AC Leonard
P Joubert

Soft issues to focus on for ensuring sound communication in software project teams

ABSTRACT

IT departments use project teams to bring key people together to achieve specific goals. Yet many struggle to achieve this effectively because of poor communication within teams. Research done in this area indicates that management and team leaders have to focus on specific soft issues to support the effective functioning of software project teams. In this research project the authors investigated the impact of a large number of soft issues on sound communication within project teams. Only four of these soft issues, namely those of mutual support, cooperation, commitment and a knowledge base, were found to be of vital importance to ensure that communication within software project teams will remain on a sound basis during the course of such a software project.

Dr Awie Leonard and Mr Pieter Joubert are Senior lecturers in the Department of Informatics at the University of Pretoria, South Africa.

1. INTRODUCTION AND BACKGROUND

The performance of software project teams has been an issue in the IT industry since early days. In our environment where we manage a large number of student teams doing software projects for end users in the private sector, it has become very important to understand why some teams are successful in working together as team members and why other teams fail in working together. Answers to this problem will enable us to spend our time more effectively on other project problems than on trying to sort out conflict between team members.

In recent research in this field the focus of attention was on a number of important issues that could be regarded as critical for the effective functioning of such project teams. Among other important issues, recent research was done on the effectiveness of project culture (Palmer, 2002), factors that impact on team satisfaction (Barczak & Wilemon, 2001), the establishment and maintenance of sound relationships between team members (Leonard, 2002), and assessing team efficiency (Jiang, Motwani & Margulis, 2002).

The importance of sound communication in project teams to achieve project success cannot be overemphasised. This is sanctioned by Barczak and Wilemon (2001) as they explain which factors influence team satisfaction. They state that strong communication skills are also important to effective team members and that they must be willing and able to share ideas, to listen and to be open-minded about the views of others on the team. Thus, team members need to possess several different interpersonal skills as well as functional expertise to be effective. Furthermore, they state that the setting of clear project goals that are communicated to, and understood by, team members pays off in greater focus and thus, greater satisfaction. Negative feelings about the project can also affect the quality of work. Thus, conflict can lead to poor direction, poor coordination and communication between members, lower quality work, and more errors.

Furthermore, Barczak and Wilemon (2001) state that an organisational culture that supports teamwork has to be built. This can be achieved by creating models of effective teamwork and sharing exemplary stories throughout the organisation, emphasising cross-functional integration, recognising and rewarding cooperation, and providing training in teamwork skills.

In this paper the authors take the research a step further by indicating which elements are the most important to focus on in order to ensure sound communication between team members and as such that all team members will feel committed to achieve project success. In the research study the authors use the elements that were identified by

Leonard (2002) as a basis from which to work. These elements form the ingredients for sound relationships among team members and, as such, for sound communication. Leonard describes two important dimensions of elements that should be focused on in order to establish and maintain sound relationships and, as such, sound communication. In his research he has identified 14 different elements, four of which belong to a physical dimension and the others to an abstract dimension. The aim of the research study was to analyse the personal experience of project team members in 60 different projects. By identifying the most important elements according to the two said dimensions, the authors argue that when focusing on these elements from a management viewpoint, communication within the teams will be on a sound basis, which will contribute to sound relationships in the team as well as a much better performance among team members. In the next section a brief description is given about what is meant by sound relationships and the specific role that each of the 14 elements plays in this regard. Furthermore, in the next section, it is pointed out that sound communication forms the basis for sound relationships.

2.   SOUND COMMUNICATION AS A BASIS FOR SOUND RELATIONSHIPS

Soundness is a term used to indicate that "everything goes well with a relationship" and with the communication in a specific team. This is a rather abstract term that is very difficult to measure. In real life situations, for example, when one asks a project team member how it is going with the team (meaning the team spirit), the typical response to such a question is: "Fine, thank you". For any outsider, like a manager or any other person who does not belong to the team, it is even more difficult to give an objective answer. This type of question and the response to it are normally quite subjective. One reason for this is because people play *politics* in the sense that they do not want to portray the situation as it really is - especially when things are not going too well. According to Agyris (1990), *politics* is in many cases the reason for the existence of "undiscussables", which prevent people from talking about things that really matter. Pitt and Bromfield (1994) state that political clout, rather than merit, can dictate the final decisions that may have a negative or destructive influence on the soundness of a relationship.

