Abstract

Purpose – The purpose of this paper is to develop an integrated conceptual trust building model for supply chain partners’ relationships. It is based on the literature on trust building models from various disciplines.

Design/methodology/approach – Various trust building concepts and models were reviewed and five widely referred trust building models were selected from the literature to analyze and integrate the views to develop an integrated conceptual model from supply chain partners’ relationships point of view.

Findings – The conceptual framework suggests that trust is a sum of risk-worthy characteristics, risk-worthy rationale and risk-worthy institutional systems of supply chain members. Though the model represents the trust building process at dyadic level, the concept can simply be extended to any number of levels and perspectives.

Research limitations/implications – The model has considered the trust building perspectives from supply chain partners’ relationships point of view. The discussions of the model lead to empirically testable issues.

Practical implications – The study results suggest that the supply chain members should strive to reduce the risk levels to build trust rather than striving to build trust to reduce the risk. As long as members’ risk levels are within their bearable limits trust can be considered as a risk coping mechanism and when the risk levels exceed their bearable limits the subject of trust turns into risk management/security management.

Originality/value – The trust building concepts developed through this model can be used by both practitioners and researchers on the subject of trust. However the model's application is not limited to supply chain management; it can be easily adapted to any discipline of management.

Keywords Supply chain management, Trust, Channel members, Channel relationships, Supply chain relationships, Concept of trust, Trust building models, Perspectives of trust, Perspectives of risk

Paper type Research paper

Introduction

Trust is often referred as an essential element for successful supply chain partner’s relationship. Spekman and Davis (2004) argued that trust is at the heart of managing risk and a prerequisite (Kasperson et al., 2003) in supply chain. Agarwal and Shankar (2003) argued that one of the prevalent issues in the introduction of e-commerce system along the supply chain is the ability to establish the dynamic and flexible structures for buyer-supplier relationships and online trust that, deterministically, drive both the
parties toward strategic partnerships and cooperation. Sinha et al. (2004) mentioned lack of trust is one of the major factors that contribute to supply chain risks. With the emergence of RFID-based u-commerce, the issue of consumer trust actually has gained additional importance because consumers are usually more concerned about the trust issue whenever new technologies are introduced in commerce (Lee, 2007). Reciprocal relationship of trust in management is vital for enhancing not only performance but perhaps also minimizing the incidence of charlatan behavior if morale and employee commitment are high (Gbadamosi et al., 2007). Thus, researchers and practitioners are turning their attention to the concept of trust as a mechanism enabling managers to achieve organizational openness and ultimately, competitiveness while reducing social uncertainty and vulnerability (Mollering, 2004).

Despite the availability of vast literature on trust, there is no clear understanding of concept of trust referring to supply chain partner’s relationship, as Halliday (2003) mentioned, there is no construct of trust with a clear definition, or even one complex definition. According to a number of guest editorial review articles of special issues of management journals (e.g. Harrison, 2003; Mollering, 2004; Arnott, 2007), there is a need for studies on conceptual issues and importance of empirical testing of multiconstellations of trust with respect to vulnerability and risk, nature and extent of uncertainty and urge to build an integrated view of trust. In supply chain management still there is an unresolved issue, i.e. how to build trust in supply chain partner’s relationship?

To address the above issue this paper has developed an integrated conceptual model for building trust in supply chain partner’s relationship referring to various trust building models in the literature. Though the model represents the trust building process at dyadic level the concept can be simply extended to any number of levels and perspectives. The next section provides an understanding of concept of trust, the section next to that discusses various trust building models, further section provides an integrated conceptual model for supply chain partner's relationship. Finally paper concludes with directions for future research on trust building process.

