How Change Management Is Influenced by Differences in Professional Discourses: A Conceptualizing Study on the Adoption of an ICT Tool for Service Engineers in a Global Perspective

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Abstract

This article describes the process of organizational change due to technological evolutions, suggesting that community-specific differences in discourse may have a considerable influence on its success. The questions for this study focus on: 1) how do we define a *technically oriented* employee who has to cope with organizational change? 2) Which factors determine the reaction to organizational change projects in which these technically oriented employees are involved? And 3) what are the consequences of these specific characters of technically oriented employees for implementing change programs in the most effective manner? First, while the present studies on professional communication do not pay any attention to change management, the current models of change management also barely pay attention to (professional) discourse. Second, we examine culture, which can be divided into *national culture* (NC), *organizational culture* (OC), and *professional culture* (PC). In this case study, we focus on the professional cultures of specific (change) managers and technicians and their discourse in the utilities sector. After this, we describe the case study, which exemplifies how change results can be influenced. It seems

that in a *technical environment*, the change process and interventions need to be specific, concrete, and to the point. However, there also seems to be a dilemma between universal (e.g. mechanistic and formal) and contingency (e.g. organic, informal and emergent) approaches to the change process. The results of this study show the need to analyze cultures through discourse and through PC as a way to differentiate discourse between technical and non-technical employees. We suggest further research on three aspects that interfere and influence the change effort: context, discourse, and professional cultures of (change) managers and technicians.

Introduction

Organizational change is still a complex and difficult process. Unfortunately, in most situations the organizational change process gives unsatisfactory results (Gilmore, Shea, & Useem, 1997; Burns, 2004; By, 2005; Meaney & Pung, 2008). The most recent statistics, derived from a global survey of businesses by two McKinsey consultants, reveal that only one-third of organizational change efforts are considered successful by their leaders (Meaney & Pung, 2008). What is even more discouraging is that the 3,199 executives who responded to their survey indicated that they devoted an average of 6 months to planning the transformations (Armenakis, 2009). Further, change programs often take much longer than initially planned, exceed their budget, or fade out because of a change in focus. More than 70% of the change projects within Dutch organizations in the Netherlands do not end in a timely fashion or do not achieve the expected results (Boonstra, 2000).

We believe it would not be useful to look at the reasons why these change projects fail and consider other, better, more generic change theories predicting such failure. Rather, perhaps it would be more appropriate to examine the interaction between participants in the change process. Usually, various professional cultures are involved in an organization-wide change process, making the change process even more difficult and complex. For example, most change efforts with groups like sales, finance, and purchasing work out well. However, it seems that technical employees inhabit a special world that does not quite fit the *thought world* of change managers. In addition, within a global Professional Culture (PC), service engineers in the utilities sector may supersede the borders of National Culture (NC) as a unifying sector. In the European context, for instance, service engineers in that sector maybe employed more easily across borders of the EU region because of their shared (technological) *borderless* experience.

In an even more turbulent global society, firms and people are in constant change, demonstrating a gap in the literature. While the present studies in rhetoric, professional communication and globalization do not pay any attention to change management, the current models of change management also pay little attention to discourse as being able to communicate change among technical and non-technical people. The present case study purports to close this gap by focussing on a Dutch utilities company's change processes. Utilities companies are omnipresent across the globe, and they are constantly under the pressure of introducing new information and communication technologies (ICT) for technical and non-technical professionals. In our case study, the non-technical managers forced the technical people to use new ICT tools.

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December, 2011, Volume 2, Number 1, 51-92.

Structure of the article

The article first reviews the change management literature and focuses on the theory of change management and discourse. Secondly, we examine different theoretical perspectives on change. Why would change fail or succeed? In the third part, we focus on specific cultural levels and discourse, in particular the intercultural setting of the different professions involved. Fourth, we focus on a case study in which a Tablet PC is introduced that changes the work of service engineers. We perform detailed discourse analyses on texts and conversations of different professionals in the change process. Finally, this article suggests directions for future research and interventions that are applicable when the change process involves service engineers. We also discuss future research in relation to intercultural and globalization issues.

Change management literature

In change management literature, two theories are common: universal and contingency. In the universal theories, change management consists of a (limited) set of interventions and actions, which can be applied to any change situation–a one-approach-fits-all perspective (e.g. Kotter, 1996). The contingency theories assume that a general set of actions and interventions cannot be specified. The effectiveness of change interventions depends on the specific situation at hand. Therefore, contingency change theories (e.g. Balogun & Hope Hailey, 1999) introduce situational awareness, requiring concrete intervention strategies to be tailored to the specific situation of each change project.

What both the universal and contingency theories have in common is the *holistic* focus on change. After a careful analysis of the organization, the change agent selects a change approach and an intervention portfolio. Next, the interventions are carried out according to plan, while the change agent monitors the progress and introduces extra interventions when the organization does not change according to the pre-formulated plans. This implies that the basic *transaction* that has to result in the desired organizational change is the change agent *sending* the change interventions; and the change targets *receiving* these interventions after which they are supposed to react to these interventions according to the pre-formulated change goals (Ford & D'Amellio, 2008). Change is conceived as a goal-congruent reaction to well chosen interventions, where the behaviour of the people in the organization is causally linked to the interventions. In the conventional change management literature, little attention is paid to the interaction processes between change agents/change targets and change targets themselves.

In the last decades, a new perspective emerges in the literature on organizational change. In these publications, the real consequences of change interventions for those who are on the receiving end making sense of these interventions play a central role (Chaundry et.al., 2009, Balogun & Jenkins, 2003, Isabella, 1990). Organizational change is defined as a result of sense making processes between all the actors involved. In these interaction processes factors like emotions (Van Tonder, 2004) and powers (Homan, 2010) are considered important. Although this latest perspective on organizational change creates new detailed insights into the dynamics which lead to change, again the *senders* and *receivers* of change are seen as holistic groups. No attention is paid to the specific professional cultures of these people and the consequences of the interactions between these cultures. Furthermore, the role of language and professional discourses is undervalued in the change management literature.

In the linguistic literature, professional discourses and the role of language in interaction between different professional cultures are central research themes. Yet publications on these themes are not focussed on innovation, change, and development in organizations (Ulijn & Strother, 1995). By bringing these worlds (linguistics and change management) together, it will be possible to highlight the differences in the professionals that work together in a project team. Although they may be working for the same organization, they do not automatically understand each other. This *cultural understanding* means understanding one's own (professional) culture and other people with a different (professional) culture (Ulijn, Nagel, & Tan, 2001). The interventions and communications used during the change process must be in line with the specific target group and should appeal to the dominant way of thinking in different professional cultures. This implies that the results of change processes across professional cultures are highly dependent on the integral approach of the change process itself and an integral perspective on all the aspects that influence change. Thus, it is assumed to be important to study the influence of differences in professional discourse and how they might influence the change results.

Valuable contributions to successful communications come from a variety of disciplines, such as linguistics or psychology (Ulijn & Strother, 1995). However, the change literature does not have such a detailed understanding on an individual level. We believe it is important to know how people listen and read, speak, and write personally and professionally (Ulijn & Strother, 1995).

Levels of culture
Culture reflects shared meanings, norms, and values (Karahanna, Evaristo, & Srite, 2005), and it can be applied to national, ethnic, and regional groups, as well as other human groups such as organizations and professions (Hofstede & Hofstede, 2004). Culture is not a separate entity from the individuals that constitute a group, but reflects those people and their values (Karahanna et al., 2005). According to Hofstede & Hofstede (2004), many subcultures or professional cultures exist within a national boundary, and subcultures will emerge with their own distinctive but interrelated patterns, language, values, and norms to the dominant culture (Xiangfu, 2008). In this sense, intercultural communication may be defined as the exchange of information between well-defined groups with significantly different cultures (Barnett & Sung, 2005). The balance of values versus practices at different levels of culture is given in Figure 1 below (Hofstede, 2001).

	Level		Place of socialization
National Culture	Nation	Values	Family
Professional Culture	Social Class / Occupation / Industry		School
Organizational Culture	Organization	Practices	Workplace

Figure 1. The balance of values and practices at different levels of culture (based on Hofstede, 2001).

Figure 1 illustrates that at the national level cultural differences reside mostly in values and less in practices. At the organizational level, cultural differences reside mostly in practices and less in values. An occupational level is placed halfway between nation and organization, suggesting that entering an occupational field means the acquisition of both values and practices (Hofstede, 2001). Values are acquired in one's early youth, mainly in the family and in the neighbourhood, and later at school. By the age of 10, most of the child's basic values have been "programmed" into his/her mind. Organizational practices, on the other hand, are learned through socialization in the workplace, which most people enter as adults, that is, with the bulk of their (national) values firmly in place (Hofstede, 2001).

Beside the levels of culture, developments such as globalization, a reduced significance of national borders, or technological change affect the environment of organizations. Globalization is "the process of strengthening the worldwide social relations which link distant localities in such a way that local events are shaped by circumstances at other places in the world" (Giddens, 1990, p.64 in Barnett & Sung, 2005). These developments lead to new organizational forms like large conglomerates doing business on a truly global basis, virtual organizational networks and considerable changes inside organizations (Meierewert, 2009). As a consequence of these developments, cross-cultural teams are getting more and more common in organizations and lead to an intercultural way of working in which the levels of culture are *mixed up*: National Culture (NC), Organizational Culture (OC), and Professional Culture (PC).

Several studies show clearly that multi cultural teamwork affects decision making (Heerkens, Köster & Ulijn, 2010), setting up strategic R&D alliances (Ravenswaaij, 2007), and innovation (Ulijn, Nagel & Tan, 2001). Based on these studies, we see the growing importance of intercultural communication in a global context, which in itself is a source of change. Cultural backgrounds of stakeholders in an organizational change process affect their discourse in their change process, not only on a NC, but also on an OC and in particular on a PC level.

Not only the NC and OC levels (see Hofstede et al., 1990, 2001, and 2004), but also the PC level (see Van Luxemburg et al., 2002) play a prominent role. For instance Power Distance (PD) and Uncertainty Avoidance (UA) in an OC transforming into an innovation culture both in the exploratory creative and the implementation stages (Ulijn & Weggeman, 2001 and Ulijn et al, 2004) translate themselves also on the level of professional discourse and culture (PC).

The *high* and *low context* distinction of NC proposed by Edward Hall (1976 and 1998) is clearly visible in communication patterns, also between managers and technicians in a change process (see Ulijn, Nagel & Tan, 2001; Van Luxemburg et al., 2002; and Ulijn & Strother, in press). The Hall theory of High and Low Context of information relates to linguistic and cultural differences, specifically to implicit versus explicit ways of communicating. Those from high context cultures know a lot from sources within the culture itself because they are more homogeneous and, therefore, share a lot of common knowledge. Communicators from these cultures tend to prefer indirect patterns of organization in text as well as higher levels of politeness and ambiguity. People from low context cultures, which are quite heterogeneous, share much less knowledge, so everything must be explained clearly and in much more detail. Within their professional culture, the same professionals use the same discourse (high context) which they cannot use when

communicating with another professional group. Technicians, for instance, can do so, since they share a lot of implicit knowledge, mostly *how to* or procedural knowledge on the basis of their declarative knowledge they have to pursue in a utilities company. (Change) managers on the other hand have their mostly (directive) knowledge about what change would imply for the organization, why it is needed, and of course also procedural knowledge how to do it. The communication between technicians and managers will take place in low context and require on both sides more explicit plain language, avoiding formulae and problem solving schemata by the technicians and high brow sophisticated over-theoretical jargon by managers.

