



<input checked="" type="checkbox"/>	Master's thesis
<input type="checkbox"/>	Licentiate's thesis
<input type="checkbox"/>	Doctor's thesis

Subject	Global IT Management	Date	25.5.2018
Author(s)	Laura Pihlajaniemi	Student number	505268
		Number of pages	77 p. + appendices
Title	End user's resistance to change from project team's perspective		
Supervisor(s)	Jani Koskinen		

Abstract

Nowadays organizations compete in dynamic and global business environment where competition is fierce and to survive the organizations need to change their operations and functions constantly (Agboola & Salawu 2011, 235, 241). Furthermore, the usage of information systems has become a necessity for the organizations (Chen, Liu & Chen) and thus, organizations use a lot of money and resources to develop their systems (Stoica & Brouse 2013, 728). However, the information system development projects often fail (Stoica & Brouse 2013, 728) and one of the reasons for the failure is the resistance to change (RTC). The RTC is a complex and multifaceted phenomenon (Hirschheim & Newman 1988, 400) and there is no simple solution how to mitigate its impact on the project outcome.

The purpose of this study was to examine the relationship between the project team and the end users and further the end users resistance to change from project team's perspective. The objective was to find out how project team can influence on end users resistant behavior and enhance readiness for change and further, what kind of tools and methods the project team can use. The systematic literature review was made on two concepts, namely the IS project failures and the resistance to change. The empirical data was gathered through interviews and the collected data was encoded and analyzed based on the Grounded Theory methodology.

The project team's influence on end users' RTC is limited due to the complex and multifaceted nature of the RTC formation. However, some conclusions can still be made from the gathered data. The project team can mainly influence on the end users' RTC through the interaction between the project team and end users for instance the quality and timing of the information, the listening of end users' concerns, and finding a mutual language. Furthermore, the collaboration within the team, the visibility of the team and planning carefully the resources for the project are important factors in the formation of end users' RTC.

Key words	Information system project failure, Resistance to change (RTC), End user
Further information	





<input checked="" type="checkbox"/>	Pro gradu -tutkielma
<input type="checkbox"/>	Lisensiaatintutkielma
<input type="checkbox"/>	Väitöskirja

Oppiaine	Tietojärjestelmätiede	Päivämäärä	25.5.2018
Tekijä(t)	Laura Pihlajaniemi	Matrikkelinumero	505268
		Sivumäärä	77 s. + liitteet
Otsikko	Loppukäyttäjän muutosvastarinta projektitiimin näkökulmasta		
Ohjaaja(t)	Jani Koskinen		

Tiivistelmä

Nykypäivänä organisaatiot kilpailevat dynaamisessa ja kansainvälisessä ympäristössä, jossa kilpailu on kovaa ja selviytyäkseen organisaatioiden pitää jatkuvasti muuttaa toimintojaan ja prosessejaan (Agboola & Salawu 2011, 235, 241). Lisäksi tietojärjestelmien käytöstä on tullut välttämätöntä organisaatioille (Chen, Liu & Chen) ja siksi organisaatiot käyttävät paljon rahaa ja resursseja systeemiensä kehittämiseen (Stoica & Brouse 2013, 728). Tietojärjestelmäprojektit ovat kuitenkin taipuvaisia epäonnistumaan (Stoica & Brouse 2013, 728) ja yksi syy epäonnistumiselle on muutosvastarinta. Muutosvastarinta on monimutkainen ja moniulotteinen ilmiö (Hirschheim & Newman 1988, 400), ja eikä ole olemassa yksinkertaista ratkaisua miten muutosvastarinnan vaikutusta projektien lopputulokseen voisi vähentää.

Tämän tutkimuksen tarkoitus oli tutkia projektitiimin ja loppukäyttäjän välistä vuorovaikutussuhdetta ja loppukäyttäjän muutosvastarintaa projektitiimin näkökulmasta. Tavoite oli löytää miten projektitiimi voi vaikuttaa loppukäyttäjän muutosvastarintaan ja parantaa loppukäyttäjän valmiutta muutokseen ja lisäksi mitä työkaluja tai metodeja projektitiimi voi käyttää. Systemaattinen kirjallisuuskatsaus tehtiin kahdesta aihealueesta, jotka olivat tietojärjestelmäprojektien epäonnistuminen ja muutosvastarinta. Empiirinen data kerättiin haastatteluista ja kerätty data koodattiin ja analysoitiin käyttäen Ankkuroitu Teoria (Grounded Theory) -metodologiaa.

Projektitiimin vaikutus loppukäyttäjän muutosvastarintaan on rajallista koska muutosvastarinnan muodostuminen on monimutkaista ja monitahoista. Kuitenkin joitain päätelmiä kerätystä datasta voidaan tehdä. Projektitiimi voi vaikuttaa loppukäyttäjän muutosvastarintaan pääosin vuorovaikutuksen kautta esimerkiksi antamalla laadukasta tietoa ajallaan, kuuntelemalla loppukäyttäjän huolia ja löytämällä yhteisen kielen. Lisäksi, projektitiimin yhteistyö, projektitiimin näkyvyys ja projektin resurssien huolellinen suunnittelu ovat tärkeitä tekijöitä loppukäyttäjän muutosvastarinnan muodostumisessa.

Asiasanat	Tietojärjestelmä, Projekti, Epäonnistuminen, Muutosvastarinta, Loppukäyttäjä
Muita tietoja	





Turun yliopisto
University of Turku

END USER'S RESISTANCE TO CHANGE FROM THE PROJECT TEAM'S PERSPECTIVE

Master's Thesis
in International Business

Author:
Laura Pihlajaniemi, 505268

Supervisors:
Jani Koskinen

25.5.2018
Turku



Turun kauppakorkeakoulu • Turku School of Economics

Turun yliopiston laatujärjestelmän mukaisesti tämän julkaisun alkuperäisyys on tarkastettu Turnitin OriginalityCheck -järjestelmällä.

The originality of this thesis has been checked in accordance with the University of Turku quality assurance system using the Turnitin OriginalityCheck service.

Table of contents

1	INTRODUCTION	5
2	THEORETICAL BACKGROUND	8
2.1	Systematic literature review	8
2.2	Literature review on project failure.....	9
2.2.1	Concept of project failure	10
2.2.2	Causes of IS project failure.....	13
2.3	Resistance to change (RTC).....	26
2.3.1	The concept and occurrence of RTC	27
2.3.2	Reasons for RTC.....	30
2.3.3	Management of RTC.....	42
3	EMPIRICAL RESEARCH: METHODOLOGY.....	47
3.1	Research approach.....	47
3.2	Data collection, coding and analysis	50
3.3	Ethical considerations	53
4	EMPIRICAL RESEARCH: RESULTS AND ANALYSIS.....	55
4.1	Results of interviews	55
4.1.1	End users.....	55
4.1.2	Project team	57
4.1.3	Organization.....	58
4.1.4	System.....	59
4.1.5	Project	60
4.1.6	Interaction	61
4.2	Analysis.....	64
4.3	Limitations and future studies	67
5	CONCLUSIONS	69
	REFERENCES.....	72
	APPENDIX 1 The selected articles of the literature search on the IS project failures... 78	
	APPENDIX 2 The selected articles of the literature search on the resistance to change 79	
	APPENDIX 3 List of the manually searched articles	80
	APPENDIX 4 Sources cited in the articles	81

List of tables

Table 1 The results of literature search on IS project failures.	9
Table 2 The results of literature search on resistance to change.	9
Table 3 Failure factors found in the literature review.....	14
Table 4 The RTC reactions found in the literature	29
Table 5 The reasons for RTC found in the literature	39
Table 6 Actions found in the literature for mitigating RTC	46
Table 7 Background information of the participants	52
Table 8 The major categories on the project team and end users' relationship	55

1 INTRODUCTION

Business environment has become a dynamic and fierce place (Agboola & Salawu 2011, 241), where the change is constant and crucial for survival (Appelbaum, Degbe, MacDonald & Nguyen-Quang 2015, 135-136). Organizations need to evolve and transform their business strategies, operations, and functions in order to keep their business running (Agboola & Salawu 2011, 235). Furthermore, the global competition has made the life of organizations challenging and organizations need to react not only to the actions of competitors but also to global economic circumstances and to new technology inventions (Saruhan 2014, 143). Usage of technologies especially the usage of information systems in organizations has increased (Chen, Liu & Chen 2010, 1) and more and more investments are spent on information system (IS) projects (Stoica & Brouse 2013, 728). However, the results of these projects are uncertain and the failure rate is high (Stoica & Brouse 2013, 728). The researchers as well as practitioners have examined the project failure in the hopes of finding the key factors behind the phenomenon and thus, enhance organization's chance to succeed in projects. Over 50 factors have been found but there are still many factors that need to be explored. (Al-Ahmad, Al-Fagih, Khafnar, Alsamara, Abuleil & Abu-Salem 2009, 94.) Furthermore, due to the complicated and multifaceted nature of failure phenomenon, it is a challenging task to understand the concept of project failure as well as reasons behind it (Dwivedi et.al. 2013, 83; Pinto & Mantel 1990, 269).

One dimension that has a major influence on projects success or failure is the human. Without human, the projects would not exist because it is the people whose actions and plans make the projects happen. (Culmsee & Awati 2012, 529.) If this dimension is not taken into account in projects, the projects most likely end up in failure for instance due to organizational politics or culture or due to bad decisions such as selecting insufficient methods for the organization or unskilled team members (Whitney & Daniels 2013, 329). People construct their opinions and perception through social interaction (Van Dijk & Van Dick 2009, 143-144). They communicate, interact and monitor their surroundings and based on the information gathered from these social events, people make sense on the matters happening around them and thus, form their perception on the matters. The way the people in organization perceive the IS project affects a lot on the end result and thus, their reactions and thoughts should be considered when planning and executing a project (Agboola & Salawu 2011, 239). Furthermore, when employees' reactions are considered, the possible resistance can be recognized and addressed. The resistance of users or resistance in general has been seen by researchers as a major challenge to the projects. (Bateh, Castaneda & Farah 2013, 115.) The resistance may hinder or even stop the process of a project and as a result, the project has been abandoned or put on hold (Al-Ahmad et.al. 2009, 95). Therefore, the

importance of resistance in projects cannot be underestimated (Van Dijk & Van Dick 2009, 143).

The resistance is a natural reaction to change (Hirschheim & Newman 1988, 400) but it is mainly seen as a negative response by the managers as well as in literature (Bareil 2013, 60; Thomas & Hardy 2011, 322). However, the literature has also found a more positive (modern) way to look at the resistance (Bareil 2013, 60; Thomas & Hardy 2011, 322). The resistance may enhance the project success by revealing that the project is faulty at beginning or that the project has shortcomings (Boohene & Williams 2012, 142). The resistance to change (RTC) concept has been studied a lot by researchers (Smollan 2011, 828). Many reasons and reactions to the resistance have been found as well as actions which influence on resistance. However, there is no simple answer on how the RTC should be managed due to the subjective and complex nature of this phenomenon (Hirschheim & Newman 1988, 400). Resistance may occur in many ways, for instance through active behavioral actions such as sabotage or more passive actions such as inertia (Hirschheim & Newman 1988, 398). These reactions are labelled as resistance by change agents, who interpret the employees' reactions as resistant or nonresistant and decide what to do to the resistant behaviour (Van Dijk & Van Dick 2009, 158). However, the change agents also influence on resistance through their actions and they may be resistant themselves for instance they diminish suggestions made by others (Ford, Ford & D'amelio 2008, 367). Consequently, the resistance is a result of the social interaction between the different parties of change (Van Dijk & Van Dick 2009, 143-144).

A great part of the interaction is about the communication e.g. the way something is communicated, whom it is communicated to, the frequency of communication, and the content of communication (Lundy & Violeta 2011, 56). When the quality of the communication is good, the relevant information regarding the project is successfully shared with project participants and other stakeholders (Lundy & Violeta 2011, 59). However, in addition to information sharing the listening of counterparts for instance the ideas and concerns of employees is important as well. The listening enhances the feeling in other parties that their opinions and thoughts are valued and thus, they may feel more positive towards a project and change. (Boohene & Williams 2012, 142.) Furthermore, the listening helps the change agents to acknowledge the concerns and fears of others and respond to these feelings accordingly. The importance of communication has been emphasized in IS project failure literature as well as in RTC literature. However, there seems to be no specific tools, methods or guidelines on how exactly the project team can create a relationship with the end users where an open and transparent communication can be cherished and where the possible resistance can be addressed. Therefore the objective of this study is to develop deeper understanding about the relationship between the project team and the end users in situation where

there is RTC and further, what the project team can do in these situations. The research questions are formulated as follows:

- How can the project team enhance users' readiness for change and therefore decrease the resistance to change?
- What kind of tools and methods can project team use?

There are five chapters in this thesis. In the first chapter, the topic and background are shortly introduced. In the next chapter the systematic literature review on two concepts is presented. Firstly, the systematic literature review method is explained and then followed by the literature review on the IS project failure and on resistance to change. The concept and the factors influencing on project failure are presented in the IS project failure literature review followed by the introduction of the concept, reactions, reasons, and the actions for management founded in the RTC literature. In Chapter 3, the research methodology is presented. The Grounded Theory methodology is examined, and the process of the study and the ethical implications are explained. In Chapter 4, the results as well as the analysis are presented. Lastly, the conclusions are explained in Chapter 5.

2 THEORETICAL BACKGROUND

2.1 Systematic literature review

The purpose of this literature review is to give the theoretical background to this study on two concepts, which are the information system project failure and the resistance to change. These two concepts are examined separately, which means that two searches on databases were made, one for each concept. The evaluation criteria for selecting the articles were presumptions on how much the article will explain the concepts overall or the reasons behind the phenomena. In the following paragraphs the procedure for searching and selecting the articles is explained in more detail and in the following chapters the results of two literature reviews are presented.

Three databases were used in the search of articles and these databases were Scencedirect, Emerald and Google Scholar. These databases were chosen due to their familiarity to the author as well as due to the belief that there would be relevant articles on both concepts in these databases. The filters were used in order to find articles, which were relevant to the study as well as reflect the present direction of the research on the field. The filters were “relevance” and a time frame from 2011 to 2017. The search words used for the concepts were the following “information system” project failure and organizational “change resistance”.

From the search results, the titles of 40 first articles were looked at and the article was either selected for further analysis or excluded from the literature review based on the relevance of the title. In the next step, the abstracts of the selected articles were analyzed and the articles were selected or excluded based on the relevance for the study. After that the selected articles were read through and some of the articles were excluded at this point due to the irrelevance of the content for the study. The author does not exclude the possibility that some of the articles excluded based on title and abstract might have consisted of information relevant to the study even though the title and abstract did not indicate about it.

Some of the articles mentioned in the literature review were manually searched. These articles were mentioned in the articles selected through the systematic literature search. The manually searched articles did not show up in the systematic search mostly due to the time filter; the articles were published earlier than 2011. These articles were selected for manual search because they bring basic and relevant information about the concepts and thus, support and strengthen the structure of the literature review. Based on the notes made from the articles selected through the systematic literature search and from the articles searched manually the literature review was written. In the Table 1 and 2, the results of the systematic literature search can be seen in detail and in Appendixes

(1, 2, and 3) the list of the articles search both systematically and manually can be found. In Appendix 4, the list of sources cited in the articles is presented. These sources are referred in the Tables 3-6.

Table 1 The results of literature search on IS project failures.

Database	Results	Chosen by topic	Chosen by abstract	Chosen by content
Science Direct	9764	22	11	5
Emerald	790	23	15	8
Google Scholar	24300	26	16	10
Total	34854	71	42	23

Table 2 The results of literature search on resistance to change.

Database	Results	Chosen by topic	Chosen by abstract	Chosen by content
Science Direct	66	24	11	4
Emerald	89	18	16	7
Google Scholar	4210	34	19	14
Total	4365	76	46	25

2.2 Literature review on project failure

In the past few decades, the computers and information systems have become a necessity for the companies (Chen, Liu & Chen 2010, 1). Moreover the companies are using a vast amount of investments and resources on IS projects even though the outcome of the project is uncertain (Stoica & Brouse 2013, 728). Information system (IS) projects fail more often than not (Stoica & Brouse 2013, 728) and time as well as money used on the projects are wasted (Al-Ahmad et.al. 2009, 95). Practitioners and researchers have been trying to form a better understanding about the IS project failure and about the reasons behind it. However, the concept of project failure is multifaceted and ambiguous and thus, it is difficult to reach an agreement on the definition of the failure as well as on the root causes of failure. (Pinto & Mantel 1990, 269.)

The IS projects are not related only to technical systems because the IS projects may change the way the work is done in the company as well as the way employees act and think (Dwivedi et.al. 2015, 152) for instance ERP system implementation is strategic and it has an effect on every employee in the company (Aloini, Dulmin & Mininno 2007, 559). Therefore, the human and strategic factors need to be considered along with technical aspect. Furthermore, the different stakeholders bring their own complexity to the concept for instance the users have gained more experience regarding the

information systems and thus, are more demanding on their opinions and expectations (Chen et.al. 2010, 1). Consequently the project may fail due to the resistance of users (Al-Ahmad et.al. 2009, 95). In the next chapters discussion about the concept of project failure as well as the causes of project failure is presented based on the literature review.

2.2.1 Concept of project failure

There is no agreed definition for information system project failure or success even though the subject has been under scrutiny in several decades (Basten, Joosten & Mellis 2011, 12; Pinto & Mantel 1990, 269). In the literature many definitions and examples on project failure can be found, which strengthens the perception that there is no consensus on this matter (Pinto & Mantel 1990, 269). Moreover, the IT field is changing all the time, which makes it difficult to test and validate hypotheses with a long-lasting research in this field. The conditions and context related to the original problem may have changed and thus, the findings would no longer reflect the original problem. Furthermore, the findings may not be applicable to the new conditions and context that define the problem at the time findings are realized. (Stoica & Brouse 2013, 731.) Furthermore, it is difficult to compare one project with another due to the specific parameters used to measure the success for each project. Thus, it is not possible to create a solid ground for creating proper definition by comparing the projects. (Alami 2016, 63.) However, there is one thing that the researchers agree on and it is that the project failure concept is a complex and multidimensional construct (Basten et.al. 2011, 13), which makes the understanding of the project failure a challenging task (Pinto & Mantel 1990, 269).

There are many ways to assess failure such as budget, time, and quality requirements (Janssen & Klievink 2012, 28) or the usage of parameters such as the initial investment and the requirements i.e. the project is a failure if the investment is totally or partly lost and if the requirements are not met (Alami 2016, 63). Al-Ahmad et.al. (2009, 95) defined the IT project failure as

“any project that is set to support the operations of an organization by exploiting the resources of information technology that fails to deliver the intended output within the originally allocated cost, time schedule, or initially-approved functionality, as well as the project comfortably satisfying the stakeholders and being accepted and largely used by the end users after deployment.” (Al-Ahmad et.al. 2009, 95)

The usage of the time, cost and quality dimensions for assessing the failure or success of the IS project is widely supported in the literature (Savolainen, Ahonen & Richardson 2011, 2) and some support can be also found in practice (Joosten, Basten &

Mellis 2011, 1). These dimensions are used due to their measurability (Joosten et.al. 2011, 7) and there are many names used for these dimensions in literature for instance the Iron Triangle (Atkinson 1999, 337), adherence to planning (ATP) (Basten et.al. 2011, 18), and traditional project criteria (Savolainen et.al. 2011, 2).

According to Yeo (2002, 241) the project can be successful, partly successful, or failure. The projects can be separated into two categories. First category consist of projects that have reached their time, budget and quality requirements, which were set at the beginning of the project. (Yeo 2002, 241.) Second category includes “challenged” and “impaired” projects. The “challenged” projects do not meet the initially set requirements for instance parts are missing, but the products are still used in the company. The “impaired” projects, on the other hand, are abandoned at some point of the project (i.e. they will not be used). (Yeo 2002, 241; Janssen & Klievink 2012, 28.) The project may not be failure from the technical point of view, in other words the end product can technically be adequate and up to standards, but due to the people or organizational factor the product is rejected or resisted (Yeo 2002, 241). The large, diverse and complicated IT projects, especially if they involve many organizations, are not easily manageable. Therefore, they are prone to exceed the time and budget dimensions and due to the various stakeholders, the requirements may also be reached or not depending on the individual. (Janssen & Klievink 2012, 27-28.)

The usage of traditional criteria has also received a lot of criticism. First of all, the time schedule and budget are set in the planning stage of the project when the project team has only a preliminary picture on the project scope and needed resources. Therefore, Atkinson (1999, 337) argues that these dimensions are only guesses and thus, are not proper tools for measuring the project. He also criticizes the quality dimension, which has been constructed by stakeholders in certain time based on their attitudes and beliefs. During the project lifecycle, these requirements may change and therefore, Atkinson calls the quality dimension as a phenomenon. He says that the other criteria should be adopted for instance stakeholders’ benefits. (Atkinson 1999, 337.) Basten et.al. (2011, 18) support this view by stating that the traditional project criteria are not suitable for measuring the IS project, because it is only a tool for monitoring and control the project execution. Instead they suggest that process efficiency and product effectiveness would be used in measuring the failure or success of the project because these dimensions give a more realistic assessment to the project. If the project is efficiently managed and the customer is satisfied with the product, the project can be seen as successful. (Basten et.al. 2011, 18.)

Baccarini (1999, 25) separates two concepts from IT project success and these are project management success and product success. In the literature, these concepts are mainly used interchangeable which makes the assessment of success confusing. (Baccarini 1999, 25.) The first concept focuses on the process of the project and can be

measured with the traditional criteria of cost, time and quality dimensions. It is crucial to define the measuring criteria for the project management success in the initial stage of the project in order to give team members a common goal. Otherwise, the team members might not try to reach the same objectives and in the end, the project is seen as failure by one or more of the team members. (Baccarini 1999, 25.) De Wit (1988, 164) remarks that project management can support the project towards success but cannot guarantee it. The second concept, the product success, is associated with the end product and its impact/effect (Baccarini 1999, 25). In the study of Joosten et.al. (2011, 5) one respondent emphasizes the importance of quality over cost, budget and functional requirements in IS projects. He states that the customer's satisfaction at the product quality as well as the economic success of the product is all that matters in the end. Another respondent notes that the customer's expectations on functionalities and requirement have to be taken into account along with the defined scope. (Joosten et.al. 2011, 5.) These notions highlight the importance of the customer's satisfaction and expectations, which have a great influence on the perception of project success or failure.

According to De Wit (1988, 164) the best way to measure the success of the project would be the objectives and how well they have been achieved. However, when determining the objectives for the project one may discover that there are multiple different and even contradictory objectives if all the stakeholders' views are considered. (De Wit 1988, 164.) One may see the project as a success whereas another may think it is a disaster. Furthermore, the perception on the failure of the project may change over time. (De Wit 1988, 169.)

As stated above the project is viewed differently throughout the group of stakeholders e.g. developers, project manager, users, top management, suppliers, and team members. (De Wit 1988, 169; Dwivedi et.al. 2015, 147). From the experts' point of view the failure is seen mostly as the absence of success and success is achieved by for instance fulfilling the time and budget requirements. The team members from contractor's side are interested in how well the project is managed i.e. efficiency whereas the customers consider the quality of the product as more important. (Alami 2016, 63.) Developers value the succeeding to overcome difficult technical challenges and providing the system with required functions. They value how the project was technically executed and operated. A project manager, on the other hand, concentrates on the resources of the project and how they are managed. The traditional success criteria (especially time and budget) are important assessments for the project from the project managers' point of view. Executives want to see the value of the system i.e. financial (tangible) outcome. This viewpoint is not good in measuring new systems that have more intangible benefits than tangible e.g. customer relationship management,

social media and knowledge management. The end users see the functions and usability of the system. (Dwivedi et.al. 2015, 147.)

Joosten et.al. (2011, 7) states that the decision on the project success or failure is based on the individual's perception on the matter. Individual analyzes and measures the dimensions according to her own notion about the overall project and decides whether the cost overruns, the delayed time schedule or the changed initial requirements were justifiable. (Joosten et.al. 2011, 7.) The findings of Montequin, Cousillas, Alvarez & Villanueva (2016, 427) support this view. They found out in their study that the project managers could be divided into 9 different groups by the background information (i.e. project type and geographical information) and by the way they behave when analyzing the factors. (Montequin et.al. 2016, 447.) Therefore, it can be said that the evaluation is based on more a subjective than an objective view (Joosten et.al. 2011, 7; Montequin et.al. 2016, 447). Al-Ahmad et.al. (2009, 95) support this view by stating that the success and failure of the project can be measured in multiple ways, but the decision on whether the project is successful or not is a subjective notion, which may vary from individual to another i.e. one can see the project successful whereas another as a failure due to differing objectives and desired outputs (Al-Ahmad et.al. 2009, 95). However, the perception is affected by the expectations (Stoica & Brouse 2013, 729) and expectations can be unrealistic due to the people's optimism when estimating the possibility of failure of large complicated projects (Tversky & Kahneman 1974, 1129). People tend to underestimate the risk and trust that project will succeed even though the odds are against (Tversky & Kahneman 1974, 1129). Therefore it is not possible to take into account all the objectives related to the project and assess them objectively. As De Wit (1988, 164) stated that the perfect measurement of success is rather an illusion. (De Wit 1988, 164.)

It can be detected from above notions that many aspects are involved in the project failure and it is not easy to agree on exact definition on this concept. However, the research on the concept and the causes of the project failure has not been pointless (De Wit 1988, 169). It is good to find the factors that support or weaken the project success and the reasons why the factors have an effect on the project outcome in order to understand the reasons and learn from mistakes done in the past. (De Wit 1988, 169.) In the next chapter, the failure causes found in the literature review will be presented.

2.2.2 Causes of IS project failure

The trend of IT project failure is huge and the new and updated management frameworks and methodologies have not found a solution for this trend (Stoica & Brouse 2013, 729). It is challenging to find a consensus on the failure causes of projects

due to the differences in studies and type of the projects (Montequin, Cousillas, Ortega & Villanueva 2014, 993; Pinto & Mantel 1990, 269). Furthermore, the failure causes emerge in combination during the different stages of the project lifecycle and their impact on the project outcome varies (Montequin et.al. 2014, 993). Moreover, a failure cause may have a different effect on the end result depending on which stage of the project it occurs for instance if the cause occurs in the beginning, the project may be determined before it even starts, but if the same cause occurs in the later stages of the project, it may not have so big an impact (Pinto & Mantel 1990, 269). Montequin et.al. (2014, 993) also suggest that not only failure causes themselves, but also the interactions between these causes should be taken into account when studying the failure causes (Montequin et.al. 2014, 993). Dwivedi et.al. (2013, 83) support this by stating that failure causes are layered, complicated, and dependent on one another (Dwivedi et.al. 2013, 83). The failure causes do not occur in isolation but in combination and they are usually linked to each other i.e. interrelated. (Dwivedi et.al. 2013, 84.) Some of the causes have an effect on a project and some on project management. The project management lasts until the project has been delivered and the project involves a longer time span. (Dwivedi et.al. 2013, 85.)

The research about project failures has leaned on secondary data and questionnaires, and it can be questioned that are the found failure factors actually the causes of the failure or just a symptom of the failure. The reported failure causes can be affected by unwillingness to admit the true causes of failure or fear of consequences to individual or to organization. This should be considered when research material is investigated. (Stoica & Brouse 2013, 729.) However, Michael D. Myers is confident that the efforts to uncover the project success factors as well as the project failure causes have been beneficial, because the practitioners may use the found causes as guidelines and thus, may be able to avoid common pitfalls and possibly execute the project successfully. (Dwivedi et.al. 2015, 149.) However, these causes cannot guarantee success and practitioners need to take into account also other possible factors that are unique in their environment (Dwivedi et.al. 2015, 149). The failure causes found in the literature review are listed in the Table 3.

