RESEARCH REPORT FOR BRITISH TELECOM

TOWARDS TRUST-ENABLING TECHNOLOGY: TRACES OF TRUST

'*It was more in the text and audio exactly what she was feeling. In that transaction I found that you couldn't accept things at face value you've got to read between the lines'*. (Interviewee quote)

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RESEARCH REPORT

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Introduction:

Human communication consists of a wide range of verbal and nonverbal cues. Nonverbal cues can communicate intent, meaning and subtleties and have an intrinsic value (Paulos 2003, p.4). While digital technologies have dramatically enhanced the amount of opportunities of individuals to interact over space and time, these technologies do not contain this rich world of data people receive in the 'physical world' to help them make their decision. Thus when people make a trust assessment in the digital space they are not privy to the usual contextual cues used to interpret information.

By exploring how people understand trust interactions in the 'physical world' we can be in a better position to design technology that facilitates a trust decision. There are many meanings and dimensions ascribed to trust, as outlined by Lacohee et al in the Trustguide project (2006 p. 13). This report uses the definition proposed by Piotr Cofta, 'trust is the confidence that what the trustor would like to happen will happen'. Digital trust research is necessary because technology is approaching crisis point – people are reluctant to interact. 'The age of innocence' is over. Users are highly aware that technology is not secure and choosing to partake with technology involves risk (Cofta, personal communication, 05/03/2006).

This report focuses on the aspects that a trustor (the person making the trust decision) analyses to make a trust decision in regards to the intention and behaviour of the trustee (the party or person whom the trust assessments are about). The aspects are referred to in this report as trust evidences. This report agrees with Bo Rothstein, a cognitist game theorist, who claims that an individual makes a trust decision in relation to what s/he thinks other people are going to do or how they are going to respond (Rothstein 2005). This report also focuses on relationships between trustor and trustee rather than individual transactions.

The data for this report was gathered from eight in-depth interviews with individuals discussing a trust interaction in either a personal or workplace context. It also refers to comments made by young people in a group workshop discussing perceptions of digital versus non-digital communication.

The report draws on the model of trust postulated by Piotr Cofta, senior researcher at British Telecom. This model categorises trust evidence as a means of understanding the comments of interviewees. Cofta's research demonstrates that trust evidences fall into three categories that he terms, continuity, motivation and competence. The dimension of continuity is concerned with shared interest beyond the current encounter – what is the shape of the 'shadow of the future'? Within the scope of this research, the continuity dimension is understood as the length of time the trustee has existed in a certain community. The dimension of motivation is concerned with shared interest: Does the trustee have an interest to work towards the welfare of the trustor? Motivation can be created between two parties sharing a connection about what they have in common. The dimension of competence is concerned with whether the trustee has the ability and skill to fulfil the requirements of the interaction. Within the scope of this research, the interviewees interpreted competency as the ability to communicate. The research adds depth to Cofta's model. It investigates how the different categorization of evidences function in the context of personal dynamics (Cofta, personal communication, 05/03/2006).

This report will briefly discuss the methodology of the data collection. A discussion of the participants' comments and observations about trust will be placed within the framework of motivation, competence and continuity. Finally, recommendations from these observations that can be applied to trust-enabling design will be extrapolated.

Methodology:

This research involved 8 in-depth interviews. Interviewees were asked to tell a story about a trust interaction. Each interviewee focussed trust on a particular situation or role. These are listed below:

- Establishment of a virtual friendship (referred to in this paper as *Virtual Friend*)
- Maintenance in a long-distance relationship (referred to in this paper as *Long Distance Relationship*)
- Development of a life-coach relationship from the perspective of a person coached by a life-coach (referred to in this paper as *Coached by Life-Coach*)
- Development of a life-coach relationship from the perspective of a life-coach (referred to in this paper as *Life-Coach*)
- Workplace relations, from the perspective of a gay woman who needs to let co-workers know of her sexuality (*Gay Rights Awareness*)
- Workplace relations, from the perspective of someone who has created trust with a client (referred to in this paper as *Client Trust*)
- Workplace relations, from the perspective of a high-level manager (referred to in this paper as *The Manager*)
- Workplace relations, from someone who delivers high-level projects (referred to in this paper as *Project Deliverer*)