In this case study, we focus on one organization in one country (the Netherlands). This means we can assume that the national and organizational cultures (NC and OC) are constant, despite some regional differences perhaps, but that professional cultures (PC) might differ because we compare technicians and (change) managers. However, in a global perspective the difference in one country between a service engineer and a change manager might be bigger than the difference for instance between a Dutch, German or Belgium service engineer active in de EU region. These differences might also be smaller when we take for instance the region of the Rhine-Meuse in the South of the Netherlands, the North of Belgium, and the West of Germany.

Professional discourses

Serious interest in organizational discourse emerged in organizational studies and management in the 1990s. This interest also resonated in topics such as organizational rhetoric, organizing, conversation, dialogue, political functions of narratives, and communication (Monge & Poole, 2008). Organizational discourse can be defined as "the structured collections of texts embodied in the practices of talking and writing (as well as a wide variety of visual representations and cultural artefacts) that bring organizationally related objects into being as these texts are produced, disseminated and consumed" (Grant, Hardy, Oswick, & Putnam, 2004, p. 3). This perspective is based on the premise that organizations are created and sustained through discourse, which can be discerned in multiple spheres in multiple layers and overlapping levels (Monge & Poole, 2008). Myers and Myers (1982) define organizational communication as "the central binding force that permits coordination among people and thus allows for organized behavior."

In this perspective, the *Tamara* effect described by Boje (1995) represents the multiple spheres at multiple levels. In Tamara, a dozen characters unfold their stories before a walking, sometimes running, audience that fragments into small groups that follow the characters in the play from one room to the next, from one floor to the next, to co-create the stories that interest them the most. This metaphor explains the multiple spheres, levels, and complexity of organizational communication. The stories, which are made and remade, are combinations of *talk* in formal (e.g. meetings, public discourse) and informal (e.g. coffee breaks, sub-public discourse) settings.

In this interaction of talk and conversation, language is an essential part of individual and collective sense-making processes. Our talks, conversations, and use of language are *expressions* of how we think and live, and our values and beliefs regarding our (professional) work. These *talks* can be seen as macro units of communication. However, at the same time there is no universal organizational language. The discourse used depends on the social community to which one belongs. In most functionally oriented organizations, we see different discourses or

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linguistic registers. In fact, every professional develops his/her own professional language based on education, speech, and language developed with peers and in the social (functional) groups.

In functional/departmental groups, we see that communication and especially its interpretation are bound to certain groups. When somebody is not a permanent member of that group, he or she can hear what is said but finds it difficult to fully understand the meaning of the utterances. In fact, several professional languages can be used within the different functional groups.

In these local communities, sense making by verbal and non-verbal interaction is one way to make the complex and ambiguous world more controllable (Tietze et al., 2003). This is an ongoing inter-subjective processes in organizations in which actors are both agents of and subject to structures and social influences (Tietze et al., 2003), thus in fact changing social reality. This is particularly the case with the technician or the service engineer, when he/she interacts with for instance IT developers, HR managers, or change agents during a change program. In this process, the speech act theory developed by Searle (1983, 1992) is of relevance. He introduces the term *background* or *network*. The background is a set of abilities, capacities, tendencies, and dispositions. Without spelling out what to do, given the background people can immediately understand the intentions. These implicit details are not explicitly formulated; nevertheless, we understand what is meant. In a peer group the *intended meanings* are more easily understood. We do not have to be explicit; we understand each other because we share the same professional background. However, in cross-functional groups, not everybody is informed, and this means that it is necessary to verify what is meant or understood. In the context of an organizational change program different people with different backgrounds work together, and the different professional discourses might easily lead to confusion, wrong interpretations, and ineffective interventions, leading to a negative change result after all.

This interrelatedness of different professional groups working together in a change process within an organization is illustrated in Figure 2 below.
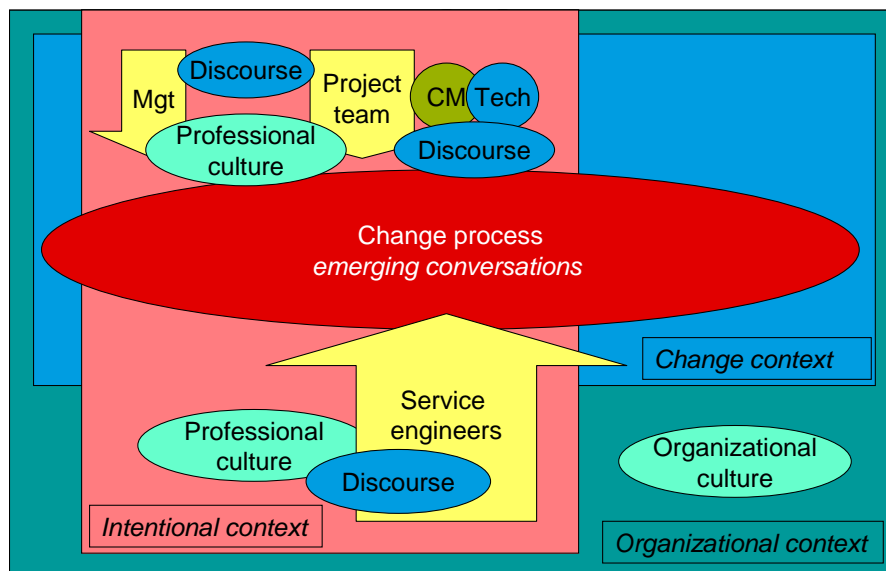

Figure 2. Different contexts and professional discourses influencing a change process.

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Figure 2 illustrates three different contexts that will be explained later. The professional groups in this case study can be divided into three specific groups: the (top) management who act in the role of a steering committee; the project team with change managers (CM) and technicians (Tech); and the biggest group of service engineers who are the actual end-users in the field. The group of technicians related to the project team represent both IT specialists who develop and test the system and service engineers who act as a user group. As assumed, every group might have its own professional culture and discourse that influence the change process.

Possible explanations for difficulties in change
As we do not expect difficulties in change processes to be the result of using the wrong change approaches (like a blueprint or an organic approach), we suggest looking at other possible explanations for the change effort that are often needed to make change processes a success. First, we see that change processes are not isolated in the organizational system. Also, we see that there is no logical causality. Changes take place in a context and even this context changes in time. Some possible explanations can be found in the composition of the workforce (Goldhaber, 1993). For example age, sex, education, and experience differences might influence the change process. We think that language is a representation of the mind, so discourse must not be seen as unitary, but as diverse and changeable (Tietze et al., 2003). Within organizations a multiplicity of discourses can be found, and this permits a multitude of *organizational realities* (Grant et al., 1998). Based on the change management literature and the theory of discourse, three possible explanations need further research:

1. *Professional differences*: there are different professionals with different mental *logics* that can be seen in behaviour and the use of language.
2. *Context*: employees, e.g. technicians, in operations are tired of all the changes they have seen in the last few years. On top of this, they are not involved in a manner that fits with their thought world. Within their organization, a lot of things are changing, and this affects their daily work even more.
3. *Discourse*: means communication: employees, managers, and change agents have different thought worlds and do not understand each other.

One should not forget that change originates more and more from technical changes on a global scale, such as the introduction of this ICT tablet in the utilities sector.

Conceptualizing framework and methodology
The three propositions in this study are related to the interrelatedness of professional culture, contexts, and discourse. The questions are: *how do we define a* technically oriented *employee who has to cope with organizational change*? *Which factors determine the reaction to organizational change projects in which technically oriented employees are involved (e.g. are the objects of change)*? And *what implications do the consequences of the specific characteristics of technically oriented employees have for the way change programs can be implemented in the most effective manner?*

The context is divided into three, which all influence each other: the change context, intentional context, and organizational context.

The change context is characterized by change actions and interventions like the direction of change, the technology used in the change process, communication about the change process, the internal tensions between departments, the timing of the change process, the commitment to change, and the role and position of change and line management (Werkman, 2006). This context is appropriate on an individual and a collective level and has objective as well as subjective aspects. In this context, discourse plays an important role, especially between the different groups involved in change.

The *intentional context* is characterized by aspects like attitude, personal values, ambition, assumptions, perception, and individual belief systems. This context on an individual level fits with the personality of individuals but also on a collective level with the culture within groups.

The *organizational context* is characterized by organizational aspects like structure, organization goals and strategy, technology, work processes, and political relations (Werkman, 2006). This is a more objective context that influences the change and intentional contexts as well.

Methodology

We performed a multiple-case study (Yin, 1994) of which this is just one case. Within this typical case, we used triangulation to answer the questions of what, how, and why (Miles & Huberman, 1994), linking the qualitative and quantitative methods. Firestone (1987) suggests that while quantitative studies *persuade* the reader through de-emphasizing individual judgments and stressing the use of established procedures, qualitative research persuades through rich depiction and strategic comparison across cases, thereby overcoming the "abstraction inherent in quantitative studies" (Miles & Huberman, 1994, p. 41). The *what* questions are answered in a qualitative manner by describing the case situation. The *how* questions are answered in a quantitative manner by using simple counting methods based on coding. The *why* questions can be answered by reasoning and discussing the results of the previous steps.

We used a case study protocol developed by Yin (1994) that includes the following: an overview of the project and case study issues, a description of the questions, and attention to specific questions that the investigator must keep in mind during data collection.

The case study used four different methods: first desk research, second the use of semi-structured interviews, third participant observation, and finally the speech act analysis of a kick-off meeting in one of the regions. The methods were used in different time frames of the project. At the beginning, we started with desk research by reading the formal project documentation, evaluation reports, progress reports, newsletters, and other relevant project documentation. Information about the organizational structure, procedures, and processes were also taken into account.

During the case study, we also observed presentations, attended project meetings on a regular basis, and visited engineers at field locations. We conducted semi-structured interviews in which all the aspects within the three different contexts were discussed. We interviewed different roles and functions across the organization (e.g. project and change managers, region, department and team managers and service engineers in the field). In total, 21 interviews were digitally recorded

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and transcripts were made. All the transcripts were approved afterwards by the interviewee. The interviews varied between 30 minutes and 90 minutes.

The *selection* of the specific service engineers was made by the team managers. The other interviewees were mostly suggested by the change manger of the project. The interview questionnaire addressed the three contexts: 1) organizational context (six items); 2) change context (eight items); and 3) intentional context (six items). Appendix A shows the topics covered in the semi-structured interviews.

We interviewed service engineers and recorded these conversations. With these employees, we always carried out an interview with a positive and a more negative-minded employee regarding the change process. The selection of a positive or negative-minded employee was made in cooperation with the departmental managers. The management knew which of these employees were willing and able to adapt to change. In addition, the actual use of the Tablet PC was in this perspective a clear indication of a positive or negative-minded technician. As a guide for reporting the interviews, we used a template in which all the items and descriptions were addressed. The specific questions that we kept in mind for data collection in these interviews were:

1) What do you think of the Tablet PC?
2) How was the implementation of the Tablet PC achieved?
3) Did the training give you sufficient support for getting started with the Tablet PC?
4) In what way can you address the questions you have about the Tablet PC?