Table 3 Failure factors found in the literature review

Failure factors found in literature	Systematic literature articles	Sources cited in articles
Inaccurate cost estimations / Inadequate financial management	Montequin et.al. 2014, 2016; Whitney & Daniels 2013; Garg & Garg 2013; Mosadeghrad 2014; Albliwi et.al. 2014; Nawi et.al. 2012; Shirouyehzad et.al. 2011	Boehm 1991; Nawi 2011; Aloini et.al. 2007; Gamal Aboelmaged 2011; Kumar et.al. 2008
Inaccurate time estimations	Montequin et.al. 2014, 2016; Whitney & Daniels 2013; Garg & Garg 2013; Mosadeghrad 2014; Albliwi et.al. 2014, Dwivedi et.al. 2013	Boehm 1991; Ropponen & Lyytinen 2000; Panizzolo et.al. 2012; Percin & Kahraman 2010

Table 3 Failure factors found in the literature review (continue)

Failure factors found in literature	Systematic literature articles	Sources cited in articles
Badly defined specifications/requirements	Montequin et.al. 2014, 2016; Garg & Garg 2013; Dwivedi et.al. 2013	Attarzadeh & Ow 2008; Yeo 2002
Customer's requirements inaccurate, incomplete or not defined	Montequin et.al. 2014, 2016; Dwivedi et.al. 2013; Nawi et.al. 2012; Shirouyehzad et.al. 2011; Alfaadel et.al. 2012	Huang et.al. 2004; Al-Ahmad et.al. 2009; Schmidt et.al. 2001
Unrealistic (customer) expectations / Unrealistic project goals and objectives	Montequin et.al. 2014, 2016; Garg & Garg 2013; Dwivedi et.al. 2013; Mosadeghrad 2014; Nawi et.al. 2012	Al-Ahmad et.al.2009; Schmidt et.al. 2001; Dickson et.al. 1978; Johnson et.al. 2001; Lyytinen & Hirschheim 1988
Too ambitious requirements (e.g. performance, reliability)	Janssen & Klievink 2012	McConnell 1996; Lam 2005
Continuous or dramatic changes to the initial requirements	Montequin et.al. 2014, 2016; Whitney & Daniels 2013; Dwivedi et.al. 2013	Boehm 1991; Attarzadeh & Ow 2008
Shifting goals	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Unclear shared objectives	Janssen & Klievink 2012	Lam 2005
Lack of clear vision and future plan	Albliwi et.al. 2014; Dwivedi et.al. 2013	Bhasin 2012a, 2012b; Jeyaraman & Kee Teo 2010; Kwak & Anbari 2006; Yeo 2002
Lack of long-term view	Mosadeghrad 2014	
Lack of constancy of purpose	Mosadeghrad 2014	
Scope creep / Extent of change	Janssen & Klievink 2012; Shirouyehzad et.al. 2011	Nelson 2007; McConnell 1996; Huang et.al. 2004
Underestimate time, limited scope, optimistic schedules	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Developing wrong functions, properties, and/or user interfaces	Whitney & Daniels 2013; Shirouyehzad et.al. 2011	Boehm 1991; Huang et.al. 2004
Project requirements deficiently documented	Montequin et.al. 2014, 2016	
Extremely new or complex technology	Montequin et.al. 2014, 2016; Dwivedi et.al. 2013; Shirouyehzad et.al. 2011	Huang et.al. 2004; Al-Ahmad et.al. 2009; Schmidt et.al. 2001
No proven technology available	Janssen & Klievink 2012	
Problematic technology base/infrastructure / Gap between new and existing systems	Dwivedi et.al. 2013; Nawi et.al. 2012; Shirouyehzad et.al. 2011; Garg & Garg 2013	Nawi 2011; Aloini et.al. 2007
Inadequate legacy system knowledge	Garg & Garg 2013	
Weak infrastructure	Albliwi et.al. 2014	Arumugam et.al. 2013; Snee 2010
Placing poor priority on quality improvement	Mosadeghrad 2014	
Quality checks badly performed (or not at all) / Unavailability of right users / Lack of appropriate experience	Montequin et.al. 2014, 2016; Garg & Garg 2013	Field 1997; Hirschheim & Newman 1988; Jiang et.al. 1998; Markus 1983; Yeo 2002
Unavailability of right users during UAT / Lack of appropriate experience of the user representatives	Garg & Garg 2013; Shirouyehzad et.al. 2011	Huang et.al. 2004
Time consuming quality improvement efforts	Mosadeghrad 2014	
Poor ERP product selection / Poor project selection and prioritization	Garg & Garg 2013; Albliwi et.al. 2014	Gamal Aboelmaged 2010, 2011; Antony et.al. 2005, 2007, 2012a; Chakravorty 2009; Duarte et.al. 2012; Kornfeld & Kara 2013; Kumar et.al. 2007b, 2008b; Nonthalecerak & Hendry 2008; Percin & Kahraman 2010; Snee 2010; Su & Chou 2008; Taner et.al. 2007
Inadequate ERP product / Unjustified TQM program	Garg & Garg 2013; Mosadeghrad 2014	

Table 3 Failure factors found in the literature review (continue)

Failure factors found in literature	Systematic literature articles	Sources cited in articles
System functionality	Whitney & Daniels 2013	Ropponen & Lyytinen 2000
Deficient/Poor leadership	Mosadeghrad 2014; Shirouyehzad et.al. 2011	Aloini et.al. 2007; Antony et.al. 2005, 2007, 2012a; Burcher et.al. 2010; Chiarini 2011; Hilton & Sohal 2012; Kumar et.al. 2011; McAdam & Lafferty 2004; Suresh et.al. 2012
Incompetent in making decision on selecting ICT projects (top management)	Nawi et.al. 2012	Nawi 2011
Poor project management / Lack of project management methodology	Garg & Garg 2013; Mosadeghrad 2014; Albliwi et.al. 2014; Dwivedi et.al. 2013; Shirouyehzad et.al. 2011; Alfaadel et.al. 2012;	Aloini et.al. 2007; Huang et.al. 2004; Jeyaraman & Kee Teo 2010; Kwak & Anbari 2006; McAdam & Lafferty 2004; Mitev 1996
Poor management	Mosadeghrad 2014; Dwivedi et.al. 2013	Mitev 1996
Ineffective organizational change management	Garg & Garg 2013; Mosadeghrad 2014; Dwivedi et.al. 2013; Shirouyehzad et.al. 2011	Aloini et.al. 2007; Al-Ahmad et.al. 2009; Schmidt et.al. 2001
Insufficient risk management	Janssen & Klievink 2012; Dwivedi et.al. 2013; Nawi et.al. 2012	Nelson 2007; McConnell 1996; Nawi 2011; Yeo 2002
Lack of management support / Lack of top management attitude, commitment and involvement	Montequin et.al. 2014, 2016; Garg & Garg 2013; Mosadeghrad 2014; Albliwi et.al. 2014; Dwivedi et.al. 2013; Shirouyehzad et.al. 2011	Aloini et.al. 2007; Huang et.al. 2004; Gamal Aboelmaged 2011; Antony et.al. 2007, 2012a; Arumugam et.al. 2013; Bhasin 2012a, 2012b; Burcher et.al. 2010; Chakravorty 2009; Chiarini 2011; Ho et.al. 2008; Jeyaraman & Kee Teo 2010; Kumar et.al. 2011; Kwak & Anbari 2006; Martinez-Jurado & Moyano-Fuentes 2012; Nwabueze 2012; Pedersen & Huniche 2011; Pepper & Spedding 2010; Pinto et.al. 2008; Scherrer-Rathje et.al. 2009; Snee 2010; Taner et.al. 2007; Worley & Doolen 2006; Al-Ahmad et.al. 2009; Belassi & Tukel 1996; Flowers 1996; Heeks 2006; Schmidt et.al. 2001; Yeo 2002
Lack of middle management support	Garg & Garg 2013	
Management turnover	Mosadeghrad 2014	
No Sponsorship	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Lack of process thinking and process ownership	Albliwi et.al. 2014	Gamal Aboelmaged 2011; Antony et.al. 2012a; Bhasin 2012a, 2012b; Hilton & Sohal 2012
No empowered decision-makers	Garg & Garg 2013; Mosadeghrad 2014	
Unclear overall program responsibilities	Janssen & Klievink 2012; Dwivedi et.al. 2013;	Al-Ahmad et.al. 2009; Schmidt et.al. 2001
Project manager: Lack of commitment	Montequin et.al. 2014, 2016	
Project manager: Lack of communication skills	Montequin et.al. 2014, 2016; Dwivedi et.al. 2013	Belassi & Tukel 1996
Project manager: Lack of competence / Project management and control problems	Montequin et.al. 2014, 2016; Albliwi et.al. 2014; Dwivedi et.al. 2013; Nawi et.al. 2012; Alfaadel et.al. 2012	Nawi 2011; Jeyaraman & Kee Teo 2010; Kwak & Anbari 2006; McAdam & Lafferty 2004; Wallace et.al. 2004

Table 3 Failure factors found in the literature review (continue)

Failure factors found in literature	Systematic literature articles	Sources cited in articles
Project manager: Lack of vision	Montequin et.al. 2014, 2016; Mosadeghrad 2014; Albliwi et.al. 2014	Antony et.al. 2005, 2007, 2012a; Burcher et.al. 2010; Chiarini 2011; Hilton & Sohal 2012; Kumar et.al. 2011; McAdam & Lafferty 2004; Suresh et.al. 2012
Project team: Lack of competence	Montequin et.al. 2014, 2016; Whitney & Daniels 2013; Garg & Garg 2013; Mosadeghrad 2014; Shirouyehzad et.al. 2011	Boehm 1991; Aloini et.al. 2007
Incompetent change agent or quality consultant	Mosadeghrad 2014	
Project team: Lack of commitment	Montequin et.al. 2014, 2016; Mosadeghrad 2014; Dwivedi et.al. 2013	Belassi & Tukel 1996
Project staff changes	Montequin et.al. 2014, 2016; Garg & Garg 2013; Mosadeghrad 2014; Dwivedi et.al. 2013; Shirouyehzad et.al. 2011	Huang et.al. 2004; Wallace et.al. 2004
Adding people to a late project	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Wrong number of people assigned to the project / Poor project team composition	Montequin et.al. 2014, 2016; Garg & Garg 2013; Dwivedi et.al. 2013; Shirouyehzad et.al. 2011	Huang et.al. 2004; Wallace et.al. 2004
Inadequate resources (technical & human)	Garg & Garg 2013; Mosadeghrad 2014; Albliwi et.al. 2014; Dwivedi et.al. 2013; Nawi et.al. 2012; Shirouyehzad et.al. 2011; Alfaadel et.al. 2012	Huang et.al. 2004; Gamal Aboelmaged 2011; Antony 2008; Antony & Desai 2009; Antony et.al. 2005, 2012a; Bhasin 2012a, 2012b; Kumar et.al. 2009a, 2009b; Pedersen & Huniche 2011; Pinto et.al. 2008; Taner et.al. 2007; Thomas et.al. 2009; Attarzadeh & Ow 2008; Heeks 2006
Project team misunderstanding related to customer/user needs	Montequin et.al. 2014, 2016; Dwivedi et.al. 2013; Nawi et.al. 2012	Al-Ahmad et.al. 2009; Schmidt et.al. 2001
Lack of customer focus	Mosadeghrad 2014	
Lack of employee engagement and participation / Lack of team autonomy	Albliwi et.al. 2014	Burcher et.al. 2010; Jeyaraman & Kee Teo 2010; McAdam & Lafferty 2004; Scherrer-Rathje et.al. 2009
Poor user involvement	Janssen & Klievink 2012; Garg & Garg 2013; Mosadeghrad 2014; Dwivedi et.al. 2013; Nawi et.al. 2012; Shirouyehzad et.al. 2011	Nelson 2007; McConnell 1996; Nawi 2011; Al-Ahmad et.al. 2009; Aloini et.al. 2007; Attarzadeh & Ow 2008; Brown & Jones 1998; Jiang et.al. 1998; Johnson et.al. 2001; Hartwick & Barki 1994; Schmidt et.al. 2001
Low levels of participation	Janssen & Klievink 2012	
Individual capabilities	Janssen & Klievink 2012	
Difference in technology readiness	Janssen & Klievink 2012	
Inadequate training and education	Garg & Garg 2013; Mosadeghrad 2014; Albliwi et.al. 2014; Shirouyehzad et.al. 2011	Aloini et.al. 2007; Huang et.al. 2004; Antony 2008; Antony et.al. 2005, 2007, 2012b; Bamber & Dale 2000; Bhasin 2012a, 2012b; Chakravorty 2009; Gurumurthy & Kodali 2011; Hilton & Sohal 2012; Kwak & Anbari 2006; Martinez-Jurado & Moyano-Fuentes 2012; Panizzolo et.al. 2012; Pedersen & Huniche 2011; Pinto et.al. 2008; Serrano Lasa et.al. 2009; Taner et.al. 2007

Table 3 Failure factors found in the literature review (continue)

Failure factors found in literature	Systematic literature articles	Sources cited in articles
Undermined motivation	Janssen & Klievink 2012; Dwivedi et.al. 2013	Nelson 2007; McConnell 1996; Irani et.al. 2001
Absence of champion	Janssen & Klievink 2012; Dwivedi et.al. 2013; Nawi et.al. 2012	Nelson 2007; McConnell 1996; Lam 2005; Al-Ahmad et.al. 2009; Yeo 2002
Lack of employee interest	Mosadeghrad 2014	
Lack of employees' motivation and satisfaction	Mosadeghrad 2014; Dwivedi et.al. 2013	
Lack of good human resource management	Mosadeghrad 2014; Dwivedi et.al. 2013	Mitev 1996
Lack of recognition and reward for success	Mosadeghrad 2014	
Lack of performance measurement system	Albliwi et.al. 2014	Karim & Arif-Uz-Zaman 2013; Kumar et.al. 2007a
Lack of evaluation and self-assessment	Mosadeghrad 2014	
Employee shortage and increased work load	Mosadeghrad 2014	
Inadequate estimation of work	Nawi et.al. 2012	Nawi 2011
Threat of redundancy	Albliwi et.al. 2014	Bamber & Dale 2000; Gurumurthy & Kodali 2011; Martinez-Jurado & Moyano-Fuentes 2012
Lack of employee trust in senior management	Mosadeghrad 2014	
Lack of consideration of human factors	Albliwi et.al. 2014	Bhasin & Burcher 2006; Burcher et.al. 2010; Chakravorty 2009; Martinez-Jurado & Moyano-Fuentes 2012; Psychogios et.al. 2012; Ringen & Holtskog 2013
User's (and middle management) resistance to change / Resistance of cultural change	Garg & Garg 2013; Mosadeghrad 2014; Albliwi et.al. 2014; Dwivedi et.al. 2013; Nawi et.al. 2012; Shirouyehzad et.al. 2011	Huang et.al. 2004; Antony et.al. 2012a; Bhasin 2011, 2012a, 2012b; Bhasin & Burcher 2006; Black & Revere 2006; Burcher et.al. 2010; Chiarini 2011; Harrison & Storey 1996; Kwak & Anbari 2006; Field 1997; Hirschheim & Newman 1988; Jiang et.al. 1998; Markus 1983; Yeo 2002
Failure to deal with problems with employees	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Experience of previous failed change initiatives	Mosadeghrad 2014	
Lack of team orientation	Mosadeghrad 2014	
Poor coordination	Mosadeghrad 2014	
Absence of collaboration mechanism	Janssen & Klievink 2012	
Poor Interdepartmental alignment	Garg & Garg 2013	
Working relationships	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Diversity of workforce	Mosadeghrad 2014	
Poor communication / Not speaking the same language	Garg & Garg 2013; Mosadeghrad 2014; Albliwi et.al. 2014; Dwivedi et.al. 2013; Nawi et.al. 2012; Shirouyehzad et.al. 2011; Alfaadel et.al. 2012	Aloini et.al. 2007; Huang et.al. 2004; Antony et.al. 2007, 2012a, 2012b; Bhasin 2012a, 2012b; Chakravorty 2009; Hines et.al. 2006; Pedersen & Huniche 2011; Scherrer-Rathje et.al. 2009; Worley & Doolen 2006; Yeo 2002; Irani et.al. 2001
Poor knowledge transfer	Garg & Garg 2013	
Unexpected events with no effective response possible	Montequin et.al. 2014, 2016	
Ineffective corrective actions	Mosadeghrad 2014	
Complexity	Dwivedi et.al. 2013	Lyytinen & Hirschheim 1988; Wallace et.al. 2004

Table 3 Failure factors found in the literature review (continue)

Failure factors found in literature	Systematic literature articles	Sources cited in articles
Public opinion opposition to project	Montequin et.al. 2014, 2016	
Improper cut over planning	Garg & Garg 2013	
Inappropriate planning	Mosadeghrad 2014; Dwivedi et.al. 2013; Nawi et.al. 2012; Shirouyehzad et.al. 2011; Alfaadel et.al. 2012	Nawi 2011; Aloini et.al 2007; Wallace et.al. 2004
Switching tools during a project	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Discussion about process dominate over project content	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Lack of process focus	Mosadeghrad 2014	
No pre implementation analysis	Garg & Garg 2013	
Lack of an effective model or roadmap to guide the implementation	Albliwi et.al. 2014	Chakravorty 2009; Kumar et.al. 2011; Pepper & Spedding 2010
Poor execution	Albliwi et.al. 2014	Chakravorty 2009; Nwabueze 2012; Pinto et.al. 2008
Treated as an IT project	Garg & Garg 2013	
Over-reliance on heavy customization	Garg & Garg 2013; Dwivedi et.al. 2013	Yeo 2002
Inaccurate data	Garg & Garg 2013	
Inappropriate timing to go live	Garg & Garg 2013	
Wasted time in the fuzzy front-end	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Requirements gold-plating	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Silver-bullet	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Lack of experience in Lean/Six Sigma project implementation	Albliwi et.al. 2014	Gurumurthy & Kodali 2011; Jeyaraman & Kee Teo 2010; Panizzolo et.al. 2012; Pedersen & Huniche 2011
Lack of awareness of the need for Lean/Six Sigma	Albliwi et.al. 2014	Antony et.al. 2012a; Martinez-Jurado & Moyano-Fuentes 2012; Panizzolo et.al. 2012; Psychogios et.al. 2012; Scherrer-Rathje et.al. 2009
Lack of awareness of the benefits of Lean/Six Sigma	Albliwi et.al. 2014	Antony et.al. 2012a, 2012b; Gurumurthy & Kodali 2011; Pamfilie et.al. 2012; Psychogios et.al. 2012
Weak link between the CI projects and the strategic objectives of the organization	Albliwi et.al. 2014	Antony et.al. 2012a; Bhasin & Burcher 2006; Chiarini 2011; Hines et.al. 2006; Kornfeld & Kara 2013; Kumar et.al. 2009a, 2009b, 2011; Pedersen & Huniche 2011; Percin & Kahraman 2010; Psychogios et.al. 2012
Narrow view of LSS as a set of tools, techniques and practices	Albliwi et.al. 2014	Gamal Aboelimged 2011; Antony et.al. 2012a; Bhasin 2012a, 2012b; Hilton & Sohal 2012
Lack of understanding of the different types of customers/VOC	Albliwi et.al. 2014	Antony & Fergusson 2004; Antony et.al. 2012a; Burcher et.al. 2010; Hines et.al. 2006; Nabhani & Shokri 2009
Poor selection of candidates for belts training	Albliwi et.al. 2014	Hilton & Sohal 2012; Kumar et.al. 2009b; Snee 2010
Too many innovations	Janssen & Klievink 2012	
Lack of innovation	Mosadeghrad 2014	
New practices entail new risks which are only discovered by use in practice	Janssen & Klievink 2012	
Research-oriented development	Janssen & Klievink 2012	Nelson 2007
Problem-solving mindset	Mosadeghrad 2014	
Mindset barriers	Mosadeghrad 2014	
TQM adoption barriers	Mosadeghrad 2014	
Poor quality of BPR	Garg & Garg 2013; Shirouyehzad et.al. 2011	Aloini et.al. 2007

Table 3 Failure factors found in the literature review (continue)

Failure factors found in literature	Systematic literature articles	Sources cited in articles
Inappropriate business model	Garg & Garg 2013	
No business change / Failure to redesign the business process	Janssen & Klievink 2012; Shirouyehzad et.al. 2011	Ebrahim & Irani 2005; Huang et.al. 2004
Unrealistic ROI	Garg & Garg 2013	
Overestimating savings	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
High implementation cost	Albliwi et.al. 2014	Bhasin 2012a, 2012b; Chakravorty 2009; Panizzolo et.al. 2012; Percin & Kahraman 2010
Inappropriate organizational structure	Mosadeghrad 2014	
Poor organizational capabilities	Albliwi et.al. 2014	Chakravorty 2009; Kumar et.al. 2009b; Shah et.al. 2008; Zhang et.al. 2012
Bureaucracy and paperwork	Mosadeghrad 2014	
Lack of organizational flexibility	Mosadeghrad 2014	
Lack of information systems	Mosadeghrad 2014	
Difference in (organizational) culture / Inappropriate culture	Janssen & Klievink 2012; Mosadeghrad 2014; Dwivedi et.al. 2013; Alfaadel et.al. 2012	Lam 2005; Ebrahim & Irani 2005; Flowers 1996; Yeo 2002
Organizational politics	Janssen & Klievink 2012; Mosadeghrad 2014; Dwivedi et.al. 2013; Alfaadel et.al. 2012	Nelson 2007; McConnell 1996; Lam 2005; Belassi & Tukul 1996; Munns & Bjeirmi 1996; Pinto & Mantel 1990
Political, social, economic or legal changes	Montequin et.al. 2014, 2016; Mosadeghrad 2014; Dwivedi et.al. 2013	Belassi & Tukul 1996; Munns & Bjeirmi 1996
Lack of previous identification of legislation	Montequin et.al. 2014, 2016	
Lack of government support	Mosadeghrad 2014	
Deficient management of suppliers and procurement	Montequin et.al. 2014, 2016; Mosadeghrad 2014; Albliwi et.al. 2014; Dwivedi et.al. 2013; Shirouyehzad et.al. 2011	Huang et.al. 2004; Bamber & Dale 2000; Brown & Jones 1998
Breaching of contract	Nawi et.al. 2012	Nawi 2011
Contracting out	Janssen & Klievink 2012	Nelson 2007; McConnell 1996
Poor relation between external consultant and managers	Garg & Garg 2013	
Change in stakeholders (contractors)	Janssen & Klievink 2012	
Competitors	Montequin et.al. 2014, 2016; Dwivedi et.al. 2013	Belassi & Tukul 1996; Munns & Bjeirmi 1996; Pinto & Mantel 1990

In their study about the failure factors of the ERP project in India, Garg & Garg (2013, 506) found out that nine factors from 28 used in the survey were the most influential to the outcome of the project. These nine factors were related to the strategic and people causes (e.g. resources, user involvement, and management) and these factors would explain over 75 percent of the problems in ERP project implementations. Other 19 factors do not occur so often and are seen as useful and supportive items but not crucial for the outcome of the project. (Garg & Garg 2013, 506-507.) According to Dwivedi et.al. (2015, 149) the factors that are influential to the IT systems are top management support, a project champion, a buy-in from users, and an advice from a consultant regarding a vendor selection (Dwivedi et.al. 2015, 149). Alami (2016, 63), on the other hand, sees that the project may fail due to the unbalanced ecosystem, poorly performed transformation process, and inadequate project management (Alami 2016, 63).

The big and complex projects are more difficult to manage than simple ones and thus, they are more prone to fail (Montequin et.al. 2014, 993). Paying attention to the complexity in the projects changes the focus from human and technology issues to managing the complex systems (Whitney & Daniels 2013, 330). Complexity and inadequate resources are seen as the root causes of the project failure in the study of Whitney & Daniels (2013, 326). Alami (2016, 62) supports this view and he also states that uncertainty, volatility, and unknowns impact on the ecosystem of the project and thus, determine the failure or the success of the project (Alami 2016, 62). In order to manage the complexity, the project team has to have an effective leader and good soft skills such as empathy and group facilitation (Whitney & Daniels 2013, 330). Furthermore, the leader must have a good understanding about human behaviour and interaction in order to be able to motivate the project team members, pour meaning to the situation, and respect the human values (Whitney & Daniels 2013, 330). Nawi et.al. (2012, 73) noticed that many of the project managers have insufficient skills on both management as well as information and communication technology (ICT). Project manager should be able to organize, communicate fluently, and maintain good relationships in addition to the project management and ICT skills. (Nawi et.al. 2012, 73.) Good project management skills are proven to be beneficial for avoiding many of the failure factors (Al-Ahmad et.al. 2009, 94). However, interestingly the project manager and project team themselves do not seem to think that their actions have an effect, at least not directly, on project failure. On the other hand, they seem to believe that they are able to succeed in the project if the guidelines and requirements are clearly stated. (Montequin et.al. 2014, 998.)

The project team combination is also important aspect, because sometimes the politics in the workplace for instance favoritism influence the team assembly more than the individual's skills, which may lead to lack of skills in the project team (Nawi et.al. 2012, 73). Moreover, the organizational politics and culture have an effect on projects and thus, they should be taken into account when selecting appropriate methodology for the project and choosing the team members. Otherwise the project may fail due to an inappropriate methodology or a team. (Whitney & Daniels 2013, 329.) Additionally, He & Sheu (2014, 909) noticed that company's culture regarding decision-making approaches (i.e. bottom-up approach, attitudes towards ideas and transparency) have an impact on project success (He & Sheu 2014, 909).

Top management support is crucial for the change project and the support is demonstrated through specific action such as leading by example, following the process of the project, allocating needed resources (Venugopal & Suryaprakasa 2011, 610). When large systems, which influence on the way work is done in the workplace, are developed and implemented, the top managers' support is extremely important in order to avoid conflicts between employees and different departments. The result of the ERP

project without top management support, for instance, can be chaos, because no one wants to give up to their working habits, which may lead to incompatible systems, processes and structure. (Shirouyehzad, Dabestani & Badakhshian 2011, 259.)

Stoica & Brouse (2013, 73) state that the communication is one of the main causes of project failure, because the project teams are nowadays a diverse group of individuals who have different backgrounds (e.g. cultural, ethnic or educational). Moreover, the team members can be working in different countries or even continents and that makes the collaboration challenging (Stoica & Brouse 2013, 731). The efficient management of change and the creation of collaborative environment may help to mitigate the negative responses which emerge from the implementation of a new system for instance change resistance (Dwivedi et.al. 2015, 148). Moreover, the collaboration between IT and business may enhance the development of a system, because the IS developers look at the system in a technical way whereas the business people look at from the functional and organizational point of view. Both have important aspects and opinions to give to development and implementation processes. (Chen et.al. 2010, 3.) Furthermore, the user influence and responsibility have a positive effect on the development processes and on interaction between the project team and the users (Chen et.al. 2010, 7).

Culmsee & Awati (2012, 529) noticed in their study the importance of people factors in projects. The people are a crucial part of the projects due to the fact that without people the project would not be executed or as Culmsee & Awati stated “*projects are conceived, planned, carried out and monitored by people*” (Culmsee & Awati 2012, 529). The people perform actions during the project based on commitments made through shared understanding, which in turn is formed through open dialogue. In order to reach the shared understanding the different parties of the project should be equal in conversation, in other words, the power relations, politics or other disruptions that obstruct the communication between these parties should be removed. (Culmsee & Awati 2012, 529.) Culmsee & Awati acknowledge that this is not easy to reach in practice and therefore, their goal in the article was to demonstrate how the shared understanding concerning the project goals and objectives can be created between the project team members, which normally have different viewpoints (Culmsee & Awati 2012, 528). In the case study, the project team goal was to create a layout design plan for small suburb area and the team contained the professional designer, community members, governmental agencies and the private sector (Culmsee & Awati 2012, 536). During the workshops, the dialogue and arguments were mapped in order to make the communication and decision making more transparent. Every stakeholder could state their opinion and mapping the conversation made it easier to remember what has already been discussed. This supported the communication between parties because parties could think that their opinions had been taken into account. Moreover, the usage of mapping reduced the time used because there was no need to repeat already discussed

views. (Culmsee & Awati 2012, 541.) The designer in the workshops tried first to lead the stakeholders by informing which solutions could work and which would not. This behaviour did not support the creation of holding environment, because the designer placed himself above the others due to his knowledge on designing. When the designer changed his behaviour from leading to guiding and supporting the others, in other words, from telling what would work or not to letting the other stakeholders discussed about the limitations and problems, which the designer himself faced in his work, and to find a solution through conversation. This kind of approach let the team to understand the purpose of the project and the background of made decision. This in turn made the stakeholders more committed to the project and achieving the goals. (Culmsee & Awati 2012, 538-539.) The purpose of the holding environment is to create a shared understanding between stakeholders in order to develop achievable goals for which parties are committed to and are willing to fulfill. After the shared understanding is reached, it does not matter much what methodology is used to manage the project because the parties are committed to reach the targets. (Culmsee & Awati 2012, 544.)

In the project communication barriers may occur, which may hinder the progress of the project (Andersson 2016, 214). A communication barrier occurs when the other party does not understand the message the other one is trying to convey for instance limited IT-competence may hinder the discussion because the technical terms used are unfamiliar and they need to be explained to other party (Andersson 2016, 229). In the case study of Andersson (2016, 229), the steering group participated in the discussion regarding the technical aspects of the project without understanding about the terms and requirements. This created communication barriers which hinder the progress of the whole project. It could be concluded that the steering group should have concentrated on their strengths and decide matters concerning the organizational aspects of the project instead of taking part in the micro discussion about details. Every time there is a meeting regarding the project it should be carefully thought of whether someone should participate or not. It is not necessary to every stakeholder of the project be present at the meeting if the matter discussed does not concern them for instance top managers do not need to hear or decide on every small technical detail of the system, so there is no reason them to participate in the meeting were the technical aspect of the project is discussed. They only need the summary of the matters discussed. This way there will be no time wasted on building the mutual understanding about the subject discussed e.g. explaining technical terminology used in the technical meeting. (Andersson 2016, 229.)