**Concept of trust**

From a careful analysis of various definitions of trust in the literature we can note that trust relation implies the participation of at least two parties, a trustor and a trustee. The trustor is the party who places him or herself in a vulnerable situation under uncertainty. The trustee is the party in whom the trust is placed, who has the opportunity to take advantage of the trustor's vulnerability. Similarly there are two concepts of trust in the literature. The first stream of concept is based on the argument that trust is embedded within the trustor (feelings, emotions and cognition) not in the trustee. For example, in psychology research, the frequently used definition of trust comes from Rotter (1967). In his definition, trust was conceptualized as a belief, expectancy or feeling that is deeply rooted in personality and has its origins in an individual's early psychosocial development. In social view trust is a belief that other people will honor obligations in varying context in an open commitment to promote social welfare through a mere conformity with conventions (Soroka et al., 2003). In management research, specifically, Zand (1972) described trust as a gradual, self-reinforcing phenomenon. McAllister (1995) believed trust is cognitive judgments of self about another's competence or reliability and an emotional bond of an individual toward the other person (referred as “affect-based trust”). Trust can refer to “the expectation that a person can have confidence in, or reliance on, some quality or
attribute when undertaking a business transaction” (Small and Dickie, 1999). According to this stream of arguments trust is all about an individual’s (trustor’s) disposition to trust the trustee with benevolence and free will.

The second stream of concept is based on the argument that trust is embedded within trustee. Trustee need not mean the other person. Trustee could be competency, ability, brand, a piece of equipment, technology, calculations, institutional system, or security, etc., depending on the context of trust. For example, Rousseau et al. (1998) interpreted trust in terms of perceived probabilities and suggest that in knowledge-based economy, a trustee’s competence, ability and expertise become increasingly important as an indicator of his or her ability to act as anticipated. According to the definition of trust given by Doney and Cannon (1997), trust requires an assessment of the other party’s credibility and benevolence, one party must have information about other party’s past behavior and promises. According to Coleman (1990) individuals calculate the gains, which might result from their decision to trust another individual before they actually make their decision to trust each other. Bachmann (2001) argues that inter-organizational trust is especially dependent on and mediated by the institutional framework in which the relationship is embedded. According to Lippert (2001) technology trust is an individual’s willingness to be vulnerable to the technology based on expectations of predictability, reliability, utility and influenced by an individual's predisposition to trust technology. Delgado-Ballester et al. (2003) define brand trust as “the confident expectations of the brand's reliability and intentions in situations entailing risk to the consumer.” According to this stream of concept trust is all about how trustworthy the trustee is and also it is partially a product of trustor’s capacity to assess the trustworthiness of trustee.

From both the concepts it can be noted that the trust is trustor’s choice, either a rational or non-rational. Deutsch (1958) describes trust as a non-rational choice of a person faced with an uncertain event in which the expected loss is greater than the expected gain or a rational choice based upon optimistic expectations or confidence about the outcome of an uncertain event, given personal vulnerability and the lack of control over the action of others (Zand, 1972). Further trust cannot exist in an environment of certainty (Bhattacharya et al., 1998), some level of uncertainty is required for trust to emerge (Dasgupta, 1988). Therefore trust is a relatively informed attitude or propensity to allow oneself and perhaps others to be vulnerable to harm in the interest of some perceived greater good (Michalos, 1990) and hence it is a risky engagement (Luhmann, 1979). Finally as argued by Laeequddin et al. (2009) trust is a threshold level of a supply chain member’s (trustor’s) risk-bearing capacity related to trustee. Beyond the trustor’s risk-bearing capacity the subject of trust turns into risk management rather than a matter of trust.

**Trust building models**

Over the years researchers from different fields have developed trust building models considering various factors from three key perspectives emphasizing that the trust building process is dependent on trustee's characteristics (e.g. ability, benevolence, integrity, credibility, etc), rational (e.g. calculations, cost/benefit, technology, etc.) and institutions (e.g. contracts, agreements, control mechanisms, security, etc.) assuming that the trustor will perceive or evaluate them positively. Some of the most referred trust building models in the management literature are: Lewicki and Bunker (1995), Mayer et al. (1995), Doney and Cannon (1997), Sheppard and Sherman (1998), Tan and Thoen (2001), Nooteboom (1996), Bhattacharya et al. (1998) and Das and Teng (1998).
order to develop an integrated model of trust building in supply chain partner’s relationship we have selected only five appropriate models and discussed within the limitation of space.