One of the important elements that plays a prominent role in the continuity of a relationship and has a direct influence on the soundness thereof is *trust* (Anderson & Weitz, 1989; Humphrey, 1990). Different elements, like the team culture, communication between team members, etc. have an influence on the soundness of relationships and therefore form determinants of trust in a relationship. In other words, these elements may be described as those that help to establish trust or mistrust in a relationship. Anderson and Weitz (1989) state that the following are important determinants in building mutual trust levels in a relationship:

- *Reputation*
  Individuals and firms provide signals of their future actions through their presentations. People are especially attuned to behaviours that allow them to infer cooperative rather than competitive tendencies. An individual is more willing to commit to another if the other person holds a reputation for cooperative behaviour. The same mechanism operates among firms and serves to check misbehaviour, thereby building trust, especially in long-term relationships.
- *Support*
  Much has so far been said about the importance of support, especially as far as the creation of a supportive culture is concerned (*cf* above). According to Anderson and Weitz (*supra*) one way of positively influencing downstream participants in relationships is to provide backup support like product training and a response to requests for information. The lack of such support is a common complaint among team members, leading to resentment and poor relationships. IT departments who support the downstream participants of the channel are rewarded with better relationships.
- *Goal congruence*
  When a dyad agrees on goals, conflict is minimised and trust can develop.
- *Cultural similarity*
  Much has been said so far about the importance of culture in the establishment of relationships. The "culture gap", for example, is one of the barriers causing difficulty in learning to trust the other party. The essence of the problem is the lack of shared values and methods, which manifests itself as differences in cognitive styles, operating methods and choices.
- *Age*
  One reason why older dyads continue is that experience breeds trust. In this regard Anderson and Weitz (*supra*, referring to Scanzoni, 1983 & Pruitt, 1981) argue that the older a relationship, the greater the likelihood that it has passed through a critical "shakeout" period of conflict and influence attempts by both sides. If the dyad survives this period, the foundation is laid for personal trust, mutual liking and a good working relationship. Furthermore, even without passing through crises, partners get to know each other's idiosyncracies, and mutual understanding deepens over time. This improves the effective quality of the relationship.
- *Communication*
  Communication improves trust by resolving disputes and misunderstandings and by aligning perceptions and expectations.
- *Power imbalance*
  When one party possesses inordinate leverage over the other, the weaker party becomes mistrustful, i.e. apprehensive about the stronger party's intentions. Hence, it is expected that power imbalances will diminish the level of trust in a dyad and therefore in a relationship as a whole.

It follows clearly that if any dyad (*sub*-relationship) in a relationship is not built on a sound basis, such a situation will have an effect on the *larger* relationship.

It is clear from the abovementioned that *trust* forms a *pivotal facet* in the establishment of stable relationships between team members. Furthermore, communication improves trust by resolving disputes and misunderstandings and by aligning perceptions and expectations. One can argue that sound communication forms an important basis for the well-being of any project team.

In the next section the elements of the *physical* and *abstract* dimensions are briefly described to indicate the important social role that each element plays in the project team environment.

3.   ELEMENTS OF THE PHYSICAL AND ABSTRACT DIMENSIONS

According to Leonard (2002), a relationship between any two members of a project team consists of two dimensions, namely a *physical dimension* and an *abstract dimension*. The physical dimension describes those elements that are necessary in order to enable contact between two members of a team, whereas the abstract dimension describes the soft issues. Furthermore, Leonard states that these two dimensions enable one to describe fully the holistic nature of such a relationship and encapsulate the important elements of a support-oriented organisation, namely mutuality, belonging and connection, as mentioned by Pheysey (1993).

A brief description of the nature of the different elements in the physical and abstract dimensions will now follow. As far as the *physical dimension* is concerned, the following elements of relationships could be seen as the most important:

- *People*
  A relationship consists of all the responsible people who are involved in the systems development life cycle at a given time. "Responsibilities are negotiated and shared between systems developers and users". (Dahlbom & Mathiassen, 1993.)

- *Technology*
  Technology may be seen as one of the most important elements in such a relationship, which enables the people who participate in the relationship to communicate with one another. The importance of proper communication structures, both vertically and horizontally, is emphasised by Bommer *et al.* (1991) and could be seen as one of the most important organisational characteristics associated with unethical activity. Apart from the normal communication technology, facilities like *help desks* and the *Internet* are some of the most important factors in this regard.