The customer satisfaction is one of the parameters for project success and thus, the customer should be included in the project in all stages in order to achieve commitment and transparent communication. This way the customer may understand if something unexpected happens and deviant decisions from the initial plan have to be made or if the project is delayed. (Basten et.al. 2011, 18.) However, the participation of the customer

may delay the project executed with the agile method, because the customer may want to change many times the minor details of the system before going forward. Changing requirements may affect both work already done or planned. They most often improve the system but are seen negatively among the project team because rework on done modules is usually needed. In case the project is behind the schedule or budget, a decision whether to proceed or not with the required functions must be made without knowing the influence of the decision on design. The decision may improve or limit it. (Whitney & Daniels 2013, 328.)

Users are seen as important part of the project, because they will use the system in the end. He & Sheu (2014, 909) found out in their study that user involvement does not increase the likelihood of success, but user expectations, on the other hand, have an impact on success. However, the user involvement may help to shape the expectations and thus, increase the likelihood of success. (He & Sheu 2014, 909.) However, the user should also be ready for the change before the project begins, because if the user is not ready for the change, they may not be willing to accept the product of the project. Moreover, the user readiness has a greater impact on a project outcome than user involvement and participation. (He & Sheu 2014, 909.) However, Venugopal & Suryaprakasa (2011, 610) remark that if participators have high expectations on project outcomes, it will have a negative effect on project success (ERP) (Venugopal & Suryaprakasa 2011, 610).

The insufficient use of tools is also one aspect of failure causes that influence on the project outcome, for instance in the TQM implementation, the tools and techniques can be overused, underused or misused due to the selection of an inadequate method. When the tools and techniques are too advance for the employees to understand, overused of tools and techniques occurs. Underuse, on the other hand, occurs when the organization does not harness all the principles and values of the method. The last one, misuse, occurs when the tools and techniques do not match with the operations and culture of the organization. (Mosadeghrad 2014, 163)

Cecez-Kecmanovic, Kautz & Abrahall (2014, 561) suggest a different perspective, “performative perspective”, for examining a failure or a success of the IS project. The IS project becomes a failure or a success through the actions and interrelations between different actors such as stakeholders, methodologies, and technologies. The IS project can be both a success and a failure at the same time due to the different networks where the different actors are influencing in. (Cecez-Kecmanovic et.al. 2014, 561.) Furthermore, there can be multiple realities from the IS project, which determines the success and failure differently. This means that the project failure or success is not only different aspects of one reality, but different networks create their own reality in which the success or failure of the IS project is determined. (Cecez-Kecmanovic et.al. 2014, 567.) Cecez-Kecmanovic et.al. demonstrate their viewpoint with an example of

Olympia-online project, which was launched by the insurance company, Olympia. The goal of the project was to create a new advanced information system, which would provide e-business services for their brokers. (Cecez-Kecmanovic et.al. 2014, 571.) Due to the lack of skills and resources needed for the development of the information system in-house, a contract was made with a technology company HighTech, which had a viable prototype for the system. The prototype was based on a rule-based engine called Emperor. The Olympia team and the HighTech team started the development of the system together. Soon it became clear that the HighTech team did not have a sufficient knowledge about the insurance industry nor an understanding concerning the challenges and complexity of developing the desired functions for the new system. Furthermore, some of the functions had to be added to the mainframe outside the Emperor due to the limitations and inflexibility of Emperor. Therefore, the design of the system became time-consuming and troublesome. (Cecez-Kecmanovic et.al. 2014, 572.) The information system was delivered delayed, over budget, and lack of some desired in-house functionalities. However, in spite of all the challenges and delays the brokers were happy with the product and the created system enhanced the sales and improved the market share of the company. (Cecez-Kecmanovic et.al. 2014, 574.) The managers in Olympia were not aware of the challenges and shortcomings of the system and thus, they thought that the success was reached due to the usage of the Emperor. In their minds, the Emperor was a key factor in Olympia-online's success based on the presented prototype at the beginning of the project and reconfirmation of this vision by the market success. (Cecez-Kecmanovic et.al. 2014, 574, 578.) However, the Olympia team had a different view on the Emperor due to the challenges experienced during and after the project. Cecez-Kecmanovic et.al. state that these two views on Emperor are different realities, because they are acted in different networks and are visible only for the actors within the network. In other words, the managers, HighTech team and "Emperor" form one network where the Emperor is seen as enabler for the success of Olympia-network. (Cecez-Kecmanovic et.al. 2014, 578.) In the Olympia-online network, which consists of Olympia team, application software, mainframe resources and rule-base engine Emperor, the Emperor is seen as a troublesome and unsuitable engine for the system (Cecez-Kecmanovic et.al. 2014, 572, 574). Both views are equally real within their own network and they are the relational effects of interaction between the actors (Cecez-Kecmanovic et.al. 2014, 578).

When the failure causes emerged during the project, they should be solved quickly especially at the beginning of the project in order to create balanced environment where the occurred problems can be resolved without delay (Janssen & Klievink 2012, 34). Furthermore, the warning signs may be detected early and it is critical to act before the failure causes become too big to handle in order to avoid the project failure (Dwivedi et.al. 2013, 84). In order to detect the possible failure causes in the project, the project

team can use risk management, especially in big and complicated projects. Some of the risks cannot be avoided or mitigated for instance the resistance of change or the use of unproven technology. However, the recommended actions for the factors found in risk management, may help to avoid most of the challenges occurred during the project and thus, increase the likelihood of the project success. The person responsible for risk management should be someone else than the project manager especially in the complex projects. (Janssen & Klievink 2012, 35.)

Lyytinen & Robey (1999, 86) mention that organizations have learned to fail and with this they mean that the organizations use practices that have been ineffectual in previous times, but still keep on using them. Moreover, they are not able to change their practices and thus, are prone to fail also in the future. They are both learned to fail and failed to learn from their own or others experience. (Lyytinen & Robey 1999, 86.) Organizations tend to forget their own experience as a source of learning and thus, heavily lean on external sources (Lyytinen & Robey 1999, 99). Lyytinen & Robey (1999, 99) sees that only way to overcome this learning failure phenomenon is to question and challenge the established ineffectual structures and habits, and learn from the past even though that is a difficult and slow way to proceed (Lyytinen & Robey 1999, 99).

Based on the literature review on failure causes it can be concluded that this subject is multifaceted and complex and thus, there is no easy answer why projects fail. One category that rouses from the literature review on failure factors was the human's influence on the project and more specifically the resistance of certain parties. If stakeholders are not willing to accept the IS, the project will most likely fail even though the project would be handled well and the product is functional. Therefore in the next chapter the literature review on the resistance to change is presented.

2.3 Resistance to change (RTC)

The change has become an unavoidable phenomenon in organization nowadays due to the advancing technologies, globalization, and intense competition (Agboola & Salawu 2011, 241; Saruhan 2014, 143, 148). Organizations need to evolve and transform their operations constantly in order to be able to compete and survive in the active volatile business environment (Appelbaum et.al. 2015, 135-136; Agboola & Salawu 2011, 235, 241; Boohene & Williams 2012, 135). However, there has been a significant amount of failures in organizational change initiatives worldwide, which hinder the progress of change initiative development (McKay, Kuntz & Näswall 2013, 29; Bateh et.al. 2013, 115). The researchers have tried to find reasons for this trend in order to determine

factors that lead to a successful implementation of change (McKay et.al. 2013, 29). Researchers also try to understand the reasons behind the failures and in that way help the organizations to avoid common pitfalls and successfully implement the change (Bateh et.al. 2013, 115).

The meaning of change is to modify the original position to something new. In order to change, old familiar habits or procedures need to be forgotten and new unknown habits or procedures need to be adopted. (Agboola & Salawu 2011, 235.) Change is abstract phenomenon and therefore, it arouses a lot of feelings on people. More concrete subjects do not cause so much of a hassle as abstract things. (Airo, Rasila & Nenonen 2012, 296.) One of the reactions to change, which has been labelled by researchers as one of the main challenges of change initiatives, is resistance to change (RTC) (Bateh et.al. 2013, 115). RTC does not occur necessarily in every change process (Hirschheim & Newman 1988, 400) but when it occurs, it may have a significant impact on the adoption of change initiative (Van Dijk & Van Dick 2009, 143). RTC has been studied a lot. However, the researchers have not found a consensus on the RTC concept (Smollan 2011, 828). In literature RTC is seen as a natural response to change (Hirschheim & Newman 1988, 400). Davidson (1994, 94 as cited in Carlström & Olsson 2014, 462) described RTC as

“anything and everything that workers do which managers do not want them to do, and something that workers do not do that managers wish them to do” (Davidson 1994, 94 as cited in Carlström & Olsson 2014, 462).

However, the RTC is more complicated and multifaceted phenomenon and the depth of RTC cannot be captured in a simplistic manner (Hirschheim & Newman 1988, 400). In the next subchapters, the RTC concept, the reactions of RTC as well as implications for managers are explained based on the literature review.

2.3.1 The concept and occurrence of RTC

The resistance is interpreted mainly from the change agent’s perspective. They recognize the possible resistance, evaluate the potential risk the resistance may impose, and act accordingly. (Van Dijk & Van Dick 2009, 158.) RTC is seen as the behavioral actions of change recipients towards a change initiative introduced by management and these actions may occur in any stage of the process or afterwards and they may last a short or a long period of time (Hirschheim & Newman 1988, 398; Bareil 2013, 62). In a traditional aspect, the RTC is defined negatively as hostile actions towards change initiatives, which obstruct the implementation of initiative (Bareil 2013, 61-62; Thomas & Hardy 2011, 322). Nowadays the responses to change can be seen in both a negative

and a positive way (the modern aspect) (Bareil 2013, 62; Thomas & Hardy 2011, 322; see also Piderit 2000, 783).

Van Dijk & Van Dick (2009, 144-145) presents two dimensions, which are person-oriented resistance and principle-oriented resistance. In person-oriented resistance, employee perceives that change has a negative impact on individual's own or colleagues work identity or experience. (Van Dijk & Van Dick 2009, 144-145.) In principle-oriented resistance, on the other hand, the threat (real or perceived) is imposed on the organization, its structure and processes. In other words, the employee perceives that change harms the organization. However, the management may have a different opinion on what is beneficial for the organization. (Van Dijk & Van Dick 2009, 144-145.) Van Dijk & Van Dick (2009, 158) states that the resistance cannot be considered only from the linear perspective (i.e. a change agent observing the reactions of change recipients) rather RTC is an interactive process (Van Dijk & Van Dick 2009, 158). RTC is shaped and continually redefined through social interaction between all the participants in a change process for instance change recipients and a change agent (Van Dijk & Van Dick 2009, 143-144).

From the employees' perspective RTC may be seen as a refusal to do what is told or to reject the adoption of the system. So, they may not realize that they are resisting when they for instance argue against the change. Negative attitudes towards change can be labelled as resistance. (Smollan 2011, 840-841.) In cases that change initiative is not beneficial to the employee or to the organization for instance the loss of status quo or the loss of job or a fear of unknown, RTC may be seen as justified by employees (Hirschheim & Newman 1988, 398).

To the individual's tendency to resist may be reduced by the individual's readiness for change. The individual's readiness for change is based on individual's perception on their capability to survive the change, how appropriate the change is for the organization, how much support the managers give for the change, and how beneficial the change will be for individual. (Holt et.al. 2007 as cited in McKay et.al. 2013, 31.)

Changing the information system for instance the implementation of a new function may be perceived as a minor change by the IT department. However, these kinds of changes may be perceived as a major by users and thus, users may resist the change. (Hirschheim & Newman 1988, 400.) The new technology raises responses of a different kind for instance embracement, acceptance, rejection or partially acceptance of the technology (Laumer & Eckhardt 2011, 65). Adoption of knowledge management systems, on the other hand, differs from other information systems due to its optional nature. The individual can choose whether adopt or not the system whereas other information systems needs to be adopted in order to be able to do the work. (Li, Liu & Liu 2016, 190.)

There can also be misinterpretation on RTC for instance on the usage of a new system. If employees do not use the system, it can be labelled as resistance, but managers should be careful not to make hasty presumptions. The employees may not use the new system, because they may be unaware of it or they are still evaluating it before using it. If employee knows that the system exist and had enough time to consider the usage of the system, but does not still use the system in other words has rejected the usage of the system, this may be labelled as a resistant behaviour. So, non-usage is not always resistance. (Bhattacharjee & Hikmet 2007, 726.) In Table 4 the RTC reactions have been listed based on the literature review.

Table 4 The RTC reactions found in the literature

RTC reactions found in literature	Systematic literature articles	Sources cited in articles
Positive emotions / Hopeful / Pleasant	Helpap & Bekmeier-Feuerhahn 2016	Bartunek et.al. 2006; Mossholder et.al. 2000; Huy 2002
Anxiety	Appelbaum et.al. 2015; Latta 2015; Helpap & Bekmeier-Feuerhahn 2016	Oreg 2006; Bartunek et.al. 2006; Mossholder et.al. 2000; Huy 2002
Anger	Latta 2015; Airo et.al. 2012; Boohene & Williams 2012	Oreg 2006; Kübler-Ross 1969
Fear / Frightened	Latta 2015; Pakdel 2016; Helpap & Bekmeier-Feuerhahn 2016	Oreg 2006; Bartunek et.al. 2006; Mossholder et.al. 2000; Huy 2002
Frustration	Helpap & Bekmeier-Feuerhahn 2016	Bartunek et.al. 2006; Mossholder et.al. 2000; Huy 2002
Apprehension	Latta 2015	Oreg 2006
Opposition / Rejection / Refusal / Fighting / Defying	Bareil 2013	
Arguing / Blaming / Accusing / Doubting / Disturbing	Bareil 2013; Smollan 2011	Hultman 2006
Intimidating / Threatening	Smollan 2011	Hultman 2006
Undermining / Ridiculing	Smollan 2011	Hultman 2006
Speaking out against or negatively about the change in public	Peccei et.al. 2011; McKay et.al. 2013; Smollan 2011; Airo et.al. 2012	Lawrence 1954; Stanislao & Stanislao 1983; Caruth et.al. 1985; Iverson 1996; Greasley et.al. 2009; Giangreco & Peccei 2005; Recardo 1995; Coetsee 1999; Price & Fortune 2008
Being critical / Questioning	Rosenberg & Mosca 2011; Smollan 2011; Bareil 2013	Petrini & Hultman 1995; Hultman 2006
Withholding information	Rosenberg & Mosca 2011; McKay et.al. 2013; Smollan 2011	Petrini & Hultman 1995; Hultman 2006; Giangreco & Peccei 2005; Recardo 1995
Gossip / Inside-jokes / Starting rumors / Selective use of facts	Agboola & Salawu 2011; Thomas & Hardy 2011; Rosenberg & Mosca 2011; Smollan 2011	Werner & De Simone 2008; Kellogg 2009; Petrini & Hultman 1995; Hultman 2006; Coetsee 1999
Manipulating	Smollan 2011	Hultman 2006
Quitting	Thomas & Hardy 2011	Coch & French 1948
Desire to leave the company	Agboola & Salawu 2011	
Absenteeism / Sick leaves	Thomas & Hardy 2011; Carlström & Ekman 2012; Agboola & Salawu 2011	Coch & French 1948
Restricting output / Downsizing / Truncate the process / Procrastinating	Thomas & Hardy 2011; Rosenberg & Mosca 2011; McKay et.al. 2013; Bareil 2013; Agboola & Salawu 2011; Smollan 2011	Coch & French 1948; Petrini & Hultman 1995; Hultman 2006; Giangreco & Peccei 2005; Recardo 1995; Judson 1991; Werner & De Simone 2008
Boycott / Blocking	Boohene & Williams 2012; Smollan 2011	Coetsee 1999; Hultman 2006
Striking	Agboola & Salawu 2011; Boohene & Williams 2012; Smollan 2011	Coetsee 1999

Table 4 The RTC reactions found in the literature (continue)

RTC reactions found in literature	Systematic literature articles	Sources cited in articles
Sabotage	Agboola & Salawu 2011; Rosenberg & Mosca 2011; McKay et.al. 2013; Boohene & Williams 2012; Smollan 2011; Peccei et.al. 2011	Werner & De Simone 2008; Petrini & Hultman 1995; Hultman 2006; Giangreco & Peccei 2005; Recardo 1995; Coetsee 1999; Lawrence 1954; Stanislaw & Stanislaw 1983; Caruth et.al. 1985; Iverson 1996; Greasly et.al. 2009; Judson 1991
Stealing	Agboola & Salawu 2011	
Showing hostility towards management	Thomas & Hardy 2011	Coch & French 1948
Physical violence / Personal aggressions (sexual harassment, verbal abuse, endangering or staling from co-workers)	Agboola & Salawu 2011	Werner & De Simone 2008
Apathy	Smollan 2011	Hultman 2006
Distancing oneself from the change / Feigning ignorance / Showing ambivalence	Airo et.al. 2012; Smollan 2011; Bareil 2013	Hultman 2006
Stress	McKay et.al. 2013; Boohene & Williams 2012	Armenakis et.al. 1993; Courpasson et.al. 2012; George & Jones 2001; Lau & Woodman 1995; Armenakis & Bedeian 1999
Change fatigue / Burn-out	Stensaker & Meyer 2011	Abrahamson 2000; Lee & Ashforth 1996

2.3.2 *Reasons for RTC*

People may resist a change due to the change itself rather than the content of the change and how the change will affect them (positively or negatively) (Airo et.al. 2012, 298; Van Dijk & Van Dick 2009, 159). Sometimes, a change challenges the beliefs and assumptions of the employees regarding how the work should be done, what the work contains or how the change affects the tasks perceived as valuable for instance patient care (Erwin 2009, 32-33).

The participants in the study of Lundy & Violeta (2011, 56) agreed that the change always generates resistance. The type of resistant employee depends on the employee's age, personality and motivation as well as on the position they work in the hierarchy and the department or industry they are working in. (Lundy & Violeta 2011, 56.) Pakdel (2016, 445), on the other hand, found out that the gender and age do not have an effect on individual's tendency to resist change but the education level, however, has some influence on individual's resistant behaviour. The individuals with higher education were less likely to have cognitive resist to change, because they understand the importance and necessity of the change. (Pakdel 2016, 445.)

The reactions of employees on change may base on the perception of the employees on their ability to adopt the new skills and gather needed capabilities to address the change (Van Dam, Oreg & Schyns 2009, 11). Employees that have a lot of experience on a large change process are more supportive and relax towards the change than the

less experienced colleagues (Stensaker & Meyer 2011, 113-114). The experienced employees perceive the change as familiar and believe that even though there is uncertainty and many unknowns, they will make it through the change. Furthermore, they do not question the need for change and concentrate on what is changed rather than why should be change. (Stensaker & Meyer 2011, 114-115.) The less experienced employees, on the other hand, tend to be more nervous about the uncertainty of change and they wonder why the change is needed. The employees that accept the change develop and actively promote their professional competency in order to have more career options. (Stensaker & Meyer 2011, 115.) The compliant employees, on the other hand, concentrate on themselves and what kind of effect the change has on them. Furthermore, they tend to keep distance to change as well as distrust the management. (Stensaker & Meyer 2011, 116.)

Different employees endure different levels of uncertainty for instance some feel uncertain if daily work is not predictable whereas other may feel secured as long as they have a job. A new information system imposes uncertainty, because it changes the way work is done. Therefore it can be seen as a threat. People tend to perceive a change or a system negatively if they cannot contribute to it or a power is used over them to implement the changes. Due to the change, some employees may lose their position as an expert or feel insecure for their ability to master the new skills required for the change. (Klaus & Blanton 2010, 631.) Furthermore, some systems are complex to comprehend and the employees may feel confused. This challenge can be handled with proper training. However, the training may not be influential if the teacher is not competent or it is organized in unsuitable time or employee perceives it as unnecessary. (Klaus & Blanton 2010, 632.)

The change, especially IT-enabled change, may require a new set of skills and if the employees do not think that the change reflects their perception on what the change should have been, they may regard their psychological contract breached (Klaus & Blanton 2010, 632). Furthermore, if the new system is implemented that does not yet work properly or as well as the old system, the employees may perceive their psychological contracts violated. However, if enough support is offered for the disruption of the system, the psychological contracts may not be perceived as violated and a system may not be resisted. (Klaus & Blanton 2010, 631.) The psychological contract is a subjective agreement, which employees have created based on their assumption on employer's obligations towards the employee (Klaus & Blanton 2010, 626). The psychological contract does not have a legal foundation and it cannot be verified through a court system. However, the employee may feel entitled to demonstrate their opinion (usually negative) towards the organization if a violation of their psychological contract appears. (Klaus & Blanton 2010, 626, 657.) In order to avoid breaching the psychological contract, the managers may try to communicate

transparently about their plans in order to help the employees to understand the reasons behind the psychological contract change (Klaus & Blanton 2010, 631).

People tend to also act when their positive identity is threatened. Van Dijk & Van Dick (2009, 146) identified three ways to act to identity threat. These acts are “*individual mobility, social creativity, and social competition*”. (Van Dijk & Van Dick 2009, 146.) One thing that threatens the identity is how individual is treated during the change. If individual thinks that management does not treat the employees fairly and equally, they may resist the change by enhancing the values of their own group, alienate other groups, quit the job or elevate the behaviour of a workgroup instead of adopting the change initiative. (Van Dijk & Van Dick 2009, 159.) Moreover, if employee thinks that s/he loses more than gains in change process, s/he is more likely to resist the adoption of a new information system. Moreover, if the change need a lot of time and effort, the employee is more likely to resist. Employee may resist also due to the social pressure i.e. resistant behaviour is high with the closest colleagues. Furthermore, if the employee prefers to maintain the current behaviour, it enhances the influence of three earlier mentioned phenomena (i.e. fair procedures, loss vs. gain, a need of time and effort). (Li et.al. 2016, 197.)

Wittig (2012, 25) demonstrate the employees reactions to change with the “Spectrum of Employees’ Reactions to Organizational Change (SEROC)”. In different ends of the spectrum stands the acceptance to change and the resistance of change. The employee’s reactions (resistance or acceptance) are located somewhere in the spectrum based on the power of the reaction. (Wittig 2012, 25.) Employee may have both reactions at the same time, but the location in the spectrum depends on which reaction is more powerful (Wittig 2012, 27). Furthermore, during the change the location in the spectrum fluctuates based on the changes in employee’s reactions (Wittig 2012, 27). The range of employee’s reactions to change can be from non-existing to extreme (Airo et.al. 2012, 290).

The most common reason to resist change is that employee perceives that the change will increase the workload (Lundy & Violeta 2011, 56). Furthermore, the employees that have worked within the company a long time may be more resistant to change than the employees who have been in the company shorter time (Van Dam et.al 2009, 19). The employees who resist change most likely have a little trust in management as well (Boohene & Williams 2012, 142). Participation may reduce the change resistance and enhance trust in management. Furthermore, motivation, communication, and transparency influence on resistance to change. (Boohene & Williams 2012, 135.) If an employee is motivated, it is unlikely that the employee would engage in resistant behaviour (Boohene & Williams 2012, 141). According to Pardo-del-Val, Martínez-Fuentes & Roig-Dobón (2012, 1851) participation does not influence on RTC or the influence is positive (Pardo-del-Val et.al. 2012, 1851). This means that participation

might not increase the negative resistance, but a positive one, which may help the organization to reach better results with the change initiative (Pardo-del-Val et.al. 2012, 1856). Participation in projects that are essential for the organization, does not impact on resistance as much as participation in projects which purpose is to proactively enhance organization. In rapid changes, the participation does not diminish the resistance. (Pardo-del-Val et.al. 2012, 1848.) Participation may create more committed employees, which in turn may reduce resistance. If the resistance is seen in positive light, the commitment may help to reach improvements. (Pardo-del-Val et.al. 2012, 1856.) However, the employee may resist because they are committed to the organization and perceive that the change will harm the organization (Ford, Ford & D'amelio 2008, 369).

Individual's tendency to resist change may be predicted by evaluating how committed individual is with organization, how the individual perceives the benefits of change, and is the individual involved in the process of change. If the individual is committed, perceived the change as beneficial and is involved in the process, the individual has a more positive attitude towards change and it is unlikely that the individual would resist the change. (Peccei, Giangreco & Sebastiano 2011, 198.) Furthermore, organizational commitment of an employee influence positively on the attitudes of the employee, which in turn reduce the likelihood of the change resistance. Moreover, the perceived benefits and involvement in the process affect positively on the attitudes of employee. If the change process is managed well and fairly and the employee is able to influence the process, it may enhance their commitment to the organization and further mitigate the likelihood of change resistance. (Peccei et.al. 2011, 199.) This implies that the change process in the organization may also generate opportunities along with the challenges for the managers. The managers may use the change process to enhance employees' commitment to organization and thus, reduce the resistance to change in future. (Peccei et.al. 2011, 199.) However, poorly managed change process may enhance resistance to change even though the employees are highly committed to the organization. In other words, employees' commitment to organization does not diminish the importance of change management. (Peccei et.al. 2011, 199.)

The emotions influence on the employee's commitment to change, on how employee perceives her/his ability to influence on the change, and on the expectations of employee. All of these dimensions have an effect on employee's tendency to resist the change. So, employee's emotions indirectly influence also the RTC. (Helpap & Bekmeier-Feuerhahn 2016, 911.) Employee, who feels negative regarding the change initiative, is more likely to be less committed to the organization, to feel unable to influence on change, and to have negative expectations and therefore, be more likely to resist change initiative. On the other hand, positive emotions enhance employee's psychological resources and it is unlikely that the employee would have any intention to

resist change. (Helpap & Bekmeier-Feuerhahn 2016, 911.) However, the emotions and psychological resources of employee most likely vary and evolve during the different stages of the change process. Furthermore, an environment (e.g. the culture, the reactions of other employees, and the interaction) shapes the emotions of employees. (Helpap & Bekmeier-Feuerhahn 2016, 912.)

The change process is influenced by the culture (Carlström & Olsson 2014, 462; Latta 2015, 1019). Organizational culture contains subcultures, which are different between departments and groups. The groups that have a similar kind of professional combination may have a different subculture. (Carlström & Olsson 2014, 466.) When the organizational culture and subculture are recognized, the potential challenges to adopt change in different departments can be realized and thus, it helps to distribute the resources where they are needed (Carlström & Olsson 2014, 471). The open cultures, which tolerate errors and have narrow hierarchy structure, are less likely to resist the change due to their flexibility to adjust their working habits (Carlström & Olsson 2014, 463; Carlström & Ekman 2012, 185). On the other hand, the cultures, which have routine seeking behaviour and high hierarchy structure, tend to stick with the known routines and avoid changes. Therefore, they are more likely to resist the change. (Carlström & Olsson 2014, 463.)

Latta (2009, 24) introduces the OC3 model, which emphasizes the organizational cultures effect on the change process. Managers should be aware of their organizations culture and how it affects the change process in order to use proper leadership styles and effectively manage the implementation process. (Latta 2009, 24.) If the cultural aspect is not considered in change strategies, there is a possibility that the change initiative collides with the cultural values and norms and results in resistance (Latta 2009, 28). The OC3 model helps to identify the cultural factors that have a positive or negative influence on change. The purpose of the model is not to imply that it is possible to implement every change successfully if culture is taken into account. On the contrary, it supports the managers to recognize the cultural aspect of the change and identify the possible reasons for resistance due to the cultural artifacts. (Latta 2009, 32-33.) The model also points out the way managers themselves are influenced by the cultural norms and values. It is important to know which cultural values and norms are preserved and which ones will be transformed in order to mitigate the resistance arising from changing cultural values and norms. (Latta 2009, 35.)

Communication is important for a change process for many reasons for instance it provides information for participants and diminish uncertainty and insecurity as well as gives participants a way to express their opinions and thus, have power to influence on the change (Boohene & Williams 2012, 137). However, it is equally important that the quality of communication is good and informative, because otherwise it may lead to a negative outcome and resistance (Boohene & Williams 2012, 141-142; see also Saruhan

2014, 159). In the study of Lundy & Violeta (2011, 56), one participant described the importance of communication and its effect on resistance by saying that the way it is communicated, with whom, the frequency of communication and what is communicated determine the resistance to change (Lundy & Violeta 2011, 56). Therefore, management should include the communication in organization's overall strategy highlighting its importance to organization daily operations (Saruhan 2014, 148). Communication can be formal and informal. Formal communication includes for instance the newsletters, conversations in person, and reports provided by organization. The meaning of these communications is to share information about organization's activities and it is either vertical or horizontal. Informal communication includes for instance gossiping. (Saruhan 2014, 148.)