The third method used was a speech act analysis. The coding and inter-coder reliability were confirmed during a workshop with 10 participants not familiar with the case. The participants were familiar with language and inter-coder reliability but not particular trained for this upfront. In total 38 speech acts were analyzed based on a regional kick-off meeting in which project change managers, team managers, and service engineers discussed the implementation of the new Work Order Management (WOM) application on their Tablet PC. These conversations were coded along the following criteria: classifying speech acts (assertives, directives, commissives, expressives, and declarations); negotiation style (non-cooperative, cooperative, general, and meta-communicative) (Ulijn & Strother, 1995); and conversation style (initiative, understanding, performance, and closure) (Ford & Ford, 1995).

Case Study: The introduction of Tablet PCs for service engineers
This case study describes the introduction of the Tablet PC for service engineers. It was conducted at the Business Unit (BU) Infra Services (IS) of a Dutch home utilities company that delivers gas and electricity to consumers and businesses. The organization employs 3,678 people of whom 3,083 (84%) are male and 595 (16%) are female. The employees in the age range of 45–55 years form the greatest group: 1,457 (40%). The organization is divided into 2 major sub-organizations: first the commercial production and delivery organization and second the infrastructure organization (IS). IS employs in total 1,152 (31%) people. As of July 1, 2009, both organizations operate as fully *stand alone*. The organization is based on a traditional hierarchical structure, as can be seen schematically in Figure 3. The management team of IS represents the six regional managers and several staff managers. Every region has three different departments

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with departmental managers. In every department, several teams work together on electricity or gas installations. In one region, approximately 250 employees work together. The implementation of the Tablet PC focused on the service engineers working in the maintenance and repair teams. In these teams, 526 service engineers work mostly solo in different (field) locations in the region.
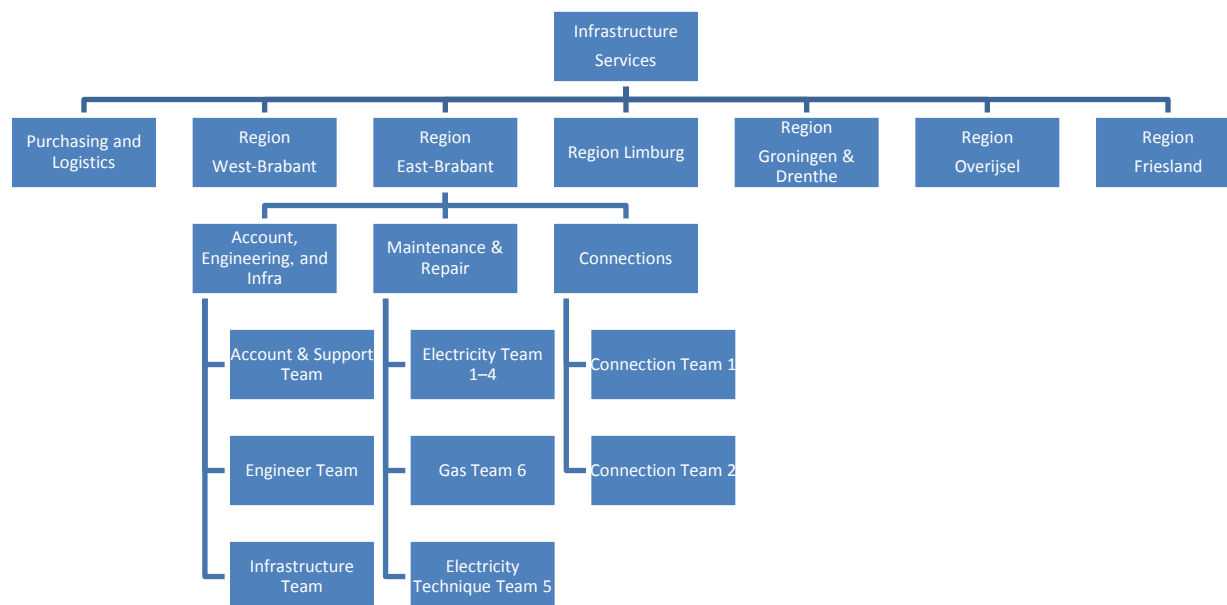

Figure 3. Organization chart of BU Infrastructure Services.

The change for these service engineers started in 2007/2008 with the introduction of a Tablet PC. At the start, only office applications (MS Office, mail, and wireless Internet) were used but later new applications, necessary for performing the job, were added. The case study focuses on the implementation of the *Work Order Management* (WOM) application for both the field service engineers and the office engineers. With these software packages, the service engineers could communicate with the back-office system and fill in documents directly from their field location. Finally, this innovative ICT tool will change their way of working, planning, registration, and communication.

Role-changing functions of the Tablet PC
By using the Tablet PC and the software, the service engineers can communicate by e-mail with colleagues and back-office employees, receive information about corrective maintenance or repair orders from the planning department, send information about corrective actions taken and additional materials needed, and carry out their own planning during the day. This places the service engineers in a leading role between the customer and their own organization. They initiate the actions and plan their own workload together with the support of the back office and colleagues. This is quite different from the situation before the implementation of the Tablet PC when the service engineers had to start the working day at the office and receive the work orders from the planning department. During the working day, administration had to be completed, which was delivered to the office by the end of the day. Overall, the service engineers were not

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"in control" of their own work. They were dispatched and could not carry out their own planning, see if materials were available, and make proper appointments with customers to avoid waiting times. The implementation of the Tablet PC would change this "old" way of working and therefore needed a shift in cognition of the service engineers. Beside this, of course, technology acceptance played an important role in the success of this change.

For the implementation of the WOM application, the engineers attended a short basic one-day training in which they learned to work with the Tablet PC and the software. About six months after this implementation (January 2008) only 50% (263) of the engineers appeared to be using the system on a regular basis, and 12 months after the first roll-out, about 80% (421) service engineers were using the Tablet PC. Of the other 20% some engineers were using only the very simple functions of the software or were having to ask a colleague for help. The evaluation of the UFO project within the whole population (526) gave a response rate of 41% (217). The service engineers gave 6.5 (on a scale from 1 to 10) to the overall project. About 81% were positive about the roll-out, 66% were positive about the training, and only 34% were positive about the toolboxes built into the cars. These were quite promising results, and the overall project started by developing new software packages for maintenance and repair work in the field (e.g. the WOM package).

The WOM software included not only new software but also other work processes for both the engineers and the back-office employees. In fact, this software fit into a bigger corporate vision in which the service engineers should be working as a central *linking pin* in the maintenance and repair process. The corporate vision was to develop an entrepreneurial attitude (result-driven, self-developing, and communicative), customer- and service-oriented attitude (adoption ability), and a drive for cross-functional cooperation.

Also, as part of the new role for the service engineers, some leading principles were defined throughout the IS organization together with the WOM application. The four were: 1) optimized processes; 2) facilities for cooperation in daily work; 3) a focus on the complete production flow; and 4) tailored freedom. It was assumed that both the competencies and the *leading principles* would create a different kind of mindset and working environment in which the overall goals of the change program, like satisfied customers, first time right, and proactive service engineers, could be realized.

The project team that had already been formed in the first phase for implementing the UFO part was now concerned with developing the WOM software, further improving the Tablet PC, and also addressing the soft skills of the engineers and their managers. The project team consisted of IT professionals who were developing, building, and testing the WOM application and change agents who were concerned with the whole implementation, both hard and soft aspects.

Results and data analysis of semi-structured interviews and speech acts

In the first part, we analyze the semi-structured interviews, and in the second part, we present the speech act analysis. The semi-structured interviews formed the basis for an interactive discourse between participants, e.g. project members, regional management, and service engineers. Mostly this was a one-to-one situation between the researcher and the interviewee. Table 1 shows

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different quotes from the recorded interviews from the three contexts. We have made a distinction here between quotes of (team) managers, engineers and change agents.

Table 1.
Quotes from interviews with managers, engineers and change agents within three different contexts.

Context	Managers	Engineers	Change Managers
Organizational context	- Goals related to customers and excellent service delivery. - The engineers are not used to work with these IT tools. - They [*the engineers*] do not have that structured way of working. - Ambiguous about change result. - Things are really changing for the engineers.	- I know the clear goals of the project. - The Tablet PC is difficult to use … - Managers sometimes see us as little children … - Technicians do not say very much in regular meetings, but afterwards, when they are with colleagues …	- We have very clear goals and a good plan to realize the goals. - The main focus is on realizing the ICT part of the project. - But it is difficult to align this project with all the other different change programs within the organization.
Change context	- I am rather positive about the change direction … - …but I am very critical about the Tablet PC … - The communication and information is good. - The exact role of the whole project group and the change management can be discussed. - We [*the management*] are in the change process just "in between." The project group tells us and we have to explain to our engineers. - I expect positive results of this change project. - Support and "buy in" are difficult. There are many different perspectives on how this should work.	- I think the direction is clear. - This is a change in technology but it won't change our behaviour. We still do the same work! - … the job stays quite the same … - Communication and information are good but I am critical towards the project group. - Line management does not have an important role in this. - Support for this project should be created but this is not done explicitly. Most of us [*the engineers*] have to inform themselves by reading the intranet news, listen to presentations, and so on. - The Tablet PC is working fine. Application … is a good solution. We used to work with large drawings but now we have it all on our Tablet and it is the actual situation.	- There is not much time for the real change of behaviour for the engineers. - The question is if and how the engineers are involved and what kind of sense they make of this project. - The change program is basically build upon the implementation of the Tablet PC and the applications. This fits within a strict time frame but there is nearly no time for end-users to get involved or adjust to this new way of working.
Intentional	- Engineers want to understand things, know	- I like some variation in my job.	- I believe that it is important to get a good working Tablet

context	how it is working. - They [*the engineers*] do not believe everything directly. - I think engineers are critical doers, result-driven people who like variation in the job and enjoy the "freedom" of being alone "on the road."	- I have a long working history with many ups and downs. I am not that motivated anymore. - I can see that there is more tension rising between employees in the team but also between the teams.	PC. This will increase our efficiency. - But about 50% of the engineers is using the Tablet PC, so we still forget about other factors that contribute to the use of IT tools.

Table 1 shows that the general perspectives between these three professional cultures are different. (Team) managers are aware of the changes in the organization, see opportunities but also threats, and have some kind of *overall picture* of the *engineer* and his/her abilities. The engineers also understand the direction of the change program but do not really *live the change*. They are critical of the change but there is also a distinction between younger and older engineers. The younger ones adopt this technology change more easily. The change managers focus especially on the project goals, the project risks, and the realization of the technical implementation of the Tablet PC. They are aware of the *human factors* but seem to have "no time to fix this problem" at short notice.

Regarding the change context, the (team) managers have an ambiguous role in the project. Sometimes they are involved but sometimes they do not know what is happening in the project. They can see the benefits but are critical of the process of change and the interaction with the project group. This is also related to the geographical dispersion. The engineers think that this is all about technology change (e.g. the Tablet PC) but do not seem to realize that their job content and behavior also need to be changed. The engineers are at a *great distance* from the project and have to carry out their regular work. The change managers are focusing on the implementation of the Tablet PC, which is already a difficult process. They want to involve line management in the project but find it hard to do so.