*Trust development model – Lewicki and Bunker (1995)*

Lewicki and Bunker (1995) posit three stages of trust development in professional relationships: calculus-based trust (CBT), knowledge-based trust (KBT) and identification-based trust (IBT). They suggest that the three stages of trust are linked and are sequential in development rather than being three separate types of trust. The first stage of interpersonal trust development in professional relationships is CBT. CBT is based on assuring consistency of behaviors; individuals will do what they say because they fear the consequences of not behaving in that way. They argue trust can be sustained to the degree that punishment is available. They feel that for CBT, the threat of punishment is more salient promise of reward.

KBT relies upon information rather than deterrence. It develops over time as the parties get to know one another; increased information enhances the predictability of the other party, which contributes to the development of interpersonal trust.

The third stage of interpersonal trust development, IBT, is based on an understanding of the other’s needs and desires. Parties are confident that their interests will be protected, and little or no monitoring of the other is required. As IBT develops, parties eventually come to understand what they must do to maintain the other’s trust, a process Lewicki and Bunker (1995) describe as “second order” learning. Increased identification allows one to think like the other and to respond to his or her needs. In order to move to the identification-based stage of interpersonal trust development, parties need to have a collective identity, common goals and shared values interpersonal trust develops gradually as the parties move from one stage to another. In this model, trust evolves and changes over time. Trust is created as CBT develops; then, as parties get to know one another better, the relationship may move on to the KBT stage. If only an arm’s length transaction is required, the relationship may not move beyond CBT. This model suggests that trustor extends his trust on trustee in stages based on three types of trusts: rationale, institutional and characteristics of the trustee.

*Trust building model – Mayer et al. (1995)*

Mayer *et al.* (1995) developed an integrative model of organizational trust considering, characteristics of the trustor, the trustee and the role of risk. Analyzing various trustworthy characteristics from the previous research they summarized that, trust is a function of trustee’s perceived ability, benevolence and integrity and that of the trustor’s propensity to trust. As the relationship begins to develop, the trustor may be able to obtain data on the trustee’s integrity through third-party sources and observation. As there is a little information available about the trustee’s benevolence in the beginning of relationship, integrity is important to formation of early trust. As the relationship develops, interactions with the trustee allow the trustor to gain insights about the trustee’s benevolence and the relative impact of benevolence on trust will grow. If a trustee is perceived as high on all three factors, it is argued that the trustee will be perceived as quite trustworthy. They also argue that, propensity to trust lead to risk taking. In order to trust one does not need to risk anything, however, one must take risk in order to engage in trusting action. The fundamental difference between trust and trusting behavior is between a “willingness” to assume risk and actually
“assuming” risk. Trust is the willingness to assume risk; behavioral trust is assuming of risk. In order to describe how trust actually affects a person’s risk taking, they separated trust from other situational factors that necessitate trust (i.e. perceived risk) and the level of trust is compared to the level of perceived risk in a situation. If the level of trust surpasses the threshold level of perceived risk, then the trustor will engage in the risk-taking relationship (RTR). If the level of perceived risk is greater than the level of trust, the trustor will not engage in the RTR. Trust is willingness to be vulnerable to another party, but there is no risk involved with holding such attitude.

The model indicates the importance of the context in which the risk is to be taken. Even though the level of trust (as determined by contextual factors such as the stakes involved, the balance of power in the relationship, the perception of the level of risk and the alternatives available to the trustor). When a trustor takes a risk in a trustee that leads to a positive outcome, the trustor’s perceptions of the trustee are enhanced. Likewise, perceptions of the trustee will decline when trust leads to unfavorable conclusions. The outcome of the trusting behavior (favorable or unfavorable) will influence the trust indirectly through the perceptions of ability, benevolence and integrity at the next interaction.