If organization is able to communicate the goal of the change clearly and how the organization benefits from the change, it may lower the tendency of employees to resist the change. Participation would not have a significant impact on readiness or resistance if the communication of change was not adequate. So, it could be said that without a good communication the participation cannot mitigate change resistance. If the employees are emotionally committed to the organization, they are less likely to resist the change and be ready for the change. The employees, who are attached to the organization, may have a higher tendency to believe that organizational change has beneficial impact on the organization as well as on every stakeholder. (McKay et.al. 2013, 37.)

It is important to communicate actively about the change in order to create atmosphere that signals that the change will happen and it is the only option. The confrontation of undesired behaviour is also a very important aspect of a change. It strengthens the impression that there is no other option than comply with the change. (Erwin 2009, 36.) Transparent and timely communication enhances the employee's perception on justice and fairness and this in turn reduces the employee's tendency to resist change (Saruhan 2014, 159).

When managers involve employees in a change process, it improves the communication between the parties as well as the employee's perception on organization and on change initiatives, because they feel valued by the organization and think that organization believes in their ability to contribute to the decision on the change initiative (Boohene & Williams 2012, 142). The support, clarifications and interventions should be done in a proactive and timely manner in order to decrease insecurity and give the employees tools to manage the change (Bareil 2013, 67).

When the organization is not used to changes, the communication regarding the change and its effect on daily tasks is needed as well as persistent and steady mindset and informing the behaviours that are no longer an option (Erwin 2009, 33). Furthermore, managers may need to be pressured to act according to the change

initiative when the communication is not enough. The pressure to change may create anxiety in managers and employees, but it may be the only way to receive the attention needed to push the change forward. (Erwin 2009, 33.) Anxiety causes RTC and the degree depends on organizational hierarchy structure and culture (Appelbaum et.al. 2015, 141).

Managers should consider the way employees speak about the change as well as what the employees are actually saying. Employees may mean something else than what they are actually saying. They may not be straightforward with the meaning of the messages. (Airo et.al. 2012, 293.) Therefore, the way something is said may be more meaningful than what is actually said (Airo et.al. 2012, 289-290). Sarcasm and pretending to be stupid are examples of these kinds of conversation tactics. The purpose of these two tactics is to get the other party to agree with the individual's real opinion by disagreeing with what individual is saying. (Airo et.al. 2012, 295.) The positive actions use the same strategies as the negative one. However, the purpose is different for instance one can say what others think (office talk) but may disagree with public opinion and use their own perception (Airo et.al. 2012, 296). In one example on Airo et.al. (2012, 296) article, the participant seems to be neutral with his view on change based on what he said. However, when the way of talk was considered, he seemed to be unhappy with the change and he thought of himself as a victim. He implied that there was no way to influence on the change and his opinion did not matter by saying that there was no point to oppose the change because it did not lead anything. Furthermore, he pointed out that the change was a mistake by saying that the money was spent in vain. (Airo et.al. 2012, 296.)

The employees, who resist the change, may enhance their perception with the office talk and support of other employees or blaming management on having a secret aim for the change or keep distance to the change initiative. Employee may refer that the whole group think the same way (resisting) and thus, she distance herself from the responsibility on her own thought and opinions. Employee may also think that the management is not telling everything and that it hides the true agenda. (Airo et.al. 2012, 294.) Peoples may contradict or change their own opinion in the same sentence (Airo et.al. 2012, 296). Airo et.al. (2012, 298) noticed that people did not try to convince the opponent about their view by using arguments about the content of change rather than just persuading (Airo et.al. 2012, 298).

Employees do not either resist or comply with the change. They may change their perspective on the matter many times within one conversation. Employees engage to sustain talk when they discuss about the resisting the change and to change talk when they comply with the change. (Klonek, Lehmann-Willenbrock & Kauffeld 2014, 344.) When employees engage to sustain talk, the change agent should be careful not to confront the employees and defense the change with arguments or warnings. This kind

of behaviour may generate more resistance. (Klonek et.al. 2014, 348.) Instead the change agent should see the sustain talk as a resource from which possible threats to change can be found and addressed (Klonek et.al. 2014, 348). Sometimes the change agents should concentrate on listening than trying to bring forth their own opinion on the matter (Piderit 2000, 790).

A change agent has the power to decide which reactions are labelled as change resistance and how to react on them (Thomas & Hardy 2011, 323). This power relation between a change agent and a change recipient raises some problems in managing the change, because giving the power to the change agent implies that the change agent's view on change initiative is correct and the opinion of the resistant change recipient is flawed (Thomas & Hardy 2011, 325). This may influence on opponent's desire to give their input to the change (Thomas & Hardy 2011, 325). Sometimes the change recipients are encouraged to voice the opposing views on change to find errors in a change initiative. This is, however, very problematic for the change recipients, because if they voice opposing views, they may be labelled as resistant even though they are encouraged to do that and if they don't, they are punished on not having effort to assist the change. (Thomas & Hardy 2011, 325.) Therefore, it is good to acknowledge the power relation between the change agent and the change recipients in order to avoid problematic situations, which may create anxiety and RTC (Thomas & Hardy 2011, 323).

A change agent may label reactions or behaviour as resistance that are not harmful to change initiative because she perceives them as inappropriate or she acquires a justifiable motive to operate in a different way than in normal work situations. Instead of labelling resistance as an independent phenomenon, it should be considered as a change agent's perception on the interaction between her and change recipients. Any reactions that change recipients have towards the change are not resistant, but these reactions become resistant ones after the change agent perceives them as resistant. This means that even though recipients have reactions and these reactions influence on the outcome of the change, these reactions are not resistant before the change agent labels them as such. (Ford et.al. 2008, 372.) According to Ford et.al. (2008, 371) this is a part of a change agent sense making process (Ford et.al. 2008, 371). Change agents do not only observe the participants and analyze their responses in change process. The change agents themselves make the sense of the change process and actions of participants. They, too, contribute to the change process and may engage in violating trust, deceiving, and resisting the ideas and opinions of resistant opponents. (Ford et.al. 2008, 365.) Furthermore, change agents may engage in change resistance by themselves. If they perceive that they are resisted and they have lost power, they engage in actions, which enhance their power and status. (Van Dijk & Van Dick 2009, 147.)

Employees construct their perception about a change through sense making, which can contain both negative and positive feelings. If employees feel negative about the change, they may act against the change for instance office talk. On the other hand, the positive feelings may enhance the change. After the change, the employees may comply with the made changes by accepting the change. (Airo et.al. 2012, 294.) Change agents should take time to have conversations with the change recipients in order to gather information about their thoughts and concerns. When the change agent has knowledge about recipient's preoccupations, the change agent can intervene when needed and thus, enhance commitment and reduce resistance. (Bareil 2013, 65.)

When change agents are tightly intertwined to a change initiative, they perceive the change more positively and thus, any opposing view on the change is perceived as a threat and labelled as resistance (Van Dijk & Van Dick 2009, 159-160). Sometimes the change agent may reflect their own experience regarding the change and not reflect or understand how others perceive the change. This may lead to reporting fewer problems with the change because the leader reports based on her own positive view on change. (Van Dijk & Van Dick 2009, 157.) Furthermore, the leaders may misinterpret the employees' experience on the change and thus have a different view on how employees have perceived the change for instance in the merger case the staff perceived that the pre-merger groups still existed ("us and them" mentality) and the leaders thought that the challenges with the merger had already been addressed (Van Dijk & Van Dick 2009, 156).

A change agent may try to diminish the resistant behaviour of participants by avoiding discussions about the resistance. The change agent may believe that by avoiding the discussion about the resistance will decrease the resistance. However, this kind of behaviour most likely works as an opposite way. Not discussing about the resistance may enhance the resistance even further. (Ford et.al. 2008, 368.) If change agents understand their own role in constituting resistance, they may learn to utilize this understanding to make a better judgement on the reactions of change participants and improve their interaction with change participants in order to have a high-quality relationship, which in turn lowers the tendency of the change agent to label resistant behaviour. (Ford et.al. 2008, 372-373.) The relationships and roles of the change agents and the change recipients are a complex thing that cannot easily be specified in a certain way (Thomas & Hardy 2011, 325). In Table 5 the reasons for RTC have been listed based on the literature review.

Table 5 The reasons for RTC found in the literature

RTC Reasons found in literature	Systematic literature articles	Sources cited in articles
Concept of change initiative	Latta 2015; Agboola & Salawu 2011; Rosenberg & Mosca 2011	Holt et.al. 2003; Judson 1991
Not understanding reason behind the change	Airo et.al. 2012; Thomas & Hardy 2011; Agboola & Salawu 2011; Rosenberg & Mosca 2011; Bateh et.al. 2013; Boohene & Williams 2012	Bedeian 1980; Furst & Cable 2008; Kotter & Schlesinger 1979; Reichers et.al. 1997; van Dam et.al. 2008; Harvey & Brown 2001; Hickins 1998; Weinbach 1994
Complexity of change / Organizational structure	Helpap & Bekmeier-Feuerhahn 2016; Pakdel 2016; Agboola & Salawu 2011	Balogun 2001; Pakdel et.al. 2014
Ambiguity	Helpap & Bekmeier-Feuerhahn 2016; Agboola & Salawu 2011	Balogun 2001
Uncertainty	Helpap & Bekmeier-Feuerhahn 2016; Pakdel 2016; Agboola & Salawu 2011; Rosenberg & Mosca 2011; Boohene & Williams 2012; Smollan 2011; Saruhan 2014	Balogun 2001; Piderit 2000; Graetz et.al. 2006; Armenakis & Bedeian 1999; French 2001
Fear of unknown	Tomozii et.al. 2013; Boohene & Williams 2012	Nicolescu & Nicolescu 2006; Hickins 1998; Weinbach 1994
Lack of/poor leadership	Tomozii et.al. 2013; Rosenberg & Mosca 2011	Nicolescu & Nicolescu 2006
Lack of support from management	Rosenberg & Mosca 2011	
Leadership style, strategies and values	Appelbaum et.al. 2015; Latta 2015; Tomozii et.al. 2013; Rosenberg & Mosca 2011; Bateh et.al. 2013; Pardo-del-Val et.al. 2012; Boohene & Williams 2012; Smollan 2011; Fugate 2015; Saruhan 2014	Szabla 2007; McGuire & Rhodes 2009; Gilley et.al. 2009b; Herold et.al. 2008; Alutto & Belasco 1972; Kotter & Schlesinger 1979; Lawler 1993; Lenz & Lyles 1986; Waddell & Sohal 1998; Huy 2001; Szabla 2007; Van Dam et.al. 2008
Power differentials/relations	Latta 2015; Thomas & Hardy 2011; Smollan 2011	Thomas et.al. 2011; Foucault 1980, 1982; Mumby 2005; Thomas et al. 2011
The depth of intervention	Li et.al. 2016	Huse 1980; Lewin 1947; Schmuck & Miles 1971
Mishandling of change by change agents	Thomas & Hardy 2011; Agboola & Salawu 2011	Greiner 1992; Reichers et.al. 1997; Spreitzer & Quinn 1996; Graetz et.al. 2006
Coercive methods to force through the change	Thomas & Hardy 2011	French & Delahaye 1996
Lack of rewards for implementing change	Rosenberg & Mosca 2011; Smollan 2011	Beer & Nohria 2000
Breach of psychological contracts	Li et.al. 2016; Klaus & Blanton 2010	Folger & Skarlicki 1999; Henderson 2012; Van den Heuvel & Schalk 2009; Komodromos 2013; Novelli et.al. 1995; Wooten & White 1999
Violation of trust and agreements	Bateh et.al. 2013	Ford et.al. 2008
Distrust / Believing to a hidden agenda of management	Latta 2015; Carlström & Olsson 2014; Airo et.al. 2012; Pakdel 2016; Agboola & Salawu 2011; Rosenberg & Mosca 2011; Wittig 2012; McKay et.al. 2013; Boohene & Williams 2012; Stensaker & Meyer 2011; Fugate 2015; Saruhan 2014	Oreg 2006; Carlström & Ekman 2012; Bedeian 1980; Salem 2011; Graetz et.al. 2006; Waddell & Sohal 1998; Rousseau et.al.1998; Bommer et.al. 2005; Lines et.al. 2005
Low commitment to organization and change	Appelbaum et.al. 2015; Peccei et.al. 2011; Helpap & Bekmeier-Feuerhahn 2016; Carlström & Olsson 2014; Li et.al. 2016; Wittig 2012; McKay et.al. 2013; Pardo-del-Val et.al. 2012	Arkowitz 2002; Mowday et.al. 1982; Guest 1987; Meyer & Allen 1997; Meyer et.al. 2002; Holmberg 1997; Bordia et.al. 2004; Benders & Van Hootegeem 1999; Jermias 2001; Armenakis et.al. 1993; Elving 2005; Goodman & Truss 2004; Lines 2004; Judson 1991
Perceived favorableness and fairness of change	Peccei et.al. 2011; Li et.al. 2016; Bateh et.al. 2013; Wittig 2012; Smollan 2011; Stensaker & Meyer 2011; Saruhan 2014	Fedor et.al. 2006; Joshi 1991; Bordia et.al. 2004; Masterson et.al. 2000; Bommer et.al. 2005; Konovsky & Folger 1991; Tyler & Lind 1992

Table 5 The reasons for RTC found in the literature (continue)

RTC Reasons found in literature	Systematic literature articles	Sources cited in articles
The perception of justice	Saruhan 2014	Greenberg 1990; Cobb et.al. 1995
Perceived consequences of change	Latta 2015; Pakdel 2016; Agboola & Salawu 2011; Fugate 2015	Prasad & Prasad 2000; Oreg 2003, 2006
Perception of loss	Latta 2015	Woodward & Bucholz 1987; Bridges 1986
Perceived benefits of change	Appelbaum et.al. 2015; Peccei et.al. 2011; McKay et.al. 2013	Giangreco and Peccei 2005; Agocs 1997, Oreg 2006, Piderit 2000
Participation	Latta 2015; Pakdel 2016; Thomas & Hardy 2011; Li et.al. 2016; Wittig 2012; McKay et.al. 2013; Pardo-del-Val et.al. 2012; Boohene & Williams 2012; Saruhan 2014	Giangreco & Peccei 2005; Lines 2004; van Dam et.al. 2008; Asafi et.al. 2010; Farahani et.al. 2011; Furst & Cable 2008; Coch and French 1948; Huse 1980; Lewin 1947; Schmuck & Miles 1971; Lewis 2006; Armenakis et.al. 1993; Elving 2005; Goodman & Truss 2004; Judson 1991
Involvement in change	Appelbaum et.al. 2015; Peccei et.al. 2011	Giangreco and Peccei 2005
Communication (appropriate, accurate and timely information)	Appelbaum et.al. 2015; Latta 2015; Thomas & Hardy 2011; Bateh et.al. 2013; Wittig 2012; McKay et.al. 2013; Boohene & Williams 2012; Saruhan 2014	Lewis 2006; Wanberg & Banas 2000; Furst & Cable 2008; Giangreco & Peccei, 2005; Ford et.al. 2008; Ertuk 2008; Lewis 2006; Armenakis et.al. 1993; Elving 2005; Goodman & Truss 2004; Lines 2004; Wanberg & Banas 2000; Raina 2010
Social interaction, relation and pressure	Latta 2015; Peccei et.al. 2011; Li et.al. 2016	Lawrence 1954; Stanislao & Stanislao 1983; Caruth et.al. 1985; Iverson 1996; Greasley et.al. 2009
Contradictory stakeholders' interests	Airo et.al. 2012; Agboola & Salawu 2011	Bedeian 1980; Graetz et.al. 2006
Loss of status, power, pay, comfort or identity	Latta 2015; Peccei et.al. 2011; Thomas & Hardy 2011; Li et.al. 2016; Tomozii et.al. 2013; Agboola & Salawu 2011; Rosenberg & Mosca 2011; Boohene & Williams 2012; Smollan 2011	Dent & Goldberg 1999; Petriglieri 2011; Pitsakis et.al. 2012; Lawrence 1954; Stanislao & Stanislao 1983; Caruth et.al. 1985; Iverson 1996; Greasley et.al. 2009; Kellogg 2009; Nicolescu & Nicolescu 2006; Kendall 1997; Graetz et.al. 2006; Carr 2001; Ezzamel et al. 2001; Van Dijk & van Dick 2009
Experience of personal loss	McKay et.al. 2013	Burke et.al. 2008; Diamond 2003
Stability and safety is threatened	Pakdel 2016; McKay et.al. 2013	Khorasani Toroghi 2013; Waddell & Sohal 1998
Job security and career prospect	Peccei et.al. 2011; Agboola & Salawu 2011; Bateh et.al. 2013; Wittig 2012; Boohene & Williams 2012	Lawrence 1954; Stanislao & Stanislao 1983; Caruth et.al. 1985; Iverson 1996; Greasley et.al. 2009; Erwin 2009
The education level (higher level education tends to resist less)	Pakdel 2016; Thomas & Hardy 2011	Furst & Cable 2008; Giangreco & Peccei, 2005
Parochial self-interest (power, respect or prestige threaten)	Airo et.al. 2012; Thomas & Hardy 2011; Tomozii et.al. 2013; Agboola & Salawu 2011	Bedeian 1980; Kotter & Schlesinger 1979; Nicolescu & Nicolescu 2006; Graetz et.al. 2006
Independence threaten (choice of behaviour, personal freedom and control, powerless)	Latta 2015; Pakdel 2016; Tomozii et.al. 2013; Agboola & Salawu 2011	Brehm 1966; Arkowitz 2002; Mariotti 1998; Piderit 2000; Nicolescu & Nicolescu 2006; Harvey & Brown 2001
Personality differences, characteristics and shortcomings	Latta 2015; Thomas & Hardy 2011; Li et.al. 2016; Tomozii et.al. 2013; Agboola & Salawu 2011; Smollan 2011; Saruhan 2014	Oreg 2003; Wanberg & Banas 2000; Vakola et.al. 2013; Piderit 2000; van Dam et.al. 2008; Nicolescu & Nicolescu 2006; Gardner et.al. 1994, Sacks et.al. 1993; Judson 1991; Oreg 2006; Stanley et.al. 2005
Personal comfort	Tomozii et.al. 2013	Nicolescu & Nicolescu 2006
Maladaptive defense mechanisms	Latta 2015;	Bovey & Hede 2001b;
Dispositional resistance	Li et.al. 2016	Laumer & Eckhardt 2010; Nov & Ye 2009; Oreg & Sverdkuj 2011; Oreg 2003, 2006
Low risk tolerance	Latta 2015; Tomozii et.al. 2013	Judge et.al. 1999; Nicolescu & Nicolescu 2006

Table 5 The reasons for RTC found in the literature (continue)

RTC Reasons found in literature	Systematic literature articles	Sources cited in articles
Low tolerance for change (not trusting own capability to overcome change)	Airo et.al. 2012; Thomas & Hardy 2011; Agboola & Salawu 2011	Bedeian 1980; Furst & Cable 2008; Kotter & Schlesinger 1979; Reichers et.al. 1997; van Dam et.al. 2008; Graetz et.al. 2006
Lack of motivation	Boohene & Williams 2012	
Attitudes towards change	Peccei et.al. 2011; Li et.al. 2016; Agboola & Salawu 2011; Rosenberg & Mosca 2011; Stensaker & Meyer 2011; Saruhan 2014	Giangreco and Peccei 2005; Martinko et.al. 1996; Judson 1991; Lines 2004; Oreg 2003, 2006
Negative change experience	Stensaker & Meyer 2011	
Increased workload	Thomas & Hardy 2011; Li et.al. 2016; Rosenberg & Mosca 2011; Smollan 2011	Kellogg 2009; O'Connell Davidson 1994
Inertia (rely on and inability to change familiar assumptions)	Li et.al. 2016	
Negative assumptions	Tomozii et.al. 2013	
Fear of failure / poor outcome	Rosenberg & Mosca 2011; Saruhan 2014	
Cynicism	Latta 2015; Thomas & Hardy 2011; McKay et.al. 2013; Stensaker & Meyer 2011	Stanley et.al. 2005; Furst & Cable 2008; Kotter & Schlesinger 1979; Reichers et.al. 1997; van Dam et.al. 2008; Armenakis et.al. 1993; Courpasson et.al. 2012; George & Jones 2001; Lau & Woodman 1995; Reichers et.al. 1997
Maintain the status quo	Latta 2015; Thomas & Hardy 2011; Li et.al. 2016; Tomozii et.al. 2013; Agboola & Salawu 2011; Rosenberg & Mosca 2011; McKay et.al. 2013; Boohene & Williams 2012	Arkowitz 2002; Kellogg 2009; Jex 2002; Lewin 1947; Gilley et.al. 2009a; Agocs 1997, Oreg 2006, Piderit 2000; Lewin 1958
Routine-seeking (reluctance to give up old habits)	Carlström & Olsson 2014; Li et.al. 2016; Saruhan 2014; Airo et.al. 2012	Oreg 2003
Emotional Reaction (lack of resilience and reluctance to participate)	Carlström & Olsson 2014; Li et.al. 2016; Saruhan 2014	Oreg 2003
Short-term focus (preparedness to adjust to new context)	Carlström & Olsson 2014; Li et.al. 2016; Saruhan 2014	Oreg 2003
Cognitive Rigidity (rigid individuals resist change because of the closed mindset)	Carlström & Olsson 2014; Li et.al. 2016; Saruhan 2014	Oreg 2003
Cognitive dissonance (balance between attitudes and behaviour)	Li et.al. 2016	Burnes & James 1995; Gawronski 2012; Jermias 2001; Jones 1990
Cognitive level (reluctance to perform change)	Pakdel 2016; Li et.al. 2016; Wittig 2012; Boohene & Williams 2012; Smollan 2011; Stensaker & Meyer 2011	Smollan 2006, Hadavinejad et.al. 2010; Oreg 2006; Piderit 1999, 2000
Affective level (fear of loss and uncertainty)	Pakdel 2016; Wittig 2012; Boohene & Williams 2012; Smollan 2011; Stensaker & Meyer 2011	Smollan 2006, Hadavinejad et.al. 2010; Oreg 2006; Piderit 1999, 2000
Behavioral levels (forces of resistance and applying change contradict)	Pakdel 2016; Wittig 2012; Boohene & Williams 2012; Smollan 2011; Stensaker & Meyer 2011	Smollan 2006, Hadavinejad et.al. 2010; Oreg 2006; Piderit 1999, 2000
Organizational culture	Latta 2015; Li et.al. 2016; Tomozii et.al. 2013; Rosenberg & Mosca 2011; Smollan 2011	Bate et al. 2000; Wilkins & Dyer 1988; Kotter & Heskett 1992; Nicolescu & Nicolescu 2006; Gawronski 2012; Levin & Gottlieb 2009; Smollan & Sayers 2009; Van Dijk & van Dick 2009
Violation of organizational norms	Thomas & Hardy 2011; Agboola & Salawu 2011	Kellogg 2009; Graetz et.al. 2006
Organizational politics	Agboola & Salawu 2011; Rosenberg & Mosca 2011	Graetz et.al. 2006

Table 5 The reasons for RTC found in the literature (continue)

RTC Reasons found in literature	Systematic literature articles	Sources cited in articles
Disruption in relational system	Tomozii et.al. 2013	Nicolescu & Nicolescu 2006
Disruption of routine	Rosenberg & Mosca 2011	
Interaction between system and people related characteristics	Li et.al. 2016	Markus 1983
User friendliness of system design	Li et.al. 2016	Shneiderman 1997
Beliefs towards IT-induces organizational change	Li et.al. 2016	Martinko et.al. 1996
Inappropriate timing	Agboola & Salawu 2011; Smollan 2011	Graetz et.al. 2006; Huy 2001; Smollan et al. 2010

2.3.3 Management of RTC

Steps that organization need to take in order to stay competent is to first recognize the need for a change, then communicate the new priority and focus clearly as well as analyze the potential improvement areas in organization for reaching the desired goal with the help of managers. After that the next step is to create an action plan for a change. (Erwin 2009, 32.) In theory the process is pretty lean but in practice it may be very complicated and chaotic and needs a lot of communication and persistence (Erwin 2009, 34). Lewin's unfreeze-move-refreeze theory may not be applicable in nowadays fast changing environment, because managers need to think and implement new changes constantly and try to foresee the reactions of employees to change initiatives (Agboola & Salawu 2011, 236).

It is essential to pay attention to human element in the decision regarding change initiatives (Bateh et.al. 2013, 113). Employees may enhance or hinder the change process and therefore, managers should carefully consider the opinions of the employees and observe unspoken signals. If managers take seriously employees suggestions and ideas, the employee may be more willing to participate and contribute to change initiatives. If employee concerns are mitigated or undervalued, it might result in the bigger challenges later in the change process. (Agboola & Salawu 2011, 239.) Moreover, management should consider whether the change could be implemented in fractions. Moreover, the management should be unanimous on the change initiative in order to be successful. (Rosenberg & Mosca 2011, 144.) The change resistance can be minimized and employees' commitment can be enhanced with specific actions of leadership, management and human resource management (Fugate 2015, 198).

Human resource management is essential part of a change initiative. It can be used to motivate people as well as to give support for the change through training, compensating, or securing the work continuation ("tenure"). Managers can reduce the feeling of a personal loss among employees by communicating and participating,

training and using manuals, giving compensations, and influencing organizational culture by encouraging innovation and creativity. (Li et.al. 2016, 198.) In order to motivate employees about the change, the actions and values, which are beneficial for the change, can be given rewards of different kinds for instance a raise, a bonus, or incentives. Rewards may be perceived as a sign of management commitment to change. (Boohene & Williams 2012, 143.) The leader, who is experienced with change and understands it, may reduce the resistance in employees and other stakeholders with a positive behaviour and attitude. However, it is not enough if the top management does not visible support the change initiative. (Lundy & Violeta 2011, 55.)

The managers may reduce the probability of the resistance by examining possible reasons for resistance in a certain group for instance through surveys. After evaluating the reasons, managers should address the most threatening reasons by communicating transparently and openly in order to ease the uncertainty in employees. (Bhattacharjee & Hikmet 2007, 734.) The need for a change should be explained carefully and support those who will be affected by the change (Agboola & Salawu 2011, 241). Moreover, managers should be aware of employees' reasoning. Some employees appreciate and value fair procedures and if change effects on employees and colleagues work conditions, an explanation about the necessity and assurance about a fair procedure are needed in order to guarantee the support towards change from the employee. Some employees, on the other hand, value more the logical decision on structural changes. It is important to assure these employees that change is necessary and it has been considered carefully, and it is not just a temporary fix of a manager, who wants to make an impression. (Bateh et.al. 2013, 114.)

When information about the change initiative is shared more openly in organization, it enhances the awareness of employees about the need for a change and reduces the RTC (Pakdel 2016, 445). Furthermore, if people are satisfied with their working environment, they tend to be more willing to adopt new working routines and to use more effort to implementation (Tomozii, Usaci, Norel & Vlad 2013, 651). A change also includes organizational politics and therefore effective management of the change is needed. Furthermore, the change may threaten some employees' power and status quo, which constitute resistance. (Agboola & Salawu 2011, 235.)

Managers need to find ways to enhance their implementation strategies for a smooth change process. However, it is good to note that the same strategy may not be good for other organizations or change initiatives. (Rosenberg & Mosca 2011, 143.) Managers need constantly to consider their leadership style as well as the context in which the change is implemented. Furthermore, managers need to change the leadership style according to the context and the stage of the change in order to effectively carry out the change initiative or transformation. This means that there is not only one leadership style that is perfect for changing environment rather the different leadership styles

should be used in a different degree in different stages of the change in order to have a successful implementation process. (Appelbaum et.al. 2015, 141.) For instance, transformational leadership style is the most effectual for change process whereas transactional leadership style is seen as keeping status quo (Appelbaum et.al. 2015, 139).

There are strategies of two kinds, which managers used to mitigate the resistance of employees. These strategies are negotiation and force. The employees are encouraged to actively participate to change processes by making suggestions and discussing. However, the managers who own the change initiative may not take seriously employees' suggestions and make the decision by themselves. They inform employees about the events and use force and penalties if necessary to gain the desired results. (Tomozii et.al. 2013, 652.) Managers, who have a dominant approach to leading and management, are more likely to use force when implementing change. The leaders, who prefer negotiations and participation, are less likely to use force when implementing change. (Tomozii et.al. 2013, 653.) Managers should carefully analyze the reasons behind the resistance, because sometimes resistance may reveal the flaws or redundancy of the change initiative. On the other hand, if the change initiative does not generate resistance, it does not mean that managers have been able to develop a perfect change initiative. (Boohene & Williams 2012, 142.)