Finally, the intentional context is considered. (Team) managers have a clear perspective on the drives and motives of the engineers. Most (team) managers also have a technical background, so this could be a projection of their own motives and ambitions. The engineers like the technical parts and solving problems for customers. Working outside and having a certain freedom to perform the job together with colleagues is their main motivation. Change managers are convinced of the long-term benefits and work hard to realize the change project within the given timetable and deadlines.

During informal chats with members of the project team as well as during observations of project meetings, we heard the following: "it is difficult to really implement this change," "we do not know where to start first, because there are so many projects, there are many different projects that have also impact on my projects," and last but not least, "the organizational structure is complex which makes it difficult to see all the aspects related to the change projects." From the interviews with the regional managers, we heard that "the change projects are badly implemented. This is mainly because the project team cannot oversee all of the consequences of the changes and the impact in our region." However, one regional manager also told us that

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"team managers are now able to streamline all of the different projects within our organization and in fact they must also focus on the operational activities in the team." These informal reactions clearly show what people were thinking about the change project. Everybody reacted from his/her perspective and based on the things they saw or heard.

The service engineers are critical result-driven doers. They are motivated to improve their direct work and working conditions. However, this is carried out in a practical manner and often in a relatively short time. They want things to be performed in a positive way. There is no intermediate solution. If a tool is not working properly then it is not beneficial. The service engineers were the first to see direct results because of their immediate contact with customers. The engineers had to absorb all the customer complaints. Some generic beliefs that the service engineers had were:

- New tools must work 100% of the time. Technically the tools have to be perfect and engineers must see the benefit of them in their daily work.
- We know exactly what we are doing and how our work is done. Someone else can not know all the details.
- We focus on the details and keep all the aspects concerning our work in mind so we can come up with the best workable solution.

These beliefs became concrete and observable in the use of language. Some statements that were made during interviews with service engineers were:

- We are absolutely not involved in the change process.
- They [the change agents] do not even know what we are doing here.
- The wireless connection is miserable, it makes this thing sluggish.
- The implementation and training is insufficient.
- They [the change agents] should ask us on the workplace first, we must work with it.

On a professional level, we see that engineers think and act technically. It is almost a kind of binary thinking. Something is good or bad; it is working or not. One service engineer told us: "there is light or there is not." Engineers also think rather pragmatically and execute things practically. If a solution works for them, it is fine. In this thinking, solutions must also be realized in a short time. At the contextual level, we see a great distance between the change agents and the workforce in the field. Project members came and went and were not "one of them." They gave presentations and training but were difficult to reach if there were problems. The engineers felt that their participation was insufficient.

Regarding discourse, we saw quite a different approach. Within the project group, the focus was on particular functional parts, like roll-out plans, IT development of hardware and software, safety, HR training, etc. However, the service engineers had to work with it all together. For them, a working tool was the criterion with which s/he determined if something was good or bad. Some interviewees found the implementation and training in general to be insufficient, as quoted above. The interviews were held sometime after the one-day training sessions. The evaluation results, as mentioned earlier, were taken directly after the training. This seems to influence the positive results, as after some time of practical experience in the field engineers considered the

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training insufficient. Of course these reactions only came from some of the people interviewed, but this sub-public discourse that was going on in the group at that moment influenced the change result.

Speech act analysis

The speech act analysis was based on a regional kick-off session with the maintenance and repair managers, team managers, some representatives of the regional service engineers, and two change agents from the project team. The goal of this session was to inform the regional team managers about the implementation of the WOM application, give a demonstration, discuss the local implementation project, agree on concrete actions to be undertaken, and listen to possible pitfalls.

The day started with some explanations and questions, followed by a demonstration of the application on the Tablet PC, and finished with a clear direction from the regional manager to start working with the Tablet PC and especially to give feedback to the project team when improvements could be made. These discussions were digitally recorded and transcripts of parts are listed chronologically in Appendix B, including the role/function of the participant in which *Project CM* stands for the Project Change Manager or the change agent. Engineer stands for different engineers and relates more to the specific role than to the individual person. Manager stands for the role that can be both the team manager(s) and the manager of the maintenance and repair department. In this situation the three different professions involved are" 1) the manager, 2) the engineer, and 3) the change agent.

With these specific data, a workshop was organized with 10 coders who were familiar with discourse analysis. A presentation was also given by the researcher to instruct the 10 coders how to fill in the standard document. The document was set up in columns starting with the number of the speech act (1–38), the role/function, and the speech act as performed in the discussion. After that, columns were made to score the different classifications of speech acts (1–5) and the specific negotiation style (non-cooperative behavior, cooperative behavior, general speech acts, and meta-communicative speech acts). The final columns showed the four types of conversation styles (initiative, understanding, performance, and closure). Once the coders had filled in the document the results were calculated as fixed numbers and percentages. These numbers were input for the graphics presented in Figures 4, 5, and 6.

This quantitative method was used together with a qualitative method described later, a combination that can increase the level of validity and reliability (Ulijn, 2000) and is not uncommon in the area of business communication and intercultural negotiations (e.g. Brown & Levinson, 1987; Van der Wijst & Ulijn, 1995; Ulijn & Verweij, 2000). Appendix C shows the detailed coding per speech act. Figure 4 shows the results for the 5 different classifying speech acts with the related trend lines. Figure 5 shows the results for the negotiation style with the related trend lines. Finally Figure 6 shows the results for the conversation style with the related trend lines. In this figure a green line is also visible; this is an assumption on what we expected to see in the regional meeting and will be discussed in the findings.
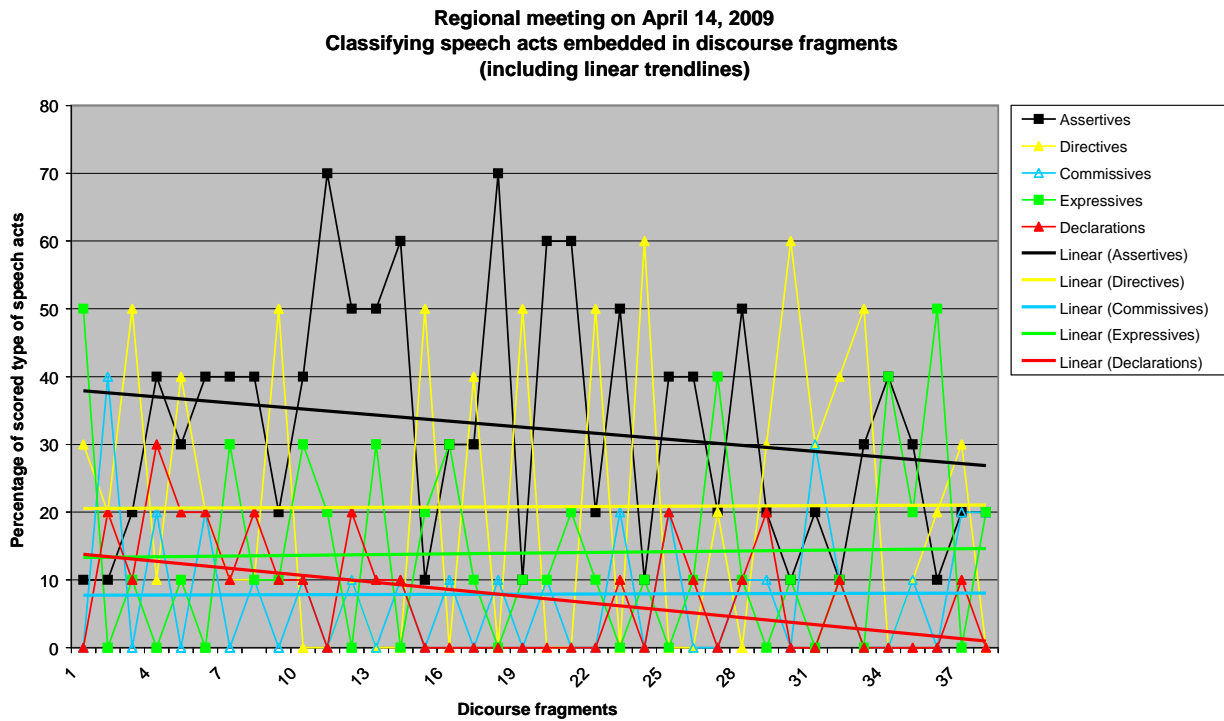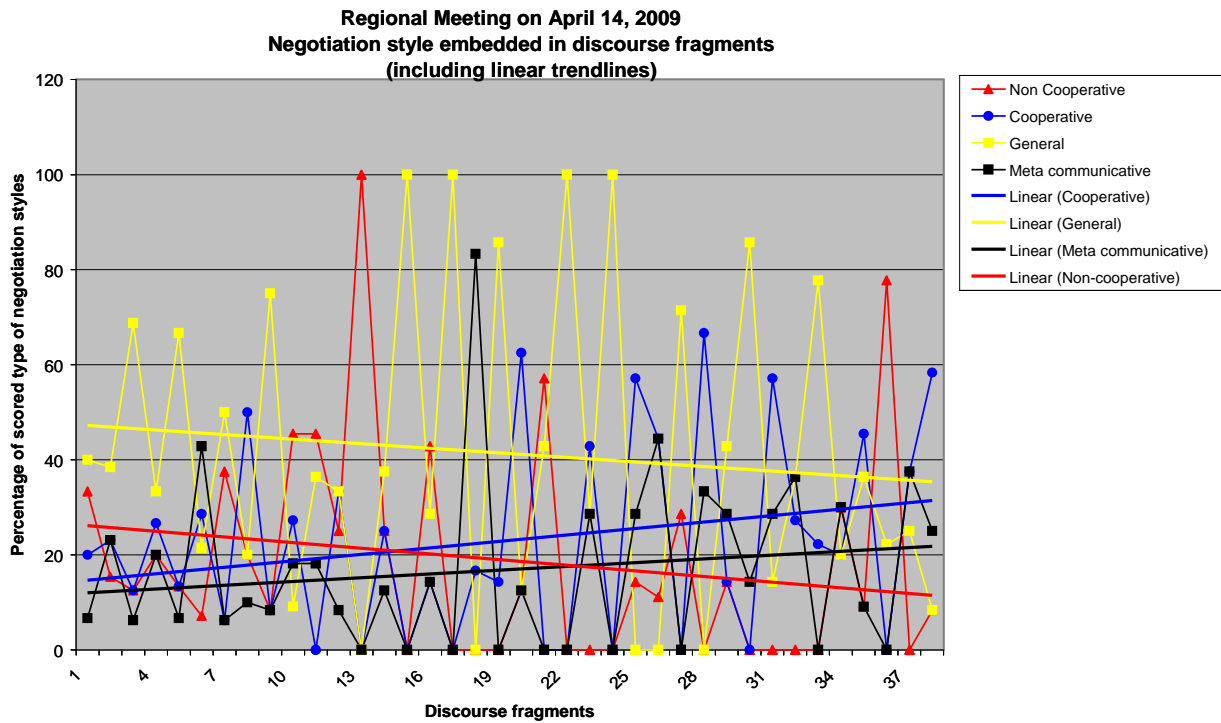
Figure 4. Classifying speech acts with trend lines.