Doney and Cannon (1997) integrated the theory from several disciplines to determine five cognitive trust building processes:

1. calculation;
2. prediction;
3. capability;
4. intentionality; and
5. transference through which industrial buyers can develop trust on a supplier firm.

In calculative trust building process, trustor calculates the costs and/or benefit of trustee acting in an untrustworthy manner. In prediction trust building process, trustor develops confidence that trustee’s behavior can be predicted, in capability trust building process, trustor assesses the trustee’s ability to fulfill its promises. In intentionality trust building process, trustor evaluates the trustee’s motivations and finally in transference trust building process, trustor draws on “proof sources” from which trust is transferred to the trustee. This model suggests evaluating characteristics and rationale of the trustee to develop trust.

Trust building model – Sheppard and Sherman (1998)
Sheppard and Sherman (1998) have developed context-dependent model and describe how to build trust under specific context. In shallow dependence it is only necessary to select partners based on their history of reliability and discreet behavior. Trustworthiness in deep dependence the partners need to have the qualities that mitigate cheating, abusing or neglecting a dependent other. Furthermore, altruism, benevolence and caring are desirable qualities in trustworthy partners in circumstances where the potential for neglect, abuse or harm to self-esteem exists.

Trust production in shallow dependence. Institutional mechanisms serve either to incite reliable, discreet behavior or to deter unreliable, indiscreet behavior. Thus, the
mechanisms necessary for trust production in shallow dependence have been referred to as "calculative" or "deterrence based." Deterrence in relationship occurs when the potential costs of discontinuing the relationship in whole or in part outweigh the short-term advantage of acting in a distrustful way.

Trust production in deep dependence. Parties can produce trust in deep dependence by evoking a sense of obligation based on the procedural justice and bureaucracy. The ways in which a sense of obligation is engendered and maintained can be described by quadratic trust, based on relational networks; and psychological contracts based on individual perceptions of obligation.

Quadratic trust. Parties in a deep dependence relational network choose to sanction untrustworthy behavior as a mechanism for sustaining the viability of the relational network. Central to quadratic trust is the concept of a community of people who collectively act to reinforce the base of their relationship.

Psychological contract. A key feature of psychological contracts is that the individual voluntarily assents to make and accept certain promises as he or she understands them. Psychological contract is a mental model that people use to frame events such as promises, acceptance and reliance.

Trust production in shallow interdependence. To develop trust in shallow interdependence, one must engage in developing sufficient information about one’s partner actively discovering through communication and research in emergence of trust in situations requiring coordination. The shallow interdependence can only be so shallow or else there is insufficient incentive to invest in the relationship deeply enough to permit effective coordination.

Trust production in deep interdependence. In deep interdependence, trust is predicted on the assumption that the trustee has internalized the trustor’s preferences and ways of viewing the world, especially as they relate to those things that need to be anticipated or inferred as a consequence of the party’s interdependence. In “internalization,” one adopts another’s beliefs because they are congruent and integrated with one’s own. Time, proximity, shared strategizing shared identity, common incentives and the negotiation of common values all can lead to eventual evaluation of highly similar internalized views, beliefs and values. The essential construct in this argument is time. Sufficient trust for deep interdependence can only be built over time. This model suggests that trust building is based on the trustee’s characteristics, rational or institutional system or combination of them depending on the context of relationship.

Generic trust model – Tan and Thoen (2001)
Tan and Thoen (2001) have developed a generic model of trust for electronic commerce consisting of two basic components, trust in the trustee (party trust) and control trust. Party trust and control trust are dependent on various subjective and objective reasons. The model is based on the assumption that, individuals only engage in transactions if their level of trust exceeds their personal threshold. The type of transaction and the other parties involved determines the threshold level. It may be high, if the value of the transaction is high and low if the agent is a risk-seeker. The mental state determines whether the trustor has sufficient trust to engage in a transaction. The determinants of the trustor’s trust threshold include potential profit, the risk involved and attitude toward risk or risk propensity (i.e. whether one is a risk-seeker, risk-neutral or risk-averser). The control mechanism designates procedures and protocols that monitor and control the successful performance of a transaction.
The risks in e-commerce environment pertain to the information available to the parties in a transaction. Three typical situations are proposed:

1. the situation of perfect information in which all the parties know everything relevant to a transaction;
2. the situation of complete ignorance, where none of the parties has information relevant to the transaction; and
3. the intermediary situation of information asymmetry, in which one party has information that the trustee does not have.