Many other factors in addition to a leadership style help to reach a success for instance communication. Transparent and clear communication may help to mitigate the individual responses to change for instance insecurity, fear and ignorance. (Rosenberg & Mosca 2011, 143.) The participants may be bought to accept the change by letting them to give improvement suggestions or new ideas regarding the change. However, these suggestions or ideas are not taken seriously (or participants think that they are not taken seriously), the participant may feel disappointed and the trust to management may decline (Van Dijk & Van Dick 2009, 160). If the participation strategies do not generate the desired outcomes, the managers may impose threats on stronger disciplinary actions for instance changes in work positions or firing the employees. However, these measures should not be taken lightly, because they may generate negative reactions such as anger, and lead to actions such as sabotage. (Boohene & Williams 2012, 143.)

There are many ways to avoid taking responsibility of change for instance ignoring, denying, and creating arguments regarding change. These kinds of reactions may be due to the inexperience and inability to comprehend the need for a change. Sometimes managers do not understand the need for a change and may believe that the reasons for change do not apply to them for instance when CEO of hospital wanted to improve the financial performance, managers did not believe that the financial performance of their department was in their responsibility. They perceived their job to be the management of daily routines such as patient care quality. Sometimes the managers did not want or

did not know how to take a leading role from their department in order to implement change, but instead protected their department against the change. (Erwin 2009, 32-33.) Managers may have reached their position through the professional career and may not have any training or experience on leading, managing, budgeting or establishing change (Erwin 2009, 34). Inexperienced managers need to receive support in order to be able to carry out the change in their department. Furthermore, they need reassurance that the process is not meant to embarrass them due to their former behaviour, diminish their position or danger the valued tasks such as the quality of patient care. (Erwin 2009, 36.) The managers that were successful in their department to implement change can be used as a peer support for those managers who struggle with the change initiative. However, the peer support may be seen negatively as interfering. (Erwin 2009, 38.)

In order to have a successful change, the resistance should not be demonized by change agents and the roles of different stakeholders should not be fixed. Resistance is complex phenomenon, which is influenced by power relations in the organization and the roles and opinions may change during time. Therefore, the actions that are labelled as resistant should be examined from the multiple angles of different stakeholders before labelling the action in order to have a better understanding whether the behaviour is really resistant or not. Employees can adopt some actions due to the concerns regarding the impact of change for instance impact on business or healthcare. (Thomas & Hardy 2011, 329.)

Organization may prepare for the future changes by creating an open atmosphere in the organization which fosters the close interaction between employees and managers as well as encourages the employees to develop and change in a daily basis. The employees may be more open for a change, when the employees trust in their managers, they have possibility to participate in changes, and they receive timely information about organizations activities. (Van Dam et.al 2009, 9.) However, employee's personal characteristics also have an influence on a change adoption. If the employee is open for the new possibilities, she may be more positive about the change process than the employee, who is less open and perceives the changes as a threat. (Van Dam et.al 2009, 17-18.) The management of change is also an important factor in reducing the change resistance. A participatory leadership style may be more beneficial than leadership styles, which prefer distant hierarchical structure for instance top-down management. (Van Dam et.al 2009, 20-21.)

Organizations have begun to understand the benefits of effective communication and a flatter hierarchical system in a change process. Furthermore, some employees have started to anticipate a chance to participate in the change related decisions. Instead of finding a way to reduce resistance, the organizations are trying to evoke employees' enthusiasm, support and acceptance to change initiatives. (Piderit 2000, 783.) In Table 6 the actions for mitigating RTC have been listed based on the literature review.

Table 6 Actions found in the literature for mitigating RTC

Actions found in literature for mitigating RTC	Systematic literature articles	Sources cited in articles
Training / Educating / Encourage to learn new knowledge, skill or attitude	Agboola & Salawu 2011; Bareil 2013; Boohene & Williams 2012; Peccei et.al. 2011; Rosenberg & Mosca 2011; Agboola & Salawu 2011	Mooketsi 2009; Kotter & Schlesinger 1979, 2008; Kotter 1995; Kumar et al., 2007; Dube 2009
Build confidence	Boohene & Williams 2012	
Support	Agboola & Salawu 2011; Bareil 2013; Boohene & Williams 2012	Dube 2009; Kotter & Schlesinger 2008
Participation / Involvement	Agboola & Salawu 2011; Rosenberg & Mosca 2011; Bareil 2013; Boohene & Williams 2012	Mooketsi 2009; Vales 2007; Armenakis & Harris 2009; Kotter & Schlesinger 2008
Effective and open communication	Agboola & Salawu 2011; Rosenberg & Mosca 2011; Bareil 2013; Boohene & Williams 2012; Fugate 2015	Mooketsi 2009; Kotter & Schlesinger 2008; Wiggins 2009; Kitchen & Daly 2002; Allen et.al. 2007
Facilitation	Agboola & Salawu 2011; Bareil 2013; Boohene & Williams 2012	Mooketsi 2009; Kotter & Schlesinger 2008
Motivation	Agboola & Salawu 2011; Boohene & Williams 2012	Dube 2009; Kotter 1996
Reward and disciplinary systems	Boohene & Williams 2012	
Negotiation	Agboola & Salawu 2011; Bareil 2013; Boohene & Williams 2012; Tomozii et.al. 2013	Mooketsi 2009; Kotter & Schlesinger 2008
Management of concerns, losses, and preoccupations	Bareil 2013	Hall & Hord 2011; Bareil & Gagnon 2005; Hiatt 2006
Acknowledge value of employees and their opinions and accept constructive criticism	Boohene & Williams 2012; McKay et.al. 2013	Armenakis et.al. 1993; Courpasson et.al. 2012; George & Jones 2001; Lau & Woodman 1995
Implementing change in pieces if possible	Rosenberg & Mosca 2011	
Manipulation	Agboola & Salawu 2011; Bareil 2013; Boohene & Williams 2012	Mooketsi 2009; Kotter & Schlesinger 2008
Co-optation	Agboola & Salawu 2011; Boohene & Williams 2012	Mooketsi 2009
Coercion	Agboola & Salawu 2011; Bareil 2013; Boohene & Williams 2012; Tomozii et.al. 2013	Mooketsi 2009; Kotter & Schlesinger 2008
Terminating	Bareil 2013	Prosci 2010
Offering early retirement package	Bareil 2013	Prosci 2010

3 EMPIRICAL RESEARCH: METHODOLOGY

Organizations need to change in order to survive in today's dynamic business environment (Agboola & Salawu 2011, 235). Furthermore, organizations are increasingly utilizing information systems in their operations and transformations (Chen, Liu & Chen 2010, 1). However, the end results of information system (IS) projects are not certain (Stoica & Brouse 2013, 728) and multiple factors determine the success or the failure of IS projects (Al-Ahmad et.al. 2009, 94). One factor is the resistance to change (RTC) (Al-Ahmad et.al. 2009, 95). RTC is "*a socially constructed phenomenon*" (Van Dijk & Van Dick 2009, 143), which influence on the deployment of IS significantly (Al-Ahmad et.al. 2009, 95). Since RTC is a result of social interaction (Van Dijk & Van Dick 2009, 143-144) and interaction mainly concerns communication (Lundy & Violeta 2011, 56), the importance of communication on a RTC formation and thus, to the IS project outcome cannot be ignored. However, the information about how the project team should interact with end users seems to be scattered or near to non-existing. Therefore, the purpose of this study is to acquire a deeper understanding about the interaction between a project team and end users from the project team's perspective in order to generate tools and methods how the project team could influence on the relationship positively and reduce the possible negative RTC and thus, enhance the possibility of project success.

The research questions are formulated as follows:

- How can the project team enhance users' readiness for change and therefore decrease the resistance to change?
- What kind of tools and methods can the project team use?

In the following subchapters, the research approach is presented followed by the explanations on data collection, coding and analysis processes. Lastly the ethical issues of study are considered.

3.1 Research approach

The objective of this study is to acquire deeper understanding about the complex social phenomenon, namely RTC in IS projects. Furthermore, the focus of the study is on the interaction between a project team and end users from the project team's perspective. The data collected will contain interpretations and experiences, which are difficult to express in numeric form. Therefore, this study is qualitative in nature. The qualitative approach can give a new knowledge about complex phenomena for instance how and why things work as they do or how they can be seen in different ways (Eriksson & Kovalainen 2008, 3). Furthermore, the qualitative approach contains tools and methods

that give the study the focus and guidelines on how to proceed in order to reach the desired objective, namely deeper understanding about the phenomenon. The phenomenon under study is interpreted by the participants of the study and these interpretations are unique because they are influenced by the participants' backgrounds, feelings and experiences. (Eriksson & Kovalainen 2008, 3, 5.) The philosophical and disciplinary stance of a qualitative approach varies and a qualitative approach has multiple methods (Eriksson & Kovalainen 2008, 3).

The other objective of the study is to find tools and methods, which could help the project team to manage the relationship with the end users by enhancing the readiness to change and reducing a possible negative resistance to change. In order to gather the needed information and to generate a theoretical frame from the collected data, the Grounded Theory methodology was chosen for this study.

The Grounded Theory (GT) was established in 1963 by Barney Glaser and Anselm Strauss (Eriksson & Kovalainen 2008, 155). It was created as a response to authors' frustration at that time on the mainstream methodology approaches, which emphasized more on theory testing through hypothesis rather than theory generation (Eriksson & Kovalainen 2008, 155). The origin of the methodology was developed based on a six-year research on dying patients in California medical institutions (Locke 2001, 2). Originally, the GT leaned on positivism with objectivist assumptions. This thinking is still used, but other directions have also emerged such as constructivist assumptions. (Eriksson & Kovalainen 2008, 156-157.)

The purpose of Grounded Theory (GT) method is to generate a middle-range theory from empirical data by using specific coding and analyzing techniques and procedures (Eriksson & Kovalainen 2008, 154). Middle-range theories are theories about social events examined from certain aspects. So, the purpose is not to generate abstract macro level grand theories. (Eriksson & Kovalainen 2008, 154; Corbin & Strauss 2008, 32-33.) The new theory emerges as an outcome of a process, in which the empirical data collection and analysis phases are constantly overlapping and interacting with each other according to the specific given guidelines (Eriksson & Kovalainen 2008, 156-157). Consequently, the GT, in addition to being a method, is the end result of the process as well (Eriksson & Kovalainen 2008, 154). Since the social events are complex in nature, the purpose of specific procedures in GT methodology is to support and guide the process of generating theory from empirical data (Eriksson & Kovalainen 2008, 159).

One of the GT's features is to observe and analyze the social events directly without being delimited by the pre-existing theories. This does not mean that the prior research and the theoretical perspective should be forgotten when engaging in a new GT research. It means that the existing theories should not come between the researcher and data under study. The ideas and concepts should emerge directly from the collected

data, not from the pre-existing theories or from the researcher's own expectations. Consequently, the knowledge emerges from the studied events and the found concepts can be verified by the collected data. (Locke 2001, 34, 46.)

Based on the idea that RTC is socially constructed phenomenon and every event is unique, this study adopts a constructivist view on the grounded theory methodology (Eriksson & Kovalainen 2008, 14; Blaikie 1993, 94 as cited in Eriksson & Kovalainen 2008, 14). The researcher is a part the knowledge production process (Eriksson & Kovalainen 2008, 15), which means that the researcher interprets the data and forms categories and generates the theory based on the formed categories. Consequently, the researcher is highly involved in the process of theory generation and thus, researcher's background, experience and emotions may have an effect on the results of the study. (Eriksson & Kovalainen 2008, 14.)

A comparative analysis is the core of the GT method (Glaser & Strauss 1967, 6). The new theory is closely related to the data due to the systematic coding and analyzing phases (Glaser & Strauss 1967, 1). This means that the categories and concepts of a theory do not just emerge from data, but they are shaped through a constant comparison of data, concepts and categories (Glaser & Strauss 1967, 6). In theory generation through a comparative analysis, the researcher does not have to know the studied field thoroughly or understand the studied events better than the participants in order to be able to develop general categories from these events. The researcher's task is to analyze the data and find categories that correspond to a relevant behaviour in the studied event. (Glaser & Strauss 1967, 30.) The researcher studies the interaction and behaviour in different cases and tries to find patterns that explain the different behaviours and actions concerning the social phenomenon under study (Locke 2001, 41). These patterns form categories. In order to broaden the applicability and explanatory power of the generated theory, the categories can be enhanced by comparing the similarities and differences of category's properties (Glaser & Strauss 1967, 24).

In GT methodology data is collected until saturation is reached. Saturation means that no new information is found in the collected data or in the new events. Saturation can be reached through careful theoretical sampling, which guides the selection of additional events based on the founded theoretical constructs. (Glaser & Strauss 1967, 61; Eriksson & Kovalainen 2008, 160.) However, it is good to note that in generating theory, the number of cases studied is not crucial. One studied case can provide a general category that can be confirmed by a few other cases. (Glaser & Strauss 1967, 30.) All in all, the aim of the GT is to generate a theory that is grounded in data and explains the phenomenon under study adequately (Eriksson & Kovalainen 2008, 160). In theory generation, a combination of induction and deduction is used (Saunders et.al. 2003, 93).

3.2 Data collection, coding and analysis

Data was collected through interviews with individuals, who have experience on RTC in IS projects from project team perspective. A semi-structured interview method with open-ended questions and general discussion topics was adopted. In this way, the interviews had a structure without limiting the answers of participants too much. Saunders et.al. (2003, 246) states that interviewer has a list of questions and topics that will be addressed during the semi-structured interview. However, some variation on the questions and topics may occur between different interviews. (Saunders et.al. 2003, 246.) The participants for the interviews were selected through researcher's professional network. The participants have different backgrounds and expertise, which helps to gain different perspectives and thoughts. However, the integrative factor between participants is that all the participants have experienced on being in a project team, which purpose has been information system development and implementation. Furthermore, they have experienced directly or indirectly some kind of resistance from end users when being in the project team. Due to the limited network a snowballing method was used as well. The interviews were recorded with the permission of the participants. However, notes were still made right after the interview. The participant can say something relevant for the study after the recording has been turned off (Corbin & Strauss 2008, 28). In this case, the permission to write the matter down on paper was requested from the participant.

The participants were mainly contacted by e-mail, but also through social media (Facebook and LinkedIn) or face-to-face. The topic of the study was presented, willingness to participate as well as the applicability of the topic in participant's work experience were asked. In total 9 request were sent but two declined due to the non-relevant work experience on the topic. So, in total 7 interviews were held in time period of mid-March to mid-April. The background information about participants is presented in Table 7. The language of the interviews was Finnish, because discussion about the abstract topic is easier with mother tongue than foreign language. Furthermore, the purpose was to gain deeper understanding about the topic and the use of foreign language could have limited the depth of answers. Five of the interviews were held face to face and two through Skype meeting. Duration of interviews varied from 30 minutes to 70 minutes. The following interview questions formed the structure of the interviews:

- Could you shortly tell about your work history?
- In what kind of ISD projects have you participated?
- What has been your role in these projects?
- How did the projects go in your opinion?
- What kind of cultural environment there was in the organization?

- How were the end users considered in the projects? Were they involved somehow (for instance did they give advice or test the system)?
- How was the interaction and communication between the project team and the end users handled? How were the information about the project and the progress of the project given to the end users?
- How did the end users react to the development of a system or to the project in general?
- Why did the end users react as they did in your opinion? What were the reasons for the end users' behaviour?
- How were the end users' reactions addressed?
- What kind of attitude did the project team members have towards the end users? What kind of thoughts had they about the end users?
- What would you have done differently concerning the end users and interaction with them?
- Can you remember a practical example on a difficult situation with end users?
- Do you have something else in mind that you would like to say about the relationship between project team and end user?

The order of questions or amount of questions varied a little bit between different interviews because of how the discussion proceeded. Some additional questions may have been used in order to clarify or get deeper understanding about the discussion. After the interviews, the recordings were transcribed and the summary of the interview was sent to the participant. Then the transcriptions were encoded carefully and then translated into English. Some meanings might have been lost in the translation process. The results of coding and the analysis are presented in Chapter 4.

The coding process of the collected data is one of the important dimensions of the GT methodology. During the coding process it is important to keep a memo about the thoughts and ideas developed during the coding process. The memo writing and coding the data systematically can help to explain the interpretations and conclusions made in the research and to check that researcher's own expectations and pre-existing assumptions do not have an effect on the process. (Eriksson & Kovalainen 2008, 160.) The memo also supports the analyzing process by helping to link the researchers' thoughts and ideas together (Eriksson & Kovalainen 2008, 166). Furthermore, from time to time the researcher needs to stop coding and write down her thoughts on the memo in order to track where the study is going and clarify the possible conflicting thoughts. This helps the researcher to focus on notions related to data rather than her own assumptions. (Glaser & Strauss 1967, 107.)

Table 7 Background information of the participants

Participants	Field	Project types	Role in the project
Participant 1	Paper industry	General production systems, Control systems, Automation	Project manager, Project team member
Participant 2	Communication network services	ERP-project, Interface for financial system	Project team member, Expert of own field
Participant 3	Copper industry	ERP-project, Production planning control system	Project team member, Key user, Expert of own field
Participant 4	Telecommunication, Information technology, Consumer electronics	Production engineering, Development of operations, Lean projects	Customer within the organization, Project manager
Participant 5	Pharmaceutical industry, Telecommunication, Information technology, Consumer electronics, Multimedia	Ticketing system, Reporting, Services for mobile portal, Web pages, Operating systems	Project manager, Project team member
Participant 6	IT-department in municipality	IT service management projects	Project team member, Technical key user
Participant 7	Library, Education	E-library services, E-learning environments	Project team member, Key user, Trainer

There are three types of coding in the GT methodology, namely open coding, axial coding and selective coding (Eriksson & Kovalainen 2008, 160). First the coding process starts with open coding, which contains initial classification and analyzing of the data. The data is analyzed, compared and categorized and multiple codes are created. During the open coding process the researcher gains a basic understanding about the phenomenon studied by breaking the data to words, phrases or sentences. This stage of coding is more about describing what the data contains. (Eriksson & Kovalainen 2008, 160-161.) The next stage, axial coding, gathers the codes and initial categories to higher level categories by grouping the events that are related in a latent way. The grouping is done through constant comparative analysis, which purpose is the reveal the latent patterns. In the comparative analysis one incident for instance an interview is compared with another. This stage of coding moves away from describing the data to conceptualizing the found patterns. In the last stage of coding, namely selective coding, the researcher selects one of the categories as a base for the theory. Other categories are linked to the main category. (Eriksson & Kovalainen 2008, 161.) Validation of theory is done by testing the created categories and their linkages to the existing data. At this stage, the theory is generated from data. (Eriksson & Kovalainen 2008, 166.)

The qualitative data can be interpreted in many ways due to the rich and diverse content, which contains a possibility to find new meanings and stories out of the same data. When the researcher is analyzing the data, she will make her own interpretations

on which aspects are important and which are not. Another researcher may look at the data differently and thus highlights a new aspect or meaning from the same data. Furthermore, the same researcher may interpret the data differently at different point of time. So, the interpretations of data depend on the perspective, from which the researcher is analyzing the data. (Corbin & Strauss 2008, 50.)

3.3 Ethical considerations

In research it is good to consider the ethical aspects of the study in order to conduct the study appropriately and to respect those who participate or are connected with the study in any way (Saunders et.al. 2003, 129). Saunders et.al. (2003, 131) list in their book general ethical issues, which are “*privacy, voluntary nature, consent, the confidentiality of data and anonymity, behavior and objectivity of the researcher, the reactions of participants, effects on participants*” (Saunders et.al. 2003, 131).

The privacy of participants is one of the core issues in ethics. Many other issues are related to the privacy for instance the confidentiality and the participant’s consent. In order to respect the participants’ privacy, researcher needs to honor participant’s right to refuse from participating, to abstain from answering to questions, and to determine (within reasons) the time of the interview. Furthermore, the researcher should not harass the participant at unreasonable times or expose the participant to stress or uncomfortable position with the questions. (Saunders et.al. 2003, 131.) Moreover, the information given in the interviews should not be connected to the participant in the written analysis or in the final report (Eriksson & Kovalainen 2008, 74). The use of pseudonyms helps to safeguard the identity of participants (Eriksson & Kovalainen 2008, 53).

The participants’ participation should be voluntary. Therefore, it is important to inform the participants about their right to refuse to participate or withdraw from participating in any point of the time of study. (Eriksson & Kovalainen 2008, 70.) Sometimes, it can be difficult to have a people’s consent, because resources such as time and information are needed from the participants. If the participant cannot see how they might benefit from the participation, they might decide to decline from participating. (Eriksson & Kovalainen 2008, 53.)

A confidentiality of personal information that can be linked to participants needs to be carefully handled in order not to jeopardize the anonymity of participants by revealing sensitive information. For instance, when recordings are used in interviews, the researcher needs to be clear on how the recordings will be handled, who will have access to them and how they will be stored. Furthermore, the time span how long the recordings are stored is good to mention for instance are the recordings destroyed after

the study is finished or after a certain time period such as one year. (Eriksson & Kovalainen 2008, 53.)

In order to gain the participant's trust, the researcher should be open about the information regarding the study for instance the purpose of the study, the basic procedures as well as the selection criteria of participants. Furthermore, the researcher should also be willing to answer participant's questions and give additional information if requested by the participant in any point of time. (Eriksson & Kovalainen 2008, 71.) Lastly, the analysis and the report should be made so that outsider is able to evaluate the quality of the research, the logic of thought, and the validity of the conclusions of the study (Eriksson & Kovalainen 2008, 72).

4 EMPIRICAL RESEARCH: RESULTS AND ANALYSIS

The purpose of this study was to acquire deeper understanding about the relationship between project team and the end users and find out how the project team can influence on resistance to change (RTC). The RTC in IS projects is a multifaceted and complex phenomenon. Therefore, there is no simple answer how it could be taken into account in projects. Seven interviews were held and the results and analysis of these interviews are presented in this chapter. The results of open coding analysis are presented in Table 8. In the first subchapter the major categories of the coding analysis are introduced in more detail and followed by the analysis in second subchapter. The analysis is done based on the interviews and literature review. In the last subchapter the limitations of the study and suggestions for future studies are presented.

Table 8 The major categories on the project team and end users' relationship

Major categories	Associated concepts
End users	Emotions, feelings, perception, self-confidence, attitude, experience, IT-skills, level of usage, commitment, nature of work, motivation, possibility to influence, way of thinking, perceived benefits, time to digest, orientate and adopt the change
Project team	Personality and skills, understanding the reason for and goal of the project, changes in project team composition, collaboration, size, end user representatives included, coherent communication to other stakeholders, visibility
Organization	Size, culture, different departures, management structure, skills of management, change readiness, comprehension of linkages between existing systems and processes
System	Usability, development possibilities, error tolerance, requirements, purpose, functionality, content, utilization rate
Project	Resources, timetable, size, preparedness, clear purpose and goal, timing, overlapping projects, marketing
Interaction	Communication, listening skills, tools, mutual language, information interruptions, openness, presence, supportive, compromises, explicit

4.1 Results of interviews

4.1.1 End users

End users are a crucial part of system development, because they know what functions and tools are needed to do the work in practice. However, there is always some level of resistance among end users and there are many things that affect the end users' perception on change. First of all, adopting change increases the workload. Even though

it is temporary, end users might not understand why they should put extra effort on learning a new system, functions or a version which does not benefit them. Therefore, it would be good to tell end users the possible benefits of the system in order to motivate and give a purpose to change. However, it is good to note that workloads in general are increasing all the time and end users might not have time to learn how the system functions. So, even though they would be willing to put extra effort to learn the new system, it might be that they do not have enough time to do it. So, when change comes end users are stressed, because they have a million things to do and they don't know how to use the new system.

Secondly, end users might like to keep their old habits and work as they have used to. They are not willing to change and therefore, continue to do things in the same way as before if possible in any way. As one participant stated that it is a challenge to change end users thoughts from how they have used to do things to how the work should be done in a new system. The urge to keep the old habits may rise from insecurity. End users might question their own ability to adopt the new system in other words they lack self-confidence on their own abilities. In these situations, encouragement and support is needed. One participant described a situation where support was given to end user who was not sure about the usage of the new system. The participant said to the end user that the end user have a long work experience, does she really think that someone else in the city would do the job better than she does. It does not matter what is the system. She knows her customers and what they want and that is why she is absolutely the best person to take care of them no matter what is the system. Thirdly, the end users might resist the change, because they consciously resist the usage of IS/IT for instance some people do not want to start using smartphones. This might create difficulties, because organizations might try to utilize the mobile platforms in some of their functions due to the easy accessibility and usability.

Fourthly, people adopt new things at a different rate. Some end users might think that they struggle to adopt the system while others are using the system effortlessly. Some of the participants stated that the age of end users or if end users were getting into a rut, affects the end users' willingness to adopt change. For older people, the learned habits stay strong and understanding the computers and systems may be weak. They think that they have survived with the old habits until now, why would they not survive with these habits in the future as well. Younger people, on the other hand, are more use to change and to computers. They learn quickly and use the computers fluently. However, one participant had a different opinion. According to her, the age or the field does not affect the ability to adopt change. For older people, who are soon to retire, the questioning of the need to change is more about a transition process. The older people are preparing themselves for the future change. In her opinion end user's reactions depends on the

level they are using the system and on their IT skills. Some end users are happy about the change whereas other ones are more negative about it.

Lastly, if the end users are able to affect some of the functionalities or decisions made in the project, they may be more willing to accept the change. However, it is good to note that there are limitations on what end users can influence on for instance the decision about the course of conduct is made by management, and the budget and the system creates restrictions as well. One participant gave two examples on end users ability to influence decisions. The first example was about the time schedule when the change was implemented. If end users are able to influence on the time schedule when the change will be implemented into their position, they might be more willing to accept the change for instance they can determine that the change will not be implemented during their business trip. However, some kind of time frame for implementation needs to be given in order to avoid situation in which end user tries to avoid change by delaying the implementation. Another example was about choosing the multifunction printing machine to the office. There were two options, which were similar with their functionalities as well as on costs. So, end users were able to vote which one of the machines they liked more. Even though the decision was not major, end users felt they had an opportunity to express their opinion and thus, were more positive about the change.

4.1.2 Project team

The project team composition should include end user(s), because they are able to give knowledge about the practical side of the system. This helps to make the developed system functional and enhance the project success. However, the selected end users might not be popular among other end users, because of the conflicting views and thus, the influencing possibilities of selected end users to the perception of other end users might be small. This would be a shame, because the purpose of the selected end user is to represent the other end users as well. Another thing that influence on project team composition is that there are changes in the project team composition. It may influence on the responsibilities and workloads for instance if there is no replacement for a person leaving the team. Furthermore, participating late in the project might be challenging because the new member needs to catch up on what others have done already in the project.

Several participants noted that it is good if project team is familiar with the end users and knows how they will react to changes and to the system development. Therefore, the project team will be able to plan and be a few steps ahead of the end users and the project team is able to answer and explain if the end users have questions. Furthermore,

it is important that the project team discuss among themselves in order to be in the same page and thus, speak the same coherent way about matters. If the message the project team is conveying is not coherent and clear, it might create confusion and insecurity.

A few participants stated that it is important that the project team is visible. This means that the team composition, the purpose of the change and the scope of the project is clearly informed in the organization. This gives the end user comprehension on what is going on and who is involved. Furthermore, they will be able to contact the project team if they have questions or feedback, because they know who to contact. This enhances the transparency of the project and open discussion. The project team should know the purpose of the project and the desired future state which they are aiming at in order to know what to say or what not to say in training sessions and how to encourage the end users. If the purpose of the project is not explicit to the project team, they will not be able to promote the change, because they might not know on whose work the system will effect or what the possible benefits of the change are. Furthermore, they are not able to acquire feedback from the end users, because they might not know who the end users are or what should be asked.

If the developed system contains many bugs and problems due to the too early dispatch or for some other reason, the end users' work may be interrupted. According to one participant, it is a difficult situation for the project team and especially for the key users, when there is a problem and you do not know why it occurred and when it will be solved. You would like to help but you are not able to, because you are not responsible for deciding on things such as turning off the function or have a hotline to the developer who could solve the bug. Interruptions to work are very bad especially in customer service where there is always a rush. Furthermore, the end users might be wondering what the project team has been up to the whole time of the project if problems of this kind have not been thought of. So, end users may be blaming the project team even though they do not voice the opposition.

4.1.3 Organization

The organizational culture influences on the attitudes of end users. If organizations have not changed a lot, making changes can be more difficult than in organizations that change all the time. One factor that can create readiness for change is that the existing systems are not sufficient and business people are not able to answer the customers' needs, which will create the purpose for the change as well as the desire to change. People realize that in order to keep the business running, the change is crucial. In this kind of a change supportive environment, the end users feel more positive towards change and are willing to support the project by giving advice or help otherwise if

needed. One participant said that responding to end users' resistance is nothing more than normal management and leadership practices. The manager needs to know their subordinates. Another participant stated that management is all about learning and improving skills, finding new better ways to express matters and learning to sell ideas to different stakeholders.

