# Trusting Technology - Shaping Relationships:

## Qualitative Research into the Relationship between Line Managers and Employees

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# *Trusting Technology - Shaping Relationships:*

## *Qualitative Research into the Relationship between Line Managers and Employees*

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## Preface

This work represents the effort of one year of hard work. I have done it with lots of passion and devotion. Without some amazing people, this research would have not been possible. Therefore, I feel honored to mention them here. I would like to thank my supervisors for their guidance and support. Many thanks to Anna Bos-Nehles for her great efforts in supporting me with her knowledge, experience and constructive feedback. She never saved any efforts to provide whatever needed to make my work successful. I am also very thankful to Gery Voogt, my supervisor and the HR manager at UniCarriers for her ultimate support and great feedback. I would like to thank my parents for motivating me even though they are living far away in Syria. Their thoughts and prayers have been always with me as well as mine with them. Finally, I would like to thank my fiancée for her great love and support.

Hopefully, this study will contribute positively to the academic research as well as to the practical avenue of work.

## Management Summary

This study examines the effect of technology on the quality relationship between line managers and employees. By means of unstructured and semi-structured interviews with IT project managers, line managers, and technicians at UniCarriers, data were collected. The questions were mainly about technological developments, the role of line managers and the effect of technology on the relationship. Also, diverse documents were analyzed and studied. The examined technology represents the two main systems used at the company, namely, MSIT and Track and Trace. Many conclusions can be drawn based on the analysis. First, there is a high-quality relationship at UniCarriers that is based on trust, openness, and informal contact. Second, although line managers play their traditional role as supervisors, they are, however, not deeply involved neither in the implementation of technology nor in transformation of strategy that guaranties smooth change to automated systems. Finally, the findings of this study present more understanding on the paradox of technological developments within the organization, as technology can have both negative and positive effect at the same time. This represents an addition to the efforts done for more understanding on how technology interacts within organizations. The theoretical implications of this research include, as mentioned, the confirmation of line managers role as a link to other strategic levels of management. Moreover, it can be concluded that monitoring systems such as Track and Track can reveal trust issues between line managers and employees and with the organization as a whole. The practical implication and recommendations of this research is that executive and HR managers need to be aware of how technology implementation plans and the objectives of technology are delivered to employees by sending clear and logical messages to them about the necessity, the goals, and the benefits of applying technology. In applying that, former technological experience of employees should be considered. Second, making use of the good relationship between line managers and employees on the operational level in strengthening the link with the organization and its strategic goals. Finally, technology application should be well supported by line managers and other managerial levels by providing information and getting employees involved to minimize change resistance and fostering trust.

# 1. Introduction

## *1.1 Technological Developments*

The twenty first century has brought a new wave of numerous technological changes which started to appear and influence the workplace (Holland & Bardoel, 2016). Organizations are facing a new era that is characterized by high level of competition and they are exposed to growing changes in the technological dimension. In response to that challenge, organizations strive to improve their management operations by means of technology with which they aim to obtain the flexibility to face competition and become more technologically sophisticated (Machado & Davim, 2014). Several forms of information technology (IT) are available nowadays for organizations in their endeavor to achieve better operations and management (Archer and Yuan, 2000; Borders, Johnston, & Rigdon, 2001). There is a broad range of technology use in the organizations, such as the use of information technology (IT) in data processing and communication within the internal management (Molinillo & Japutra, 2017; Garicano & Rossi-Hansberg, 2006), the use of IT in shared databases and electronic data interchange (EDI) with the aim of enhancing the supply chain (Angeles and Nath, 2000), and the use of technology in electronic monitoring surveillance in pursuit of protecting the organization and increasing production performance (Holland, Cooper & Hecker, 2015). Therefore, it is not surprising that the technological impact has been the topic of many early and new studies since the use of technology started to become prominent. Golson (1977) stated that technological transformation has an influence on all types of organizations which will create the urge for a correspondent knowledge and actions in the social and diplomatic aspects. Additionally, there will also be a necessity for a novel pattern of leadership that cannot be hosted and supported solely by the current organizational structures. As technology becomes more prominent in the workplace, psychological and social aspects of work can be affected due to the decrease in social interaction between people in the organization. The implementation of new technologies and software is accompanied with less human interactions and more complexity as applying these technologies can cause less face to face contact and increase the distance between individuals (Joyce, Fisher, Guszcza & Hogan, 2018). Therefore, one of the goals of this research is to examine

the effect of the implementation of digital systems and technologies on that aspect of human interactions, as it can be noticed that relationships and interactions on the work floor is an important factor in the organization.

## *1.2 Line Managers and Technology*

Managers can affect employees' attitude and consequently their work behavior which, in its turn, influences efficiency and productivity (Lilly & Durr, 2012). Moreover, as robotization and automation in the organization becomes more present, the need for human contact is rising (Chamorro-Premuzic & Ahmetoglu, 2016). While robotization is used as a reference to the replacement of employees with physical machines and devices, automation can indicate more to the fact of using computer software and digital systems to replace the tasks done by the human part in the organization (Freese & Dekker 2018). The term "technology" covers the concept of robotization as well as automation. Since more of these technologies (i.e. robotization and automation) are being applied on the work floor, employees might feel the need of appreciation and recognition from their leaders rather than from a computer system (Lilly & Durr, 2012; Loughry & Thatcher, 2004).

This research focuses mainly on automation using IT as this is believed to be an important area due to the increasing adoption of IT in all kind of organizations on different levels and with variety of objectives (Bouwman, 2015). The use of IT such as software, emails, and apps to manage and supervise employees can have both negative and positive impact on the relationship between managers and employees. Technology supporters argue that the use of technology simplifies communication and exchange of information. They also claim that technology enhances work relationships because it promotes sharing and collaboration (Morency, 2016). Furthermore, according to Mankins (2016), the use of technology enhances information flow within the organization and cooperation within teams. However, technology can result in less physical proximity to colleagues and managers which might affect interpersonal skills and consequently the ability to build relationships in the organization (Lilly & Durr, 2012; Ramey, 2013). The lack of personal contact can also give a chance for more misunderstanding

and distance between line managers and employees as less personal contact, body language and emotions are exchanged due to the use of computer software and apps to communicate.

Levinson (1988) argues that the responsibility of technology in the organization has moved from the hand of technical teams to general and line managers due to the steady increase of the technology usage among organizations, as well as the fact that the role of technology moved from a peripheral contribution to a pivotal factor in the core of the organizational operations. Moreover, as technologies develop and become easier to use and as knowledge about technology grows, line managers will be confronted with more responsibilities related to technology (Heckman, 2003). Consequently, line managers are the level of management that should be concerned the most with the aforementioned issues as they supervise the introduction and the implementation of new technologies and they can have significant influence on the success of technological systems (Burnes, 1987). Next to that, line managers play a role in the organization as implementers of a variety of policies aiming to increase employee's performance (Guest, 1987; McGovern, Gratton, Hope-Hailey, Stiles, & Truss, 1997). Moreover, line managers have the most interaction and constant contact with employees due to their responsibility in implementing the practices on the work floor on day-to-day basis (Bos-Nehles, Van Riemsdijk, & Looise, 2006; Hales, 2015). Therefore, it can be argued that line managers are an important player in the organization as supervisors and implementers of technological systems within their team.

As leaders, line managers have substantial influence on their followers which results in low- or high-quality dyads (Basu & Green, 1997). Using the leader-member exchange theory (LMX) which focuses on the dyadic relationship between leaders and their subordinates on one hand, and the role of line managers as implementers of technology on the work floor on the other hand, the purpose of this research is to shed light on how the use of technology in the organization affects the relationship between line managers and employees.

## *1.3 Research Question*

As technological developments are becoming more prominent in organizations, their social consequences are of importance. The impact of the use of technology and the application of

new technologies on the relationship between managers and employees is still a topic of debate in the literature (Chesley, 2005). This study comes as an addition to the efforts to understand the social effect of technology on the work floor, specifically, its impact on the relationships between line managers and their subordinates. Whereas most studies in this field were directed toward a general scope with respect to the impact of technology on the relations and the social side within organizations (e.g. Montano & Dillon, 2005; Blackler & Brown, 1985), the scope of this study is more specific and limited to the effect of technology on the relationships on the operational level. As mentioned, some voices say that technology has a positive impact on the social interactions within the organization (Mankins, 2016), whereas others argue that technology has a negative impact on that social side (Joyce et al., 2018). In that sense, the question rises regarding the level and the quality of relationships that prevails between line managers and employees when technology is introduced and presented in the organization. Considering that paradox, this research aims to explore the influences accompanied with the application of technology on the quality of the relationship between line managers and their subordinates. That is, how the usage, the existence, or the introduction of technology in the organization can enhance or weaken this relationship on the work floor. Accordingly, the question that this research is trying to answer is:

*What is the impact of technology on the quality of the relationship between line managers and employees?*

Further, relevant literature and concepts are discussed resulting in a development of a framework that manifests the meaningfulness of including multiple concepts in the research. Then, the methods of data collection and analysis are discussed. Finally, conclusions are presented, and recommendations are made.