**Party trust.** The concept of trust is adopted from Mayer *et al.* (1995) as “The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform particular action important to the trustor, irrespective of the ability to monitor or control the trustee”. The party trust is subjective and has both an action and an information perspective. The subjective reasons of trusting are personal experiences, understanding, communality and the objective trust reasons are social indicators such as uniforms of police officers and doctors, etc.

**Control trust.** The concept of control trust is adopted from the Bons (1997) definition of trustworthy trade procedures as “A trade procedure that governs transaction in which risk of opportunistic behavior by one or more parties is present, but which provides sufficient inter organizational controls to limit this risk.” Although “sufficient control” could be interpreted as a subjective measure this will result in a set of design principles for trade procedures, which specifies in detail when a certain trade procedure has sufficient controls. The set of design principles is intended to be an objective measure of the trustworthiness of trade procedures:

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\text{Transaction trust} = \text{party trust} + \text{control trust}
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A major drawback of the existing trust building models is that, most of the models consider trust as one dimensional phenomenon and focus on characteristic building (e.g. honesty, credibility, brand image, integrity, ability, etc.) or build institutional control system to protect the rational decisions of trusting without a reference point at what level these characteristics or institutional systems will propel the trustor to indulge in act of trust. However, we argue that since trust is trustor’s choice, he will limit his propensity to trust and level of vulnerability toward trustee according to his risk-bearing capacity. Therefore we have developed our trust building model by integrating characteristic trust, rational trust and institutional trust factors from risk perspective as shown in Figure 1.

**Trust building in supply chain partners relationship – an integrated conceptual model**

There are two important points to be noted in trust building process. The first point is “information is pivotal to trust building.” When the supply chain members have access to complete mutual information about partner’s reliability, calculations, consequences, controls and they are certain that there is no risk involved in the relationship, then trust has no relevance; complete knowledge obviates the need for trust but it can be there (i.e. no risk = trust). On the other hand when the partners lack mutual information and they are in the state of total ignorance of future outcome of the relationship, there can be no reason to trust and it need not be there, as risk
prevails (i.e. risk = no trust). The second point is that some level of uncertainty is required for trust to emerge (Dasgupta, 1988) and propensity to trust lead to risk taking.

The other arguments in the trust building process that can be noted are in order to trust one does not need to risk anything, however, one must take risk in order to engage in trusting action. Trust is the willingness to assume risk (behavioral trust is assuming of risk). If the level of trust surpasses the threshold level of perceived risk, then the trustor will engage in the RTR. If the level of perceived risk is greater than the level of trust, the trustor will not engage in the RTR (Mayer et al., 1995). Individuals only engage in transactions if their level of trust exceeds their personal threshold (Tan and Thoen, 2001). Conversely, trust in a relationship will limit at the threshold level of a supply chain member’s risk-bearing capacity (Laeequddin et al., 2009). Under power-based and highly dependent context, the weaker party may find the stronger party as “risky” (not trustworthy). However, under compelling situations of dependency, the weaker party may find the stronger party as not trustworthy but at the same time if the probability of risk is bigger than not engaging in the relationship, then the weaker party will evaluate the stronger party as not trustworthy but “risk worthy” for short-term financial/non-financial gains, staying in the relationship as long as the relationship context changes, knowing that they are being controlled and monitored. Research within social exchange has shown that the risk of being exploited in social relations facilitates some degree of commitment and attachment building as a way of reducing uncertainty (Molm et al., 2000). We can consider this relationship as

Figure 1. Trust building in dyadic relationship – an integrated conceptual framework.
“risk worthy” relationship. As trust is willingness to take risk (Mayer et al., 1995), risk worthiness can be interpreted as trust worthiness. Therefore trust and risk are complementary to each other (i.e. risk = no trust; no risk = trust; risk worthy = trustworthy). Since trust cannot be easily measured, we can evaluate the quantifiable perspectives of risk in relationship and map them in terms of trust.