Organization contains different departments e.g. sales, production and R&D, which each have their own need. In system development, which affects the whole organization, all of these demands should be gathered in order to consider them in the project. According to one participant, the real puzzle in organizations, especially in large organizations, is to understand what the systems are, what they need and how fast people can learn. Furthermore, the comprehension on how the system links to reality (i.e. to the established processes) and how the big picture works as well as how it can be managed and maintained is important.

One participant noted that there is a contradictory paradigm between business people and people maintaining the IT infrastructure. Business people would like systems up and running all the time in order to do their job and the IT maintenance people, on the other hand, would like to keep the systems updated and during the updating the systems would not be available. Old systems form a risk for information security and they might also be more prone to collapse. Updating a part of the system without interrupting the whole system is mostly not possible, because there is lack of money to develop this kind of error tolerance to the system in the ISD project in the first place. In a mobile workplace, the maintenance of the system is seen as a nuisance because end users (e.g. sales representatives) need to come to the office and assist in updating by being patient and pushing a button when needed. Other participant had a similar experience about the maintenance breaks of the system. The users do not like the maintenance breaks because it interrupts the work. So, if there needs to be a maintenance break, it should be short as possible and during the night time.

4.1.4 System

The needed functions and requirements for the systems depend on the system that is developed for instance in e-library services the content is more important than functionality. If the system is owned by the organization, the possibility to make changes is easier than when the system is provided by external stakeholder. Organization should concentrate more on using the system they have picked for their primary system in order to receive a good utilization rate. For instance, if managers want to know when the product is ready and they know the order number, they can look for the information from the system and there is no reason to create a WhatsApp group

for that purpose. If the end users do not use the system properly, the created reports will not work either, which decrease the utilization rate and return of investment.

The usability of the system for instance a portal should be user-friendly. According to one participant, their portal was made so that it is simple and easy to use. Therefore, end users should be able to adopt it without difficulties. However, the challenge is to get the end users to read what the system is telling them to do and even though the project team thinks that the developed system is simple, it might not be so from the perspective of an end user who uses the system once in a while.

If the system is implemented before the testing is done properly, it might end up losing the end users trust on the system functionality because there might be faulty functions and problems which will interrupt end users work. If the system is properly developed, it is better than the old one. End users think that the system is good after it has been implemented and harnessed, but the implementation and adoption, which create extra work, are not appreciated and may create resistance.

If the procedures are changed a lot (in other words how users works), then it is not just a system change but changing the working habits. This can be very difficult. It is crucial to know how the different functions work in the new system and train the users to use the system. Furthermore, it is necessary to give an explanation on why the change is needed.

4.1.5 Project

According to the participants, the projects have gone varyingly but all the projects have achieved results of some kind, which participants viewed as a positive thing. It can be interpreted from the answers that there have been challenges in the projects. One participant had participated in the development of several updated versions for the same system and each of these projects was done differently, which explains some of the variation in progress of the project. However, each of these updates was implemented in the end.

The planning and preparing for the project is important. One participant stated that the project will go well, if a good plan, which contains a minute time schedule on who will do and what, is made. Furthermore, it is necessary to know what you are doing when implementing a new system or managing a project, because if you do not, the risk of failure is enormous. Information system implementation rarely goes as planned and thus, going through a checklist without understanding what you are doing most likely end up in failure because you are not able to respond to changes in the project. Therefore, it is good to have back-up plans available if needed due to the unexpected occurrences in projects. Planning gives a good impression to end users that resources,

training and other things are well thought of, which might decrease the uncertainty and the resistance. However, there is always resistance in projects because the end user needs to change their way of doing things and this will interrupt their working routines temporarily and people do not like interruptions. End users rarely see the long distance benefits in changes, because they concentrate on daily issues (i.e. short-sighted). Sometimes the end users may resist at first but when they realize the benefits of the change they might change their opinion.

The main stumbling block in a project is that there is lack of resources. It is difficult to estimate how much time or resources are needed for the project. In order to plan the project, all the necessary information needs to be gathered for instance who will do, what will be done and in what time frame. Furthermore, it is good to identify the skills needed for the change and who will be affected by the change. The plan should be realistic and the schedule should be loosely planned in order to have flexibility. If the schedule is too tight, the project will be executed in haste and thus, the end result will not be good. Furthermore, the schedule should be flexible because the project team might do the project beside their daily tasks. One participant stated that the project team should be able to concentrate on the project. Therefore, they should not be doing their daily tasks, not fully at least, when a project is executed and this should be taken into account when planning the project. Furthermore, it is good to note in the planning that many systems are changing all the time, so the projects and implementations are overlapping. People might need to adopt many new changes at the same time. Therefore, it is good to reserve time for adoption and training. A loosely planned schedule can be tightened if the progress of the project is better than expected.

One participant said that small projects are easier to execute than larger projects, because the large projects tend to expand and become even larger and thus, they do not get across the finish line. When taking small steps, it is good to have a map where these steps should be taken in order to go in a right direction. Another thing that was brought up by another participant was the need for new systems or a change. IT personnel are deep in the technical matters and might want to make changes because new technical functions are available or because they want to execute a project cleanly from the system perspective. Therefore, the business needs might be forgotten. The IT changes can be justified by the platform changes or updates for the old version.

4.1.6 Interaction

Clear and coherent communication is crucial. Informing the end users about the progress of the project helps the end user to understand what the project is about and to form a picture how the change will affect them. If the information is not shared, the end

users may feel uncertain and there might be mixed up messages going through the organization and thus, people do not have a clear image what is happening and what to expect. When the end users are informed about the changes, the benefits of change should be highlighted in order to avoid feeling that the changes are made because of this and that. Furthermore, it is not a good idea to inform end users about the change only from top-down manner, because people might think that they do not have possibility to influence on the change and thus, they might resist the change. Moreover, if the information is shared first time close to the implementation and not enough information is given, the end users do not have time to adjust to the idea of change and they might not have a clear picture on how the change will affect their work. Therefore, they might feel very negatively towards the change. One thing that was raised in several interviews was the importance of informing end users about the change well in advance for instance half a year before the change is implemented. This gives time for end users to digest, prepare and orientate themselves for the change. If the changes become too fast the end user might feel anxiety because they have other things to do as well, so there is a perception of rush and feeling stressed. According to one participant, challenging situations are when something unexpected happens for instance someone has not received the information about the change or the information about the change has not been understandable and because of these disruptions on informing, something bad happens for instance an important chat meeting has been arranged at the same time with the maintenance break.

In the interviews many ways to inform end users about the change were mentioned for instance e-mail, intranet or other internal communication channel, weekly or monthly reports, training sessions, personnel meetings, coffee breaks, face-to-face, feedback forms, in the system which is changed, and through key users, managers and project team members. The challenging part of e-communication is to get the end user to notice that this information is for you. If sending an email from project team to end user saying that the change will be done to you during this time frame and you should be ready to assess the implementation with these actions, then the end user may read it and understand that it concerns her. However, if the e-mail contains attachment or links (e.g. further instructions), there is a good chance that end user will not click them or will click them but do not read them after all. According to one participant, the most influential communication is still face-to-face and another participant stated that it never works that there is training material in the web and people should go there to study.

Training sessions are important tools for sharing information about projects and receive feedback from the users. When the training sessions are recorded, it is possible to return to the session afterwards or people who were not able to participate can watch the video. When the training session is arranged through Skype, then the amount of participants can be bigger than in classroom teaching, which means that wider range of

users can be reached and problems as well as solutions can be shared to wider population. The training sessions should be planned carefully and consider who will participate, who will keep the training, and how much people are able to learn and absorb information. People come from different skill levels and if training does not match the skill level, the users might not benefit from the training. Furthermore, people cannot concentrate on something for a long time period and they cannot remember all the information given in the training. Therefore, according to one participant in large organization the training sessions were mostly replaced by key user setup. This means that there were key users in every department. This person's job was to learn the system, train the others, solve problems, support end users by sitting next to them, listening, guiding and discussing with them. One participant stated that the training sessions should be arranged in short sessions during several days than in one long session during one day for instance one hour sessions in 10 days rather than 10 hours in one day. Another participant agreed this notion by stating that there should be at least two training sessions, because normally people do not have experience on the system in the first training session, so it would be good to keep a second one after a month of usage in order to have more feedback and suggestions from the end users. Furthermore, one participant said that there should be some amount of compulsory user training, because people, who say that they do not need the training, are the ones that have trouble in first six months after the implementation and extra support for these people are needed. User training takes care of the basic principles and functions, which mean that users are able to use the system properly and there is no need to correct the faulty information and such afterwards. So, extra work would decrease.

One participant said that the instructions should be made as detailed as possible because the assumption is that the end users do not know anything. So, screen shots at the system should be taken and every step should be carefully instructed. The language of the instruction should also be considered. If the end users mainly use Finnish as their working language, the instructions should be made in Finnish, because misunderstandings or insecurity may occur for instance if there is "cancel" instead of "peruuta" (cancel in Finnish) in instructions. Another participant said that the instructions should be made by key users who have experience on how the system is used in practice, because instructions made by the system developer might be too technical and lack the practical view on the system.

Communication is a very important aspect of interaction. Communication tools need to be found in order to speak the same language and understanding what matters are discussed for instance there might be a communication barrier between end user and IT personnel. End users might not understand the IT terms used and IT personnel might not understand the practical side of the system. One participant shared a story about how in one organization a "manufacturing data management" group was established. The main

task of this group was to be a translator and communication channel between the mill personnel and IS personnel. The group members had experience of both sides and they possessed mutual language with both personnel. It is easier to understand what other one is saying if you have experience on being in a similar position or situation yourself as well.

According to one participant it is challenging to explain why something has been done in the project to an end user who does not know the background and feels negative about the change. This is because the counterpart does not want to listen to the explanations and they are only thinking about the next thing they are going to say. After the discussion, both parties are frustrated and in a bad mood. Another participant said that it is important that the end users can unburden their negative feelings which they have towards the project or change. When end users express their feelings, then it is time to just listen and understand how the other one is feeling. It does not help to explain why the changes are needed or the person should be able to adopt the change because of this and that. After unburdening, people tend to be more willing to listen and discuss. It is important that other one does not feel their feelings are undermined, because everyone feels the way they do and no one can say that these feelings are wrong. However, certain assertiveness is needed in projects, because there are rules that need to be followed and not all requests can be executed. However, suggestions and development ideas should always be welcomed. The possibility to have an influence on a project has a big impact on people's attitudes and this might be a way to change the attitudes towards change more positive. Listening is an important factor in projects. Project team should listen to the end users and end users should listen to the project team. Furthermore, systems are developed all the time so listening of the end user should not stop during or right after the system has been developed. If feedback is continuously gathered, then it easier to consider the different requests from end users and the end users start to understand what kind of changes are possible and on what time frame.

4.2 Analysis

Based on the literature review and interviews it can be interpreted that some level of resistance always exists in IS projects. As one of the participants said that it needs to be accepted that not everyone will approve the change in the first round and according to Hirschheim & Neuman (1988, 400) the people's resistant reactions to change are natural. However, with a careful planning and by considering different factors in a project, the extent of RTC can be influenced for instance one participant noted that with good communication and instructions the RTC will be marginal. Furthermore, taking

into account the thoughts and reactions of people in the project planning can affect RTC decreasingly (Agboola & Salawu 2011, 239). However, the project team is not the only one that influence on end users' tendency to resist and thus, they cannot solve every issue that is related to resistance for instance managers' style of managing their departments or organization's culture. The project team can, however, influence on their own behaviour and how they manage their part in the project for instance how they act among end users and how well they try to consider the different aspects in an IS development project. Sometimes, however, the project team especially in large organizations do not necessarily meet directly with end users and do not have knowledge about how different end users might react to changes. Therefore, especially in these kinds of situations, the manager's role and how they do their job affects a lot to the end users' resistant behaviour.

The one factor that has a big impact on projects and RTC is the people (Culmsee & Awati 2012, 529). They make sense of the world through interactions and based on the information collected in different situations the people create their perception and opinions about matters and thus have different viewpoints than others (Van Dijk & Van Dick 2009, 143-144). So, individuals feel and think differently and these divergence perspectives should be seen as a richness rather than nuisance. Different perspective creates a multidimensional and rich view on the matter and when developing the system, these divergence views help to enhance the systems applicability, because as one participant said that it is for naught to try to think about solutions on your own. When you talk with other people, you can have a more in-depth understanding how something should be done. According to one participant interaction between project team and end user is a normal interaction between people. The project team should pay attention to their interaction skills and try to improve them. Good soft skills, like empathy, help the project manager, and the project team in general, to motivate and encourage people to change or adopt a new system. (Whitney & Daniels 2013, 330). One participant believes that interaction skills will be more crucial in future due to the growing amount of people who strongly trust on their way of doing things and thus, selling the idea of the change to them will be more challenging.

Interaction is mostly about communication and how well the information is shared between different parties (Lundy & Violeta 2011, 59). Communication is not just how you talk and express your ideas. It is also about listening to the others and what they are trying to convey. One important thing is to respect the other ones and their opinions. One participant said that being present in the situation, actively listening to what other one has to say and encountering the person gives a positive image to other one that their input is valued. No one likes the feeling that they are not valued and their opinions are ignored (Boohene & Williams 2012, 142). Therefore, the project team should learn how to express something without undermining the value of others for instance as the

manager of one participant had said about different employees' styles of doing things that other ones like to have variation in their work and learn new things whereas other ones like to remain working on the same thing and learn deeply about it. The manager indicated both styles in manner that was positive and did not say that which way would be better. In both working styles there is a positive and negative side depending on how the people are thinking about them. It all depends on how person views on the matters. There are always two sides or multiple sides in every situation and everyone of them is as valid as the other ones.

When planning the project, the resources should be carefully thought of. According to several participants, the resources are many times lacking for instance people do not have enough time to concentrate on executing the project or end users do not have time to learn the new system or function. Whitney & Daniels (2013, 326) has a similar finding in their study in which the complexity and lack of resources were indicated as an initial cause for the failure of the project. The changes increase the workloads of end users temporarily and therefore, end users might resist the change (Lundy & Violeta 2011, 56). Furthermore, one participant stated that the workloads in general have also increased and people have less time to become familiar with a new system. Moreover, there are multiple systems which all have updates or changes from time to time. Overlappings in system implementations and lack of time can increase the end users' resistance to change. However, if training is planned well and end users' resources (i.e. workload, time and IT skills) have been taken into account, the end users might feel less uncertain and thus, be less resistance towards change. Transparency of communication decreases the change resistance as well, because end users are able to assess the fairness of the procedures (Saruhan 2014, 159). Furthermore, the transparency decreases the insecurity and fear related to change (Rosenberg & Mosca 2011, 143). Moreover, if end users think that they can voice their opinions and they have some level of influence on what is going on, it decreases the change resistance, because they are not just being exposed to change.

Project team's visibility was seen as an important factor by a few participants. It is important that end users understand the reason for the change, the extent of the change, who is involved in the project and how it will affect their own work in order to prepare themselves for the change as a few participants phrased that time does its work. When time passes end users become used to the change. Furthermore, when end users receive timely information about the project, have time to prepare themselves for the change and have been able to share their concerns as well as ideas, they might be more willing to accept the change in other words their psychological part will be prepared for a change.

4.3 Limitations and future studies

The first limitation of this study is the research method used to gather information, namely interviews. Interviews are subjective interpretations. The answers given by the participants are interpretation on their experiences and the interviewer interprets the answers further. However, the summaries of the interviews were sent to participants in order to avoid misinterpretations. Furthermore, the topic of the study is an abstract phenomenon that is interpreted by individuals based on their knowledge and sense making. So, interpretations cannot be avoided. The interpretations can be reflected on existing data and by comparing with other interpretations in order to find patterns and generalizability.

Second limitation is that the study was conducted in western Finland because of the location of researcher and her professional network. The geographical area may influence on results due to the cultural background and similarity of management style in workplaces for instance cultural or management aspect may be different in western countries compared with the eastern countries. However, the results are applicable in a similar cultural context and some results may even be universally applicable.

Third limitation is the scope of the study. The study did not focus on any specific organization, field or information system in order to get a wider understanding about the phenomenon. However, this might have limited the finding of the specific features related to the phenomenon in a certain field, organization or information system. Furthermore, the focus of the study was the perspectives of the project team on the RTC phenomenon that does not include the interpretations of other stakeholders. However, these limitations can be interesting for the future studies.

Several implications can be made for the future studies. Firstly, the relationship between the project team and end users could be studied from the end users' perspective. This perspective could give an interesting viewpoint how the end user perceives that their opinions and suggestions are taken into account or how well they receive information about the project and reflect these notions on the intention to resist. Furthermore, it could be intriguing to investigate what are the reasons for the resistance from end users' point of view.

Secondly, the interaction between the project team and end users could be observed and the interviews could be held afterwards for both parties in order to understand the interpretations made in the situation. This could give a different kind of information about the phenomenon. The researcher could observe the way people talk and act and find out how both parties interpreted the situation and then analyze the connections between observations and interpretations. This could give a deeper understanding about people's sense making process and possible give guidelines how to avoid misinterpretations.

Thirdly, a longitude study could be made on how the RTC in IS projects change over time for instance, when the project is started, during the project, right after the project and one year after the project finished. There were a few notions from participants that time does its job meaning that over time people's resistance decreases because they get used to the change. Furthermore, people perceive the same situation differently after they have got some distance to it. So, the time factor in RTC phenomenon can be a fascinating aspect to future work.

5 CONCLUSIONS

Nowadays the change is an unavoidable phenomenon in organizations due to the rapidly changing business environment. Organizations utilize information systems (IS) for staying competitive. Therefore, information systems have become a necessity in organizations (Chen et.al. 2010, 1) and a huge amount of resources are spent in IS projects even though the end result is not certain (Stoica & Brouse 2013, 728). According to Garg & Garg (2013, 506) the people and strategic factors form more than 75% of the problems occurred in projects (Garg & Garg 2013, 506). Therefore, the importance of resistance to change (RTC) in IS projects should not be disregarded. RTC in IS projects is a multidimensional and complex phenomenon. Moreover, it is a subjective interpretation, which may be different depending on whose perspective it is looked at. There are also many factors that influence on its formation. The purpose of this study was to examine the relationship between the project team and end users and discover how the project team can influence on end users' readiness for change and RTC. Furthermore, possible tools and methods, which project team could use, were studied. The study was made in two parts. First a systematic review on literature was made and then seven participants were interviewed. Based on these the analysis was done.

In the systematic literature review, two concepts were introduced, namely the IS project failure and the resistance to change. In IS project failure literature, the multifaceted and complicated nature of IS project failure concept was revealed. There are multiple views on how the project failure is measured (e.g. traditional criteria) and there are various different factors that influence on the project outcome (e.g. resources, management and/or end users' resistance). Similarly, in the RTC literature, the concept's complexity and multidimensionality is uncovered. There is no consensus on the definition of RTC. However, multiple reactions (e.g. sabotage, apathy, and anxiety) as well as many reasons (e.g. the fear of unknown, the violation of trust and maintain the status quo) can be related to RTC. Furthermore, there are also some actions found for mitigating RTC for instance training, motivation and manipulation.

The findings from the interviews are in line with the existing literature. However, the perspective of this study (i.e. the project team's perspective) gives a new kind of viewpoint on end users' RTC. The project team's possibilities to influence on end users' resistance are limited because there are also other dimensions that influence on RTC formation for instance organizational culture or management structure. However, there are still some actions and aspects that the project team members can consider in their relationship with end users for instance information sharing, the listening skills, the creation of instructions, training sessions, the team project collaboration, and the language used to communicate.

The methods and tools, which the project team can use, are mostly related to interaction skills. Firstly, the project team should have a good collaboration within the team in order to communicate similarly about the project to other stakeholders. The project team composition should also be visible to other stakeholders because it will enhance the understanding about what is going on and who is involved. Secondly, the information given about the project and its progress should be coherent and given in a timely manner. Furthermore, informing the end users about the change should be started well before the actual implementation if possible. Then the end users have time to prepare themselves for the change. Moreover, the purpose of the change should be clearly stated. Thirdly, listening to the end users is crucial. If end users feel their opinions are valued and they think that they have a chance to influence on change, they may be more willing to accept the change. Fourthly, the project team should be prepared to give guidelines and support when needed. Fifthly, a mutual language between the project team and end users should be found in order to avoid communication barriers and to have a shared understanding about the topic. Lastly, planning and acquiring necessary resources for the project are important factors as well because a poorly planned project or lack of resources influence on the end users' perception of the project and thus, might generate RTC. Sometimes the project team cannot influence on project planning but when they can, they should carefully consider who will do what and when.

One participant mentioned the importance of emotional intelligence when listening to the end users' concerns. When the end users have strong feelings towards the change, they are not ready to hear explanations on why the change is necessary or why they should be able to adopt the change. Therefore, it would be important to let the end users unburden their feelings about the change and after the unburdening, they might be more willing to listen to the explanations and discuss the change. If explanations are given while the end users express their feelings, the end users might think that they are not listened to and their feelings are not valued and thus, they may feel even more resistant than before. Emotional intelligence and letting end users to unburden their feelings were not mentioned in literature and only one participant stated it in the interviews. Therefore, the influence of the emotional intelligence on end users' RTC should be further studied in future in order to validate its importance in RTC formation. In practice, the project team could enhance their skills on emotional intelligence and consider the different ways on how the end users can unburden their feelings and concerns.

The limitations and suggestions for future studies were presented in this study. Limitations of the study are the interpretive nature of the used research method (i.e. interviews), the geographical dimensions, and the scope of the study. There are also some interesting possibilities for future studies for instance the time factor's influence on the level of RTC and observing the interaction between the project team and end

users during the project. Furthermore, examining the relationship between the project team and end users from the perspective of the end users could be a fascinating and revealing topic for a study.

REFERENCES

- Agboola, Akinlolu Ayodeji - Salawu, Rafiu Oyesola (2011) Managing deviant behavior and resistance to change. *International Journal of Business and Management* Vol.6 (1), 235-242.
- Airo, Kaisa - Rasila, Heidi - Nenonen, Suvi (2012) Speech as a way of constructing change in space: opposing and conforming discourses in workplace change process. *Facilities* Vol.30 (7/8), 289-301.
- Al-Ahmad, Walid - Al-Fagih, Khalid - Khafnar, Khalid - Alsamara, Khalid - Abuleil, Saleem - Abu-Salem, Hani (2009) A taxonomy of an IT project failure: root causes. *International Management Review* Vol.5 (1), 93-104.
- Alami, Adam (2016) Why do information technology projects fail? *Procedia Computer Science* Vol.100, 62-71.
- Albliwi, Saja - Antony, Jiju - Abdul Halim Lim, Sarina - Van der Wiele, Ton (2014) Critical failure factors of Lean Six Sigma: a systematic literature review. *International Journal of Quality & Reliability Management* Vol.31 (9), 1012-1030.
- Alfaadel, Fahad - Alawairdhi, Mohammed - Al-Zyoud, Mahran (2012) Success and failure of IT projects: a study in Saudi Arabia. *Proceedings of the 11th WSEAS international conference on Applied Computer and Applied Computational Science. World Scientific and Engineering Academy and Society (WSEAS)*, 77-82.
- Aloini, Davide - Dulmin, Riccardo - Mininno, Valeria (2007) Risk management in ERP project introduction: review of the literature. *Information & Management* Vol.44 (6), 547-567.
- Andersson, Annika (2016) Communication barriers in an interorganizational ERP-project. *International Journal of Managing Projects in Business* Vol.9 (1), 214-233.
- Appelbaum, Steven H. - Degbe, Medea Cesar - MacDonald, Owen - Nguyen-Quang, Thai-Son (2015) Organizational outcomes of leadership style and resistance to change (Part Two). *Industrial and Commercial Training* Vol.47 (3), 135-144.
- Atkinson, Roger (1999) Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria. *International Journal of Project Management* Vol.17 (6), 337-342.
- Baccarini, David (1999) The logical framework method for defining project success. *The project Management Institute* Vol.30 (4), 25-32.
- Bareil, Céline (2013) Two paradigms about resistance to change. *Organization Development Journal* Vol.31 (3), 59-71.

- Basten, Dirk - Joosten, Dominik - Mellis, Werner (2011) Managers' perceptions of information system project success. *Journal of Computer Information Systems* Vol.52 (2), 12-21.
- Bateh, Justin - Castaneda, Mario E. - Farah, James E. (2013) Employee resistance to organizational change. *International Journal of Management & Information Systems* Vol.17 (2), 113-116.
- Bhattacharjee, Anol - Hikmet, Neset (2007) Physicians' resistance toward healthcare information technology: a theoretical model and empirical test. *European Journal of Information Systems* Vol.16 (6), 725-737.
- Boohene, Rosemond - Williams, Asamoah Appiah (2012) Resistance to organisational change: a case study of Oti Yeboah Complex Limited. *International Business and Management* Vol.4 (1), 135-145.
- Carlström, Eric D. - Ekman, Inger (2012) Organisational culture and change: implementing person-centred care. *Journal of Health Organization and Management* Vol.26 (2), 175-191.
- Carlström, Eric - Olsson, Lars-Eric (2014) The association between subcultures and resistance to change – in a Swedish hospital clinic. *Journal of Health Organization and Management* Vol.28 (4), 458-476.
- Cecez-Kecmanovic, Dubravka - Kautz, Karlheinz - Abrahall, Rebecca (2014) Reframing success and failure of information systems: a performative perspective. *MIS Quarterly* Vol.38 (2), 561-588.
- Chen, Charlie C. - Liu, Julie Yu-Chih - Chen, Houn-Gee (2010) Discriminative effect of user influence and user responsibility on information system development processes and project management. *Information and Software Technology* Vol.53 (2), 149-158.
- Corbin, Juliet - Strauss, Anselm (2008) Basics of qualitative research (3rd ed.): Techniques and Procedures for Developing Grounded Theory. *SAGE Publications, Inc. Thousand Oaks, California*.
- Culmsee, Paul - Awati, Kailash (2012) Towards a holding environment: building shared understanding and commitment in projects. *International Journal of Managing Projects in Business* Vol.5 (3), 528-548.
- De Wit, Anton (1988) Measurement of project success. *Project Management* Vol.6 (3), 164-170.
- Dwivedi, Yogesh - Ravichandran, Karthik - Williams, Michael - Miller, Siân - Lal, Banita - Antony, George - Kartik, Muktha (2013) IS/IT project failures: a review of the extant literature for deriving a taxonomy of failure factors. *International Working Conference on Transfer and Diffusion of IT. Springer Berlin Heidelberg*, 73-88.

- Dwivedi, Yogesh K. - Wastell, David - Laumer, Sven - Henriksen, Helle Zinner - Myers, Michael D. - Bunker, Deborah - Elbanna, Amany - Ravishankar, M. N. - Srivastava, Shirish C. (2015) Research on information systems failures and successes: status update and future directions. *Information Systems Frontiers* Vol.17 (1), 143-157.
- Eriksson, Päivi - Kovalainen, Anne (2008) Qualitative methods in business research. *SAGE Publications Ltd., London*.
- Erwin, Dennis (2009) Changing organizational performance: examining the change process. *Hospital topics* Vol.87 (3), 28-40.
- Ford, Jeffrey D. - Ford, Laurie W. - D'amelio, Angelo (2008) Resistance to change: the rest of the story. *Academy of Management Review* Vol.33 (2), 362–377.
- Fugate, Mel (2015) The impact of leadership, management, and HRM on employee reactions to organizational change. *Research in Personnel and Human Resources Management*, 177-208.
- Garg, Poonam - Garg, Atul (2013) An empirical study on critical failure factors for enterprise resource planning implementation in Indian retail sector. *Business Process Management Journal* Vol.19 (3), 496-514.
- Glaser, Barney - Strauss, Anselm (1967) The discovery of grounded theory: strategies for qualitative research. *AldineTransaction, London*.
- He, Xin James - Sheu, Myron (2014) Efficacy of functional user impact on information system development. *Management Research Review* Vol.37 (10), 902-911.
- Helpap, Sevda - Bekmeier-Feuerhahn, Sigrid (2016) Employees' emotions in change: advancing the sensemaking approach. *Journal of Organizational Change Management* Vol.29 (6), 903-916.
- Hirschheim, R. - Newman, M. (1988) Information systems and user resistance: theory and practice. *The Computer Journal* Vol.31 (5), 398-408.
- Janssen, Marijn - Klievink, Bram (2012) Can enterprise architectures reduce failure in development projects? *Transforming Government: People, Process and Policy* Vol.6 (1), 27-40.
- Joosten, Dominik - Basten, Dirk - Mellis, Werner (2011) Measurement of information system project success in organizations - what researchers can learn from practice. *In Proceeding of European Conference on Information Systems (ECIS)*.
- Klaus, Tim - Blanton, J. Ellis (2010) User resistance determinants and the psychological contract in enterprise system implementations. *European Journal of Information Systems* Vol.19 (6), 625–636.
- Klonek, Florian E. - Lehmann-Willenbrock, Nale - Kauffeld, Simone (2014) Dynamics of resistance to change: a sequential analysis of change agents in action. *Journal of Change Management* Vol.14 (3), 334-360.