# 2. Literature Review

## *2.1 Technology in the Organizations*

Understanding technology is important to examine its impact on the work floor. Scholars define the term "technology" differently. However, Salomon (1984) posits a definition based on several views from the literature about technology. According to him, technology "reacts with science

not only on nature and objects, but also on society. It involves not only the creation and transformation of physical objects but also the creation and transformation of intangible things (for instance, computer software or marketing)" (Solmon, 1984: 116). The technological development is not a new phenomenon, it is a part of human history. Even though these developments are not limited to computers and electronics, it can be noticed that these are the most common form of it. Modern technologies fall into two main categories; technologies related to manufacturing and technologies related to administration. As a term, Information Technology (IT) is now used for all kinds of computer related equipment, including hardware and software. Computers have thus made it to the main processes of production and administration after they had a limited role only in accounting and other simple activities (Buchanan and Huczynski, 1985). Several studies on technology focus on the influence of technology on the social aspect (e.g. Caruso, 2017; Sassen ,2012). Specifically, IT social effects was the subject of many debates (Daly 1996; DiMaggio, Hargittai, Neuman, & Robinson, 2001; Chesley 2005; DiMaggio & Bonikowski 2008; Wajcman, Bittman & Brown, 2008). Caruso (2017) have found that technology has succeeded in supporting capitalism material purpose, whereas its success in the social side is still questionable and related to more complex set of social and political factors. Some other studies discussed the practical and operational challenges of new technologies (e.g. O'Connor, E., Parsons, C., Liden, R., & Herold, D., 1990; Hecklau, Galeitzkea, Flachsa & Kohlb, 2016). Hecklau et al. (2016), for instance, studied the consequences of technology on the workforce. They generated a list of competences required to deal with the industrial developments. Furthermore, Blackler & Brown (1985) argue that an efficient use of technology lies in the response of management to the change of the technological environment. Next to that, technological environment and the human interaction with technology is crucial as "Ignoring the human aspects of technological change can result in the loss of potential benefits from such transitions" (O'Connor et al., 1990: 70). Finally, Bondarouk and Ruël (2008) posit that IT project are considered as unstable and contradictory developments in the organization and they demand a set of technical and social changes. Moreover, Bondarouk and Ruël (2008) suggested that the implementation of IT technologies can be enhanced through removing obstacles, motivating users, ensuring that employees have the needed knowledge and skills, and empowering employees to work with IT and offering participation opportunities. The implementation of technology on the work floor is done by line managers who take on the role of managing their teams using these technologies. Therefore, the role of line managers is explained next.

## *2.2 The Role of Line Managers in The Organization*

### *2.2.1 Line managers as supervisors*

Line managers are responsible for correct execution of administrative processes. They have the power to define how an administrative procedure is implemented on the operational level. Often, they also have budget responsibility (Nof, 2009). In a comprehensive study where face to face interviews in 135 organization were conducted, Hales (2005) has found that the main role of line manager is still the supervisory function. That role shifted from operational supervision to more separated team leadership and strategic business management. Line managers take on the role of supervision in addition to managerial responsibilities such as administration, turning the organization strategy into operation, unit management and business management. Additionally, line managers represent a part of hierarchical system. They are responsible for the daily operational fluidity and they share the authority and accountability up with senior managers and down with the work team (Hales, 2005). Storey (1992) argues that first line managers are expected to take on additional and extensive responsibilities in employee relations. The establishment of team working can place them in a coordinating role over several teams (Cunningham & Hyman, 1995).

### *2.2.2 Line Managers Involvement in HRM*

Line managers are getting progressively involved in HR practices through devolution where many studies have found an increasing role of line managers in implementing and delivering HR practices (Storey, 1992; Boxall, Purcell & Wright, 2009; Larsen & Brewster, 2004; McGovern et al.,1997; Maxwell & Watson, 2006; Kulik & Bainbridge, 2006; Perry & Carol Kulik, 2008). Line managers are becoming far more important in the management of human resources. They are considered crucial to the successful implementation of HRM policies (Storey, 1995). Their responsibilities can include tasks as conducting team briefings, target-setting, encouraging quality circles, allocating individualized pay awards, appraisal, training and development, motivating teams, coaching and deploying labor (Cunningham & Hyman, 1995; Storey 1995).

To sum up, the literature stresses the increasing value of line managers for organizations. To understand the role of line managers as leaders in an organization or a team, LMX theory takes

this a step further and discusses the quality of relationship between line managers and employees.

### *2.2.3 Line Managers Role in The Implementation of Technology*

Heckman (2006) argues that line manages are becoming more involved in the strategic planning for IT projects. He suggested a three-stage process that enables line managers to play an active role in technological project planning. The first stage is "strategic alignment" where business strategies and technology are aligned. The second stage is "creating IT investment portfolio" where a list of future investment options is identified, and finally, "tactical bridge" which is an active process done by line managers to make sure that the portfolio is implemented. Another empirical study was conducted by Huang and Xie (2009) based on the technology acceptance model (TAM) suggested by Davis (1989). Their research examined the usage intention line managers using structural equation model. The result shows that the user attitude has a significant effect on the technology usage intention among line managers. The findings indicate the involvement of line managers in using technology and their significant role in fostering that when they have a positive attitude toward technology.

## *2.3 Leader-Member Exchange Theory (LMX)*

Employees are affected by the quality of their relationship with the line manager, that is, outcomes and behaviors (Erdogan & Bauer 2015). That kind of relationship is explained optimally by the leader-member exchange theory (LMX) which focuses on the dyadic relationship between leaders and followers and it links, consequently, this relationship to certain outcomes (Gerstner &. Day, 1997).

LMX has gained momentum among scholars (Graen & Uhl-Bien, 1995). It is a relationship-based, dyadic theory of leadership. In contrast to behavioral leadership theories that discuss leaders' actions and the different type of leadership forms, LMX focuses strongly on the proposition that leaders affect employees in their team (members) as a result of the quality of the relationship developed with them (Liden and Maslyn, 1998). It postulates that leader-member exchange relationship falls on a continuum between on the one hand, a low-quality relationship that is based on short-term , economic, and transactional exchanges where direct reciprocity is

expected according to the demarcated rules, and on the other hand, on a high-quality relationship which is based on rational, long-term trust and exchange of support and resources (Berg, Grimstad, Škerlavaj, & Černe, 2017; Sparrowe & Liden, 1997; Buch, Kuvaas, Dysvik, & Schyns, 2014; Kuvaas, Buch, Dysvik, & Haerem, 2012; Liden & Graen, 1980). Researchers use the social exchange logic to demonstrate the link between the quality of the relationship and LMX outcomes. Resources with high value are reciprocated in the High-quality relationships. Where leaders support, monitor, and give followers chances for developments. The supply of such resources motivates the employees to reciprocate with positive behaviors such as loyalty and voluntary contributions. Thus, high LMX quality is characterized by commitment to the supervisor and the organization where members feel the obligation to return the favor. Moreover, the level of outcomes depends on employees' perception of the promised role fulfilment from the leader (Erdogan & Bauer, 2015). Thus. LMX theory is important to understand the antecedents and consequences of the relationship between line managers and their subordinates. Since the goal of this research is to study the impact of technology on that relationship, in the next section, the paradox of technology is discussed to understand how technology might have contradictory effects on the quality of LMX relationship.

## *2.4 The Paradox of Technology*

As mentioned, line managers have direct interaction with employees and therefore a significant role in managing the application of new technologies. The implementation of technology might affect the work floor negatively due to the distance and less personal contact. that might mean a low-quality relationship between line managers and their subordinates. At the same time, line managers aim to maintain a high-quality relationship with their subordinates by making use of technology to enhance positive performance and outcome. Thus, technological developments can produce contradictory effects on the work floor (Ter Hoeven, Van Zoonen & Fonner, 2016; Smith & Carayon, 1995; Holland & Bardoel, 2016; Deogaonkar, 2013; De Wet, Koekemoer & Nel, 2016). Building on that, focusing on the paradox of technology (i.e. the bright and the dark side thereof) can give more insights on possible opposing effects of technology. A paradox is defined as a phenomenon that comprises contradictory but

interrelated components that exist simultaneously and persist over time (Smith & Lewis, 2011; Ter Hoeven et al., 2016). Paradox concepts are now used to study many of organizational contexts and levels of analysis (Keegan, Bitterling, Sylva, & Hoeksema, 2017). Some scholars discussed paradoxes to address how organizations cope with contradictory institutional logics, whereas others focus on interrelated management objectives, competitive strategies, and leadership methods (Keegan et al., 2017). Studies on paradox of IT and communication technology in organizations include some of the early work when IT was still being implemented and introduced in organizations. Bjorn-Andersen, Eason and Robey (1986) found that technology represented in computer systems supports employee's efficiency as it grants them easier access to information. Moreover, these systems increase the work efficiency by raising confidence and motivation among employees. However, Bjorn-Andersen et al. (1986) noticed that computer systems could decrease motivation due to the fact that employees would feel threatened by technology. Also, computer systems can seem difficult and more complex than the traditional work methods which, in turn, can have a negative effect. Brynjolfsson (1993) argued that despite the noticeable advantages, CEO's and line managers had their doubts about the efficiency of IT systems and its usefulness through many failures in production as big investments were made in these systems. Obviously, the role of technology and computer systems has nowadays become unquestionable in enhancing productivity due to the enormous developments and improvments. However, the paradox of technology effect on employees in the organizations can be seen in many of the recent studies (e.g. Florian, 2015; Ter Hoeven et al., 2016). In their research, Ter Hoeven et al. (2016) have studied the paradox effect of communication technology use on employees. The findings indicate opposing consequences as technology can accelerate communication process and therefore, it has a positive impact on work efficiency. At the same time, it might hinder the work process due to interruptions, unpredictable workloads and an accumulation of unforeseen and additional tasks. Chesley (2010) found mixed responses to the use of digital software and systems in the organization. According to her research, IT is linked, on the one hand, to a better assessment of workplace effectiveness. Whereas work-related use of IT is connected to the perception of more workload on the other hand.