- *Procedures*

    Two types of procedures are of importance, namely organisational procedures (such as standards and policies), which already *exist* and can be seen as a given and *new* procedures, which are created by people because of their interaction with the given procedures and technology. DeSanctis and Poole (1994) state:

    > Prior to development…structures are found in institutions such as reporting hierarchies, organisational knowledge, and standard operating procedures…the structures may be reproduced so as to mimic their nontechnology counterparts, or they may be modified, enhanced, or combined with manual procedures, thus creating new structures within the technology.

- *Structures*

    Depending on the "type" of team member and therefore the service and support that will be offered, relationships will differ in content as far as *formal and informal* social communication structures are concerned. The most common of these structures are project meetings and JAD (joint application development) sessions.

    During the initial stage of the traditional systems development life cycle, communication normally takes place in the form of formal or informal talks by means of telephone discussions, meetings, mail, etc. When IT starts developing a system, communication between team members can of course still take place by means of the abovementioned talks, but a new dimension of communication in the form of involvement in JAD sessions may, for example, take place.

    These structures are mainly used to ensure that the emerging product remains on track. On the other hand, it is used by IT not only to obtain business needs, but also to get clarity on already stated needs. Furthermore, these communication structures serve as enquiry forums for team members where they learn and understand the new environment of the emerging system or that part of the organisation that they are redesigning. According to Dahlbom and Mathiassen (1993:122), designing a computer system is really a means of redesigning the organisation. They state that the challenge is to understand and change established traditions in the user organisation and in the project group.

As far as the *abstract dimension* is concerned, the following elements of relationships are the most important:

- *Team members are sensitive to change*
  Because of the social nature of relationships, any form of change that is initiated, either on the IT side or the end user side, may disturb a relationship. It is argued that any kind of change that has an effect on any of the elements of the *physical* and *abstract* dimensions of a relationship will in fact disturb the relationship because of its holistic nature, which will be described later.

- *Team members need a knowledge base*
  According to Beard and Peterson (1988), at least part of the design problem seems to be that the analyst/designer is working from his or her own perceptions of the user's needs, which often include unrealistic expectations of user *knowledge* and an often mistaken idea of user desires and requirements. Furthermore, he says that the analyst views the computer from an expert's point of view and often a technical perspective. The user views the computer as a potentially useful tool, but from a more general orientation. These two views are quite different, and they are often incompatible and in conflict.

  This type of relationship was explained by Newcomb in the early 1960s as the *co-orientation* model. According to his model, if an object (the computer) is important to us, we expect others to whom we are attracted or with whom we interact also to like the object and view it from our perspective. A "strain toward symmetry", an attempt to reach a common understanding or viewpoint, can develop from the discrepancies between the two possibly different orientations. The resolution of these different perspectives is possible only when the analyst begins to understand the needs, requirements and desires of the user in order to design and produce the system properly. Users must also aid in this resolution by understanding the limitations of the computer systems they desire, and by developing a thorough and specific understanding of their own needs.

  The abovementioned explanation of the complex world of perceptions, attitudes and approaches towards developing software products by IT professionals for the end user forces us to a point where we can say that in order to overcome the most serious problems during this communication process in a relationship, a knowledge base of some kind is necessary before entering a relationship.

- *Team members need a supportive culture*
  In order for a relationship to be sound, continuous support and mutual understanding, *inter alia*, need to be elements of such a relationship. According to Pheysey (1993), a support-oriented working environment has the elements of mutuality, belonging and connection.

- *A cooperative behaviour pattern is followed by the participants*
  Cooperation is not a fixed pattern of behaviour, but a changing, adaptive process directed to future results. The representation and understanding of intent by every party is therefore essential to cooperation, and as such emphasises the importance of communication during cooperation (Clarke & Smyth, 1993).

  Furthermore, they say that cooperation can also create new motives, attitudes, values and capabilities in the cooperating parties and therefore such behaviour will help to create and maintain a supportive culture.

  Ciborra (1993) argues that the design of effective systems for cooperative work in teams must be based on a thorough understanding of the forces that shape cooperation and influence the productivity of the work group. "Co-operative work is not a straightforward social process whose stability can be taken for granted. On the contrary, each case of work-group formation and process is uniquely influenced by its contextual forces". (op. cit.). Furthermore, Ciborra (*supra*) states that with a high level of goal congruence, a work group can be relatively self-reliant and self-motivated and require little external monitoring; a group of this sort can be considered 'co-operative'.

