

## A Study on Virtual Team Trust Mechanism and Its Construction Strategies

Wei Xiao

School of Management, Chongqing Jiaotong  
University, Chongqing, P.R.China  
xiao98612343@163.com

Qing-qi Wei

School of Management, Northwestern  
Polytechnical University, Xi'an, P.R.China  
weiqingqi@163.com

### Abstract

*Trust is a critical success factor (CSF) of virtual team, and successful virtual team needs the support of trust construction and maintenance. Based on Theory of Reasoned Action (TRA), the connotation and conceptual model of trust are systematically analyzed, and virtual team trust construction mechanism is discussed by combining with its essential characteristics and its relationship to communication, collaboration, and team performance. The two essential characteristics of virtual team trust are pointed out, which are "swift trust" and "cognition-based trust". In virtual teams, trust can be swiftly developed, but it is very fragile. In virtual context, the cognitive element is more important than the affective element of trust. Finally, several management principles and specific strategies for trust construction and maintenance in virtual teams are presented.*

### 1. Introduction

Virtual team represents one organizational form that takes advantage of leveraging intellect and information to create value in the era of knowledge-based economy [1]. Some of the reasons for choosing a virtual team in comparison with a conventional team are: Access to scarce resources all over the world, less time and money spent on traveling, possible to work 24 hours a day, collaboration because of global acquisitions, the need to be closer to the customer, etc [2]. For its advantages of cost effectiveness and high flexibility, virtual team has been adopted in more and more industries. However, constructing a virtual team does not mean gaining competitive advantages and success; on the contrary, it is more difficult for virtual team to be successful than that of traditional face-to-face team. Researches show that the failure ratio of virtual team is about 20% to 50%. In order to display its "virtual advantages" and gain success, some critical factors,

such as communication, trust, leadership, and cross-cultural coordination, should be taken more care of.

Some recent researches show that trust can prompt the effective communication in global virtual team, and good trust relationship can improve communication effectiveness, then lead to higher team performance. Trust is an outstanding character of excellent teams, and it is also a critical success factor (CSF) of virtual team, trust construction and maintenance are considered to be the focus areas in virtual team management [3]. However, how to build trust in virtual team members is a puzzle and paradox [4]. On the one hand, virtual team is a temporary and "project-oriented" team, it needs trust and collaboration to accomplish tasks quickly and with flexibility; on the other hand, trust and collaborative relationship can not be built in short term, and there are many uncertainties in virtual team, which can lead to a lower level of trust. So, how to construct and maintain trust effectively is a key problem should be solved in virtual team management.

### 2. Basic concept of trust

#### 2.1. Connotation of trust

Trust is a social and psychological phenomenon with complexity. Researches on trust are carried on in several fields, such as economics, psychology, sociology, and organizational behavior. Granovetter (1985) considers that trust is socially embedded, and trust exists and is shaped by various factors in social settings [5]. Hosmer (1995) point out that "trust is the expectation by one entity of ethically justifiable behavior — that is, morally correct decisions and actions based upon ethical principles of analysis—on the part of the other entity in a joint endeavor or economic exchange"[6]. According to the definitions of many theorists, trust is an optimistic expectation that a trustor has of trustee in a situation that involves the trustor's vulnerability, risk, and uncertainty if trustee

could not deliver what he or she promises or is supposed to do.

## 2.2. Conceptual model of trust based on Theory of Reasoned Action (TRA)

The Theory of Reasoned Action (TRA) as developed by Ajzen and Fishbein is concerned with determinants of consciously intended behaviors [7]. According to TRA, the performance of a specified behavior is determined by the individual's behavior intention, and behavior intention is determined by the individual's attitude toward the behavior and their subjective norms. While attitude means that "the person's judgment that the behavior is good or bad", and is affected by the two factors of behavior beliefs and evaluations of outcomes. Subjective norms refer to the person's "perception that most people who are important to him think he or she should not perform the behavior in question", and is determined by the combination of his or her normative beliefs and motivation to comply. According to TRA, determinants of personal behaviors are shown in Figure 1.

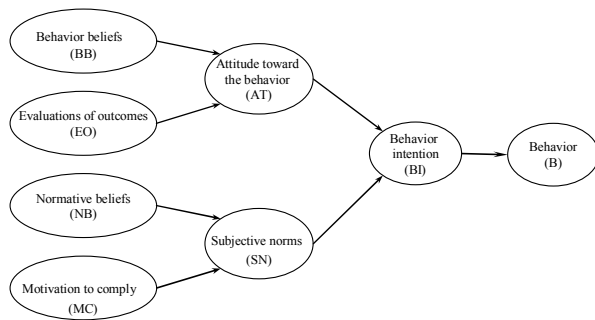


Figure 1. Determinants of behaviors

TRA constructs a strong base of theories for explaining and forecasting people's behavior, and the reliability of the TRA model has been verified by many empirical studies. Sheppard et al. (1988) has performed an empirical meta-analysis and found strong evidence of the predictive power of the model, especially for those cognition-based behaviors which need to be carefully thought [8]. Based on TRA, and combining the connotation of trust [9], a conceptual model of trust in organizations is shown in Figure 2.