## 3. Research Model

As discussed in the LMX section, the relationship between line managers and employees is dyadic and this is explained by LMX theory. On the other hand, technology might affect paradoxically the work and relationships, (i.e. technology could result in positive as well as negative effects on work and the quality of LMX). Due to their role as introducers and implementers of new technologies, line managers can be considered as connection point through which technology is delivered to employees and that, in turn, can impact the quality of LMX relationship. The model in Figure (1) illustrates that. The suggested framework of the research combines the concepts of LMX and paradox of technology after taking into consideration the role of line managers in the introduction and application of technology on the work floor. These concepts are important and related to the purpose of this research. Namely, understanding how technology is introduced, implemented and supported by line managers and consequently, its impact on LMX quality gives the possibility to answering the research question.

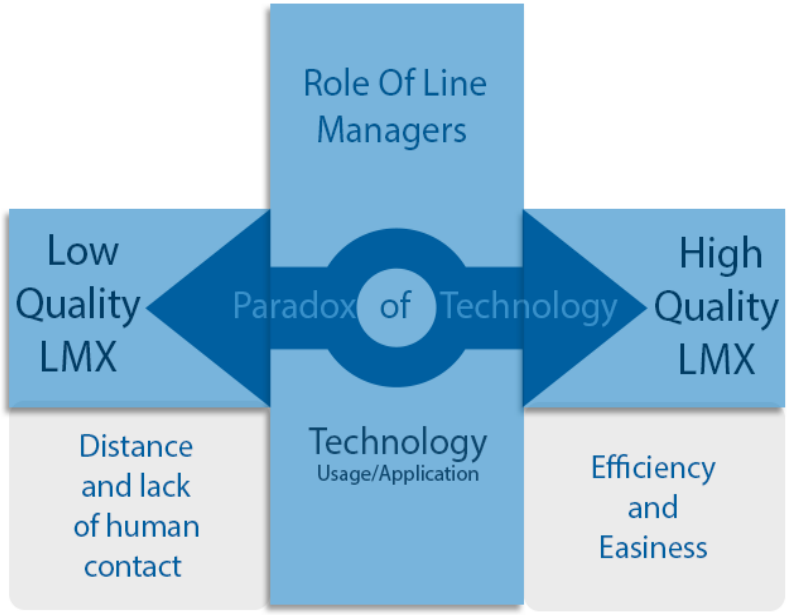


*Figure (1) - research model for more understanding of the technology impact on the relationship between line managers and employees*

# 4. Methods

## *4.1 Research design*

In order to achieve the purpose of this research, an exploratory case study was conducted to investigate how technology influences the relationship between line managers and employees. The exploratory type of research has been chosen because it offers the ability to get a feeling for potentially important variables and to describe phenomena in the appropriate contextual setting (Maphanyane, Mapeo & Akinola, 2018). In this case, the variables are related to the technology and the level of the relationship between line managers and employees in a certain context (i.e. a specific organization where technology is used). Also, As case study in general is a systematic inquiry into an event which aims to describe and explain the phenomenon of interest (Bromley, 1990), the main purpose of this kind of this study is to investigate the case in relation to its historical, economic, technological, social, and cultural context (Eriksson & Kovalainen, 2008), where a holistic, in-depth investigation is needed (Feagin, Orum, & Sjoberg, 1991; Tellis, 2015). Reflecting on the topic of my research, there is more focus on the technological and social context, where this study represents in-depth examination of a program or project (Lichtman, 2017) and is believed to be suitable for achieving the research goal and answer the research question as I aim to get more insights about the topic to accomplish that.

## *4.2 Organization: UniCarriers*

The study took place in UniCarriers, a multinational company that is specialized in the manufacturing of forklifts. The company is a part of Mitsubishi Logisnext and has subsidiaries all around the world. While forklifts are produced in Sweden, Spain, Japan, China and the USA, sales and service offices are located in many countries, among which the Netherlands. Two main facilities in the Netherlands are responsible for sales and maintenance of forklifts in the country. The two offices were originally Dutch companies (Atlet and Crepa). Due to a couple of acquisitions, now the two companies are a part of UniCarriers Europe. In Total, approximately 200 employees, who are specialized in sales and maintenance of forklifts, work at UniCarriers in the Netherlands. UniCarriers has a service department that is responsible for performing the

maintenance which is done by technicians who work at the department. It consists of the service director, service managers, planners, region service managers and technicians. There are approximately 75 technicians divided into four regions: East, West, North and South. Most of the technicians work on location where clients' activities take place. The four region service managers are the direct supervisors of the four teams. Thus, there are four first line managers who manage the four region teams. UniCarriers uses two IT systems to enhance its operations in the Netherlands.

### *4.2.1 Mobile Service IT (MSIT)*

MSIT represents an important technology that is implemented at UniCarriers. It is a digital system that operates through a tablet. The MSIT version 1.0 system has been in use for four years now, and it has been developed to help the technicians to do their tasks in an efficient way. Namely, MSIT 1.0 has two main purposes: 1) providing information regarding the maintenance process and 2) simplifying the administration work by giving the possibility for generation of work receipts and ordering the required parts using the system. To use MSIT, technicians are provided with special tablets where a software is installed. Recently, a new version of MSIT (MSIT 2.0) has been introduced with several promised improvements and additions. MSIT 2.0 will be implemented somewhere at the end of the summer. A related point to consider is that technicians who worked at Crepa had already a digital system named AllSolutions, similar to the current MSIT system while technicians who were working at Atlet performed almost everything manually without any digital tool. This point is considered in the data collection as employees from Crepa, based on their experience, could have another perception than employees from Atlet due to different systems and blueprints. It serves the purpose of this research to investigate how MSIT affects work and relationships within the organization. Also, how technicians as well as the line managers perceive the implementation of MSIT 2.0 and their expectations regarding the new version of the system. Studying MSIT is crucial when speaking of technology, as it is a system used to perform the core tasks at UniCarriers. MSIT is used by both technicians in their daily work and less frequently by line managers in some administrative tasks.

### *4.2.2 Track and Trace*

Track and Trace is another important technology used at UniCarriers. It forms a logistic tool that complement the function of MSIT. Track and Trace is provided by a company that is specialized in navigation technology and it has been in use within UniCarriers for approximately two years. With Tack and Trace, supervisors and line managers have the ability to determine the exact location of every technician which allows the (planners) to assign tasks to the technicians on the basis of the malfunction location, the type of malfunction, the expertise that the technician has and the contract terms on which UniCarriers agreed with the client. Moreover, using Track and Trace, the actual working hours of the technicians can be digitally calculated and their travel for work purpose can be exactly determined.

It can be noticed that Track and Trace and MSIT are used daily and frequently in core operations at UniCarriers. Moreover, these two technologies have different purposes and functions. Whereas MSIT is mostly used by the technicians, more parties use Track and Trace such as planners and line managers. Therefore, the understanding of both technologies is essential to get a comprehensive realization with respect to technology at UniCarriers and its impact in the organization.

## *4.3 Data Collection Method*

Two main sources have been used to collect qualitative data, namely interviews and document analysis. Table (A) presents more information about the collected data and its sources. The methods are mentioned in detail in the following sections.

### *4.3.1 Interviews*

Primary data is subject-specific and is mainly used to investigate the research problem and achieve the research objectives (Walliman, 2006). For this research, primary data was collected by means of interviews.

#### *4.3.1.1 Unstructured interviews*

At first, three in depth, unstructured interviews have been conducted with a senior HR advisor, the project manager of MSIT system and the project manager of Track and Trace system. The goal of these three preliminary interviews is to get more understanding about the technology and the organizational culture at the company. Thereby, allowing the researcher to have a broader insights and thorough notion about the topic without limiting the responses with questions (Lichtman, 2017), and giving the interviewees the freedom and the space to tell the story in their own terms (McCracken, 1988).