- *Elements of a relationship have a holistic nature*
  According to Leonard (2002) the important elements that make up a relationship between team members at a given time behave in a holistic way. These elements impact on one another and have a negative or positive influence on each other depending on the given circumstances. If any of these elements is disturbed in a negative sense, the entire relationship is undermined.

- *Sustainability*
  A most obvious characteristic of the abstract dimension is its sustainability over *time*. In this regard, time refers to the lifespan of a relationship and one can argue that from an information systems viewpoint, a relationship of this kind will only survive until the product or service reaches the end of its life cycle.

  Projects that are proven to be unfeasible are terminated in the early stages of the systems development life cycle, whereas projects that are implemented successfully may have a lifespan of several years in terms of supporting organisational processes. During such a lifespan, an information system may undergo many modifications in order to cope with changing organisational needs. Therefore, the relationship between team members may last for a few hours (even minutes) depending on the circumstances of the team. In this regard, Introna (1994, *op. cit.*) states: "Structures

as relationships are contingent, it appears and disappears. It could be brief (a few seconds) or long lasting (several years)".

- *Commitment*
  Kinlaw (1989) states that one of the primary tasks of a manager is to create commitment and focus among employees. He states furthermore that managers who help employees to increase their knowledge, skill and experience are also building employee commitment.

  In this regard it is important for managers to note the four sturdy supports of commitment, namely: (a) clarity of goals and values; (b) employee competencies that ensure success; (c) the degree of influence that employees have; and (d) the expressed appreciation given to employees for their contributions. Commitment should be seen as a solid block that rests on these four sturdy supports or legs (Kinlaw, 1989).

  Commitment has been defined by Newman and Sabherwal (1996, referring to the work of (Staw, 1982)) as a state of mind that holds people and organisations in the line of behaviour. It encompasses psychological forces that bind an individual to an action. Commitment has been argued to affect greatly the persistence of behaviour (Newman & Sabherwal, 1996), referring to the work of Salancik (1977).

All the elements described above form important sub-dimensions of the *physical* and *abstract* dimensions. Each of these elements plays a specific social role that impact on the soundness of communication in the team structure and on the success of the project undertaken by a specific team.

5.   BRIEF BACKGROUND ON STUDENT PROJECTS UNDER INVESTIGATION

In their final year, students are given the opportunity to form part of an information development project that is as near to real life as possible. They are expected to analyse, design, test and implement a business information system, for a real user with a real information system need, as part of a project team. The final-year project aims to establish and integrate the theoretical and practical work done in the previous years of study and to prepare students better for the working life.

The project teams consist of three or four members as chosen by them. Nobody is formally appointed as a project leader and the team must find their own way. The aim of the team approach is to teach students to work together in groups on a very important project (their degrees normally depend on this) and to learn how to handle the inevitable

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communication problems and conflict arising from it. Although the importance of the social side of information systems development is emphasised during the preceding years, most students really only understand it after the project.

Although students choose their own teams, quite a few of the teams build up a lot of interpersonal tension. The biggest source of tension is one or more members not doing their part. In most cases, these issues can be resolved in conjunction with the course coordinator. In severe cases, where communication has broken down completely, the course coordinator becomes the project manager of the team or the team splits up.

6.   RESEARCH APPROACH

The research study was conducted by taking into consideration the important principles for interpretive research as stated by Klein and Myers (1995) and Sahay *et al.* (1994), because they are very suitable in identifying the social nature of the research questions involved. Furthermore, they give structure to the entire problem of conducting interviews in a reliable and valid way.

Klein and Myers *(supra)* state that the most common way of conducting interpretive research is what is referred to as *the interpretive field study* (an approach that depends on gaining access to people in the field). "…One could even do a valid and high-quality case study without leaving the library and the telephone…" (Yin in Klein & Myers, 1989). The abovementioned relativist approach to studying the social construction of information technology therefore formed the basis of the research.

Based on the above-mentioned, an *interpretive field study* was done in order to answer the research question under investigation. Although a questionnaire was used as a research method, it was not intended to be used in a mainly quantitative, statistical way. The questionnaire was merely constructed to capture the factors that played the most important role where team members regarded their experience as positive or negative. Furthermore, the questionnaire also allowed the students to express their views regarding the reasons for having a positive or negative experience.