Figure 5. Negotiation styles with trend lines.

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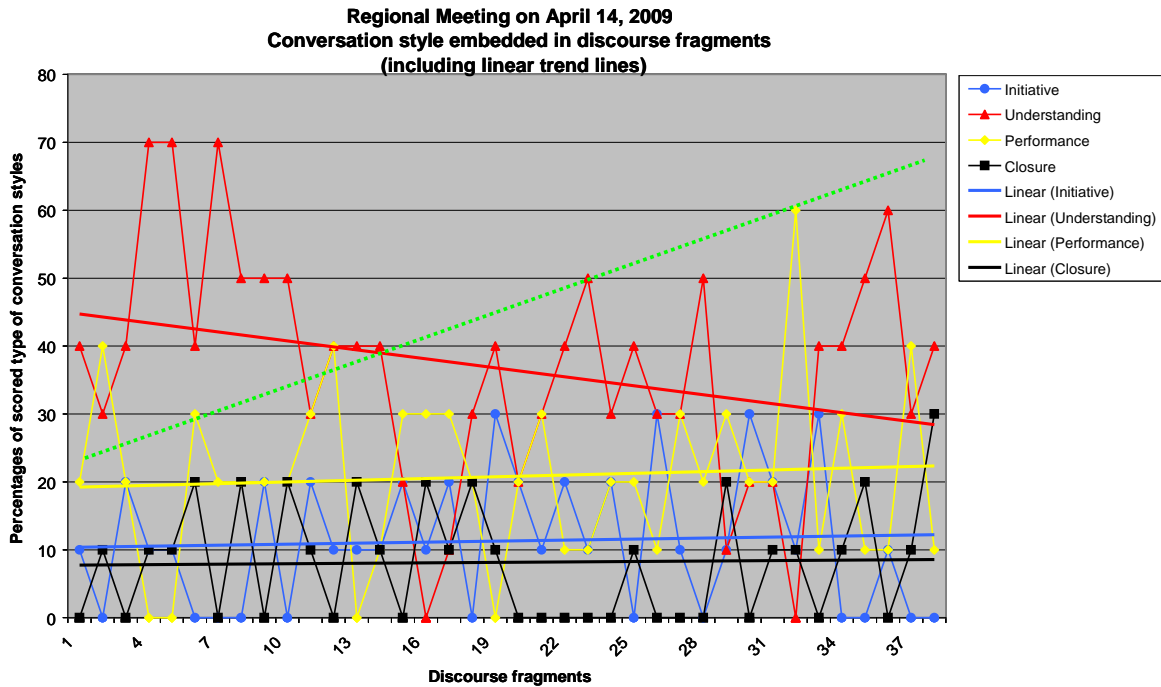
Figure 6. Conversation style with trend lines.

What is obvious in all these trend lines shown in the figures is first that they show relatively low percentages. In most situations, the trend lines stays flat or increases slightly but also sometimes declines strongly during the conversation over the day. When we put this into the situation of the regional meeting where different professions (manager, engineer, and change agent) were together and the goal of that meeting was to inform and increase understanding, it seems that the result was the reverse. This becomes very clear in Figure 6, in which the trend line of *understanding* (red line) declines during the discussion on that day. It was expected that this line would increase, as depicted by the green line. This green dotted line is just an indication of what was expected and is not based on the data. Also in Figure 6 it becomes clear that the trend lines for *initiative* (blue line) and *closure* (black line) are low (about 10%). An increasing line was expected here as well. When looking at Figure 5, it is clear that the *non-cooperative* trend line (red line) goes down and the *cooperative* trend line (blue line) goes up. This should be the goal of the meeting, but it was expected that the cooperative line would increase more strongly than it does in this situation. In general, this kind of discourse analysis is unique and gives a good insight into what is occurring between the different professionals and what the effect of this intervention might be after this regional meeting among the participants.

Speech acts and professional roles
For a deeper analysis of the specific professional roles (e.g. manager, engineer, and change manager), we also counted the number of different speech acts that were ranked highest by the 10 coders. Colors were used to distinguish the different roles (see Appendix C). The manager role is marked green, the engineer role is marked yellow, and the change manager is marked purple. This color scheme also relates to the highest ranked speech act. In cases of equals we counted both or sometimes all three rankings. This explains why sometimes the total amount

counted is higher than the 38 speech acts. Tables 2, 3, and 4 give an overview of the different speech acts per professional clustered by 1) classifying speech acts, 2) negotiation style, and 3) conversation style. We discuss our interpretation of the results in these tables.

Table 2.
Classifying speech acts counted per professional role.

Speech Act	Manager	Engineer	Change Mgr	Total
Assertives	9	10	1	20
Directives	2	4	8	14
Commissives	1	1	1	3
Expressives	1	5	-	6
Declarations	-	-	-	-
			Total = >> minus 5 double counted	43

What is obvious in Table 2 is that managers (9) and engineers (10) mainly use assertives in their communication over the day. Assertives are defined as claims or statements supportable by evidence (e.g. true or false statements, judgments, evaluations, and opinions). This can be recognized in the language and behavior of *technicians* when they argue about their work. Mostly these discussions are quite dichotomous and arguments in favor or against are discussed at the extremes of a scale and can be seen as black and white arguments.

The change managers (8) mainly use directives in their communication. Directives are defined as requests for someone to do something (e.g. invitations, instructions, orders, and commands, getting the work done). This is in line with the role of most change agents who do not have a formal hierarchical role but can only "facilitate" and make requests in the preferred direction. However, the change agent is also seen as the one who sets the direction and who knows what the new way of working will look like for the engineers and what actually will change for them. When the change agent cannot give detailed answers to the questions or arguments from the engineers, they will not directly adopt the changes as planned. This might be explained as resistance to change from the change agents' point of view but not from the engineers' perspective. The engineers think they do not receive satisfactory answers to their questions.

The engineers (5) also used some expressives, which are defined as the expression of an affective state (e.g. worries, apology, and wishing). These expressions also indicate that the questions and change situations give ground for many discussions: unanswered questions logically followed by expressions of worries. Declarations, beginnings, and endings that create new conditions are not used by anyone.

Table 3.
Negotiation style counted per professional role.

Negotiation Style	Manager	Engineer	Change Mgr	Total
Non-cooperative	2	5	-	7
Cooperative	5	4	2	11
General	5	7	7	19
Metacommunication	2	2	1	5
			Total = >> minus 4 double counted	42

In Table 3 the negotiation style per professional is given. The non-cooperative style is used when wordings or utterances for example to criticize, deny, disapprove, object, reject, and show irritation, etc. are used. The cooperative style uses utterances for example to admit approach, be forthcoming, confirm, inspire confidence, emphasize cooperation, show goodwill, etc.

In this particular case, the engineers show a mix between cooperative (4) and non-cooperative (5) styles. The managers show a more cooperative (5) style versus a slightly low non-cooperative (2) style. In our opinion, this means that the engineers are still worried and not completely satisfied with the change situation at that moment in time. The change managers do not use the non-cooperative style at all, which of course is obvious. The change agents in this situation are the *champion* of the change project. Also interesting is the relative use of the general conversation style by all three professions. The managers (5), engineers (7), and change managers (7) use utterances that ask for understanding, confirmation, and information but also explain, request, stipulate, and suggest. In this intervention it was obviously necessary to become *attuned* and work hard to gain a better understanding of all the ins and outs of the change project.

Table 4.
Conversation style counted per professional role.

Conversation Style	Manager	Engineer	Change Mgr	Total
Initiative	1	1	2	4
Understanding	8	16	6	30
Performance	5	3	4	12
Closure	-	-	-	-
			Total = >> minus 8 double counted	46

Table 4 shows directly the engineers (16) and their understanding conversation style. Understanding is defined as utterances in which claims, evidence, beliefs, and feelings are explored (Ford & Ford, 1995). However, for the managers (8) and the change managers (6), this intervention is also used to gain a better understanding of the real-life situation and how that fits with the intended change project. As we have seen in Figure 8 above, the number of utterances for understanding decreases during the intervention day.

The managers (5) and change managers (4) use the performance style the most. This means that these professionals want to "produce a specific result" at the end of the day. This can be explained from their formal positions as hierarchical and change managers, who are thus

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responsible for progress and results. Finally, nobody uses the closure style. According to Ford and Ford (1995), this is also an important step in the conversation. It allows everyone to leave the event behind them and continue from that point. Interventions are always *one time* moments. The spirit and sub-public discourses that *stay behind* are directly brought into the mind of the participants when the next intervention is planned. It is this kind of *history* that is important for interventions *here and now* but also for future interventions that will take place in the change process.

Linguistic models and intercultural communication
The linguistic models used above are studied in this particular case within one organization in one country. Although we might think that cultural aspects on a national and organizational level are rather stable, we clearly see that on the level of professional culture there are differences. Taking this to a global level in which intercultural aspects become relevant, we assume that differences even might become greater. The extensive work of Ulijn & Strother (1995) shows the importance of additional constraints when talking or writing in a different language and the psychological effects of a different cultural background.

Findings and discussion
The findings from the case study are described in relation to the propositions made for this study. Table 5 gives an overview of the propositions related to the three possible explanations.

Table 5.
Propositions related to the three possible explanations.

Possible explanation	Related question
Professional Culture	How do we define a *technically oriented employee* who is having to cope with organizational change?
Contexts	Which factors determine the reaction to organizational change projects in which technically oriented employees are involved (e.g. are the objects of change)?
Discourse	What are the consequences of the specific characteristics of technically oriented employees for the way change programs can be implemented in the most effective manner?

Within each proposition we found different *topics* that provide insights into the complexity of change programs in which different professional cultures (e.g. technicians, managers, IT developers, and change agents) work together. Table 6 gives an overview of topics related to the three possible explanations (professional culture, contexts, and discourse) for the sender–receiver gap. The topics that emerged from the data will be discussed afterwards. By this we focus on what seem to be the two most influential aspects: 1) professional culture and 2) discourse. The contextual aspects, especially the change context and organizational context, are also important but seem to have less influence on the change result. Finally, we will answer the propositions.

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Table 6.

Topics related to possible explanations for the "sender–receiver" gap.

Possible Explanations	Topic	Short Description
Professional culture 1) (change) managers 2) technicians	Beliefs and values	Different beliefs and values of 1) different professionals and 2) different hierarchical levels
	Attitude	Age-related attitude towards the use of ICT tools
Context	Support at a distance	Support on ICT issues by the Helpdesk
	Support on the "shop floor"	Support by team management and super users
	Reliability of the ICT tool	The Tablet PC seen as a "tooling" must work properly
	Geographical distance	Physical distance between the project team at HQ and regional areas in which service engineers are working in "mobile offices"
Discourse 1) (change) managers 2) technicians	Understanding	Different expectations and need for clearness during training sessions and regional meetings

Professional culture–beliefs and values

First we found that different professionals (e.g. service engineers and ICT developers) have different beliefs and values related to the same Tablet PC. The beliefs and values of the service engineers were expressed in clear statements, like: "I can only work with a well-working and easy to handle instrument. For me it is just one of my 'technical tools' and those have to be perfect otherwise I won't work with it," and "the wireless connection is miserable, it makes this thing slow and we cannot work with the Tablet PC when we want. First we must look for a good location where the wireless connection is working."