The research also refers to a workshop held by the researcher with a small group of young people aged 15 – 25. Within a two-hour session, participants were asked questions about their perceptions of digital communication and relationships. This research has formed the basis of another report written by this author, 'Trust and the Young Digital User: The Significance of the Trustee's Intention Motivation and the Gift Exchange Process'.

Continuity, competence, and motivation in the context of workplace and personal relationships

This section discusses how participants understand trust exchanges. The comments and insights raised by interviewees about trust interactions will be discussed in terms of motivation, competence and continuity.

In Cofta's model, the continuity dimension is concerned with the length of time of the relationship of the trustee with the trustor or the trustor's community. A competence assessment is made regarding whether the trusted party is skilled in the relevant domain of expertise. Motivation is about whether the trustor's interests are encapsulated within the interests of the trustee. The following discussion will demonstrate how these dimensions can be interpreted in the contexts of personal and workplace relationships (personal communication, 04/03/2006).

1. Continuity

The dimension of continuity is concerned with shared interest beyond the current encounter – what is the shape of the 'shadow of the future'? Interviewees associated continuity with the length of time the trustee has existed in a certain community, and 'social embeddedness' as important grounds for trust. 'Social embeddedness' is the reputation of the parties within a trust interaction and the amount of associated 'social capital'. Social capital refers to the ways in which one's social relationships provide access to needed information, resources and supports. Someone who is rich in social capital can be described as being respected within a certain community or 'well-connected' to respected people (author unknown 2004, p.28). The Trustguide Report found that 'recommendations from trusted sources within an individual's social network play a major role'. Lacohee et al refer to this as 'second-hand' trust, the reliance on the advice of a person's contacts regarding a decision. This advice is informed by the previous experience (both positive and negative) of the contact (Lacohee 2006, p.19). Riegelsberger provides an explanation; social embeddedness allows for the exchange of information about a trustee's performance. Trustees who know that trustors exchange information about their behaviour have an incentive to fulfil an arrangement, even if they don't expect future interaction with a given trustor. Interest in future interactions with anyone who might gain access to reputation information is an incentive for fulfilment in the present encounter' (Riegelsberger et al 2005, p.395).

Thus having social capital can be helpful in the establishment of a trusting relationship. This notion is supported by a comment from *The Manager* in relation to how he judges whether to trust a person to deliver a project,

> 'Social proof and respect is a key factor. People demonstrate this in different ways. It's about history, and seeing that they have done things that they are relevant'. In reference to a successful project he commented 'I got excited because the researcher was talking to key-people - and had found spontaneously links into the organisation. He was on right track. I could talk to the other key people to see if they were excited to - then decide if appropriate to expand and push to deliver'.

According to *The Manager,* sometimes people can breed distrust in the way they present their social capital.

> ’A classic one is that people introduce themselves in terms of whom they report to. This must be in order to tell people that they must listen to them. Once I use to take note of this. But now think of people who do this as idiots. If you have something to say you will say it. This exhibits that you believe in yourself.’

The Manager's profession as a high-level manager is based on trust. Managing many projects at once means that he needs to be able to correctly decide which projects need micro-management support or which projects should not be fostered. Thus he would describe his skill base as reading, acting, and planning with trust. In response to whether his skill-base is scalable (whether he is able to delegate his knowledge and decisions) he responded,

> ’Yes, however you cannot teach these skills because it is about judgement and experience. You learn on the job that some things are not important and other things are important. The judgements are context dependent and people react differently. If you are involved in the team where you see people making the judgements - although you are not receiving the signals directly, you will be able to learn what those signals meant to that person. You can take on that wisdom and develop your systems of interpretation. I think it is a cultural thing’.