The following is a brief description of the field study:

• Final-year students were given the opportunity to design software systems for real users. They started in the beginning of 2002 and were evaluated at the end of that year. During the year, they needed to form and manage their own teams. The progress of the different student teams was monitored by at least two lecturers. Among other things, the supervising lecturers were responsible for holding discussions

with team members about the problems they experienced, and making recommendations about future directions with regard to their specific project.

- After successful completion of their projects at the end of the year, each student completed a questionnaire that was analysed by the authors to establish how they as individuals experienced the projects on which they worked. The questionnaire focused on eight of the important elements of how sound relationships are established and maintained as described by Leonard (2002). A more detailed motivation for this follows in the next section. Furthermore, the students were given the opportunity to provide their own opinions/ideas with regard to how software project teams can achieve success in terms of sound communication.
- Students were also allowed to send "private" emails or have private discussions with any of their supervisors with regard to any problems they experienced in their different teams.

The following research question needs to be answered:

Which elements of the physical and abstract dimensions are the most important role players in establishing sound communication and sound relationships in a project team?

Based on the research of Leonard (2002), the hypothesis of the authors for this research study is that all the elements of both the physical and abstract dimensions play a vital role in building and maintaining sound communication and sound relationships. Furthermore, based on our experience in managing these software project teams, we believe that the elements of the abstract dimension play a more important role in this regard.

7.   LIMITATIONS OF THE STUDY AND FUTURE RESEARCH

Because of the special circumstances under which the student projects were conducted, it was not feasible to evaluate the impact of the more philosophical elements on the establishment of sound communication and sound relationships. Furthermore, the students were allowed to organise themselves into project teams and, as such, the value of working with people they did not know at all and with whom they might differ a lot (which is normally the case in the "real" IT world) could not be evaluated.

In terms of the said limitations of the study, it is important that a similar study should be conducted in a working environment where these limitations do not exist.

8. RESEARCH RESULTS

Eight of the 14 elements (from the physical and abstract dimensions) discussed above were used in the research. The motivation for this was that some of the soft issues (elements) described by Leonard (2002) were of a philosophical nature and not applicable to the working environments in which the students performed their projects. The first three (technology, procedures and structures) form part of the physical dimensions, while the next five (changes, knowledge base, support, cooperation and commitment) form part of the abstract dimensions. An example of the questionnaire is presented in appendix A.

Students were given the opportunity to complete questionnaires about their personal project experiences during class sessions. A total of 120 out of the 200 students who took part in the research project completed questionnaires. Appendix B contains a summary table of the results obtained through the questionnaires, a brief discussion of which follows:

- When asked which factors are important for sound communication in the teams, the factors in the abstract dimension (76.8%) were considered more important than those in the physical dimension (64.7%), with the exception of the changes factor (60%).
- Similarly, when asked which factors contribute to poor communication, the factors in the abstract dimension (70.8%) were considered more important than those in the physical dimension (60.7%), again with the exception of the changes factor (59%).
- In total, cooperation was the most significant positive (83%) and negative (79%) factor, while procedures were the least significant positive (60%, with changes) and negative (57%) factor.
- A possible reason why the changes factor is not behaving as expected is because of the controlled environment in which teams work. Most of the changes that impacted on teams were managed by the department and did not impact that negatively on the members. Most teams remained the same throughout the whole year.
- Some of the other factors mentioned by the team members who had a positive experience were: sacrifice, good relationships with end-users, friendship, team building, communication, diversity in the group, mutual respect, humour and good leadership.
- Some of the other factors mentioned by the team members who had a negative experience were: poor communication, lack of leadership, poor time management, lack of interest in team members, petty quarrels, lack of trust and lack of commitment.

To summarise, those elements that the team members regard as important for a "positive" experience in a team environment come mainly from the abstract dimension. They are: knowledge base, support, cooperation and commitment. Furthermore, cooperation was the most significant factor and procedures (part of the physical dimension) were the least significant.

In terms of a "negative" experience in the team, it is interesting to note that the same elements (knowledge base, support, cooperation and commitment) were indicated as responsible for this. Furthermore, the element of technology (part of the physical dimension) was indicated as a typical reason for a "negative" experience.

The previous two paragraphs provide the answer to the research question stated earlier (*cf* above). Therefore, to summarise, the authors argue that in terms of both positive and negative experiences that teams reported about as well as in terms of the data we gathered via the questionnaires, the elements of the abstract dimension (that is: knowledge base, support, cooperation and commitment) play a significant role during the establishment and maintenance of sound communication and sound relationships. The results of this study also support the acceptance of the hypothesis stated by the authors.