#### *4.3.1.2 Semi-structured interviews*

Consequently, semi-structured interviews were conducted to collect data on how employees and line managers experience MSIT and Track and Trace. The duration of every interview was between 45 minutes and one hour. The interviews were recorded after granting respondents permission. Semi-structured interviews can be considered as one of the most efficient methods to identify individual thoughts and opinions directing individuals' behaviors and relationships due to the possibility to ask more questions when necessary which increase the ability to get a deeper understanding. The interviews were conducted to collect data on how employees and line managers experience the effect due to the use of technology in their company and its impact on their relationships. Although this research is written in English, the interviews were done in Dutch with the aim of getting more precise results and avoid any misunderstanding or language difficulties by interviewees. With regards to questions, the line managers were asked about their role and how they supervise and implement these technologies on the one hand. The technicians, on the other hand, were asked how they perceive that supervision and how they deal with these technologies. As every line manager has a team of subordinates, two employees per line manager have been interviewed. In that way, dyads can be explored, and broader insight can be taken. Moreover, one interview has been conducted with one of the two service managers who lie at a higher position in the organizational structure than the region service managers. This is important as service managers can give more strategic dimension and may add broader insights related to the company objectives and ideas regarding the application and the adoption of the technological systems, while direct line managers can offer more

operational dimension. Three important factors were considered with regards to the selection of technicians for the interviews. First, the region, as on the top of every region team there is a different line manager. Second, tenure, by getting more diverse sample of employees who have been working for years in the company as much as who have started working recently. Finally, the technicians were selected on the basis of their technological experience of the technicians by including those who had already worked with a digital system before MSIT (Crepa technicians) as well as who had not (Atlet technicians). The purpose here is to assess if there is any potential effect of the former digital experience on the responses. In total, thirteen semi-structured interviews have been conducted, four of which with line direct managers and eight interviews with technicians. Based on LMX theory, the relationship is dyadic and two-sided, therefore, it is crucial for this research to get the perception of line managers as well as employees on how the technology use in the organization (i.e. the use of MSIT and Track and Trace) affects their relationships.

### *4.3.2 Document analysis*

Secondary data is essential for obtaining background information regarding the research question (Walliman, 2006). Particularly, documents represent important source of data and can be beneficial for getting more insight into processes and perspectives in the organization (Taylor & Bogdan, 2015). Scrutinizing document can also be useful for getting insights about the company vision and mission related to technology and the organizational culture prevailing to assess the status quo of social interaction in the company. Therefore, various documents have been analyzed for that purpose (Table A). Among the others, two documents related to Track and Trace and MSIT have been used

*Table (A) Data Collection*

| Data Collection Method | Details | Goal |
|---|---|---|
| Unstructured Interviews N= 3 | With HR advisor, MSIT project manager and Track and Trace project manager | Insights about technology and the culture in the company |
| Semi-structured interviews N= 13 | With Service manager, four line managers, and eight technicians | Exploring the use of technology and its effect on the quality of LMX |
| Document Analysis | Multiple documents analysis (UniCarriers Brand book, MSIT instruction manual, Track & Trace business case and Line managers job profile) | Insights into the organization and the background of the research problem |

## *4.4 Data Analysis*

The analysis has been done using coding technique. First, the interviews were transcribed. About 45 hours of transcribing resulted in 70 pages of text. Next, the transcripts were exported to Atlas.ti, a tool made to facilitate qualitative data analysis by assigning codes to chunks of text to simplify and enhance the analysis. Thereafter, an open coding process was done by giving pieces of text certain codes. This is important to highlight the important ideas and confine them within particular domains that are related to the research question. Subsequently, a sub-coding process was done to obtain more specific codes resulting in a total of codes categorized in three main domains. First, technology domain which includes expectations from technology, challenges facing the implementation of technology, technological developments, advantages of technological systems, disadvantages of technological systems, support and supervision practices with regards to technology, and planning automation consequences. Second, the role of line managers in the implementation of these technologies and finally LMX, which includes LMX quality, positive impact of technology on LMX quality, and negative impact of technology on LMX quality. The sub-codes for these categories count 45 code explained with more details

in table (B). Furthermore, Figures (2, 3 and 4) show code webs that provide more details with respect to code groups, categories and sub-codes.

*Table (B): Categories and related codes*

| Domain | Category | Associated Codes | Example Quote |
|---|---|---|---|
| Technology | Expectations from technology | Autonomy, efficiency, integration, new features, support, clarity | *"Based on the news, it seems better to me, more information, it is good that we will be able to see more"* (ST5) |
| | Challenges facing the implementation of technology | Delay, miscommunication, lack of information, inefficient planning | *"They shout for years already that it is coming after the summer, but they did not say which summer"* (ST2) |
| | Planning automation consequences | Miscommunication, miscoordination, lack of experience | *"It can be better, also with malfunction, etc. There should be coordination in appointments*" (ST6) |
| | Advantages of technological systems | Saving time and effort, easiness, effectiveness, efficiency, precision | *"It is a very useful as a planning to use"* (RM1)<br>*"It is a useful system; receipt processing is faster"* (ST1) |
| | Disadvantages of technological systems | Constraining, impersonal, vague, tedious, complex | *"You feel like you are being watched, where you drive and what time you drive"* (ST5) |
| | Support and supervision practices with regards to technology | Meetings, project groups, providing information, technical support, motivation | *"I think for MSIT 2.0, we met two days in Enschede, one day tablet and one day MSIT"* (ST3) |
| **Line Managers Role** | The Role of Line Managers | Giving information and guidance, solving issues, supervision, monitoring, administrative tasks | *"In principle, we can ask him if there is something that we do know know"* (S7) |
| LMX | LMX characteristics | constant and good contact, trust based, personal, informal, open | "*mutual trust, also things that we do not find good from each other, we filter them. We have open conversation" (RM3)* |
| | Positive impact of technology on LMX quality | Fairness, coordination, clarity | *"I think it is an advantage that we can work independently, and our supervisor has to do nothing"* (ST5) |
| | Negative impact of technology on LMX quality | Less trust, less personal contact, less freedom, the feeling of being monitored and watched. | *"I have this feeling since we have started working digitally, that numbers are more important than the person who is working*" (ST1) |


*Figure (2) Codes Network for Technology*

In the figure above we see the group code of technology and the related categories and codes. From the interviews, it can be noticed that there are some expectations on the goals that technology is supposed to fulfil. Moreover, the application of technology is associated with advantages as well as disadvantages. It is noteworthy that some codes contradict each other, this can be mainly attributed to the different way in which each individual experiences technology. Furthermore, codes that are related to planning automation were generated, and lastly, codes related to the support that is offered to technicians so that they become more efficient and trained in working with the digital systems at the organization.

Figure (3) shows the codes related to the role of line managers at UniCarriers. As most questions were asked about the role related to the digital systems at the organization, the codes shown can be considered more as the activities that line managers perform related to these systems.

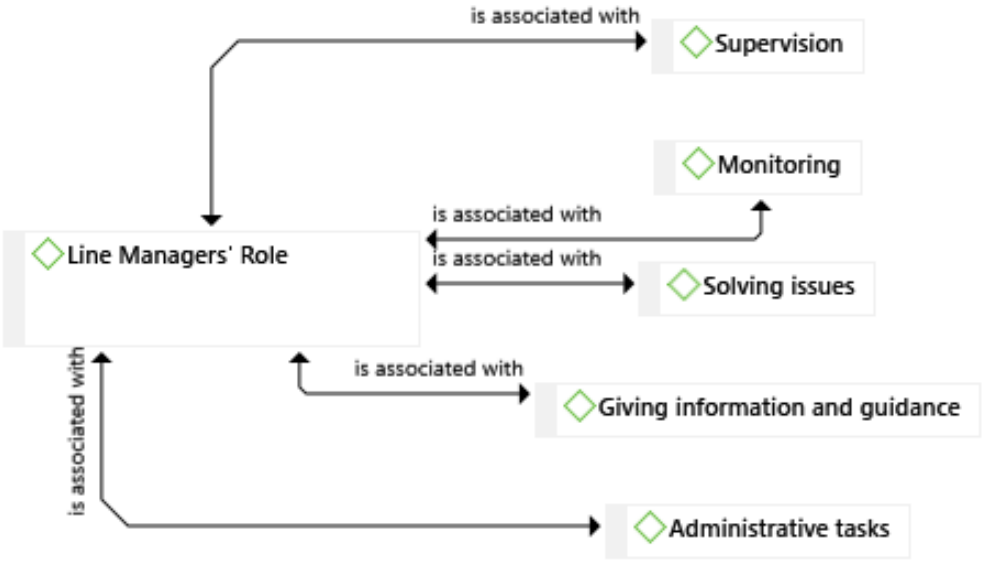


*Figure (3) Codes Network for Line Manager's Role*

Finally, in figure (4), the categories related to LMX are shown. The codes related to LMX characteristics indicate the quality of LMX, which is the start point. Consequently, the codes

related to the effect of technology on that quality were generated, and these are two categories. One drives LMX quality to a higher level, and the other pushes it to a lower level. This division and specification of codes is important for investigating the prevailing level of LMX. Based on the characteristics of LMX, quality of the relationship can be drawn. Moreover, the codes related to the impact of technology are essential in examining the impact of technology on that quality.