Step 1 – characteristic trust building
Characteristics-based trust deals with factors such as perceptions, reliability, dependability, credibility, commitment, honesty, benevolence, fairness, goodwill, emotions, etc. (e.g. Mayer et al., 1995; Cumming and Bromiley, 1996; Rousseau et al., 1998; Kwon and Suh, 2005; Schoorman et al., 2007). Therefore to build characteristic trust, depending on the context of trust building the trustee should identify the trustor’s requirement of characteristic factors, for example benevolence as characteristic 1 (say, C1), ability as characteristic 2 (say, C2), integrity as characteristic 3 (say, C3) and in this way there could be “n” number of characteristics (say, Cn). Next he should evaluate whether these characteristics are perceived by the trustor as risky, not risk or risk worthy because trust is a threshold level of trustor’s (supply chain member) risk-bearing capacity (Laeequddin et al., 2009). If the trustee’s characteristics are risky, the trustor will not trust. However, if there is no risk from characteristics or the characteristics are risk worthy it implies that the supply chain members can have a propensity to trust. The propensity to trust is only an antecedent of trust and it will not engage the trustor in act of trust.

The widely suggested characteristics in the context of trust building are according to Doney and Cannon (1997) trust is transferred to target from the “proof of source” (e.g. market credibility, brand image, visit to the partner’s facilities). According to Lewicki and Bunker (1995) interpersonal trust is developed between the parties through collective identity, common goals and shared values. Trust is build based on the partner’s level of willingness to take risk depending on the perceived ability, benevolence and integrity (Mayer et al., 1995). Trust is build based on the personal experience and communality (Tan and Thoen, 2001). Trust is build based on history of reliability and discrete behavior, honesty and integrity, altruism, benevolence and caring. The characteristic-based factors are dependent on the mutual perceptions, positive or negative past experiences (Sheppard and Sherman, 1998). Trust given by trust requires an assessment of the other party’s credibility and benevolence, one party must have information about other party’s past behavior and promises (Doney and Cannon, 1997). In the dynamic business environment the level of partner’s willingness to take risk is based on clear objectives of partnership that include calculations of cost and benefit, capabilities, technological compatibility of the partners and a legal framework to protect the external risks and opportunistic behavior of partners to fit into either, efficient, responsive, lean, agile or integrated supply chains. As mentioned by Williamson (1993), individuals make trust choices based on rationally derived costs and benefits. Therefore the second logical step in trust building is to evaluate the risk and risk worthiness of rational factors.

Step 2 – rational trust building
Rational trust deals with factors such as economics of relationship, dynamic capabilities of partners and technology adoption (e.g. Williamson, 1993; So and Schill, 2002; Lippert and Swiercz, 2005). From the rational choice perspectives theory, decisions about trust are similar to other forms of risky choice; individuals are presumed to be motivated to make rational, efficient choice (i.e. to maximize expected
gains or minimize expected losses from their transaction). Therefore to build rational trust, depending on the context of trust building the trustee should identify the trustor’s requirement of rational factors. For example price as rational 1 (say, R1), dynamic capabilities of partner as rational 2 (say, R2), partner’s technology as rational 3 (say, R3) and in this way there could be “n” number of rationale (say, Rn). Next he should evaluate whether these rational factors are perceived/calculated by the trustor as risk, not risky or risk worthy. If the rational factors are risky, the trustor will not trust. However, if there is no risk from the rational factors or the rational factors are risk worthy the supply chain members will indulge in act of trust as the risk levels would be within the trustor’s bearable risk limits.