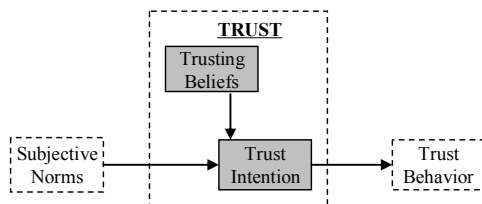


Figure 2. Conceptual model of trust based on TRA

This conceptual model of trust can be divided to three levels: The first level is composed of trusting beliefs and subjective norms, where trusting beliefs come from the four aspects as benevolence, competence, honesty and predictability; the second level is trust intention; and the third level is trust behavior. Any factor or the combination of two factors of the first level can directly affect trust intention, and trust intention will directly lead to trust behavior or not. In this model, trust contains two factors as trusting beliefs and trust intention. It shows that trust is not a kind of behavior (such as cooperation) or a choice (such as taking a risk), but a psychological state connected with these actions.

## 3. Trust mechanism in virtual team

### 3.1. Relationship model between trust and team performance

In working teams, trust can affect team performance seriously. Many specialists and scholars studied interpersonal trust in the fields of economics, psychology, sociology and organizational behavior, and discussed the influence relationship of communication, trust, coordination and team performance. In general, it can be summarized as a relationship model, and it is shown in Figure 3.

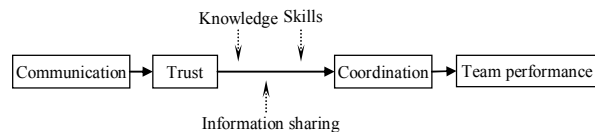


Figure 3. Relationship model of communication, trust, coordination and team performance

Figure 3 shows that trust is tied up with communication, coordination and team performance; it can be described as follows.

(1) Teaming depends on collaboration. Collaboration can help to reach the effect of "one plus one equals more than two", and then lead to excellent team performance.

(2) Collaboration entails sharing information, knowledge and views with other members, which is very important in a team.

(3) Trust can prompt collaboration, and congregate individual's knowledge and skills.

(4) Communication builds trust. Through communicating with people, we calibrate them, we get a better sense of them, we understand their priorities, and then we trust them.

Obviously, if people don't trust other members, they don't want to cooperate with others, and the team can not be operated successfully.

### **3.2. The two primary characteristics of virtual team trust**

In a virtual team where members normally work on a short-lived project, they might not have enough time to gather sufficient information about their co-workers in order to determine if their colleague is trustworthy. Moreover, the physical separation of team members may imply that the levels of trust among virtual team members must be higher than in traditional work relationships in order to successfully complete the project. The lack of engagement in a typical social greeting, such as a handshake as well as face-to-face interaction, makes it harder for team members to establish trust in a new working relationship. In such environments, team members need to carry out their tasks by trusting other members from the beginning of the project, not on the basis of past experiences, but rather on the basis of their background, professional credentials and affiliations. Such kind of trust is referred to as swift trust. According to Meyerson et al. (1996), in a temporary team, "people have to wade in on trust rather than wait while experience gradually shows who can be trusted and with what: Trust must be conferred presumptively or *ex ante*" [10]. Jarvenpaa & Leidner also found that trust can be swiftly created in virtual teams, but it is very fragile. So it is more important to maintain trust than to build it in virtual teams [11].

Cognition-based trust refers to the calculative and rational characteristics demonstrated by trustees, includes reliability, integrity, competence, and responsibility. People assess trust based on various attributes such as certain types of professions (doctor, lawyer) and levels of familiarity (friend vs. stranger). One basic function of cognition-based trust is to reduce the complexity among social actors. The highpoint of cognition-based trust is reached when 'social actors no longer need or want any further evidence or rational reasons for their confidence in the objects of trust'. Thus, cognition-based trust relies more on information and develops through communications among members. In the context of virtual teams, people working in a temporary system deal with each other primarily in terms of the professional roles each individual performs, not in terms of developing social relationships. Therefore, in temporary working systems such as virtual teams, the formation and maintenance of trust relies more on a cognitive dimension than on

an affective one, so virtual teams should explicitly attempt to develop cognition-based trust.