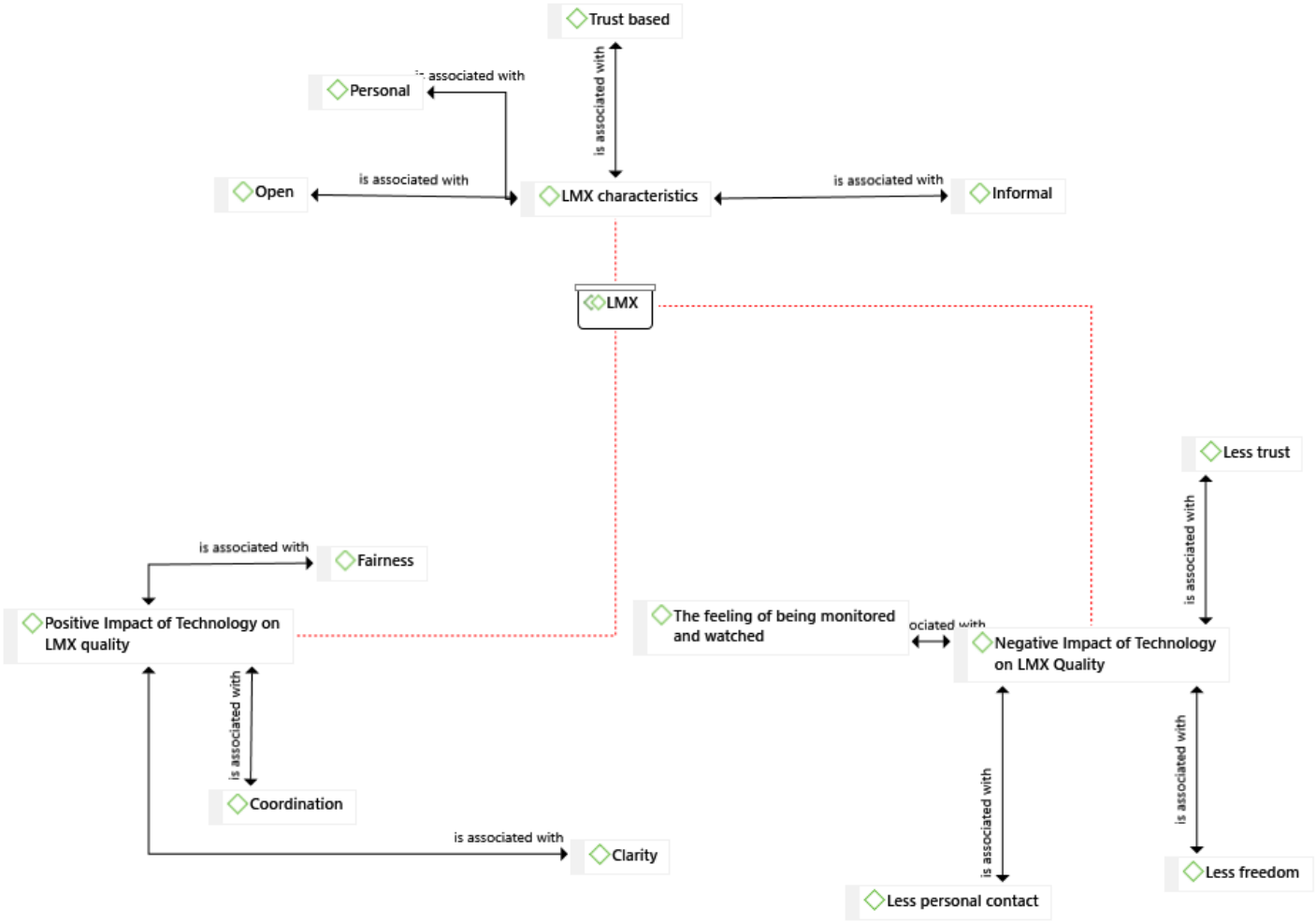


*Figure (4) Codes Network for LMX*

# 5. Results

## *5.1 Technology at UniCarriers*

Technology in UniCarriers plays a big role in its daily operations and services. Using MSIT and Track and Trace, the organization aims for more efficient outcomes and better planning. The service managers of region north confirmed that by enumerating the aspects served by these digital systems and technologies used in the organization.

> *"We have, thanks to the technology more insight in operations which allows us to make dashboards and evaluation where we can get more efficient. At this moment, when we can work more efficiently, we can decrease our maintenance rates or keep them at the same level which makes us compete better and be more attractive for customers" (*SM)

Also, in MSIT 1.0, the technicians as well as line managers agree on many advantages that allow them to work more efficiently. Efficiency, according to them, can be noticed in the possibilities that these systems offer, represented in more easiness and smoother processes.

> *"You can process the receipts and request parts. You can also save things digitally, review the client and machine information"* (ST5)
> *An advantage of MIST is that you can perform paperless administration and as technician you can process the receipts fast, because I know that technicians had to write components down and some of them were a half hour busy to fill a receipt, but it can now all be done more easily"* (RM3)

However, technicians who had already worked with another digital system before the acquisition, argue that MSIT 1.0 is backward in comparison with other systems they used to have previously, namely, many useful functions they had in the old system are missing in MSIT 1.0. Roughly, all technicians who worked at Crepa, the firm that had a digital system before being taken over by UniCarriers, adopted that opinion with regards to MSIT 1.0. Here is a sample that represents this point of view:

> *"It is a basic system, not more, the old system that we used in Crepa was much better. You could see more there, and you could do more. MSIT what we now use is then very basic. You cannot see the history of the machine in MSIT. I cannot see the last receipts; I cannot see the parts that I used the previous time" (ST2)*

This can indicate to some doubts about the value of MSIT in comparison to the old system that some technicians used previously. Noticeably, this critique is not expressed only by technicians but also line managers admit that some functions in MSIT system need to be developed further and some bugs need to be fixed. For instance, MSIT 1.0 does not give the possibility to look back in the history of the machine. They are looking forward to introducing the new version of the system (MSIT 2.0).

> *"We have good expectations from MSIT 2.0, I tell the technicians already that they will get more insight into their work receipts, because now when they close the receipt and do not keep the information with them, it is possible the receipt will get lost unless the planner or someone who has a permission brings it back. I expect that MSIT 2.0 will be a good addition as long as it will work as described" (*RM3)

Also, the technicians put high hopes on the new version as most of them think that it will bring what they miss in the current version. They expect more useful functions, integration of administrative tasks and flexibility. One technician explained that in the following,

> *"I hope that we can work in a more flexible way that we have more insights in the orders so that we know more about what is expected from us and that we have more information. With maintenance receipts, that we can issue the receipt and we can have them back independently in an easy way" (ST4)*

There seems to be consensus that a newer version based on improved technology will offer better possibilities and improvements. This voice can be heard from many technicians and it is mainly based on the information provided by the project managers and the line managers. Although there is cautious optimism with regards to that, some doubts were expressed about the announced date for the new version. Some of the technicians expressed their disappointment that the management "every year said that MSIT 2.0 will be implemented". However, that was not fulfilled according to them. This can be noticed in the following response:

> *"They said already three years long that it is coming, but not yet, first see and then believe" (ST8)*

Remarkably, service managers, line managers, and MSIT project manager said that they are trying to get the technicians involved by sharing information regarding the progress of the project and the expected time for the application, whereas the technicians perceive that

differently, namely, they think that the expected time is a promised time. It is an obvious contrast in what the management aims to deliver to the technicians and what is in fact perceived by them which raises doubts regarding the role of line managers in forming a bridge for prober transmission of ideas that higher levels of management at UniCarriers attempt to transfer. This might also cast some doubts whether the management has a clear and effective implementation policy of new technologies and systems.

With regards to Track and Trace, many positive voices can be heard as well. Several technicians expressed their satisfaction that system took over many administrative tasks that used to be done by hand, such as filling the "weekly statements" where the exact working hours are registered, and the easiness to assign tasks to technicians due to the system's ability to access their locations. The following quotes summarize these positive opinions.

> "*It gives advantages, you can see where the technicians are and who is nearby, you know exactly what time you left and what time you are back, it is a locked system and there is mostly no problem with it*" (ST4)

It can be noticed that the many technicians perceive the system as positive in congruence with the management's point of view. Mostly, that it simplifies lots of administrative tasks that the technicians had to perform regularly. Moreover, the ease of assigning tasks digitally seems to be experienced positively by several technicians, as they do not have to do efforts to determine and seek the destination of the next assignment.