The beliefs of the IT developers as members of the project team were mostly expressed in separate project meetings and not in close contact with the service engineers. The statements expressing their beliefs were: "We can never deliver an application that is 100% correct working. There will always be some 'bugs' in it which will be handled later on as issues and must follow the IT change process," and "The service engineer does not have to be 'online' all the time. It is possible to do the administrative work later when there is a good connection. Of course this is not ideal, and we are working on that issue, but for the moment it works."

Second, we found that different hierarchical levels, positions towards, and roles in the change program influenced the beliefs and values, or at least the expressions made. The project members' statements were related to the situation in which were working. They had to cope with "the relations between the many projects within this organization which make it difficult to really implement this change. We really want to implement this change in a very structured manner

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along clear phases with involvement of the target group." The project members also "wanted the best for the service engineers and hopefully they could explain that this change fits within the strategic focus of our organization." During the change program, it also became very clear that their first achievement would be to implement a working Tablet PC with functional applications that were accepted. The visionary "new way of working" and the assumed "central function for the service engineer in the maintenance and repair process" became second best.

The regional and team management had an "in-between position." They were the linking pin between the project group and the service engineers as end-users. Their focus was "first on the operational actions and at the same time organize all the change effort in our region. Most engineers work in the field so we don't see them often." A generally statement of team managers, especially those who were at a distance from the project, was: "the implementation of the Tablet PC is bad. A lot of activities are 'dropped' in the region without any support of the project group. We must find out ourselves." A manager from the maintenance and repair department stated: "we really see the benefits of this change but we also have to perform our operational job."

Finally the service engineers are at the very end of this change process and sometimes can be seen as *the objects of change.* Engineers stated: "I don't know what is going on anymore. I hear things from my team manager and then I will do what is asked. But all the things I hear and see don't motivate me. We are not involved at all in this change process. Let them come to us first, we have to work with that thing [the Tablet PC]." Although every region had representative colleagues in the super user role it was still very hard to inform the other service engineers. In general engineers were sceptical and stated: "We want the best for our customers and that things will work well. But we can't work like that anymore because of all the 'expensive' ideas from HQ."

Professional culture–attitude

Most service engineers were not familiar with ICT tools; particularly, older service engineers (above the age of 45) did not have positive feelings about working with them. This made it more difficult for engineers to start using the Tablet PC after a one-day training. Although the training seemed sufficient at that moment, it really became clear after several weeks of engineers working alone in the field with the Tablet PC that the training was insufficient. Beside this, the bad attitude towards the ICT tool increased (like a self-fulfilling prophecy) because of the daily trouble they had understanding and using the Table PC and the applications.

The project members and the team managers had a much more positive attitude towards ICT. They were used to working with it all day in the office environment and could not imagine what working life would be like without this kind of instrument. Of course, this also makes it difficult to understand the position of the service engineers.

Discourse –understanding

The discourse used by service engineers is much more detailed and to the point than the discourse of the change managers. Service engineers wanted to know if the application could handle certain detailed material numbers that they used when replacing parts. The change manager could only answer that she did not know exactly but expected that there would be no

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problem. Another example is that the generic work process was explained by the project team on an abstract level. Practically for an overview, this was good enough, but for the engineers a lot of details were missing. When the engineers asked how and when they could expect training sessions in the region for the team, they expected a clear answer but the change manager gave a period in time that was just an open-ended answer. One clear statement from a service engineer was: "if I have a repair order I have to fix it within time. After that the customer has light (e.g. electricity) or he has not. There is nothing in between. I cannot work with something in between right or wrong. It is working or it is not!" These observations describe the discourse differences between the abstract or global thinking of the (change) manager and the detailed or concrete thinking of the service engineers.

Propositions related to findings

Based on the findings in this case study, we can describe a *technically oriented* employee as someone who thinks and acts in a logical (cause and effect) and operational manner. This employee is a critical and rational thinker with a high capacity for results. He/she believes in improvements of work processes but must see the benefits quickly in his/her daily work. The employee has an aversion for abstract and emotional thinking and vague or unclear goals. A more directive approach might work here but much better is direct involvement from this employee at the beginning of a change program. The employee is sometimes uncertain about specific activities but he/she will be unlikely to express this in a group. When the employee is supported in the right manner and there is a proper relational sphere, he/she is able to make a considerable contribution to the change process. This also requires (team) managers "to back off," maintain distance, and have enough supporting leadership to give engineers confidence. In this way the engineers can take responsibility and find out in daily practice what it means to work within this new context.

The factors that determine the reaction to organizational change projects in which the technically oriented employee is involved in the first place have to do with contextual aspects. The distance between project members and their own *life conditions* determine their reactions to a great extent. The interaction processes can only be established when there is a basic relation between the project members and the service engineers. Therefore, the project members must place themselves in the life conditions of the service engineers. The need for direct and close cooperation is important to establishing a certain trust in the relationship. This suggests the need for a local or regional project member who is available for questions and answers, who knows the work process, and who can really support the engineers in daily issues. Contextual aspects like a good working Tablet PC, functional applications, sufficient training, aftercare, and support are more or less "hygiene conditions." If the mindset of the service engineer is "the Tablet PC must work like a good tool and if it does not, then it is not useful," that means the change agents have to take care of a good working Tablet PC, but they also have to anticipate expectations, and communicate on the same level as the service engineers as well as listen to their complaints and solve problems quickly. When the relation is good and expectations are communicated properly upfront, the acceptance of minor troubles in the physical deliverables is *manageable*.

Knowing this, what then are the consequences for the way change programs and interventions might be executed? We think that interventions with technically oriented employees should be

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very clear, not abstract discussions and unclear programs, which seem to lead to nothing. Clear goals and a well-defined program that will guide them are necessary, as well as a good alignment with the engineers' daily practice. The change agents must really know the *work situation* of the engineer, the kind of working conditions in which he/she has to work, and the important issues he/she encounters in practice. Details of process flows, software applications, processes, etc. must be explained by the change agents. This builds trust in the relation. The results of the interventions must directly benefit their daily work, and should also include a great deal of activities (doing) instead of listening or reading. This seems obvious but for change agents and middle management is often difficult to realize. It needs close upfront thinking about deliverables, output, results, and what to do with them. The direct involvement of engineers in the change project should be better in this particular situation, not only as a user group that is able to test and give feedback on something that was invented by the change project, but as real participants in the change, developing together. This might overcome many problems during the interventions. Homan (2010) calls this kind of communication and interaction "power to" instead of "power over" communication.

Findings in an intercultural perspective

This case study is limited in scope (e.g. one organization within the Netherlands) and therefore makes is difficult to suggest findings in an intercultural perspective. However, with the dimension of Hofstede in mind it might be possible to make some assumptions. The professional culture relates to the profession of the service engineers, the manager or the change agent in this case. We assume that this professional culture is quite *universal*, so (service) engineers worldwide do not have severe difficulties in understanding each other when the communication is work related. For instance, IT developers from India might work very well with IT developers in the Netherlands when the conversation is IT related. In the military *multicultural* task forces show that a common professional understanding prevails. It is theorized that the relative influence of the different levels of culture on individual behaviour varies depending on the nature of the behaviour under investigation. Thus, for behaviours that include a strong social component or include terminal and moral values, national cultures might have a predominant effect. For behaviours with a strong task component or for those involving competence values or practices, organizational and professional cultures may dominate (Karahanna, et al, 2005). This might implicate that (service) engineers have a stronger bound with their profession. Wever (1990) notices that "many employees don't feel loyal to the company any more but to their profession, their own outline of their profession and their professional code of ethics."

When we take a closer look at the interaction between the three observed professionals (e.g. service engineers, (team) managers and change agents) we see an interaction pattern which might be typically Dutch. The Dutch place emphasis on egalitarianism and are skeptical about the value of leadership. Terms like leader and manager carry a stigma (House et al, 2002). This indicates that a same case study in a different country (e.g. with a higher Power Distance Index) might give other findings. This also implicates that in a cross cultural organizational change program people with different national cultural background will interact differently. As an illustration we found in the case study an e-mail discussion between one of the change managers and a user of the Work Order Management (WOM) application. The quotes below are illustrative for the different thought worlds:

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Engineer: After the demonstration of the WOM application I realized that we have to work according a lot of different procedures [engineers mentions detailed procedures and refers to manuals]. These procedures are not in line with the vision and values to be realized in the project; freedom, self supporting and cooperation. I do not think these values are realistic considering the regulations we have to stick with.

Change manager: Thanks for this reaction. I did not want to go into this discussion during the demonstration session. However we are quite busy to take your concerns and those of many others seriously. I want to assure that you are always responsible for the job and that we do not want to interfere with the regulations. But I want to point out that the vision of the project and the values are important in our work in the future.

Engineer: Ok, your answer sounds good, and I still believe in this project but I must say you're presentation was very technical. Many engineers have no experience with PC's and they did not understand much of your presentation. We have to keep them [the engineers] motivated. Their trust in this new technology is still far away. Personally I am positive about this development but in this idealized way of working there are too many expectations. Not every engineer has this kind of self starting initiatives, welcome in the real world I would say.

These quotes indicate that manuals and procedures are one way to reduce uncertainty (e.g. Uncertainty Avoidance Index: UAI), but also fear for new technological innovations like the Tablet PC are important to address in training sessions and discussions.

If we analyze how the change manager and the technician's conversation develops and the engineer starts from an egalitarian point of view (low Power Distance Index: PDI), we both learn in a learning organisation. The engineer sees a conflict between the vision of project and the formal procedures to pursue. The change manager reacts in an avoiding way (high Uncertainty Avoidance Index: UAI), let us not deal with this conflict now. The engineer in turn, does a last bid and calls for his constituency and plays good guy (himself) and bad guy (the constituency). Both are aspects of a low PDI and a low UAI. Let us fix the problem now, reflecting also a high problem solving mood, typical of the average technician or engineer. Combining this with the speech act analyses performed earlier we see the engineer using assertives (claims and statements) and the change manager using expressives (a kind of apology) and implicit also directives (getting the change work done). This is in line with earlier findings.

In an innovation management case (creative stage of innovation), 12 Dutch appeared to be more effective than their 10 German fellow students, all industrial engineering, whereas in an operations management case (implementing stage of innovation), the Germans were superior (results of the above Ulijn et al., 2004 study). A trainer of Dutch change managers, such as in the above example might learn from this that at the implementation stage of an innovation, such as a Tablet PC, one has to stick to a high PDI and a high UAI, where the Germans are good at, but combine this with granting more space and freedom for the creativity of the Dutch engineer or technician to find solutions to the full satisfaction of the client apart from overly strict regulations of WOM applications. There are several ways to reach Rome! Use the creative

problem solving potential of the engineer and the Tablet PC will fall in its place in this organisational change process.

Conclusions

The findings can be categorized in the three different contexts that we have addressed: namely the organizational, change, and intentional contexts. Figure 3 also implies that change interventions should take place in all the four quadrants of the AQAL model because they influence each other and cover the three mentioned contexts. If we take a closer look at the change program regarding the implementation of the Tablet PC, there is more interest in and attention given to the outside, measurable, and planned interventions in the individual and collective outside quadrants. This seems to be a result of thinking about change as a well-planned and controlled execution. We also find that the professional mindset strongly determines whether there is a positive expectancy, belief, and positive perception amongst the engineers about the Tablet PC. If the talks and informal conversations at the coffee machine are positive then the change result might also eventually become positive.