Thus, the technique by which someone learns this skill is social proof and continuity in itself.

It appeared during the research process, that according to workshop participants, continuity of the past (how long someone has been involved in an association) is valued more highly by users making a trust-decision than continuity of the future (how long for an association may last into the future). When asked to speak about the concept of continuity or the length of time of a relationship, participants only discussed the past. Continuity of the future was not considered. A group of participants (aged 14-16) were asked why this might be the case. Interesting responses were recorded. To this group the past is important because…

> ‘The past is based on fact. It has already happened’. The future is regarded as a domain where there can be no guarantee. ‘what is so great about the future? - Someone could say that they will be around for 20 weeks and leave after 2 weeks’. “You don't know how long someone is going to be around for. They could up and leave”.

One participant told an anecdote…

> “When we go to town we all scab off each other because we all know each other quite well, for instance, this guy had no money and we paid for him. When the first time we all met we paid exactly the right amount for our lunch. As you develop the relationship, the trust develops”.

In the context of personal and workplace relationships, continuity is embodied in the reputation the trustee holds in a specific community. Continuity of the past is valued more highly than continuity of the future because the future is yet to be – ‘anything could happen’. The continuity dimension is cited as an important reason to trust – trustors value the opinion of their networks highly when making a decision.

2. Motivation

The dimension of motivation is concerned with shared interest: Does the trustee have an interest in working towards the welfare of the trustor? Motivation can be created between two parties sharing a connection about what they have in common and what is important to them. It allows the trustor to ask if the trustee shares a world-view with him/her, feels a bond or connection and thus be motivated to work in their interests? According to Luhmann, when people start to cooperate, they get the chance to adopt each other's perspectives (Luhmann 1979, in Nooteboom 2005, p.3). Thus the social exchange that occurs at the beginning of a relationship does not only provide the trusted party with competence evidence, but also an opportunity for both parties of an exchange to get a sense of the other's perspective and a chance to develop a connection.

As *Virtual Friend* described, the relationship began by the two parties establishing they had hobbies and interests in common. The relationship was then maintained by the discussion of the similarities and differences between lives in different cultures (U.K and U.S). *Virtual Friend* described how detail in an email would be a jumping-off point for the two parties to explore their connection. For instance, there was a shared interest in costume parties, explored via exchange of photographs. As the photos were of a personal nature, the exchange put both parties in a position of vulnerability. *Life-Coach* also mentioned vulnerability. He said that an indication of a client's motivation is how willing the client is to leave him or herself open to a question. The common thread in these two stories is the ability and willingness of the trustee to allow a position of vulnerability.

Long Distance Relationship also mentioned the importance of a shared connection. He discussed how the gifts he received and exchanged during a long-distance relationship were:

> 'to show that she was thinking about me…. things of a loving nature. Skull and crossbones would not have been appropriate. It was all hearts and that sort of thing'.

Long Distance Relationship sent specific food over a lengthy distance so he could share with his girlfriend the same meal on Valentines Day via the 'webcam'. The amount of gifts exchanged is relevant to an understanding of the maintenance of the relationship. At the beginning of this long-distance relationship, there was a 'flurry of gift exchanges', in order to assist the other party with the transition of distance. Then the exchange levelled off for a one-to one exchange, except on special occasions.

The Manager described a shared connection as relevance in the context of work-place relationships. He provided a working definition of relevance:

> 'in the context I am currently operating in does this message fit? He also associated relevance with resonance - does this statement fit with what my social networks are telling me?'

However this relevance must be genuine: people are sensitive to relevance being deliberately created in order for one party to make a connection with another.

According to *The Manager*:

> ‘Relevance is important but only if it is appropriate - if someone quotes back at you a document you have written, that undermines to some extent what they are saying. It is as if they are trying to jump on a bandwagon. If they quote it to you and instead say 'but that is wrong' then you have a conversation’.