The widely suggested rational factors in the context of trust building are according to Doney and Cannon (1997) the rationality of trust building is based on calculation, prediction of positive or negative outcomes and capabilities and the trustor’s calculation of the cost and/or rewards of target acting in a trustworthy manner. According to Lewicki and Bunker (1995) the first stage of interpersonal trust is developed in professional relationships is based on calculations. Trust may be high, if the value of the transaction is high and low if the partner is a risk-seeker (Tan and Thoen, 2001). People calculate the gains, which might result from their decision to trust another person before they actually make their decision (Coleman, 1990). The objective of the lean supply chain is to develop a value stream to eliminate all waste, including time, and to enable a level schedule. Therefore, even if the supply chain partners are having a propensity to trust or willingness to take risk, based on the other member’s characteristics, essentially trust involves a calculative process as and when an organization or an individual calculates the costs and/or the benefits of staying in the relationship (Dasgupta, 1988). Act of trust is dependent on the acceptable levels of economics, dynamic capabilities and technological risk in relationship.

Though the supply chain partners develop risk-worthy characteristic and risk-worthy rational related to economics, dynamic capabilities and technologies, there is always an element of risk present in the partner’s relationship from the changing political, institutional and business environment. According to Gutierrez and Hintsa (2006) the emergent international terrorism against developed economies highlight the vulnerability of current global chains and places security issue at the top of the agenda of several government and international organizations around the world. As Sheffi (2001) mentioned, manufacturers, distributors, retailers and other firms involved in the handling of physical goods face four new challenges in this era: preparing for another attack, managing supply chains under increased uncertainty, managing relationship with the government and organizing to meet the challenges. A survey carried out in Latin America with 102 Business Alliance for Secure Commerce member companies has shown that, the trust of benefiting from the insurance depends on the perceived degree of risk faced by the company and the program’s capacity to reduce the probability that this risk will occur. The riskier companies have perceived higher benefits/perceived as risk worthy because the potential savings from preventing undesirable events are higher than for the low-risk companies (Gutierrez et al., 2007). Therefore the third logical step in building trust is to evaluate the risk and risk worthiness of the institutional control mechanisms.

**Step 3 – institutional trust building**

Institutional trust deals with factors such as control mechanisms between members through legal frameworks, commercial law, contracts, agreements, bank guarantees and
insurance, etc. (e.g. Kramer, 1999; Das and Teng, 2001; Child and Mollering, 2003). Therefore to build institutional trust, depending on the context of trust building the trustee should identify the trustor's requirement of security/control mechanism factors. For example legal agreement as institutional control 1 (say, I1), bank guarantee as institutional control 2 (say, I2), partner's insurance as institutional control 3 (say, I3) and in this way there could be “n” number of institutional control mechanisms (say, I_n). Next, he should evaluate whether these institutional control mechanisms are perceived as risky, not risky or risk worthy from the trustor’s perceptions of security. If the institutional control mechanism is risky, the trustor will not trust. However, if there is no risk from institution or the institution is risk worthy the supply chain members will feel secured and extend his trust as the institutions can protect the trustor from unforeseen risks.

The widely suggested rational factors in the context of trust building are according to Sheppard and Sherman (1998) institutional mechanisms serve either to incite reliable, discreet behavior or to deter unreliable, indiscreet behavior. Thus, the mechanisms necessary for trust production in shallow dependence have been referred to as “calculative” or “deterrence based.” According to Bons (1997) trustworthy trade procedures governs transaction in which risk of opportunistic behavior by one or more parties is present, but which provides sufficient inter-organizational controls to limit this risk. According to Nooteboom (1996), control comes into play only when adequate trust is not present. Here adequacy refers to insufficient propensity to trust (willingness to take risk) or low level of risk-bearing capacity for a partner to become vulnerable to other partner’s actions. Luhmann (1979) suggests the existence of legal norms is one of the most effective remedies to confine the risk of trust and thus provide those good reasons, which a potential trustor needs to decide to invest in a relationship. Bachmann (2001) recognized that inter-organizational trust is especially dependent on and mediated by the institutional framework in which the relationship is embedded. Shapiro et al. (1992) has proposed the notion of deterrence-based trust. This perspective suggests that actors act in a trustworthy manner because of the fear of the consequences of trust violation. Thus, higher the penalty, the theory suggests, the greater the probability that actors will be trustworthy. In other words the penalties act as additional risk that the partner cannot bear and induce the trust to act as trustworthy. However, if the partners have no willingness to take risk or rationale to become vulnerable due to the unpredictable and unassessable risks, the institutions have no role to play. Therefore, institutional systems are referred as risk-coping mechanisms that ensure risk-worthy characteristics and limits rational risks of partners protecting the partner’s act of trust or extending the trust further.