## **4. Principles and strategies to trust construction in virtual team**

### **4.1. Principles to trust construction and maintenance**

Above analyses show that trust is tied up with communication, collaboration, and team performance closely, and swift trust and cognition-based trust are the two primary characteristics of virtual team trust. In virtual teams, trust construction and maintenance should follow the following principles:

(1) Trust is the necessary condition to gaining excellent performance and success in virtual team.

(2) Communication is an antecedent of trust, and trust is built through repeated communication. Not only communication fosters the trust development, but also it is a means of restoring trust.

(3) Trusting relationships must be mediated by worker's effectiveness and efficiency. Members' abilities, including expertise, interpersonal skills, and capacity for self-renewal, are very important for trust construction and maintenance in a working team.

(4) Trust can be swiftly created in virtual teams, but it is very fragile. So it is more important to maintain trust than to build it in virtual teams.

(5) Virtual team members rely on cognition-based trust more than affect-based trust throughout the virtual project, thus, the managers of virtual teams should focus on cognitive dimension of trust during the project.

(6) Individuals are likely to become teammates of people they already "know" from earlier projects. It is quite likely that virtual teams will experience similar reconstitutions, and it is likely to enhance levels of trust.

(7) In virtual context, team members are trustworthy if they behave as follows: act in our and the team's best interest, be truthful, keep their promises or tell us when they can't keep them, respect the citation and /or protection of information we send them, and share mutually-valuable information with us.

### **4.2. Management strategies**

According to these principles, management strategies for trust construction and maintenance in virtual teams can be summarized as follows:

(1) Effective communication. Communications help to build trust. Through communicating with people, we get a better sense of them, and then we trust them. First

impressions are critical, especially in virtual work environments. Furthermore, technologies used in virtual teams should not merely facilitate effective information sharing and exchanges among teams, one should also look into a possibility of using technologies to create a digital workplace that supports building trust. For example, video conferencing can reduce the sense of both physical and psychological distance.

(2) Strong leadership. As leaders, they should keep in mind the importance of close monitoring and quick corrective actions. The team leaders need to come down hard on anyone who behaves in an untrustworthy manner, and virtual team leaders need not only to be trustworthy, but to be very visibly trustworthy, for it is much easier to be suspicious of people when they are out of the line of sight. Leaders must serve as role models in work and communication; they should persuade their teams to complete work as promised, and they should help their teams by offering opportunities for groups to meet “in person” whenever possible, such as face-to-face meetings, synchronous teleconferences, or synchronous online chats.

(3) Building swift trust. In virtual environment, team members need to carry out their tasks by trusting other members from the beginning of the project, not on the basis of past experiences, but rather on the basis of their background, professional credentials and affiliations. Team members should exchange their background and personal information with others at the very beginning of the project; it can help to build swift trust.

(4) Building cognition-based trust. If the trustors believe that the trustees have the ability or competence to perform an assigned task, and if trustees are perceived as being benevolent and having integrity, trust is more likely to occur. In temporary work teams, the cognitive element is more important than the affective element of trust. It is emphasized that virtual teams should explicitly attempt to develop cognition-based trust. Team leaders need to provide task-relevant background information on virtual team members (such as expertise, working experience) so that members can quickly develop cognition-based trust.

(5) Building affect-based trust. Affect-based trust involves the emotional elements and social skills of trustees. Although cognition-based trust is more important than affect-based trust in virtual team, in order to maintain long-term collaborative relationship, it is also important to build affect-based trust. Those actions can help to build affect-based trust, such as exchanging photos, sent a birthday card, congratulating others, and sharing the feelings of happiness with other members.

(6) Focusing on trust maintenance. Managers of virtual teams should focus on the maintenance as well as the development of trust. A large number of high-performing teams were able to maintain high levels of trust until the end of the project. Typical socialization strategies may help managers develop trust, but they may not be enough to maintain it once conflicts among team members emerge. Thus, managers need to be equipped with various conflict resolution strategies in order to alleviate conflict before it leads to the degradation of trust among members.

## 5. Conclusion

Trust is a critical success factor (CSF) of virtual team, and successful virtual team depends on effective construction and maintenance of trust. From the viewpoint of economics, trust can help to reduce transaction cost, prompt collaboration, and enlarge social capital. So, virtual team should focus on trust in each stage of team development. From above analyses, it shows that trust is tied with communication, collaboration, and team performance, and swift trust and cognition-based trust are the primary elements of virtual team trust. Management strategies for trust construction and maintenance should be established from these aspects: Constructing trust by effective communication, helping to build swift trust and cognition-based trust, and maintaining high level trust during the total lifecycle of the project.

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