In general the following conclusions can be made. In the project, the focus was mainly on topics such as: application design, use of proper (ICT) technology, training, organizational/project aspects, and the social function of matching the expectations of service engineers with IT support. This message is mostly discussed from a sending perspective. The change agents were *sending* their message, but not communicating well with the target group (the receivers). However, in the communication by change agents, there was little understanding of the real intentional aspects of the engineer. Different beliefs and assumptions arising from different professional backgrounds might be the reasons for the misunderstandings. The technicians mainly used expressive speech acts, a non-cooperative negotiation style, and a need for understanding in their conversation. (Team) managers used more assertive speech acts, a cooperative negotiation style, and a need for understanding. The change managers used more directive speech acts, a general negotiation style, and again a need for understanding. These differences might indicate that people drifted apart during their communication process.

Another conclusion is that the participation and involvement of the service engineers was low. The super users should have filled this gap but they were mostly not skilled enough in performing this *intermediate* function between the project team and the end-users. Also, the regional management was not really involved during the change process. This means that from a receiving perspective more or less no one from the change group actually listened to the end-users, or at least the end-users had the feeling that they were not being heard. All the participants performed a certain visible behaviour that was strongly based on their invisible belief system. Many different internal and external parties were involved in the project, which increased the necessary interaction and complexity in the way that different sending and receiving messages *surrounded* the project.

The different parties all had their own specific organizational and professional cultural backgrounds and had to deal with issues such as software, hardware, new technology, etc. The service engineers, perceived their work from a very strong (technical) belief system. They were practical, inventive, and wanted results in the short term. Most important for them was that they

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could offer the customers a good job. Their approach to problems was more a situational one than a structured one. Engineers are more likely to act from a strong professional and personal belief system.

Finally it is obvious that the three aspects, professional culture, context, and discourse, are intertwined. It is hard to see these aspects as completely isolated. It is difficult to make sense of a piece of discourse outside its relevant contexts, and, at the same time, these contexts would not be what they are in the absence of (particular) discourse(s) that take(s) place within them (Linell, 2009).

Contribution and Directions for Further research

The language (e.g. clear statements and directions) and the methods (e.g. interactive discussions instead of long mono vocal presentations) used during the intervention became more adjusted to the receivers' thought world (e.g. the engineers). For a training session on the Tablet PC, the project focused clearly on the *proper language* that would be in line with the *language* of the service engineers. Change managers were also more *on site* so they could listen to and hear what the service engineers had to say and which problems they faced. They started to understand what technicians mend when they were having trouble with the Tablet PC. The focus in the project group shifted from a sender perspectiv*e* towards a receiver perspective and the change managers formed a kind of common language that could be understood by both the service engineers and the change managers.

Although this case study gives insights into the complexity of change programs and directions for interventions, we think further studies might follow this line of research. Especially the combination of *personalities* expressed in professional cultures and discourse analysis in the change process are really innovative. We suggest further research on the dialogical processes of human sense-making (e.g. Linell, 2009) in the specific social interaction between technicians, managers, and change agents in a change context. This indicates that discourse analysis should also take into account the socio-cultural setting in which the change takes place. Instead of the rather static representation of a combined sender–receiver perspective a more dynamic gesture–response perspective (Stacey, 2003) would be more appropriate given the complex situation of human interaction. In this sense, we think that change processes need to be studied from a dynamic perspective taking the context into account. History, future, and the here and now come together in interaction processes between people and language can be seen as a dynamic expression of the parties involved in the change process.

Further research might focus on intercultural aspects and the consequences of globalization. For example it might be interesting to focus on IT professionals working in India developing software for a Western firm. How can we disentangle national culture from professional culture in the use of language? What is more influential, the own national culture or the commitment to the specific professional culture and the typical discourse that belongs to it? How does all this affect the final (change) result of building new IT technology for example?

Moreover the growing integration of the energy sectors in Europe, including natural gas firm in Siberia and important solar energy from North Africa might cause changes in the daily operating

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procedures of service engineers. This might also make them aware that their professional culture and discourse has to match more and more with that of the change managers. In consequence, future research might be needed to study change managers in a more global role.

The novelty of this work is in particular in combining change management with detailed discourse analysis. By achieving this we integrate different scientific fields and try to gain more grip on the influencing aspects that occur in complex change programs. Being aware of the different professional cultures and thought worlds of people involved in the same change process and their professional discourse within the context makes people *culturally intelligent* (Plum, Achen, Draeby, & Jensen, 2008).

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Appendix A – Items and description for the semi-structured interviews with project members, team management, and service engineers during the case study in relation to three different contexts.

Organizational context	
Item	*Description*
Goals and strategy of the organization	Clearness of organizational goals and how these goals are reached. External focus of the organization strategy. Flexibility of the organization to react to market issues and developments in the market.
Organizational structure	Rules and procedures used in daily work. The way the organization focuses on systematic processes, control, and the way the work is executed.
Information, processes, and systems within the organization	The availability, use, and understanding of technology in daily work. Support of information technology in daily work.
Cooperation	The way the employees work together in the organization to realize tasks. Cooperation within a department or cross-departmentally.
Behavior	The way employees behave, what they do, and how they react to and communicate with each other.
Work	The way skills and knowledge of employees are used in the organization. The balance between work and pleasure. Working together with colleagues.

Change context	
Item	*Description*
Direction of change	Clearness and agreement about the change direction and the way to realize the goals of the change.
Technology related to change	The realization of new technology during the change process. Capacity for development of technology, alignment and perspective on the new technology.
Timing of the change process	The number of change processes in the organization that also affect this particular change process. Time available for acceptance and becoming used to the changes.
Communication about the change process	Clarity and frequency of communication regarding the change process. How well known is the communication regarding the change process?
Role change manager	The role and vision of the change manager regarding the change process.
Expected result	The things that employees expect regarding the change result. The impact on jobs, career perspective, the normal work, and the benefits for the employee.
Role of line management	The role of line management during the change process.
Creating support	The support employees will give to the change process. The way employees show initiative and support the change. Possibilities for influencing the change process, training, support from (top) management.

Intentional context	
Item	*Description*
Motivation and ambition	The motivation of individuals to carry out their specific job within the organization and the ambition of individuals for what they want to realize in their work.
Beliefs	The core beliefs of individuals.
Values and assumptions	The core values and assumptions of individuals.
Tensions between people and groups	Tensions between individuals or departments within the organization and as result pressure on the existing culture.
Culture and leadership	Support for one's own initiative, teambuilding, cooperation, trust, and openness between employees and management.
Political relations	Conflicting interests between individuals or departments.

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Appendix B – Speech acts in a regional kick-off meeting

Line no.	Function/ role	Speech act
1	Engineer	But what if I do not have any Internet connection and they have sent an order to me what will happen then? Will I miss this order?
2	Manager	No, if there is a connection later on, then you will still receive this order and all the information is still available.
3	Engineer	How do you use the different codes in this system? Are these still the same as we are used to?
4	Manager	Yes, we use the same codes until now. But they [*the project group*] are also talking about new codes for getting more details. I do not know at this moment what will be the coding for all our maintenance work.
5	Engineer	Do I also have to work with the different material numbers at this moment?
6	Manager	Yes, but these numbers are already in the system available.
7	Engineer	Okay, but does every engineer know these numbers? Or do we have to work with a manual and look them up? This will take a lot of time.
8	Manager	Yes, but you can see these numbers on your Tablet PC. They are there!
9	Manager	… Did some of you already take a look with a colleague to see the application and how it works?
10	Engineer	I don't think so, at least I have not had any visitors! (*... laughing ...*)
11	Engineer	Some of our engineers have difficulties with the Tablet PC and the applications. When they only have a shift once in a six-week period then the routine will take very long.
12	Manager	Yes, this might be an extra problem. But we then have to support them and be aware that they will pick up all the new stuff, perhaps a little bit easier. But at the end they also must work with this system.
13	Engineer	I know the direction of this project. They want us to start working from home. If this works well we do not have to come to the office anymore. But I do not think this will work. The way they tell it seems very nice, but I do not think that it will work in that way.
14	Manager	I think the project and new way of working will be very good. Of course the older employees might have some difficulties, but I can help them to get along with the system. For you, the younger ones, it won't be a problem, I think.
15	Project CM	How do you take care that engineers within your region deliver the proper data?
16	Manager	We have said this from the beginning. Already in the training we start to tell the engineers that they were responsible for correct data entry. You have to take care that this will always happen! You have to see that the engineers keep on doing this so they will learn it is a part of their job.
17	Project CM	How much time did you need to get used to work with the system?
18	Engineer	That's difficult to say… mmm, we have been testing, after that we got the training, and after that we started working in real practice. But it will take some time to learn all the ins and outs of this system. I am now working with

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		it for about two weeks.
19	Project CM	How do you think about this change?
20	Manager	First I want to see things working in practice, after that I will believe it. At first it looks rather good.
21	Engineer	I think it will take a lot of extra work for me to administrate all this. This could be a blocking issue for me.
22	Project CM	Can you mention more things that will change for the users?
23	Engineer	Oh, many things … [*Project CM: give some examples*]. There are so many things that will change, system-wise …
24	Project CM	Do we want at the end this validation step to disappear in the whole process?
25	Engineer	Yes, but the engineer in the back office should always take some action and give his approval. But for instance for an engineer of which he knows he is working good this step is just "a mouse click" and then it is validated. For other engineers who are not working that good we still have to validate.
26	Project CM	So these are the work orders which are to be done. The engineers can pick them random and freely. This is what I call the freedom within responsibility.
27	Engineer	OK, what can you do when this order keeps in the list? Nobody picks it up and they will not start working on it?
28	Engineer	Yes, then I have to dispatch this order out of the list to someone. But I think this is also something that should be discussed in the team. We have a performance target within our team and we realize this together.
29	Project CM	OK, this was our demonstration. It seems logical and of course we know that this will take some time to learn. But we want to ask you to start looking into the system with a colleague. The application is dealt with in your region.
30	Engineer	When is the training for our team planned?
31	Project CM	Yes, I have the global schedule at this moment. Together with (… *mentions name* …) we have to look into the detailed planning for training. I come back to that later, alright?
32	Manager	Yes, I think we have to do some homework in the next month. We need to make appointments about how we are going to work. This is also necessary for the cooperation within the team. Please start working on this, it's important.
33	Project CM	… Thank you. I would like to know what you think about this way of working at this moment. What is your first impression?
34	Engineer	Yes I think we have to start working with it. At this moment I can really see what it has to offer me and what kind of problems I will encounter. At first I think it will also give a lot of extra work.
35	Manager	Yes, but I think that this has to do with getting started on the system. Once you know it, it is possible to do more in the same time. But time will tell us. If things are working out well you should have less work with validation. In the end perhaps absolutely no work anymore ...
36	Engineer	Yes, but this was something I have heard many times. I think that at least one or two employees are quite busy with this. What will they do when this is not necessary anymore?