Based on the literature and our conceptual framework trust building can be defined as a process of making self (trustee) to be risk worthy from characteristics, rational and institutional perspectives such that it drives the trustor's propensity to be vulnerable to the trustee and indulge him in risk-taking behavior and at the same time protect him to limit his vulnerability and risk-taking behavior through the institutional systems. Though the model assumes that characteristics lead to propensity to trust, rationality leads to act of trust and institutional system extends the trust in a sequence of three steps the order may change depending on the context. For example the institutional system may drive the propensity and characteristics may drive the act of trust and rationality may extend the trust further.

**Conclusions**

The main contribution of this paper is that it drives the idea that trust and risk are interlinked and trust cannot be built as one-dimensional phenomenon. In contrast to
past approaches that often present trust as a complicated and multifaceted concept and portrays trust building as an incredible challenge to establish and may be even harder to maintain it, our integrated conceptual model suggests that, simple evaluation of supply chain member’s risks from characteristics, rationale and institutional control/security perspectives and bringing them to within the bearable limits can lead to trust building. As trust is context-dependent phenomenon we cannot study trust under all possible business contexts to design trust building models. Therefore supply chain partners should approach trust building process from risk perspective and evaluate the relationships as “risky,” “risk worthy” or “not risky” and translate them in terms of trust perspectives as “no trust,” “trustworthy” and “trust”.

Since trust is a trustor’s choice, a supply chain member is likely to engage in act of trust only when his rational risks, related to other member’s technology, economics and dynamic capabilities are within his bearable limits. Therefore any amount of characteristic trust building such as commitment, credibility, integrity, emotion, etc. is not going to make trustor vulnerable to technology or economics risk of relationship. Even if the rational risk levels are less than the risk-worthy personal characteristics, or control mechanisms, members may not take the risks bigger than their bearable capacities and indulge in act of trust. Also it is important to note that the presence of strong institutional systems by themselves does not build trust but the presence of institutional system reduces the risk and risk reduction builds trust. If there are no risks, institutions have no role to play. Hence supply chain managers should evaluate various risk perspectives to build trust rather than attempting to build trust without considering the risk dimensions or reference points of trust. Often trust is assumed as long-term reinforcement process but our model proves that trust building can be an instant process if the risk levels can be evaluated.

Direction for further research
Trust researchers seems to have focussed overwhelmingly on the trustee’s characteristics such as integrity, benevolence, credibility, honesty, transparency, etc. to build trust and stereotyped the research identifying antecedents and consequences of trust in various contexts presuming trust as one-dimensional phenomenon. The problem is as trust is context-dependent phenomenon how many contexts can be studied to design trust building models. Under dynamic business environment how the contexts can be fixed. Trust building literature fails to address what is the trust threshold, what are the reference points of trust building in business relationship. Where does the starting, optimum and maximum trust points lie in trust building process. Further a fundamental question of debate in business management is should the managers strive to build trust or strive to reduce risk. Despite the availability of abundant literature on trust still trust is viewed as a complicated and multifaceted concept. To break such notion, get a conceptual clarity, for understanding which attitudes and behaviors drive the propensity, act of risk, etc. more studies based on case study, grounded theory or ethnography methods are needed.

References


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