Motivation to work in another’s interest can be fostered by a shared connection. However this shared connection cannot be contrived, or deliberately manufactured: trustors are sensitive to this manipulation.

3. Competence

The dimension of competence is concerned with whether the trustee has the ability and skill to fulfil the requirements of the interaction. Within the scope of this research, the interviewees interpreted competency as the ability to communicate. Does the trustee have the cultural literacy required to negotiate a relationship successfully? The communication style of the trustee was raised several times during the interviews. The interviewees’ comments about this area were complimentary to each other and could all be described under the umbrella of ‘respectful communication’ – communication that has taken into account the user’s wishes, position, and expertise – but does not use this information to take advantage of the user.

3.1 Communication and trust ‘as a two way street ‘

According to *Gay Rights Awareness*, it is important to have the opportunity to ask questions and the ability of both parties to listen and understand the position of the other. In her interview she said…

> ‘Trust is a two way street. It comes from two-way communication. It is a journey of hopscotch steps – you get to know details of each other - But I don’t know where that point of trust is. You are not going to get trust if they don’t understand’.

This resonates with Andrew Kydd’s writing in ‘Overcoming Mistrust’ (2000), Trust is a ‘confidence game’. The game is a delicate and complicated balance. Early in the proceedings, actors should not send signals that are either too valuable or too cheap because these signals can be misconstrued or damage trust. Throughout the game, each actor must wait for the other to offer a move before reciprocating (Kydd 2000 in Rothstein 2005, p.158). Rothstein adds that willingness to genuinely consider others’perspectives is predicated on believing that the others will reciprocate (Rothstein 2005, p.210).

3.2 Non-judgemental communication

Non-judgemental communication is communication that avoids making assumptions about a person’s position or identity. *Gay Rights Awareness* searches for indications of non-judgmental communication as evidence to trust.

> ‘You can tell if someone is open-minded by their response to the general environment. You are not going to get trust if they don’t understand’.

She says that non-judgemental communication is important because it means that people do not think that the information is going to be used against them. She gave the example of Amazon – and recommender systems (automated methods based on the user’s past behaviour that predict then present choices and services).

> ‘If I buy a book, and the book is tagged, assumptions are made. The system could be used to judge me. I want to know that the information about my book will not be used again’.

This sentiment is echoed in Serino and Furner who studied the effect of personalisation on recommender systems. They found in each of their four trials that personalisation encourages distrust because users perceive personalization as violation of their privacy (Serino and Furner 2005).

3.3 Client as the expert

From the other perspective, in the position of the party to be trusted, it seems that treating the trustor or the recipient of communication, as an expert is a method that promotes trust. *Client Trust*’s work-place practices has facilitated clients to trust him in high-risk situations. His approach is to put to his clients

> ‘You are the expert - please tell me about it. How are things? Or how should things be?'

As *Client Trust* said:

> ‘People like to be treated this way’.

This approach is supported by *Client Trust*’s work-practices. These practices include a more formal process that involves suggesting to the client what their needs might be and asking for feedback. ….

> 'We identified what the issues were by suggesting technological solutions to their problems’.

Perhaps why this method is successful is because the trustor understands that the trustee is endeavouring to genuinely comprehend the perspective of the trustor, and thus the trustee will work in the interests of the trustor.

3.4 Clear communication

Clear guidelines within the communication were cited as a reason to trust. *Coached by Life-Coach* trusted her life coach because ‘he told me everything would be confidential - between me and him - everything that comes out of the coaching experience is just between me and him. That reassured me that I could tell him anything I liked to share. He put it in writing too - 'this is what a life-coach does'. *Coached by Life-Coach* added:

> ‘He keeps a logbook. This also helps in his coaching career He needs to lock down hours. He gave me the rules - I know what he can and can’t do.’ The life-coach encouraged her to keep her own clear communication records. ‘I have been asked to keep a notebook to write down anything that has been discussed, any actions that need to be taken. And to reflect on that for next time I saw him’.