> *"Positive that your information what je generate are saved and that you can see it back, thus you do not need to write anymore, and it is positive that people at the office who have to assign the tasks, they can easily see who stands where and if he is nearby" (ST3)*

Furthermore, there is a satisfaction regarding the technical functionality of the system. Although there were some issues when the system was newly implemented, however, it is now up and running and there are no severe issues or complaints regarding its technical mechanism. For instance, a technician can switch easily between business and private trips using the system. The following response shows an image of the system ease and functionality:

> *" I find the system good and I do not have a single problem with it, I go to my parents and I press on private kilometers, then when I start the bus again, it is automatically set*

*to work trip, this is an advantage because you never go on private kilometers without noticing" (ST6)*

This is important to notice as it can neutralize the technical effect of the system on the relationships and limits its impact to other factors as the system could have an impact in several ways and for different causes. One of these causes is the fact that Track and Trace is considered an excessive type of monitoring.

*"You feel monitored, with where you drive and what time. They can see it all, where you go and where you are; this gives a negative feeling*" (ST5)

The origin of this perception can be that the technicians have a real lack of freedom and privacy due to the Track and Trace system, thus, the nature of the system itself which is, as mentioned, is denied by the management and line managers specifically. Another possible cause could be the feeling of the technicians that they are monitored and watched. That feeling might be a result of two possible factors. First, inefficient role from line managers in preparing their teams for the technology (i.e. introduction phase). Second, it could be the fact that line managers do not transmit the policy and plans made by the higher level of management in a way that assures technicians about the actual goal of the system and how it functions.

Further, it can be concluded that paradoxes are present regarding how technology is seen by technicians, as some have high expectations and are very positive about technology and others consider it as a monitoring tool and are doubtful about the promises.

## *5.2 Role of Line Managers*

As it can be noticed, the main role of line managers at UniCarriers is to supervise and support technicians. Practices such as monitoring and providing information and guidance are in the essence of their responsibilities toward technicians. Additionally, they are involved in making plans and running the administrative tasks related to their working hours, personnel policy and absenteeism. This is explained in the following quote from a line manager as he mentioned this in detail.

> *"One of the most important tasks of the region service manager is to make sure that the technicians can do their job in a good way without problems, as productive as possible. Supervision, I do not need to solve everything myself, but to lead well when there is a conflict between the clients and the technicians, that I interfere there too and make sure that it goes fluently. The technicians need to function well, get the parts on time, have their knowledge on a good level, have their tools with which they work and give the appearance that UniCarriers adopts. This is of course very important for the technicians. Next to that, I monitor personnel policy, sickness leaves, overtime and I do administrative tasks" (*RM4)

Also, this is stated in the job profile that the company adopts where, among others, more focus is given on optimizing the efficiency of technicians, optimizing the quality of the technicians, and maximizing employees' satisfaction. Although there is focus in the practices on contact and attention toward technicians, there appears to be more focus on the productivity and efficiency. This is not surprising in organizations that aim to maximize profit and cut costs. As this study focuses on the social effect of technology, this fact emerges as an important factor to consider in that sense. Furthermore, it is evident that line managers at UniCarriers take on an important role in the introduction of technological systems in the company as they are involved in training, project groups, giving information and supervising the implementation of technological systems. This can be noticed in the introduction and implementation of MSIT as well as for Track and Trace. As an example, I mention here a response from a technician who explained the role of his supervisor when Track and Trace system was introduced:

> *"He played a big role in that. He helped me with filling the new week statements. I was with the group who tested Track and Trace in the beginning, he helped me there and he coached me. Eventually I am happy with that"* (ST4)

Technically, the mentioned support might be sufficient, nevertheless, a gap can be noticed regarding the information that line managers providing to explain the goal and the necessity of the technological systems. This is also the case when technicians were asked about an automated planning system which is still an idea. According to the management, the goal of such system is to make efficient use of off-peak periods of the year which in turn can also give advantages for the technicians. However, the responses to this idea were mostly negative as it

is thought to be an added tool that could cause less freedom for the technicians. The following response is to a question about such planning technology:

> *"I find that less pleasant. Well, I work for some time here and I know what to expect from clients, to which client I can go, and with which client I should make an appointment. Soon if a system would do that for me, in the begin, that would give some problems I think" (ST7)*

It is apparent that most line managers have a less significant role in managing and working with MSIT and Track & Trace system, as their role is mostly limited to the administrative tasks related to working hours and overtime, with a little interference in the technical area within the systems. The following answer was given from a technician as a response to a question with respect to the role of his supervisor in MSIT:

> *"At this moment, he does not have a significant role. I think that is also not relevant because the system is up and running. We can deal with the difficulties in the system; thus, we know now how it works. We are informed about when the new version is coming but further information is coming" (*ST4)

His supervisor confirms that point on the limited interference of line managers in the use of these technological systems. He limits his role to dealing with hardware issues when, for instance, a malfunction with the tablet occurs, then the line manager can be consulted to solve the problem. The supervisor said the following with regards to that aspect:

> *"My role is not very big therein, because eventually they get a tablet with the system so that they can fill their receipts and I do not need to help them with that , thus the only thing if there are problems with their tablets then they call me, further i have no influence on MSIT"* (RM3)

Remarkably, the supervision and implementation of MSIT and Track and Trace at UniCarriers are done mainly by IT specialists who took on the role of developing and giving the needed support for these systems. There are, as mentioned, two key individuals who fulfill that function at the company, namely, MSIT project manager and Track and Trace project manager. In the two unstructured interviews conducted with them, their role in implementing the systems, giving technical support, and providing information on how these systems function was confirmed.

This can also be noticed in many responses given by technicians as well as by line managers such as in the following one:

> "*There is actually no role for my supervisor in MSIT, because things were explained to us how we can make reports, this was explained by MSIT project administrator and people who are trained to do that. I get technical information via product support, if there is something, I contact the planner and if it is not solved then I contact the MSIT department and the project manager*" (ST1)

That fact raises questions about the extent to which line managers are involved in the introduction and the implementation of technology. Although these systems are related to core operations and tasks that line managers are supposed to supervise, their supervision of these technologies is limited.

## *5.3 LMX*

It can be noticed that line managers and technicians have, in general, a good relationship with each other. Noticeably, line managers practice their role as leaders and supervisors in optimal manner giving their subordinates the needed support and resources. This is can be concluded from the positive responses provided by the technicians. Most answers confirm that idea. For instance, the following response from a technician to a question regarding the relationship with his supervisor:

> *"Actually, very good, not a single problem. He calls me when something is not good, but he also calls me to give compliments when something goes well, he says: thank you or you did a good job. It is nice to hear when you do something well, and that what he does" (ST5)*

Moreover, it can be concluded that the LMX at UniCarriers is of a high quality due to the presence of several pillars, such us the informal contact, the personal focus, and the open exchange of ideas and information. The most important pillar found in LMX within UniCarriers is the mutual trust between line managers and technicians. The word "trust" was repeated often when asked about the basis of the relationship. This indicates a high-quality relationship. The following response supports this idea

> *"I think on the trust basis also the basis of mutual support. We know that from each other and that we want the best for the company*" (ST4)

As LMX is dyadic, it is interesting to have the response on the same question from the supervisor of (ST4) to assess if the trust is mutual and supported by a strong evidence. Therefore, I mention here how his supervisor answered this question explaining when a problem is detected by the system such as manipulation done by a technician with regards to his working hours:

> *"Mutual trust, we have for example Track and Trace and there happen things sometimes that technicians, at the beginning, do not consider and then comes up something that you actually would not want. You need to be able to talk to each other and then they need to be able to explain why they did that. In his mind it can be legal, but in my experience, I might say, you cannot do it like that, it should be otherwise, and then we talk to each other about that kind of things. Yes, the mutual basis is just trust. Also, things we do not like from each other, we can filter them, and we have, of course, open conversations where they may say where I did not do things well and what I perform better, thus, regarding the people I work with, I do a lot of things on the basis of trust"* (RM3)

That attests the mutual perception of the high-quality relationship from line managers as well as their subordinated which supports more that fact and makes it robust. Furthermore, it is expressed by all line managers and the most technicians that an atmosphere of trust prevails on the operational level.

## *5.4 The impact of MSIT on the quality of LMX*

The effect of MSIT on LMX quality is not experienced by most of the interviewees as they denied that there is an impact of MSIT on the relationship between line managers and technicians. This can be attributed to the fact that line managers have a limited role in working with MSIT. It can also be originated from the fact that line managers do not have a core role in the implementation of technology of MSIT at UniCarriers. Whether the cause is the first or the latter, MSIT does not seems to have a significant influence on the quality of LMX or at least it is not a perceptible change that is experienced by the line managers and the technicians of UniCarriers as the doubts about that are noteworthy and this can be noticed in the most responses such as the following response.