- Latta, Gail F. (2009) A process model of organizational change in cultural context (OC3 Model). *Journal of Leadership & Organizational Studies* Vol.16 (1), 19-37.
- Latta, Gail F. (2015) Modeling the cultural dynamics of resistance and facilitation: Interaction effects in the OC3 model of organizational change. *Journal of Organizational Change Management* Vol.28 (6), 1013-1037.
- Laumer, Sven - Eckhardt, Andreas (2011) Why do people reject technologies: a review of user resistance theories. *Information Systems Theory, Springer New York*, 63-86.
- Li, Jia - Liu, Minghui - Liu, Xuan (2016) Why do employees resist knowledge management systems? An empirical study from the status quo bias and inertia perspectives. *Computers in Human Behavior* Vol.65, 189-200.
- Locke, Karen (2001) Grounded theory in management research. *SAGE Publications Ltd., London*.
- Lundy, Valerie - Morin, Pierre-Paul (2013) Project leadership influences resistance to change: the case of the Canadian Public Service. *Project Management Journal* Vol.44 (4), 45-64.
- Lyytinen, Kalle - Robey, Daniel (1999) Learning failure in information systems development. *Information Systems Journal* Vol.9 (2), 85-101.
- McKay, Kali - Kuntz, Joana R.C. - Näswall, Katharina (2013) The effect of affective commitment, communication and participation on resistance to change: the role of change readiness. *New Zealand Journal of Psychology* Vol.42 (2), 29-40.
- Montequin, V.R. - Cousillas, S. - Ortega, F. - Villanueva, J. (2014) Analysis of the success factors and failure causes in information & communication technology (ICT) projects in Spain. *Procedia Technology* Vol.16, 992-999.
- Montequin, VR. - Cousillas, SM. - Alvarez, V. - Villanueva, J. (2016) Success factors and failure causes in projects: analysis of cluster patterns using self-organizing maps. *Procedia Computer Science* Vol.100, 440-448.
- Mosadeghrad, Ali Mohammad (2014) Why TQM programmes fail? A pathology approach. *The TQM Journal* Vol.26 (2), 160-187.
- Nawi, Haslinda Sutan Ahmad - Rahman, Azizah Abd. - Ibrahim, Othman (2012) Government ICT project failure factors: project stakeholders' views. *Journal of information systems research and innovation* Vol.2 (1), 69-77.
- Pakdel, Abbas (2016) An investigation of the difference in the impact of demographic variables on employees' resistance to organizational change in government organizations of Khorasan Razavi. *Procedia - Social and Behavioral Sciences* Vol.230, 439-446.

- Pardo-del-Val, Manuela - Martínez-Fuentes, Clara - Roig-Dobón, Salvador (2012) Participative management and its influence on organizational change. *Management Decision* Vol.50 (10), 1843-1860.
- Peccei, Riccardo - Giangreco, Antonio - Sebastiano, Antonio (2011) The role of organisational commitment in the analysis of resistance to change: Co-predictor and moderator effects. *Personnel Review* Vol.40 (2), 185-204.
- Piderit, Sandy Kristin (2000) Rethinking resistance and recognizing ambivalence: a multidimensional view of attitudes toward and organizational change. *Academy of Management Review* Vol.25 (4), 783-794.
- Pinto, Jeffrey K. - Mantel, Samuel J. (1990) The causes of project failure. *IEEE Transactions on Engineering Management* Vol.37 (4), 269-276.
- Rosenberg, Stuart - Mosca, Joseph (2011) Breaking down the barriers to organizational change. *International Journal of Management and Information Systems* Vol.15 (3), 139-146.
- Saruhan, Nese (2014) The role of corporate communication and perception of justice during organizational change process. *Business and Economics Research Journal* Vol.5 (4), 143-166.
- Saunders, Mark - Lewis, Philip - Thornhill, Adrian (2003) Research methods for business students (3rd ed.). *Pearson Education Limited, England*.
- Savolainen, Paula - Ahonen, Jarmo J. - Richardson, Ita (2011) Software development project success and failure from the supplier's perspective: a systematic literature review. *International Journal of Project Management* Vol.30 (4), 458-469.
- Shirouyehzad, Hadi - Dabestani, Reza - Badakhshian, Mostafa (2011) The FMEA approach to identification of critical failure factors in ERP implementation. *International Business Research* Vol.4 (3), 254-263.
- Smollan, Roy K. (2011) The multi-dimensional nature of resistance to change. *Journal of Management & Organization* Vol.17 (6), 828-849.
- Stensaker, Inger G. - Meyer, Christine B. (2011) Change experience and employee reactions: developing capabilities for change. *Personnel Review* Vol.41 (1), 106-124.
- Stoica, Rosana - Brouse, Peggy (2013) IT project failure: a proposed four-phased adaptive multi-method approach. *Procedia Computer Science* Vol.16, 728-736.
- Thomas, Robyn - Hardy, Cynthia (2011) Reframing resistance to organizational change. *Scandinavian Journal of Management* Vol.27 (3), 322-331.
- Tomozii, Simona E. - Usaci, Doina - Norel, Mariana - Vlad Caftagioglu (2013) Applied managerial strategies for reducing resistance to change in kindergartens. *Procedia - Social and Behavioral Sciences* Vol.81, 650-654.

- Tversky, Amos - Kahneman, Daniel (1974) Judgment under uncertainty: heuristics and biases. *Science* Vol.185 (4157), 1124-1131.
- Van Dam, Karen - Oreg, Shaul - Schyns, Birgit (2009) Daily work contexts and resistance to organisational change: the role of Leader–Member Exchange, development climate, and change process characteristics. *Applied Psychology* Vol.57 (2), 313-334.
- Van Dijk, Rebecca - Van Dick, Rolf (2009) Navigating organizational change: change leaders, employee resistance and work-based identities. *Journal of Change Management* Vol.9 (2), 143-163.
- Venugopal, C. - Suryaprakasa Rao, K. (2011) Learning from a failed ERP implementation: a case study research. *International Journal of Managing Projects in Business* Vol.4 (4), 596-615.
- Whitney, Kaitlynn M. - Daniels, Charles B. (2013) The root cause of failure in complex IT projects: complexity itself. *Procedia Computer Science* Vol.20, 325-330.
- Wittig, Cynthia (2012) Employees' reactions to organizational change. *OD Practitioner* Vol.44 (2), 23-28.
- Yeo, K.T. (2002) Critical failure factors in information system projects. *International Journal of Project Management* Vol.20 (3), 241–246.

APPENDIX 1 The selected articles of the literature search on the IS project failures

Data Base	Author	Title	Journal
Emerald	Albliwi et.al. 2014	Critical failure factors of Lean Six Sigma: a systematic literature review	International Journal of Quality & Reliability Management
Emerald	Andersson 2016	Communication barriers in an interorganizational ERP-project	International Journal of Managing Projects in Business
Emerald	Culmsee & Awati 2012	Towards a holding environment: building shared understanding and commitment in projects	International Journal of Managing Projects in Business
Emerald	Garg & Garg 2013	An empirical study on critical failure factors for enterprise resource planning implementation in Indian retail sector	Business Process Management Journal
Emerald	He & Sheu 2014	Efficacy of functional user impact on information system development	Management Research Review
Emerald	Janssen & Klievink 2012	Can enterprise architectures reduce failure in development projects?	Transforming Government: People, Process and Policy
Emerald	Mosadeghrad 2014	Why TQM programmes fail? A pathology approach	The TQM Journal
Emerald	Venugopal & Suryaprakasa 2011	Learning from a failed ERP implementation: a case study research	International Journal of Managing Projects in Business
Google Scholar	Alfaadel et.al. 2012	Success and failure of IT projects: A study in Saudi Arabia	Recent Researches in Applied Computers and Computational Science
Google Scholar	Basten et.al. 2011	Managers' perceptions of information system project success	Journal of Computer Information Systems
Google Scholar	Cecez-Kecmanovic et.al. 2014	Reframing success and failure of information systems: a performative perspective	MIS Quarterly
Google Scholar	Chen et.al. 2010	Discriminative effect of user influence and user responsibility on information system development processes and project management	Information and Software Technology
Google Scholar	Dwivedi et.al. 2013	IS/IT project failures: A review of the extant literature for deriving a taxonomy of failure factors	International Working Conference on Transfer and Diffusion of IT
Google Scholar	Dwivedi et.al. 2015	Research on information systems failures and successes: Status update and future directions	Information System Front
Google Scholar	Joosten et.al. 2011	Measurement of information system project success in organizations - What researchers can learn from practice	ECIS 2011 Proceedings
Google Scholar	Nawi et.al. 2012	Government ICT project failure factors: project stakeholders' views	Journal of research and innovation in information systems
Google Scholar	Savolainen et.al. 2011	Software development project success and failure from the supplier's perspective: A systematic literature review	International Journal of Project Management
Google Scholar	Shirouyehzad et.al. 2011	The FMEA approach to identification of critical failure factors in ERP implementation	International Business Research
Science Direct	Alami 2016	Why do information technology projects fail?	Procedia Computer Science
Science Direct	Montequin et.al. 2014	Analysis of the success factors and failure causes in information & communication technology (ICT) projects in Spain	Procedia Technology
Science Direct	Montequin et.al. 2016	Success factors and failure causes in projects: Analysis of cluster patterns using self-organizing maps	Procedia Computer Science
Science Direct	Stoica & Brouse 2013	IT project failure: A proposed four-phased adaptive multi-method approach	Procedia Computer Science
Science Direct	Whitney & Daniels 2013	The root cause of failure in complex IT projects: complexity itself	Procedia Computer Science

APPENDIX 2 The selected articles of the literature search on the resistance to change

Data Base	Author	Title	Journal
Emerald	Airo et.al. 2012	Speech as a way of constructing change in space: Opposing and conforming discourses in workplace change process	Facilities
Emerald	Appelbaum et.al. 2015	Organizational outcomes of leadership style and resistance to change (Part Two)	Industrial and Commercial Training
Emerald	Carlström & Ekman 2012,	Organisational culture and change: implementing person-centred care	Journal of Health Organization and Management
Emerald	Carlström & Olsson 2014	The association between subcultures and resistance to change – in a Swedish hospital clinic	Journal of Health Organization and Management
Emerald	Helpap & Bekmeier-Feuerhahn 2016	Employees' emotions in change: Advancing the sensemaking approach	Journal of Organizational Change Management
Emerald	Latta 2015	Modeling the cultural dynamics of resistance and facilitation: Interaction effects in the OC3 model of organizational change	Journal of Organizational Change Management
Emerald	Peccei et.al. 2011	The role of organisational commitment in the analysis of resistance to change: Co-predictor and moderator effects	Personnel Review
Google Scholar	Agboola & Salawu 2011	Managing deviant behavior and resistance to change	International Journal of Business and Management
Google Scholar	Bareil 2013	Two paradigms about resistance to change	Organization Development Journal
Google Scholar	Bateh et.al. 2013	Employee resistance to organizational change	International Journal of Management & Information Systems (Online)
Google Scholar	Boohene & Williams 2012	Resistance to organisational change: a case study of Oti Yeboah Complex Limited	International Business and Management
Google Scholar	Fugate 2015	The impact of leadership, management, and HRM on employee reactions to organizational change	Research in Personnel and Human Resources Management
Google Scholar	Klonek et.al. 2014	Dynamics of resistance to change: A sequential analysis of change agents in action	Journal of Change Management
Google Scholar	Lundy & Violeta 2011	Project leadership influences resistance to change: the case of the Canadian Public Service	Project Management Journal
Google Scholar	McKay et.al. 2013	The effect of affective commitment, communication and participation on resistance to change: The role of change readiness	New Zealand Journal of Psychology
Google Scholar	Pardo-del-Val et.al. 2012	Participative management and its influence on organizational change	Management Decision
Google Scholar	Rosenberg & Mosca 2011	Breaking down the barriers to organizational change	International Journal of Management and Information Systems
Google Scholar	Saruhan 2014	The role of corporate communication and perception of justice during organizational change process	Business and Economics Research Journal
Google Scholar	Smollan 2011	The multi-dimensional nature of resistance to change	Journal of Management & Organization
Google Scholar	Stensaker & Meyer 2011	Change experience and employee reactions: Developing capabilities for change	Personnel Review
Google Scholar	Wittig 2012	Employees' reactions to organizational change	OD PRACTITIONER
Science Direct	Li, Liu & Liu 2016	Why do employees resist knowledge management systems? An empirical study from the status quo bias and inertia perspectives	Computers in Human Behavior
Science Direct	Pakdel 2016	An investigation of the difference in the impact of demographic variables on employees' resistance to organizational change in government organizations of Khorasan Razavi	Procedia - Social and Behavioral Sciences
Science Direct	Thomas & Hardy 2011	Reframing resistance to organizational change	Scandinavian Journal of Management
Science Direct	Tomozii, Usaci, Norel & Vlad 2013	Why do employees resist knowledge management systems? An empirical study from the status quo bias and inertia perspectives.	Computers in Human Behavior

APPENDIX 3 List of the manually searched articles

The manually searcher articles on the information system project failures		
Author	Title	Journal
Al-Ahmad et.al. 2009	A taxonomy of an IT project failure: Root causes	International Management Review
Aloini et.al. 2007	Risk management in ERP project introduction: Review of the literature	Information & Management
Atkinson 1999	Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria	International Journal of Project Management
Baccarini 1999	The logical framework method for defining project success	The project Management Institute
De Wit 1988	Measurement of project success	Project Management
Lyytinen & Robey 1999	Learning failure in information systems development	Information Systems Journal
Pinto & Mantel 1990	The causes of project failure	IEEE Transactions on Engineering Management
Tversky & Kahneman 1974	Judgment under uncertainty: Heuristics and biases	Science
Yeo 2002	Critical failure factors in information system projects	International Journal of Project Management

The manually searcher articles on the resistance to change		
Author	Title	Journal
Bhattacharjee & Hikmet 2007	Physicians' resistance toward healthcare information technology: a theoretical model and empirical test	European Journal of Information Systems
Erwin 2009	Changing organizational performance: Examining the change process	Hospital topics
Ford et.al. 2008	Resistance to change: The rest of the story	Academy of Management Review
Hirschheim & Newman 1988	Information systems and user resistance: Theory and practice	The Computer Journal
Klaus & Blanton 2010	User resistance determinants and the psychological contract in enterprise system implementations	European Journal of Information Systems
Latta 2009	A process model of organizational change in cultural context (OC3 Model)	Journal of Leadership & Organizational Studies
Laumer & Eckhardt 2011	Why do people reject technologies: A review of user resistance theories	Information Systems Theory
Piderit 2000	Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward and organizational change	Academy of Management Review
Van Dam et.al 2009	Daily work contexts and resistance to organisational change: The role of Leader–Member Exchange, development climate, and change process characteristics	Applied Psychology
Van Dijk & Van Dick 2009	Navigating organizational change: Change leaders, employee resistance and work-based identities	Journal of Change Management

APPENDIX 4 Sources cited in the articles

Abrahamson, E. (2000) Change without pain. <i>Harvard Business Review</i> Vol.78 (4), 75-79.
Agocs, Carol (1997) Institutionalized resistance to organizational change: denial, inaction and repression. <i>Journal of Business Ethics</i> Vol.16 (9), 917-931.
Allen, J. - Jimmieson, N. L. - Bordia, P. - Irmer, B. E. (2007) Uncertainty during organizational change: managing perceptions through communication. <i>Journal of Change Management</i> Vol.7 (2), 187-210.
Alutto, J.A. - Belasco, J.A. (1972) A typology for participation in organizational decision-making. <i>Administrative Science Quarterly</i> Vol.17 (1), 117-25.
Antony, Jiju (2008) Can Six Sigma be effectively implemented in SMEs? <i>International Journal of Productivity and Performance Management</i> Vol.57 (5), 420-423.
Antony, Jiju - Desai, Darshak A. (2009) Assessing the status of Six Sigma implementation in the Indian industry: results from an exploratory empirical study. <i>Management Research News</i> Vol.32 (5), 413-423.
Antony, J. - Downey-Ennis, K. - Antony, F. - Seow, C. (2007) Can Six Sigma be the 'cure' for our 'ailing' NHS? <i>Leadership in Health Services</i> Vol.20 (4), 242-253.
Antony, Jiju - Fergusson, Craig (2004) Six Sigma in the software industry: results from a pilot study. <i>Managerial Auditing Journal</i> Vol.19 (8), 1025-1032.
Antony, J. - Krishan, N. - Cullen, D. - Kumar, M. (2012a) Lean Six Sigma for higher education institutions (HEIs): challenges, barriers, success factors, tools/techniques. <i>International Journal of Productivity and Performance Management</i> Vol.61 (8), 940-948.
Antony, J. - Kumar, M. - Madu, C.N. (2005) Six Sigma in small- and medium-sized UK manufacturing enterprises: some empirical observations. <i>International Journal of Quality & Reliability Management</i> Vol.22 (8), 860-874.
Antony, J. - Bhuller, A.S. - Kumar, M. - Mendibil, K. - Montgomery, D.C. (2012b) Application of Six Sigma DMAIC methodology in a transactional environment. <i>International Journal of Quality & Reliability Management</i> Vol.29 (1), 31-53.
Arkowitz, H. (2002) Toward an integrative perspective on resistance to change. <i>Psychotherapy in Practice</i> Vol.58 (2), 219-227.
Armenakis, A.A. - Bedeian, A.G. (1999) Organizational change: a review of theory and research in the 1990s. <i>Journal of Management</i> Vol.25 (3), 293-315.
Armenakis, A.A. - Harris, S.G. (2009) Reflections: our journey in organizational change research and practice. <i>Journal of Change Management</i> Vol.9 (2), 127-142.
Armenakis, A.A. - Harris, S.G. - Mossholder, K.W. (1993) Creating readiness for organizational change. <i>Human Relations</i> Vol.46 (6), 681.
Arumugam, V. - Antony, J. - Kumar, M. (2013) Linking learning and knowledge creation to project success in Six Sigma projects: an empirical investigation. <i>International Journal of Production Economics</i> Vol.141 (1), 388-402.
Asafi, A. - Hamidi, M. - Jalali Farahani, M. - Dehghan Ghahfarokhi, A. (2010) An investigation of participative management and employees' resistance to change in Physical Education Organization and Physical Education General Department of Ministry of Education. <i>Journal of Sport Management</i> Vol.3, 5-26.
Attarzadeh, I. - Ow, S.H. (2008) Project management practices: the criteria for success or failure. <i>Communications of the IBIMA</i> Vol.1 (28), 234-241.
Balogun, J. (2001) Strategic change. <i>Management Quarterly</i> Vol.10 (1), 2-11.
Bamber, L. - Dale, B.G. (2000) Lean production: a study of application in a traditional manufacturing environment. <i>Production Planning & Control: The Management of Operations</i> Vol.11 (3), 291-298.
Bareil, C.- Gagnon, J. (2005) Facilitating the individual capacity to change. <i>Revue Gestion 2000</i> Vol.22 (5), 177-194.
Bartunek, J.M. - Rousseau, D.M. - Rudolph, J.W. - DePalma, J.A. (2006) On the receiving end: sensemaking, emotion, and assessments of an organizational change initiated by others. <i>The Journal of Applied Behavioral Science</i> Vol.42 (2), 182-206.
Bate, P. - Khan, R. - Pye, A. (2000) Towards a culturally sensitive approach to organizational structuring: where organizational design meets organizational development. <i>Organization Science</i> Vol.11 (2), 197-211.
Bedeian, A. (1980) Organizational theory and analysis. <i>Dryden Press, Hinsdale, IL</i> .
Beer, M. - Nohria, N. (2000) Cracking the code of change. <i>Harvard Business Review</i> Vol.78 (3), 133-141.
Belassi, W. - Tukel, O. I. (1996) A new framework for determining critical success/failure factors in projects. <i>International Journal of Project Management</i> Vol.14 (3), 141-151.
Benders, J. - Van Hootegeem, G. (1999) Teams and their context: moving the team discussion beyond existing dichotomies. <i>Journal of Management Studies</i> Vol.36 (5), 609-628.
Bhasin, S. (2011) Performance of organisations treating lean as an ideology. <i>Business Process Management Journal</i>

Vol.17 (6), 986-1011.
Bhasin, S. (2012a) An appropriate change strategy for lean success. <i>Management Decision</i> Vol.50 (3), 439-458.
Bhasin, S. (2012b) Prominent obstacles to lean. <i>International Journal of Productivity and Performance Management</i> Vol.61 (4), 403-425.
Bhasin, S. - Burcher, P. (2006) Lean viewed as a philosophy. <i>Journal of Manufacturing Technology Management</i> Vol.17 (1), 56-72.
Black, K. - Revere, L. (2006) Six Sigma arises from the ashes of TQM with a twist. <i>International Journal of Health Care Quality Assurance</i> Vol.19 (3), 259-266.
Boehm, Barry W. (1991) Software risk management: principles and practices. <i>IEEE Software</i> Vol.8 (1), 32-41.
Bommer, W.H. - Rich, G.A. - Rubin, R.S. (2005) Changing attitudes about change: longitudinal effects of transformational leader behavior on employee cynicism about organizational change. <i>Journal of Organizational Behavior</i> Vol.26 (7), 733-753.
Bordia, P. - Hobman, E. - Jones, E. - Gallois, C. - Callan, V. (2004) Uncertainty during organizational change: types, consequences, and management strategies. <i>Journal of Business and Psychology</i> Vol.18 (4), 507-532.
Bovey, W. - Hede, A. (2001b) Resistance to organizational change: the role of defense mechanisms. <i>Journal of Managerial Psychology</i> Vol.16 (7), 534-548.
Brehm, J.W. (1966) A theory of psychological reactance. <i>Academic Press, New York, NY.</i>
Bridges, W. (1986) Managing organizational transitions. <i>Organizational Dynamics</i> Vol.15 (1), 24-33.
Brown, A. D. - Jones, M. R. (1998) Doomed to failure: narratives of inevitability and conspiracy in a failed IS project. <i>Organisation Studies</i> Vol.19 (1), 73-88.
Burcher, P.G. - Lee, G.L. - Waddell, D. (2010) Quality lives on: quality initiatives and practices in Australia and Britain. <i>The TQM Journal</i> Vol.22 (5), 487-498.
Burke, W. W. - Lake, D. G. - Paine, J. W. (2008) Organization change: a comprehensive reader. <i>Jossey-Bass, San Francisco.</i>
Burnes, B. - James, H. (1995) Culture, cognitive dissonance and the management of change. <i>International Journal of Operations & Production Management</i> Vol.15 (8), 14-33.
Carr, A. (2001) Understanding emotion and emotionality in a process of change. <i>Journal of Organizational Change Management</i> Vol.14 (5), 421-434.
Caruth, D. - Middlebrook, B. - Frank, R. (1985) Overcoming resistance to change. <i>Advanced Management Journal</i> Vol.50 (3), 23-7.
Chakravorty, S.S. (2009) Six Sigma programs: an implementation model. <i>International Journal of Production Economics</i> Vol.119 (1), 1-16.
Chiarini, A. (2011) Japanese total quality control, TQM, Deming's system of profound knowledge, BPR, Lean and Six Sigma: comparison and discussion. <i>International Journal of Lean Six Sigma</i> Vol.2 (4), 332-355.
Cobb, A.T. - R. Folger - K. Wooten, (1995). The role justice play in organizational change. <i>Public Administration Quarterly</i> Vol.19 (2), 135-151.
Coch, L. - French, J. (1948) Overcoming resistance to change. <i>Human Relations</i> Vol.1 (4), 512-532.
Coetsee, L. (1999) From resistance to commitment. <i>Public Administration Quarterly</i> Vol.23 (2), 204-222.
Courpasson, D. - Dany F. - Clegg, S. (2012) Resisters at work: generating productive resistance in the workplace. <i>Organization Science</i> Vol.23 (3), 801-819.
Dent, E.B. - Goldberg, S.G. (1999) Challenging 'resistance to change'. <i>Journal of Applied Behavioral Science</i> Vol.35 (1), 25-41.
Diamond, M. A. (2003) Organizational immersion and diagnosis: the work of Harry Levinson. <i>Organisational & Social Dynamics</i> Vol.3 (1), 1-18.
Dickson, G. W. - Senn, J. A. - Chervany, N. L. (1977) Research in management information systems: the Minnesota experiments. <i>Management science</i> Vol.23 (9), 913-934.
Duarte, B. - Montgomery, D. - Fowler, J. - Konopka, J. (2012) Deploying LSS in a global enterprise – project identification. <i>International Journal of Lean Six Sigma</i> Vol.3 (3), 187-205.
Dube Like. (2009) Managing deviant behavior and resistance to change in selected organizations, <i>Unpublished Assignment Submitted to the Department of Management, Faculty of Business, University of Botswana, as Part of Assessment for MGT 674.</i>
Ebrahim, Zakareya - Irani, Zahir (2005) E-government adoption: architecture and barriers. <i>Business Process Management Journal</i> Vol.11 (5), 589-611.
Elving, W. J. L. (2005) The role of communication in organisational change. <i>Corporate Communications: An International Journal</i> Vol.10 (2), 129-138.
Ezzamel, A. - Willmott, H. - Worthington, F. (2001) Power, control and resistance in 'the factory that time forgot'. <i>Journal of Management Studies</i> Vol.38 (8), 1053-1079.