The results imply that project leaders, project managers and people involved in the teaching of project management should always orientate participants with regard to software projects in terms of the four said elements. Apart from ensuring that team members should understand the importance of team building (which promotes, among other things, cooperation, commitment and mutual support), it is of great importance to ensure that all members of a project team have the necessary *knowledge base*. This implies that team members should get the necessary information and training on all relevant issues and products so to ensure that they can perform to their fullest potential.

9.   CONCLUDING SUMMARY

This research study has found that soft issues like commitment, cooperation, support, and a proper knowledge base are significantly important for the establishment and maintenance of sound communication and relationships within software project teams. Although all the elements of both the *physical* and *abstract* dimensions were regarded as important for this purpose, the said soft issues were pointed out by a large majority of team members as being of greater importance.

According to Tapscott (1993), *action learning* and *formal learning* are two important learning programs to ensure awareness, commitment and skills competency. In other

words, team members have to commit themselves towards a learning culture, to enable themselves to take part (if necessary) in all the different kinds of activities of the team. In this regard the importance of the so-called *knowledge base* was argued in terms of the two different worlds from which IT professionals and end users approach information systems design activities. It was argued that this complex world of perceptions, attitudes and approaches towards developing software products by project team, forces us to a point where it can be said that in order to overcome the most serious problems during this communication process in a team, a knowledge base of some kind is necessary.

The research study has shown that all the participants need to be aware of this knowledge base and should undergo an intensive training (self-study) period before being allowed to participate in a team. This will help to create a supportive culture of all participants in a team and ensure sound communication within the team. In such an environment, all the team members should feel comfortable, secure, knowledgeable and useful. This is sanctioned by the work of Lee et al. (1995). They state that there are many positive relationships between the abilities team members have and the way in which they approach their relation within the team.

It is therefore of utmost importance that every participant should have a proper understanding and realisation of, and commitment to, all the factors that comprise the knowledge base.

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APPENDIX A: THE QUESTIONNAIRE

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According to your own experience, which of the following factors played an important role during your third year projects in terms of the establishment and maintenance of sound relationships and sound communication between team members. Mark each of the following factors with the numbers 1 (not important) to 5 (very important). If relationships were poor, indicate the same factors in the right hand column.

Met betrekking tot u eie ervaring, dui aan watter van die volgende faktore het 'n rol gespeel in terme van die skepping en instandhouding van 'n gesonde verhoudinge en goeie kommunikasie in die projekspan tydens die afgelope derdejaarsprojekte. Merk elkeen van die volgende faktore met die nommers 1 (onbelangrik) tot 5 (baie belangrik). Indien verhoudinge swak was, merk dieselfde faktore in die regterkantste kolom.

	SOUND/ GOEIE	POOR/ SWAK
Tegnologie/ Technology:		
Prosedures/Procedures:		
Struktur/Structures:		
Verandering/ Changes:		
Kennisvlakke/ Knowledgebase		
Ondersteuning/ support		
Samewerking/ Co-operation		
Verbintenis/ Commitment		

ANDER FAKTORE/OTHER FACTORS?:
Sound/Goeie: _____

Poor/Swak: _____

APPENDIX B: SUMMARISED RESULTS OF THE STUDY

Sound relationships/communication

	Physical Dimension			Abstract Dimension				
	Technology	Procedures	Structures	Changes	Knowledge	Support	Cooperation	Commitment
Count	103	99	101	92	83	87	92	85
Sum	371	298	312	277	327	352	382	344
Average	3.6	3.01	3.09	3.01	3.94	4.05	4.15	4.05
%	72	60	62	60	79	81	83	81
Average/ dimension			64.7					76.8

Poor relationships/communication

	Physical Dimension			Abstract Dimension				
	Technology	Procedures	Structures	Changes	Knowledge	Support	Cooperation	Commitment
Count	103	99	101	92	83	87	92	85
Sum	371	298	312	277	327	352	382	344
Average	3.6	3.01	3.09	3.01	3.94	4.05	4.15	4.05
%	72	60	62	60	79	81	83	81
Average/ dimension			64.7					76.8

End Notes

i   The holistic nature of an IT end relationship is of importance in this regard.
ii   As human beings, people are viewed in this regard as the physical enablers who initiate, create, participate and maintain relationships, because of their interaction with one another during transacting.
iii   Telephones, fax machines and cellular networks.
iv   This problem also relates to Brunswik's law of the lens