*"I think the relationship is not influenced, more the work pleasure, it can be easier, but it is not like that with MSIT 1.0, this can influence my motivation for work, but regarding my supervisor, I see no influence" (ST3)*

## *5.5 The impact of Track and Trace on the quality of LMX*

There seems to be consensus at UniCarriers that Track and Trace system is used as a tool of control when necessary. According to the management, some manipulations in the working hours by several technicians were detected. However, the management claims its right of monitoring the technicians and knowing their locations. On the other hand, the management confirms that the main goal of the system is effective planning and more efficient use of time. However, not all technicians adopt that idea as the feeling of being observed is prevailing among several technicians. Although, many see that the system has advantages and that it provides efficiency, however, there is a dark side of Track and Trace that appears to impact the mutual trust and the high quality of relationship between line managers and technicians. A sample of this point of view can be noticed in the following:

"*The piece of trust that I have from my boss is gone. I had the feeling that there was trust, but now I am continuously monitored and if my chief opens his telephone, he can see where my car is parked, from what time till what time*" (ST8)

Some technicians criticized Track and Trace system strongly and told that they do not feel they have privacy anymore. They even think that it is a violation of their privacy and question its ethical validity and legitimacy. For instance, the following response from a technician shows the irritation caused by the system and raise questions about the negative effect on the trust and the relationship with his line manager.

"*They can see everything, if you want, you can walk somewhere in the planning room and you can see it, this is related to the privacy law. The managers have codes to see where everyone is, but the previous time they were somewhere outside with the team (oh look he is there), they said, this is not allowed in the privacy law*" (ST2)

Furthermore, due to the use of technology, there are also concerns that this relationship will become less personal and this concern was expressed by one of the line managers who is working now 29 years for the organization as he said:

> "*More independence will push them away; they can do everything without a conversation without personal attention. This is something that we should watch out for. I hear this now a bit from the technicians that the distance with the company is becoming bigger*" (RM4)

# 6. Discussion

## *6.1 Technology on The Work Floor*

This research focuses on the use of technology and its impact on the relationships at the organization. It can be noticed, in line with the arguments of Archer and Yuan (2000), and Borders et al. (2001) that technology nowadays is an inevitable mean that organizations use to raise the efficiency and get better outcomes. Further, it is evident that technology has many advantages, such as the enhancement of workflow in the organization and increasing cooperation. These is congruent with the claims of Mankins (2016) and Freese et al. (2018). The literature mentions that several applications of technology can serve different purposes within the organization such as the enhancement of supply chain (Angeles and Nath, 2000) as well as monitoring and control (Holland et al., 2015). At the organization where this study took place, technology plays an important role in core operations as well as in the monitoring. Namely, two main digital systems have taken over traditional methods of performing administrative tasks, operations planning and control. This transformation has fruited undoubtedly with several advantages, such as more enhancing outcomes and becoming more cost-efficient. These advantages are clearly proven in this research as the company has saved thousands of euros on maintenance and fuel costs. Moreover, the efficiency in operations has risen considerably. Furthermore, the use of technology guarantied more safety on the road and more easiness at work for the technicians. Although many employees welcome that transformation, several doubts were casted about the contribution of technology to the efficiency at the organization. This embodies the paradox concept on how individuals perceive technology (Smith & Lewis, 2011; Ter Hoeven et al., 2016). It is also noteworthy that this distinction in perception is influenced by how the logic of using technology is delivered to employees through line managers and technical teams.

## *6.2 Line Managers and Technology*

The traditional role of line managers that commonly acknowledged by scholars (Guest, 1987; McGovern, Gratton, Hope-Hailey, Stiles, & Truss, 1997) is confirmed in this study, as line managers take on the role of maximizing the performance and raising the efficiency of their teams. The claim that line managers are becoming more involved in technology (Heckman, 2003) and the argument of Levinson (1988) that the responsibility of technology in the organization has moved from the hand of technical teams to general and line managers is contradicted to a large extent by this study. Although the results confirms the role of line managers which is emphasized by e.g., Bos-Nehles et al (2006) and Hales (2015), the technical teams and technology project managers are more involved in technology than line managers where the latter have little role in introducing technology and even less role working with technology. A reason for that could be the line managers are not totally aware of their position as a connection point between their teams and the rest of the organization. It could be, also, originated from the fact that line managers do not have the urge to interfere with technology due to their limited knowledge regarding the IT systems and their belief that they have only the role of acting upon request.

## *6.3 LMX and The Impact of Technology on the Relationship Quality*

Based on the concepts of LMX theory ((Gerstner & Day, 1997; Kuvaas, et al. 2012), the main goal of this research is to examine the impact of technology on the quality of the relationship between line managers and employees. First, there appears to be an evidence that a high-quality relationship suggested by the literature (Berg et al., 2017; Sparrowe & Liden, 1997; Buch et al., 2014; Kuvaas, et al., 2012; Liden & Graen, 1980) prevails at the organization. Namely, the exchange is claimed to be based on trust, openness, and informal contact. Second, a crucial finding of this study is that the usage of technology imposed social impact at the organization. Upon initial review, the relationship between line managers and employees appears to be robust due to important indicators of a high-quality relationship. However, the use of technology revealed a potential effect on the relationship between line managers and employees. Specifically, it can be noticed that the technology used for tracking employees

resulted in a less perception of trust between line managers and their subordinates. This seems be in line with the study of Holland et al., (2015) with regards to electronic monitoring and surveillance in the workplace, as their findings indicate that monitoring and surveillance was negatively related to trust in management and between employees and their employer. Also, according to them, electronic monitoring and surveillance in the workplace resulted in less trust in management decisions and competency. Based on this finding, a question rises regarding the existence of real trust between line managers and their subordinates as trust entails belief and confidence in the actions of the trusted party. In other words, when employees trust line managers, the trust will continue to exist regardless of technology. In contrast to that, the introduction of technology has shown the trust issues. In that sense, the use of technology might reveal the vulnerability of trust between line managers and employees. Another cause of the perception of less trust might be the fact that line managers get the extra role to represent the whole organization which entails a certain perception by their subordinates. Namely, the trust issues, in that sense, could be originated from the fact that line managers act for the whole organization. Therefore, trust issues mentioned between line managers and employees are in fact trust issues in the organization's plans and policies that are perceived by employees as lack of trust in the line managers. In other words, there is a high-quality relationship with line managers that is built on trust, in addition to lack of trust in the system which perceived as an impact on LMX quality whereas it is a holistic perception of trust with the organization and the management. In this case line managers use their high-quality relationship with employees to foster their own interests rather than the organizational goals and policy where arguments about the necessity and objectives of technology were not efficiently provided. Third, it can be noticed that technology is accompanied with paradoxes on different levels. The paradoxical effect of technology suggested by many scholars (e.g. Ter Hoeven, Van Zoonen & Fonner, 2016; Smith & Carayon, 1995; Holland & Bardoel, 2016; Deogaonkar, 2013; De Wet, Koekemoer & Nel, 2016) are also confirmed by this research. This can be concluded from how technology can be different in its operational and social effects, as it can enhance work and make operations more efficient. At the same time, it has social dark side represented in more distant with the organization. Whereas managers and employees are able to do more with less efforts, perform

their work efficiently and finish their tasks faster, in that sense, technology leads to high-quality relationship through its efficiency and easiness. Nevertheless, the social issues caused by technology such as the perception of less trust and more distance with the organization. It is noteworthy here that technology could be only an agent that exposes these issues and not per se a source that generates them. Also, it can be noticed that individuals can perceive technology differently. Namely, their experience and background with regards to technology might influence their attitude towards it. As it can be noticed that individuals who had worked previously with a comparable digital system, expressed less enthusiasm about the used technology at the organization. Finally, the purpose of technology and how it is promoted and presented to employees is crucial in how employees perceive it. These results confirm the suggestion of Bondarouk and Ruël (2008) that technology includes unstable and contradictory developments in the organization, and it demands a set of technical and social changes.

## *6.4 Theoretical Implications*

This research offers several theoretical implications. Firstly, line managers represent an important bridge between the executive management and the employees. The employees' perception about technology is affected to a large extent by how line managers deliver the objectives and the logic adopted by management regarding technology. Therefore, it is of importance that line managers send clear messages to their employees regarding the strategic and operational benefits and necessity of technology. Secondly, the use of monitoring technology could reveal trust issues between employees and their line managers where line managers could also get an extra role as a representative of the organization when technology is introduced and implemented. In that case, employees could perceive their relationship with line managers as the relationship with a bigger system that includes the organization and its strategic goals. Therefore, it is important to be aware of that transformation when implementing technology. Thirdly, technology has its dark and bright side in the organization, as it is on the one hand enhances efficiency and save costs, but on the other hand, it can cause less trust issues and more tensions between line managers and their subordinates. Moreover, the previous technological experiences among employees might affect the evaluation of new

technologies that are introduced and applied in the organization. Finally, the introduction and the implementation of technology is an integrated process where all levels of managers and IT teams need to cooperate to make it successful.

## *6.5 Practical Implications and Recommendations*

Based on this study several recommendations can be made. First, executive and HR managers need to be aware of how technology implementation plans and the objectives of the application of technology are delivered to employees. Clear and logical messages should be sent to inform line managers and reassure employees with regards to the logic behind the implementation of certain technology. In applying that, more attention should be also given to the previous experience and background every employee has with regards to technology. Second, a high-quality relationship on the operational level of the organization does not necessarily mean a good tie with the company, therefore, it is important to use the good relationship on the operational level in strengthening the link with the organization and its strategic goals. Finally, to minimize change resistance and fostering trust, technology application should be well supported by line managers and other managerial levels by providing information and getting employees involved in the progress of the project to a suitable extent.