Gay Rights Awareness added to this observation :

> ‘Clean communication is beneficial – it is easier to analyse and accept.’

Competence can be seen as the ability to competently negotiate a relationship. This involves the trustee as providing indications of understanding the position of the trustor. The competence dimension results in trust being a ‘two-way street’, each side providing an offering that is built on by the other. This process is fragile – the exchange cannot be built too quickly with too many assumptions about the other party. Clear communication can facilitate the exchange.

Which signal is most important – competence, motivation or continuity?

Continuity seemed the most valuable to the participants. In the workplace domain, a domain in which it would be assumed competence is valued; continuity was the most important dimension. *The Manager* commented:

> ‘Continuity is the aspect I would value most - ‘the sense of people doing things and that you are aware of what they have been doing. Motivation signals are important. But the reading of motivation signals is something that you need to distrust in yourself. Your constructions of what motivates people are often very misleading or wrong’.

Coached by Life-Coach concurred. To him lack of competence can be compensated for by continuity.

> ‘If someone has limited skills it is possible to get over this weakness by showing motivation and sticking around’.

He also added that the existence of competence without the other dimensions can cause suspicion and reason not to trust. In fact, people who are competent but lacking in continuity and motivation breed distrust. You begin to question whether they have time to do the project properly - whether they have too many fish to fry’. *Manager* also judged competence on its own as a signal that may lack quality. ‘Competence means that you might trust someone until they let you down. And then your trust falls away very quickly’.

Project Deliverer pointed out that the dimensions are interrelated, particularly continuity and motivation. ‘Motivation is very important. You need to have the motivation to keep the project going. It is a big problem when a core team member leaves. So motivation is definitely linked with continuity’.

Conclusion

When a trustor needs to make a trust-based decision s/he looks for evidence or reason to trust or not to trust. The evidences of trust fall into three categories, continuity, competence and motivation. This report has explored how the dimensions are interpreted in the context of personal and workplace relationships.

Trustors value continuity highly. Continuity is the reputation the trustee holds in a community. Continuity of the past is valued more highly than continuity of the future because the future is yet to be – ‘anything could happen’.

Evidence of motivation is also a crucial determiner. This dimension is about encapsulated interest – does the trustee have an incentive to work in favour of the trustor? This motivation can be created between two parties by the development of shared connection. When people start to cooperate, they get the chance to adopt each other's perspectives (Luhmann 1979, in Nooteboom 2005, p.3).

Within the scope of this research, competence is seen as the ability to competently negotiate a relationship. Trustors look for evidence that a trustee understands their position, needs and desires and is not likely to use this information against the trustor.

Areas for future research

The insights gathered in this report can be applied to trust-enabling design. The qualities of technology design that facilitates trust dialogue include:
• The use of social networks as trust determiner
• The ability to question a system
• The provision of clear, fair immovable guidelines about the rules of engagement
• The facilitation of a trust process that allows participants to explore a common connection.

There are insights into trust within this report that could be further expanded upon into improving trust-enabling design. These aspects include.

Continuity, the length of time a trustee has been involved in the relevant community, is an important grounds to trust. Is it possible for this dimension to be accessible to either a trustee or a trustor who happens to be outside the relevant community?

Trustors look for a trustee's motivation. This motivation could be a shared connection. A shared connection can be explored by two-parties via a series of exchanges. What types of exchanges facilitate the possibility of a shared connection developing?

Competence of communication by trustee is cited as grounds to trust. Trustors prefer communication that takes into account their wishes, position, and expertise. However trustors do not want this knowledge to be used in taking advantage of them. How does this type of communication approach work in practice?

How do the dimensions of trust interrelate? How can we understand further how trustors prioritise of the dimensions?

Trustors are sensitive to the deliberate manufacture of trust signals. Where does this sensitivity come from? What are the aspects of communication or behaviour that may trigger a trustor to be alert to possible manipulation?

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