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37	Team manager	… I think we should also take a good look at the way engineers fill in the documents at this moment. When this information is alright then you should not have much rework anymore. So in this way we must educate the engineers in the correct way.
38	Engineer	… yes I understand …

Appendix C – Detailed overview of coding results per speech act

No.	Role	Speech act	1) Assertives Abs	%	2) Directives Abs	%	3) Commissives Abs	%	4) Expressives Abs	%	5) Declarations Abs	%	Non-cooperative (1-21) Abs	%	Cooperative (22-29) Abs	%	General (30-44) Abs	%	Meta-communicative (45-64) Abs	%	1) Initiative Abs	%	2) Understanding Abs	%	3) Performance Abs	%	4) Closure Abs	%
1	Engineer	But what if I do not have any Internet connection and they have sent an order to me what will happen than? Will I miss this order?	1	10	3	30	0	-	5	50	0	-	5	33	3	20	6	40	1	7	1	10	4	40	2	20	0	-
2	Manager	No, if there is a connection later on, than you will still receive this order and all the information is still available.	1	10	2	20	4	40	0	-	2	20	2	15	3	23	5	38	3	23	0	-	3	30	4	40	1	10
3	Engineer	How do you use the different codes in this system? Are these still the same as we are used to?	2	20	5	50	0	-	1	10	1	10	2	13	2	13	11	69	1	6	2	20	4	40	2	20	0	-
4	Manager	Yes, we use the same codes until now. But they (the project group) are also talking about new codes for getting more details. I do not know at this moment what will be the coding for all our maintenance work.	4	40	1	10	2	20	0	-	3	30	3	20	4	27	5	33	3	20	1	10	7	70	0	-	1	10
5	Engineer	Do I also have to work with the different material numbers at this moment?	3	30	4	40	0	-	1	10	2	20	2	13	2	13	10	67	1	7	1	10	7	70	0	-	1	10
6	Manager	Yes, but these numbers are already in the system available.	4	40	2	20	2	20	0	-	2	20	1	7	4	29	3	21	6	43	0	-	4	40	3	30	2	20
7	Engineer	Okay, but does every engineer know these numbers? Or do we have to work with a manual and look them up? This will take a lot of time.	4	40	1	10	0	-	3	30	1	10	6	38	1	6	8	50	1	6	0	-	7	70	2	20	0	-
8	Manager	Yes, but you can see these numbers on your Tablet PC. They are there!	4	40	1	10	1	10	1	10	2	20	2	20	5	50	2	20	1	10	0	-	5	50	2	20	2	20
9	Manager	….Did some of you already take a look with a colleague to see the application and how it works?	2	20	5	50	0	-	1	10	1	10	1	8	1	8	9	75	1	8	2	20	5	50	2	20	0	-
10	Engineer	I don't think so, at least I have not had any visitors! (…laughing…)	4	40	0	-	1	10	3	30	1	10	5	45	3	27	1	9	2	18	0	-	5	50	2	20	2	20
11	Engineer	Some of our engineers have difficulties with the Tablet PC and the applications. When they only have a shift once in a six-week period then the routine will take very long.	7	70	0	-	0	-	2	20	0	-	5	45	0	-	4	36	2	18	2	20	3	30	3	30	1	10
12	Manager	Yes, this might be an extra problem. But we then have to support them and be aware that they will pick up all the new stuff, perhaps a little bit easier. But at the end they also must work with this system.	5	50	1	10	1	10	0	-	2	20	3	25	4	33	4	33	1	8	1	10	4	40	4	40	0	-
13	Engineer	I know the direction of this project. They want us to start working from home. If this works well we do not have to come to the office anymore. But I do not think this will work. The way they tell it seems very nice, but I do not think that it will work in that way.	5	50	0	-	0	-	3	30	1	10	8	100	0	-	0	-	0	-	1	10	4	40	0	-	2	20
14	Manager	I think the project and new way of working will be very good. Of course the older employees might have some difficulties, but I can help them to get along with the system. For you, the younger ones, it won't be a problem, I think.	6	60	0	-	1	10	0	-	1	10	2	25	2	25	3	38	1	13	1	10	4	40	1	10	1	10
15	Project CM	How do you take care that engineers within your region deliver the proper data?	1	10	5	50	0	-	2	20	0	-	0	-	0	-	7	100	0	-	2	20	2	20	3	30	0	-

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Appendix C – (continued) Detailed overview of coding results per speech act

Nr of discourse fragment	Role	Speech act	CLASSIFYING — Speech acts										NEGOTIATION STYLE — Behavior / Supporting Speech Acts								CONVERSATION STYLE							
			1) Assertives		2) Directives		3) Commissives		4) Expressives		5) Declarations		Non Cooperative (1-21)		Cooperative (22-29)		General (30-44)		Meta-communicative (45-64)		1) Initiative		2) Under standing		3) Performance		4) Closure	
		Percentage scord by 10 coders >>>	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%
16	Manager	We have said this from the beginning. Already in the training we start to tell the engineers that they were responsible for correct data entry. You have to take care that this will always happen! You have to see that the engineers keep on doing this so they will learn it is a part of their job.	3	30	0	-	1	10	3	30	0	-	3	43	1	14	2	29	1	14	1	10	0	-	3	30	2	20
17	Project CM	How much time did you need to get used to work with the system?	3	30	4	40	0	-	1	10	0	-	0	-	0	-	7	100	0	-	2	20	1	10	3	30	1	10
18	Engineer	That's difficult to say….mmm, we have been testing, after that we got the training and after that we started working in real practice. But it will take some time to learn all the ins and outs of this system. I am now working with it for about two weeks.	7	70	0	-	1	10	0	-	0	-	0	-	1	17	0	-	5	83	0	-	3	30	2	20	2	20
19	Project CM	How do you think about this change?	1	10	5	50	0	-	1	10	0	-	0	-	1	14	6	86	0	-	3	30	4	40	0	-	1	10
20	Manager	First I want to see things working in practice, after that I will believe it. At first it looks rather good.	6	60	0	-	1	10	1	10	0	-	1	13	5	63	1	13	1	13	2	20	2	20	2	20	0	-
21	Engineer	I think it will take a lot of extra work for me to administrate all this. This could be a blocking issue for me.	2	60	0	-	0	-	2	20	0	-	4	57	0	-	3	43	0	-	1	10	3	30	3	30	0	-
22	Project CM	Can you mention more things that will change for the users?	2	20	5	50	0	-	1	10	0	-	0	-	0	-	7	100	0	-	2	20	4	40	1	10	0	-
23	Engineer	Oh, many things….(Project CM: give some examples). There are so many things that will change, system-wise….	5	50	0	-	2	20	0	-	1	10	0	-	3	43	2	29	2	29	1	10	5	50	1	10	0	-
24	Project CM	Do we want at the end this validation step to disappear in the whole process?	4	10	6	60	0	-	1	10	0	-	0	-	0	-	7	100	0	-	2	20	3	30	2	20	0	-
25	Engineer	Yes, but the engineer in the back-office should always take some action and give his approval. But for instance for an engineer of which he knows he is working good this step is just "a mouse click" and then it is validated. For other engineers who are not working that good we still have to validate.	4	40	0	-	2	20	0	-	2	20	1	14	4	57	0	-	2	29	0	-	4	40	2	20	1	10
26	Project CM	So these are the work orders which are to be done. The engineers can pick them random and freely. This is what I call the freedom within responsibility.	4	40	0	-	0	-	1	10	1	10	1	11	4	44	0	-	4	44	3	30	3	30	1	10	0	-
27	Engineer 1	Ok, what can you do when this order keeps in the list? Nobody picks it up and they will not start working on it?	2	20	2	20	0	-	4	40	0	-	2	29	0	-	5	71	0	-	1	10	3	30	3	30	0	-
28	Engineer 2	Yes, than I have to dispatch this order out of the list to someone. But I think this is also something that should be discussed in the team. We have a performance target within our team and we realize this together.	5	50	0	-	1	10	1	10	1	10	0	-	4	67	0	-	2	33	0	-	5	50	2	20	0	-
29	Project CM	Ok, this was our demonstration. It seems logical and of course we know that this will take some time to learn. But we want to ask you to start looking into the system with a colleague. The application is dealt with in your region.	2	20	3	30	1	10	0	-	2	20	1	14	1	14	3	43	2	29	1	10	1	10	3	30	2	20

Appendix C (continued) – Detailed overview of coding results per speech act

Nr of discourse fragment	Role	Speech act	CLASSIFYING Speech acts										NEGOTIATION STYLE Behavior				Supporting Speech Acts				CONVERSATION STYLE							
			1) Assertives		2) Directives		3) Commissives		4) Expressives		5) Declarations		Non Cooperative (1 - 21)		Cooperative (22 - 29)		General (30 - 44)		Meta-communicative (45 - 64)		1) Initiative		2) Under standing		3) Performance		4) Closure	
	Role	Speech act / Percentage scord by 10 coders >>>	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%
30	Engineer	When is the training for our team planned?	1	10	6	60	0	-	1	10	0	-	0	-	0	-	6	86	1	14	3	30	2	20	2	20	0	-
31	Project CM	Yes, I have the global schedule at this moment. Together with (…mentions name…) we have to look into the detailed planning for training. I come back to that later, alright?	2	20	3	30	3	30	0	-	0	-	0	-	4	57	1	14	2	29	2	20	2	20	2	20	1	10
32	Manager	Yes, I think we have to do some homework in the next month. We need to make appointments about how we are going to work. This is also necessary for the cooperation within the team. Please start working on this, it's important.	1	10	4	40	1	10	1	10	1	10	0	-	3	27	4	36	4	36	1	10	0	-	6	60	1	10
33	Project CM	….Thank you. I would like to know what you think about this way of working at this moment. What is your first impression?	3	30	5	50	0	-	0	-	0	-	0	-	2	22	7	78	0	-	3	30	4	40	1	10	0	-
34	Engineer	Yes I think we have to start working with it, At this moment I can really see what it has to offer me and what kind of problems I will encounter. At first I think it will also give a lot of extra work.	4	40	0	-	0	-	4	40	0	-	3	30	2	20	2	20	3	30	0	-	4	40	3	30	1	10
35	Manager	Yes, but I think that this has to do with getting started on the system. Once you know it, it is possible to do more in the same time. But time will tell us. If things are working out well you should have less work with validation. In the end perhaps absolutely no work anymore....	3	30	1	10	1	10	2	20	0	-	1	9	5	45	4	36	1	9	0	-	5	50	1	10	2	20
36	Engineer	Yes, but this was something I have heard many times. I think that at least one or two employees are quite busy with this. What will they do when this is not necessary anymore?	1	10	2	20	0	-	5	50	0	-	7	78	0	-	2	22	0	-	1	10	6	60	1	10	0	-
37	Team manager	….I think we should also take a good look at the way engineers fill in the documents at this moment. When this information is alright then you should not have much rework anymore. So in this way we must educate the engineers in the correct way.	2	20	3	30	2	20	0	-	1	10	0	-	3	38	2	25	3	38	0	-	3	30	4	40	1	10
38	Engineer	…..yes I understand…..	2	20	0	-	2	20	2	20	0	-	1	8	7	58	1	8	3	25	0	-	4	40	1	10	3	30

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