## *6.6 Limitations and suggestions for future research*

Although many efforts were invested to have this research as complete as possible, no research is without limitations. Here I mention the limitations of this research. First the sample is relatively small as the interviews were conducted with, in total, sixteen employees and managers. That makes the result of these research limited to the responses of this sample and cannot guarantee that there are no new ideas that could come from the employees with whom no interviews were conducted. Also, the planners at the company were not interviewed, and this results in less diverse sample. Second, the results of this research are limited to the context and the type of organization where the study was made, therefore, the results of the effect of technology on the relationships should be generalized with consideration to that matter. Finally, the exploratory nature of this research makes the measurement of variables not possible. Future

research could focus more on precise measurement of the change in the pillars of LMX due the effect of technology. Also, using bigger sample that consists of divers employees groups and different management levels in more diverse context can contribute positively to the understanding of the effect of technology on the relationship between managers and employees.

## 7. Conclusions

This research sheds light on the effect of technology on the quality of the relationship between line managers and employees. It brings an evidence that technology is not without a social cost as it can impact the relationship through affecting the exchange mechanism between supervisors and subordinates. Based on the results, trust appears to be is the most affected element in that sense. Introduction and application of technology can reveal many trust issues between employees and managers. Additionally, technology has paradoxical effect on the work floor. On the one hand technology results in more efficiency and better workflow, whereas it has social and negative effects on the other hand. The results of this study suggest that social issues should be considered during and after the implantation of technology where line managers take on an important role in fostering and enhancing the positive logic and interest behind the use of technology. This action can lead to better implementation and minimizes technology social consequences and change resistance related to digital systems and IT projects. Further, the findings of this study confirm the important role of line managers in being the link between employees on the one hand, and HR department and managers on the other hand. Therefore, more strategic focus should be directed toward line managers, especially when applying new projects and technologies. Finally, based on this research practical implications and recommendations were made.

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# Appendix

Table (C): the conducted interviews and the questions

| Interviewee | Questions |
|---|---|
| Region Service Manager:<br><br>RM1, ..,RM4 | 1. Wil je je voorstellen? Wat doe je als regio service manager binnen de organisatie?<br>2. Hoe lang werk je voor UniCarriers?<br>3. Wat vind je van het bestaande MIST-systeem?<br>4. Wat zijn positieve en negatieve punten van het MSIT-systeem? Waarom?<br>5. Wat is jouw mening over de aankondiging van de MSIT 2.0 en wat vind je daarvan?<br>6. Waar houd je rekening mee in de implementatie van MSIT 2.0? Wanneer is MSIT 2.0 succesvol/effectief geïmplementeerd?<br>7. Wat vind je van het track en trace systeem?<br>8. Wat zijn positieve en negatieve punten van het Track en Trace systeem? Waarom?<br>9. Wat is je rol in het gebruik MSIT 1.0?<br>10. Welke informatie en begeleiding geef je aan monteurs met betrekking tot het gebruik van MSIT 1.0?<br>11. Welke informatie en begeleiding geef je aan monteurs met betrekking tot het gebruik van MSIT 1.0?<br>12. Wat is je rol in de implementatie en het gebruik van MSIT 2.0?<br>13. Wat zou je rol moeten zijn bij MSIT 2.0?<br>14. Wat heb je nodig om MSIT 2.0 op een efficiënte manier te implementeren?<br>15. Wat is je rol in het gebruik van track en trace systeem?<br>16. Welke informatie en begeleiding geef je aan monteurs met betrekking tot het gebruik van Track en Trace?<br>17. Hoe beschrijf je je werkverhouding met de monteurs?<br>18. Waar is de werkverhouding met de monteurs gebaseerd op?<br>19. Hoe kan deze werkverhouding verbeterd worden?<br>20. Hoe beïnvloed MSIT de werkverhouding met de monteurs?<br>21. Hoe beïnvloedt het trace en trace systeem de werkverhouding met de monteurs?<br>22. Op welke manier gaan deze technologieën de relatie tussen managers en monteurs veranderen?<br>23. Welke feedback krijg je van monteurs over MSIT?<br>24. Welke feedback krijg je van monteurs over Track en Trace? |

| | |
|---|---|
| Service Manager: SM | 1. Wil u zich voorstellen? (Wat doet u als service manager binnen de organisatie)?<br>2. Hoe lang werkt u voor UniCarriers?<br>3. Wat is uw ervaring met het bestaande MSIT-systeem (versie 1.0) en Wat is het doel van MSIT 2.0?<br>4. Wat is uw rol in MSIT 1.0 en MSIT 2.0?<br>5. Hoe beoordeelt u MSIT in het algemeen (positief/negatief) en waarom?<br>6. Waar houdt het management rekening mee in de implementatie van MSIT 2.0? Wanneer is MSIT 2.0 succesvol/effectief geïmplementeerd?<br>7. Wat is het doel van het track en trace systeem?<br>8. Wat is uw rol in Track & Trace?<br>9. Hoe beoordeelt u Track & Trace systeem (positief/negatief). Waarom?<br>10. Wat is uw visie m.b.t technologische veranderingen in Service over de komende jaren?<br>11. 11.Wat is het effect van track en trace op de planning?<br>12. 12.Hoe verandert track en trace de relatie tussen de planner en de regio service managers?<br>13. Hoe verandert trace en trace de relatie tussen de planner en de monteurs?<br>14. In het algemeen wat zijn de voordelen en de nadelen van MSIT?<br>15. In het algemeen wat zijn de voordelen en de nadelen van track en trace?<br>16. Welke feedback krijgt u over Track en Trace?<br>17. Welke feedback krijgt u over de aankondiging van MSIT 2.0?<br>18. Op welke manier gaan deze technologieën de werkverhouding tussen managers en monteurs veranderen?<br>19. Hoe verandert de technologie het werk binnen UniCarriers?<br>20. Hoe verandert de technologie de samenwerking binnen UniCarriers?<br>21. Wat is de rol van regio service managers in het bedrijf?<br>22. Wat is de rol van regio service managers in de implementatie van MSIT 2.0? Wat zou hun rol moeten zijn?<br>23. Welke informatie en middelen krijgen regio service managers met betrekking tot het gebruik van MSIT?<br>24. Wat is de rol van regio service manager in de implementatie van Track & Trace? Wat zou hun rol moeten zijn?<br>25. Wat voor informatie en middelen krijgen regio service managers met betrekking tot het gebruik van Track & Trace? |

| | |
|---|---|
| Service Technician:<br><br>ST1,.., ST8 | 1. Wil je je voorstellen? Wat doe je als monteur binnen de organisatie?<br>2. Hoe lang werk je voor UniCarriers?<br>3. Wat vind je van het bestaande MSIT-systeem?<br>4. Wat zijn positieve en negatieve punten van het MSIT-systeem? Waarom?<br>5. Wat is jouw mening over MSIT 2.0 en wat vind je daarvan?<br>6. Wanneer is MSIT 2.0 succesvol/effectief geïmplementeerd/ Wat is jouw verwachting van de nieuwe versie?<br>7. Wat vind je van het track en trace systeem?<br>8. Wat zijn positieve en negatieve punten van het Track en Trace systeem? Waarom?<br>9. Wat is de rol van je leidinggevende in het gebruik MSIT 1.0?<br>10. Als je tegen problemen aanloopt wie vraag je dan?<br>11. Welke informatie en begeleiding krijg je van je leidinggevende met betrekking tot het gebruik van MSIT 1.0<br>12. Welke informatie en begeleiding krijg je van je leidinggevende met betrekking tot MSIT 2.0?<br>13. Welke informatie en begeleiding wens je bij MSIT 2.0?<br>14. Wat zou de rol van je leidinggevende volgens jou moeten zijn in MSIT 2.0?<br>15. Wat is de rol van je leidinggevende in het track en trace systeem?<br>16. Welke informatie en begeleiding krijg je van je leidinggevende met betrekking tot het gebruik van Track en Trace?<br>17. Hoe beschrijf je de werkverhouding met je leidinggevende (de regio service manager)?<br>18. Waarop is jullie werkverhouding gebaseerd? Kan je hier een voorbeeld van geven? Waarop nog?<br>19. Hoe kan deze relatie verbeterd worden?<br>20. Hoe beschrijf je de werkverhouding met de planners?<br>21. Hoe beïnvloedt MSIT de werkverhouding met je leidinggevende?<br>22. Hoe ervaar je deze verandering?<br>23. Hoe beïnvloedt trace en trace systeem de relatie met je leidinggevende?<br>24. Hoe ervaar je deze verandering?<br>25. Heb je opmerkingen of wil je iets nog toevoegen?<br>26. Mag ik contact met jou later opnemen als ik vragen heb? |