Farahani, A. - Asadi, H. - Aghajani, A. (2011) The relationship between participative management and resistance of physical education teachers to change. <i>Journal of Sport management</i> Vol.2 (7).
Fedor, D.B. - Caldwell, S. - Herold, D.M. (2006) The effects of organizational changes on employee commitment: a multilevel investigation. <i>Personnel Psychology</i> Vol.59 (1), 1-29.
Field, J. (1997) Passive or proactive? <i>Adults Learning (England)</i> Vol.8 (6), 160-161.
Flowers, S. (1996) Software failure: management failure. <i>Chichester, UK: John Wiley.</i>
Folger, R. - Skarlicki, D.P. (1999) Unfairness and resistance to change: hardship as mistreatment. <i>Journal of Organizational Change Management</i> Vol.12 (1), 35-50.
Foucault, M. (1980) Discipline and punish: the birth of the prison. <i>Harmondsworth: Penguin.</i>
French, R. (2001) Negative capability': managing the confusing uncertainties of change. <i>Journal of Organizational Change Management</i> Vol.14 (5), 480-492.
French, E. - Delahaye, B. (1996) Individual change transition: moving in circles can be good for you. <i>Leadership and Organization Development Journal</i> Vol.17 (7), 22-28.
Furst, S. - Cable, D. (2008) Employee resistance to organizational change: managerial influence tactics and leader-member exchange. <i>Journal of Applied Psychology</i> Vol.93 (2), 453-462.
Gamal Aboelmaged, Mohamed (2010) Six Sigma quality: a structured review and implications for future research. <i>International Journal of Quality & Reliability Management</i> Vol.27 (3), 268-317.
Gamal Aboelmaged, Mohamed (2011) Reconstructing Six Sigma barriers in manufacturing and service organizations: the effects of organizational parameters. <i>International Journal of Quality & Reliability Management</i> Vol.28 (5), 519-541.
Gardner, D.G. - Dukes, R. L. - Discenza, R. (1994) Computer use, self-confidence, and attitudes: A causal analysis. <i>Computers in human behavior</i> Vol.9 (4), 427-440.
Gawronski, B. (2012) Back to the future of dissonance theory: cognitive consistency as a core motive. <i>Social Cognition</i> Vol.30 (6), 652-668.
George, J.M. - Jones, G.R. (2001) Towards a process model of individual change in organizations. <i>Human Relations</i> Vol.54 (4), 419-444.
Giangreco, A. - Peccei, R. (2005) The nature and antecedents of middle managers' resistance to change: evidence from an Italian context. <i>The International Journal of Human Resources Management</i> Vol.16 (10), 1812-1829.
Gilley, A. - Godek, M. - Gilley, J. (2009a) Change, resistance, and the organizational immune system. S.A.M. <i>Advanced Management Journal</i> Vol.74 (4), 4-10.
Gilley, A. - McMillan, H. S. - Gilley, J. W. (2009b). Organizational change and characteristics of leadership effectiveness. <i>Journal of Leadership & Organizational Studies</i> Vol.16 (1), 38-47.
Goodman, J. - Truss, C. (2004) The medium and the message: communicating effectively during a major change initiative. <i>Journal of Change Management</i> Vol.4 (3), 217-228.
Graetz, F. - Rimmer, M. - Lawrence, A. - Smith, A. (2006) Managing organizational change. (2nd ed.). <i>Wiley and Sons, Sydney and Melbourne, Australia.</i>
Greasly, K. - Watson, P. - Patel, S. (2009) The impact of organisational change on public sector employees implementing the UK Government's Back to Work Programme. <i>Employee Relations</i> Vol.31 (4), 382-97.
Greenberg, J. (1990) Organizational justice: yesterday, today, tomorrow. <i>Journal of Management</i> Vol.6, 399-432.
Greiner, L.E. (1992) Resistance to change during restructuring. <i>Journal of Management Inquiry</i> Vol.1 (1), 61-65.
Guest, D.E. (1987) Human resource management and industrial relations. <i>Journal of Management Studies</i> Vol.24 (5), 503-21.
Gurumurthy, A. - Kodali, R. (2011) Design of lean manufacturing systems using value stream mapping with simulation: a case study. <i>Journal of Manufacturing Technology Management</i> Vol.22 (4), 444-473.
Hadavinejad, M. - Khaef Elahi, A. - Alizadeh Sani, M. (2010) Managers' policy adoption, employees' political perception and resistance to change. <i>Iranian Journal of Management Sciences</i> Vol.4 (16), 119-137.
Hall, G.E. - Hord, S.M. (2011) Implementing change: patterns, principles, and potholes (3 rd ed.). <i>Upper Saddle River, NJ: Pearson Education.</i>
Harrison, A. - Storey, J. (1996) New wave manufacturing strategies: operational, organizational and human dimensions. <i>International Journal of Operations & Production Management</i> Vol.16 (2), 63-76.
Hartwick, J. - Barki, H. (1994) Explaining the role of user participation in information system use. <i>Management Science</i> Vol.40 (4), 440-465.
Harvey, D. - Brown D. R. (2001) An experiential approach to organization development. (6 th ed.). <i>New Jersey: Pearson Prentice Hall.</i>
Heeks, R. (2006) Health information systems: failure, success and improvisation. <i>International Journal of Medical Informatics</i> Vol.75 (2), 125-137.
Henderson, D. (2012) Employment contracts, psychological contracts and employee well-being - an international study -

edited by David E. Guest, Kerstin Isaksson and Hans de Witte. <i>British Journal of Industrial Relations</i> Vol.50 (2), 376-378.
Herold, D. M. - Fedor, D. B. - Caldwell, S. - Liu, Y. (2008) The effects of transformational and change leadership on employees' commitment to a change: A multilevel study. <i>Journal of Applied Psychology</i> Vol.93 (2), 346-357.
Hiatt, J.M. (2006) ADKAR: A model for change in business, government and our community. <i>Prosci Research, Loveland, Colorado</i> .
Hickins, M. (1998) Running the change gauntlet. <i>Gauntlet Management Review</i> Vol.87 (11), 7.
Hilton, R.J. - Sohal, A. (2012) A conceptual model for the successful deployment of Lean Six Sigma. <i>International Journal of Quality & Reliability Management</i> Vol.29 (1), 54-70.
Hines, P. - Francis, M. - Found, P. (2006) Towards lean product lifecycle management: a framework for new product development. <i>Journal of Manufacturing Technology Management</i> Vol.17 (7), 866-887.
Ho, Y.C. - Chang, O.C. - Wang, W.B. (2008) An empirical study of key success factors for Six Sigma Green Belt projects at an Asian MRO company. <i>Journal of Air Transport Management</i> Vol.14 (5), 263-269.
Holmberg, L. (1997) Health-Care Processes. A study of medical problem-solving in the Swedish Health-Care Organisation. <i>Lund University Press, Lund</i> .
Holt, D.T. - Self, D.R. - Thai, A.E. - Low, S.W. (2003) Facilitating organizational change: a test of leadership strategies. <i>Leadership & Organization Development Journal</i> Vol.24 (5), 262-272.
Huang, Shi-Ming - Chang, I-Chu - Li, Shing-Han - Lin, Ming-Tong (2004) Assessing risk in ERP projects: identify and prioritize the factors. <i>Industrial Management & Data Systems</i> Vol.104 (8), 681-688.
Hultman, K. E. (2006). Values-driven change: strategies and tools for long-term success. <i>iUniverse, Lincoln, NE</i> .
Huse E.F. (1980) Organization development and change. <i>St. Paul, MN; West</i> .
Huy, Q. N. (2001) Time, temporal capability and planned change. <i>Academy of Management Review</i> Vol.26 (4), 601-623.
Huy, Q.N. (2002) Emotional balancing of organizational continuity and radical change: the contribution of middle managers. <i>Administrative Science Quarterly</i> Vol.47 (1), 31.
Irani, Z. - Sharif, A.M. - Love, P.E. (2001) Transforming failure into success through organisational learning: an analysis of a manufacturing information system. <i>European Journal of Information Systems</i> Vol.10 (1), 55-66.
Iverson, R.D. (1996) Employee acceptance of organizational change: the role of organizational commitment. <i>The International Journal of Human Resources Management</i> Vol.7 (1), 122-49.
Jermias, J. (2001) Cognitive dissonance and resistance to change: the influence of commitment confirmation and feedback on judgment usefulness of accounting systems. <i>Accounting, Organizations and Society</i> Vol.26 (2), 141-160.
Jeyaraman, K. - Kee Teo, L. (2010) A conceptual framework for critical success factors of lean Six Sigma: implementation on the performance of electronic manufacturing service industry. <i>International Journal of Lean Six Sigma</i> Vol.1 (3), 191-215.
Jex, M. (2002) Organizational psychology. A scientist - practitioner approach. <i>John Willey & Sons, Inc, Chichester</i> .
Jiang, J. J. - Klein, G. - Balloun, J. (1998) Perceptions of system development failures. <i>Information and Software Technology</i> Vol.39 (14-15), 933-937.
Johnson, J. - Boucher, K. D. - Connors, K. - Robinson, J. (2001) Collaborating on project success. <i>Software Magazine, February/March</i> .
Jones, E.E. (1990) Interpersonal perception. <i>Freeman, New York, NY</i> .
Joshi, K. (1991) A model of users' perspective on change: the case of information systems technology implementation. <i>MIS quarterly</i> , 229-242.
Judge, T.A. - Thoresen, C.J. - Pucik, V. - Welbourne, T.M. (1999) Managerial coping with organizational change: a dispositional perspective. <i>Journal of Applied Psychology</i> Vol.84 (1), 107-22.
Judson, A. S. (1991). Changing behavior in organizations. <i>Basil Blackwell inc, Massachusetts and Oxford</i> .
Karim, A. - Arif-Uz-Zaman, K. (2013) A methodology for effective implementation of lean strategies and its performance evaluation in manufacturing organizations. <i>Business Process Management Journal</i> Vol.19 (1), 169-196.
Kellogg, K. C. (2009) Operating room: relational spaces and micro-institutional change in surgery. <i>American Journal of Sociology</i> Vol.115 (3), 657-711.
Kendall, K.E. (1997) The significance of information systems research on emerging technologies: Seven information technologies that promise to improve managerial effectiveness. <i>Decision Sciences</i> Vol.28 (4), 775-792.
Khorasani Toroghi, H. (2013) The obstacles of change in government organizations. Retrieved from http://system.parsiblog.com/posts/1102/ .
Kitchen, P.J. - Daly, F. (2002) Internal communication during change management. <i>Corporate Communications: An International Journal</i> Vol.7 (1), 45-53.
Klaus, Tim - Blanton, J. Ellis (2010) User resistance determinants and the psychological contract in enterprise system

implementations. <i>European Journal of Information Systems</i> Vol.19 (6), 625–636.
Komodromos, M. (2013) Employees' perceptions of trust, fairness, and management of change using an organisational justice framework: a brief review of the literature. <i>International Journal of Teaching and Case Studies</i> Vol.4 (1), 83-94.
Konovsky, M.A. - Folger, R. (1991) The effects of procedures, social accounts and benefits level on victims' layoff reactions. <i>Journal of Applied Social Psychology</i> Vol.21 (8), 630-650.
Kornfeld, B. - Kara, S. (2013) Selection of Lean and Six Sigma projects in industry. <i>International Journal of Lean Six Sigma</i> Vol.4 (1), 4-16.
Kotter, J.P. (1995) Leading change: why transformation efforts fail. <i>Harvard Business Review</i> Vol.73 (2), 59-67.
Kotter, J.P. (1996) Leading change. <i>Boston: Harvard Business School Press.</i>
Kotter, J.P. - Heskett, J.L. (1992) Corporate culture and performance. <i>Free Press, New York, NY.</i>
Kotter, J.P. - Schlesinger, L.A. (1979) Choosing strategies for change. <i>Harvard Business Review</i> Vol.57 (2), 106-114.
Kotter, J.P. - Schlesinger, L.A. (2008) Choosing strategies for change. <i>Harvard Business Review</i> Vol.86 (7-8), 130-139.
Kumar, M. - Antony, J. - Douglas, A. (2009a) Does size matter for Six Sigma implementation? Findings from the survey in UK SMEs. <i>The TQM Journal</i> Vol.21 (6), 623-635.
Kumar, M. - Antony, J. - Rae Cho, B. (2009b) Project selection and its impact on the successful deployment of Six Sigma. <i>Business Process Management Journal</i> Vol.15 (5), 669-686.
Kumar, M. - Antony, J. - Tiwari, M.K (2011) Six Sigma implementation framework for SMEs – a roadmap to manage and sustain the change. <i>International Journal of Production Research</i> Vol.49 (18), 5449-5467.
Kumar, S. - Kant, S. - Amburgey, T.L. (2007a) Public agencies and collaborative management approaches: examining resistance among administrative professionals. <i>Administration & Society</i> Vol.39 (5), 569-611.
Kumar, U.D. - Nowicki, D. - Ramirez-Marquez, J.E. - Verma, D. (2008) On the optimal selection of process alternatives in a Six Sigma implementation. <i>International Journal of Production Economics</i> Vol.111 (2), 456-467.
Kumar, U.D. - Saranga, H. - Ramirez-Marquez, J.E. - Nowicki, D. (2007b) Six Sigma project selection using data envelopment analysis. <i>The TQM Magazine</i> Vol.19 (5), 419-441.
Kwak, Y.H. - Anbari, F.T. (2006) Benefits, obstacles, and future of six sigma approach. <i>Technovation</i> Vol.26 (5-6), 708-715.
Kübler-Ross, E. (1969) On death and dying. <i>Macmillan, Toronto.</i>
Lam, Wing (2005) Barriers to e-government integration. <i>The Journal of Enterprise Information Management</i> Vol.18 (5), 511-30.
Lau, C.M. - Woodman, R.W. (1995) Understanding organizational change: a schematic perspective. <i>Academy of Management Journal</i> , 537-554.
Laumer, S. - Eckhardt, A. (2010) Why do people reject technologies? Towards an understanding of resistance to IT-induced organizational change. <i>ICIS 2010 Proceedings. Paper 151.</i>
Lawler, E.E. (1993) The ultimate advantage. <i>Jossey Bass Publishers, San Francisco, CA.</i>
Lawrence, P.R. (1954) How to overcome resistance to change. <i>Harvard Business Review</i> Vol.32 (3), 49-57.
Lee, R.T. - Ashforth, B.E. (1996) A meta-analytic examination of the correlates of the three dimensions of burnout. <i>Journal of Applied Psychology</i> Vol.81 (2), 123-33.
Lenz, R.T. - Lyles, M.A. (1986) Managing human problems in strategic planning systems. <i>The Journal of Business Strategy</i> Vol.6 (4), 57-66.
Levin, I. - Gottlieb J.Z. (2009) Realigning organization culture for optimal performance: six principles & eight practices. <i>Organization Development Journal</i> Vol.27 (4), 31-46.
Lewis, L.K. (2006) Employee perspectives on implementation communication as predictors of perceptions of success and resistance. <i>Western Journal of Communication</i> Vol.70 (1), 23-46.
Lewin, K. (1947) Group decision and social change. In T. M. Newcomb, & E. L. Hartley (eds.), <i>Readings in social psychology</i> . <i>New York, NY: Henry Holt</i> , 330-344.
Lewin, K. (1958) Group decision and social change. In E.E.Maccoby, T.M. Newcomb, and E.L. Hartley (eds), <i>Reading in Social Psychology</i> . <i>New York: Holt, Rinehart and Winston</i> , 197-211.
Lines, R. (2004) Influence of participation in strategic change: resistance, organizational commitment and change goal achievement. <i>Journal of Change Management</i> Vol.4 (3), 193-215.
Lines, R. - Selart, M. - Espedal, B. - Johansen, S. (2005) The production of trust during organizational change. <i>Journal of Change Management</i> Vol.5 (2), 221–245.
Lyytinen, K. - Hirschheim, R. (1988) Information systems failures: a survey and classification of the empirical literature. <i>Oxford surveys in information technology</i> Vol.4 (1), 257-309.
Mariotti, J. (1998) 10 steps to positive change. <i>Industry Week</i> Vol.247 (14), 82.
Markus, M.L. (1983) Power, politics, and MIS implementation. <i>Communications of the ACM</i> Vol.26 (6), 430-444.
Martinez-Jurado, P.J. - Moyano-Fuentes, J. (2012) Key determinants of lean production adoption: evidence from the

aerospace sector. <i>Production Planning & Control: The Management of Operations</i> Vol.25 (4), 332-345.
Martinko, M. J. - Zmud, R. W. - Henry, J. W. (1996) An attributional explanation of individual resistance to the introduction of information technologies in the workplace. <i>Behaviour & Information Technology</i> Vol.15 (5), 313-330.
Masterson, S. S. - Lewis, K. - Goldman, B. M. - Taylor, M. S. (2000) Integrating justice and social exchange: the differing effects of fair procedures and treatment on work relationships. <i>Academy of Management Journal</i> Vol.43 (4), 738-748.
McAdam, R. - Lafferty, B. (2004) A multilevel case study critique of six sigma: statistical control or strategic change? <i>International Journal of Operations & Production Management</i> Vol.24 (5), 530-549.
McConnell, S. (1996) Rapid development. <i>Microsoft Press, Redmond, WA</i> .
McGuire, J.B. - Rhodes, G.B. (2009) Transforming your leadership culture. <i>Jossey-Bass, San Francisco</i> .
Meyer, J.P. - Allen, N.J. (1997) Commitment in the workplace: theory, research and application. <i>Pitman Publishing, London</i> .
Meyer, J.P. - Stanley, D.J. - Herscovitch, L. - Topolnytsky, L. (2002) Affective, continuance, and normative commitment to the organization: a meta-analysis of antecedents, correlates, and consequences. <i>Journal of Vocational Behavior</i> Vol.61 (1), 20-52.
Mitev, N. N. (1996) More than a failure? The computerized reservation systems at French Railways. <i>Information Technology & People</i> Vol.9 (4), 8-19.
Mooketsi, D. S. (2009) Managing deviant behavior and resistance to change. <i>Unpublished Assignment Submitted to the Department of Management, Faculty of Business, University of Botswana, as Part of Assessment for MGT 674</i> .
Mossholder, K.W. - Settoon, R.P. - Armenakis, A.A. - Harris, S.G. (2000) Emotion during organizational transformations: an interactive model of survivor reactions. <i>Group & Organization Management</i> Vol.25 (3), 220-243.
Mowday, R.T. - Porter, L.W. - Steers, R.M. (1982) Employee-organization linkages: the psychology of commitment, absenteeism, and turnover. <i>Academic Press, New York, NY</i> .
Mumby, D. K. (2005) Theorizing resistance in organization studies: A dialectical approach. <i>Management Communication Quarterly</i> Vol.19 (1), 9-44.
Munns, A. K. - Bjeirmi, B. F. (1996) The role of project management in achieving project success. <i>International Journal of Project Management</i> Vol.14 (2), 81-87.
Nabhani, F. - Shokri, A. (2009) Reducing the delivery lead time in a food distribution SME through the implementation of six sigma methodology. <i>Journal of Manufacturing Technology Management</i> Vol.20 (7), 957-974.
Nawi Haslinda S. A. - Rahman, Azizah A. - Ibrahim, Othman (2011) Government's ICT project failure factors: a revisit. <i>International Conference on Research & Innovation in Information Systems (ICRIIS), IEEE</i> , 1-6.
Nelson, Ryan R. (2007) IT project management: infamous failures, classic mistakes and best practices. <i>MIS Quarterly Executive</i> Vol.6 (2), 67-78.
Nicolescu, O. - Nicolescu, C. (2006) Tranzitia la schimbare si rezistenta la schimbare. <i>Journal of Economie teoretica si aplicata</i> , 7.
Nonthaleerak, P. - Hendry, L. (2008) Exploring the Six Sigma phenomenon using multiple case study evidence. <i>International Journal of Operations and Production Management</i> Vol.28 (3), 279-303.
Nov, O. - Ye, C. (2009) Resistance to change and the adoption of digital libraries: an integrative model. <i>Journal of the American Society for Information Science and Technology</i> Vol.60 (8), 1702-1708.
Novelli, L. - Kirkman, B. L. - Shapiro, D.L. (1995) Effective implementation of organizational change: an organizational justice perspective. In C. L. Cooper & D. M. Rousseau (eds.) <i>Trends in organizational behavior</i> Vol.2, 15-36.
Nwabueze, U. (2012) Process improvement: the case of a drugs manufacturing company. <i>Business Process Management Journal</i> Vol.18 (4), 576-584.
O'Connell Davidson, J. (1994) The sources and limits of resistance in a privatized utility. In J. M. Jermier, D. Knights, & W. R. Nord (Eds.), <i>Resistance and power in organizations</i> . London: Routledge, 69-101.
Oreg, S. (2003) Resistance to change: developing an individual differences measure. <i>Journal of Applied Psychology</i> Vol.88 (4), 680-693.
Oreg, S. (2006) Personality, context and resistance to organizational change. <i>European Journal of Work and Organizational Psychology</i> Vol.15 (1), 73-101.
Oreg, S. - Sverdlik, N. (2011) Ambivalence toward imposed change: the conflict between dispositional resistance to change and the orientation toward the change agent. <i>Journal of applied Psychology</i> Vol.96 (2), 337.
Pakdel, A. - Danaie, H. - Motefakker, H. (2014) An investigation of the relationship between employees' resistance to change and the dimensions of organizational structures in government organizations of Khorasan Razavi. <i>The sixth International Conference on Management, Entrepreneurship and Economic Development</i> . Ghom, Iran.

Pamfilie, R. - Petcu, A.J. - Draghici, M. (2012) The importance of leadership in driving a strategic Lean Six Sigma management. <i>Procedia – Social and Behavioral Sciences</i> Vol.58, 187-196.
Panizzolo, R. - Garengo, P. - Sharma, M.K. - Gore, A. (2012) Lean manufacturing in developing countries: evidence from Indian SMEs. <i>Production Planning & Control: The Management of Operations</i> Vol.23 (10-11), 769-788.
Pedersen, E.R.G. - Huniche, M. (2011) Determinants of lean success and failure in the Danish public sector: a negotiated order perspective. <i>International Journal of Public Sector Management</i> Vol.24 (5), 403-420.
Pepper, M.P.J. - Spedding, T.A. (2010) The evolution of Lean Six Sigma. <i>International Journal of Quality & Reliability Management</i> Vol.27 (2), 138-155.
Percin, S. - Kahraman, C. (2010) An integrated fuzzy multi-criteria decision-making approach for Six Sigma project. <i>International Journal of Computational Intelligence Systems</i> Vol.3 (5), 610-621.
Petriglieri, J.L. (2011) Under threat: responses to and the consequences of threats to individuals' identities. <i>Academy of Management Review</i> Vol.36 (4), 641-662.
Petrini, C. - Hultman, K.E. (1995) Scaling the wall of resistance. <i>Training and development</i> Vol.49 (10), 15-18.
Piderit, S. K. (1999) Navigating relationships with coworkers: Understanding employees' attitudes toward an organizational change. <i>Unpublished doctoral dissertation, University of Michigan, Ann Arbor, MI.</i>
Pinto, S.H.B. - Carvalho, M.M. - Lee Ho, L. (2008) Main quality programs characteristics in large size Brazilian companies. <i>International Journal of Quality & Reliability Management</i> Vol.25 (3), 276-291.
Pitsakis, K. - Biniari, M.G. - Kuin, T. (2012) Resisting change: organizational decoupling through an identity construction perspective. <i>Journal of Organizational Change Management</i> Vol.25 (6), 835-852.
Prasad, P. - Prasad, A. (2000) Stretching the iron cage: the constitution and implications of routine workplace resistance. <i>Organization Science</i> Vol.11 (4), 387-403.
Price, I. - Fortune, J. (2008) Open plan and academe: pre- and post-hoc conversations. Proceedings of the CIB W070 International Conference in Facilities Management, Heriot Watt University, Edinburgh, June 16-18, available at: www.fmresearch.co.uk/cibw70proceedings.pdf
Prosci (2010) Change management toolkit: using Prosci's ADKAR model for managing the people side of change. <i>Business Performance Series, Loveland, CO: Prosci Inc.</i>
Psychogios, A.G. - Atanasovski, J. - Tsironis, L.K. (2012) Lean Six Sigma in a service context: a multi-factor application approach in the telecommunications industry. <i>International Journal of Quality & Reliability Management</i> Vol.29 (1), 122-139.
Raina, R. (2010) Timely, continuous & credible communication & perceived organizational effectiveness. <i>The Indian Journal of Industrial Relationships</i> Vol.46 (2), 345-359.
Recardo, R. J. (1995). Overcoming resistance to change. <i>National Productivity Review</i> Vol.14 (2), 5-12.
Reichers, A.E. - Wanous, J.P. - Austin, T.T. (1997) Understanding and managing cynicism about organizational change. <i>Academy of Management Executive</i> Vol.11 (1), 48-59.
Ringen, G. - Holtskog, H. (2013) How enablers for lean product development motivate engineers. <i>International Journal of Computer Integrated Manufacturing</i> Vol.26 (12), 1117-1127.
Ropponen, Janne - Lyytinen, Kalle (2000) Components of software development risk: how to address them? A project manager survey. <i>IEEE Transactions on Software Engineering</i> Vol.26 (2), 98-112.
Rousseau, D.M. - Sitkin, S.B. - Burt, R.S. - Camerer, C. (1998) Not so different after all: a cross-discipline view of trust. <i>Academy of Management Review</i> Vol.23 (3), 393-404.
Sacks, C.H. - Bellisimo, Y. - Mergendoller, J. (1993) Attitudes toward computers and computer use: the issue of gender. <i>Journal of Research on Computing in Education</i> Vol.26 (2), 256-269.
Salem, P. (2011) The seven communication reasons organizations do not change. <i>Corporate Communications</i> Vol.13 (3), 333-348.
Scherrer-Rathje, M. - Boyle, T.A. - Deflorin, P. (2009) Lean, take two! Reflections from the second attempt at lean implementation. <i>Business Horizons</i> Vol.52 (1), 79-88.
Schmidt, R. - Lyytinen, K. - Keil, M. - Cule, P. (2001) Identifying software project risks: an international Delphi study. <i>Journal of Management Information Systems</i> Vol.17 (4), 5-36.
Schmuck, R.A. - Miles, M. (1971) Organizational development in schools. <i>National Press, Palo Alto, CA.</i>
Serrano Lasa, I. - Castro, R.D. - Laburu, C.O. (2009) Extent of the use of lean concepts proposed for a value stream mapping application. <i>Production Planning & Control: The Management of Operations</i> Vol.20 (1), 82-98.
Shah, R. - Chandrasekaran, A. - Linderman, K (2008) In pursuit of implementation patterns: the context of Lean and Six Sigma. <i>International Journal of Production Research</i> Vol.46 (23), 6679-6699.
Shneiderman, B. (1997) Designing the user interface: strategies for effective human-computer interaction. <i>Reading, MA: Addison-Wesley.</i>
Smollan, R. K. (2006) Minds, hearts and deeds: cognitive, affective and behavioral responses to change. <i>Journal of</i>

<i>Change Management</i> Vol.6 (2) 143-158.
Smollan, R. K. - Sayers, J. G. (2009) Organizational culture, change and emotions: a qualitative study. <i>Journal of Change Management</i> Vol.9 (4), 435-457.
Smollan, R. K. - Sayers, J. G. - Matheny, J. A. (2010). Emotional responses to the speed, frequency and timing of organizational change. <i>Time and Society</i> Vol.19 (1), 28-53.
Spreitzer, G.M. - Quinn, R.E. (1996) Empowering middle managers to be transformational leaders. <i>Journal of Applied Behavioral Science</i> Vol.32 (3), 237-261.
Stanislaw, J. - Stanislaw, B.C. (1983) Dealing with resistance to change. <i>Business Horizons</i> Vol.26 (1), 17-38.
Stanley, D.J. - Meyer, J.P. - Topolnytsky, L. (2005) Employee cynicism and resistance to organizational change. <i>Journal of Business and Psychology</i> Vol.19 (4), 429-459.
Snee, R.D. (2010) Lean Six Sigma – getting better all the time. <i>International Journal of Lean Six Sigma</i> Vol.1 (1), 9-29.
Su, C.T. - Chou, C.J. (2008) A systematic methodology for the creation of Six Sigma projects: a case study of semiconductor foundry. <i>Expert Systems with Applications</i> Vol.34 (4), 2693-2703.
Suresh, S. - Antony, J. - Kumar, M. - Douglas, A. (2012) Six Sigma and leadership: some observations and agenda for future research. <i>The TQM Journal</i> Vol.24 (3), 231-247.
Szabla, D. B. (2007) A multidimensional view of resistance to organizational change: Exploring cognitive, emotional, and intentional responses to planned change across perceived change leadership strategies. <i>Human Resource Development Quarterly</i> Vol.18 (4), 525-558.
Taner, M.T. - Sezen, B. - Antony, J. (2007) An overview of six sigma applications in healthcare industry. <i>International Journal of Health Care Quality Assurance</i> Vol.20 (4), 329-340.
Thomas, A. - Barton, R. - Chuke-Okafor, C. (2009) Applying lean six sigma in a small engineering company – a model for change. <i>Journal of Manufacturing Technology Management</i> Vol.20 (1), 113-129.
Thomas, R. - Sargent, L. - Hardy, C. (2011) Managing organizational change: negotiating meaning and power-resistance relations. <i>Organization Science</i> Vol.22 (1), 22-41.
Tyler, T. R. - E. A. Lind (1992) A relational model of authority in groups. <i>Advances in Experimental Social Psychology</i> Vol.25, 115-191.
Vakola, M. - Armenakis, A. - Oreg, S. (2013) Reactions to organizational change from an individual differences perspective: a review of empirical research. in Oreg, S., Michel, A. and By, R.T. (Eds), <i>The psychology of organizational Change</i> , Cambridge University Press, New York, NY, 95-122.
Vales, E. (2007) Employees CAN make a difference! Involving employees in change at Allstate Insurance. <i>Organization Development Journal</i> Vol.25 (4), 27-31.
Van Dam, K., Oreg, S. - Schyns, B. (2008) Daily work contexts and resistance to organizational change: the role of leader-member exchange, perceived development climate and change process characteristics. <i>Applied Psychology: An International Review</i> Vol.57 (2), 313-334.
Van den Heuvel, S. - Schalk R. (2009) The relationship between fulfilment of the psychological contract and resistance to change during organizational transformations. <i>Social Science Information</i> Vol.48 (2), 283-313.
Waddell, D. - Sohal, A. S. (1998) Resistance: a constructive tool for change management. <i>Management Decision</i> Vol.36 (8), 543-548.
Wallace, L. - Keil, M. - Rai, A. (2004) Understanding software project risk: a cluster analysis. <i>Information & Management</i> Vol.42, 115-125.
Wanberg, C. - Banas, J. (2000) Predictors and outcomes of openness to changes in a reorganizing workplace. <i>Journal of Applied Psychology</i> Vol.85 (1), 132-142.
Weinbach, R.W. (1994) Implementing change: insights and strategies for the supervisor. <i>Social Work</i> Vol.29 (3), 282-286.
Werner, J. M. - DeSimone, R. L. (2008) <i>Human resource development</i> (5 th ed.). South Western, Mason.
Wiggins, L. (2009) Managing the ups and downs of change communication. <i>Strategic Communication Management</i> Vol.13 (1), 20-23.
Wilkins, A.L. - Dyer, W.G. (1988) Toward culturally sensitive theories of culture change. <i>Academy of Management Review</i> Vol.13 (4), 522-533.
Woodward, H. - Bucholz, S. (1987) <i>Aftershock</i> . John Wiley, New York, NY.
Wooten, K.C. - White L.P. (1999) Linking OD's philosophy with justice theory: postmodern implications. <i>Journal of Organizational Change Management</i> Vol.12 (1), 7-21.
Worley, J.M. - Doolen, T.L. (2006) The role of communication and management support in a lean manufacturing implementation. <i>Management Decision</i> Vol.44 (2), 228-245.
Zhang, Q. - Irfan, M. - Khattak, M.A.O. - Zhu, X. - Hassan, M. (2012) Lean Six Sigma: a literature review. <i>Interdisciplinary Journal of Contemporary Research in Business</i> Vol.3 (10), 599-605.