Toward Developing Web Based Support Systems for Enhanced Trust among Value Web Chains

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Abstract: This paper explores the use of the web to build trust among value web chains. Businesses tend to concentrate on the traditional tangible elements of the supply chain and ignore the crucial importance of using the web to build, develop and enhance trust in the e-marketplace. Through an extensive literature review, the major dimensions of trust are highlighted and a more precise definition and characterization of trust are developed. Second, relevant collaboration theories for developing trust are reviewed. Based upon the proposed definition and characterization of trust and collaboration theories, a conceptual framework for enhancing trust and shared understanding among stakeholders of the web supply chain is proposed. Finally, using the conceptual framework as a reference, modules of web-based support system for enhancing trust are highlighted.

1 Introduction

E- Commerce is transforming the current physical market place into a virtual market-space. This transformation is causing greater uncertainties in supply and demand. Difficulties to predict demand (e.g. computer video game, Fashion apparel) and to manage the demand chain (from manufacturers through wholesalers, distributors and retailers, and onto consumers) are at the source of new kind of relationships among partners along the supply chain. In literature, it is often argued that supply chain performance requires long-term relationships based on trust. Further, the development of the outsourcing phenomenon and its corollary the extended enterprise (Konsynski, 1993) increased attention toward the study of trust as an important variable in apprehending business relationships and prosperity (Fukuyama, 1995).

The literature on trust displays different kind of trust. Although technology based trust (i.e. encryption, secure transactions, etc) is an important factor in establishing links, it is not sufficient for developing, enhancing and maintaining relationships. Perceived trustworthiness based on ethics and moral judgments such as benevolence and integrity (Mayer et al., 1995) is fundamental for business interaction. Therefore, elements such as benevolence and integrity are a good starting place for supply chain manager to start their consideration. Because trust is situational, other elements that influence the development of trust should also be considered. Some of the antecedents highlighted in the literature include: predictability, goodwill, loyalty, openness, etc. Jones et al. (1975) assert trustworthiness reflects a behaviour that avoids opportunism. This indicates that trust elements can only come interacting with trustee over time. However, the development of Internet technology is pushing businesses to conduct business through web interaction. This new web supply chain cannot operate in a vacuum. E-transactions rely upon the willingness and trust of businessmen/customers to deal/purchase in the virtual market-space. Consequently, trust domains must be explored further. Trust research among partners along the supply chain has so far been limited to emphasize mainly vertical trust approaches in dyadic business relationships. Lately, supply chain researchers have recognized the importance of trust in developing and managing business relationships. It is a substantial dimension in the interaction and network approach (Håkansson & Snehota; 1995), and a basic feature in supply chain outsourcing relationships.

There is a real need for developing a web based supply chain framework for building, developing and enhancing trust. How to use the web for building, developing and enhancing trust in order to extend the web supply chain? Very little theory-guided research has been conducted in developing a web based computer systems to enhance trust and shared understanding among businesses and between businesses and customer that are willing to be part of the web-based supply chain. This paper attempts to fill this gap.

The paper explores, first, the new supply chain model requirements and then the concept of trust. Through an extensive literature review, the major elements of antecedents of trust are highlighted and a more precise definition and characterization of trust are developed. Second, relevant collaboration theories for developing trust are reviewed. Based upon the proposed definition and characterization of trust and collaboration theories, a conceptual framework for enhancing trust and shared understanding among businesses enterprises in the virtual market space is proposed. Finally, using the conceptual framework as a reference, modules of web-based support system for enhancing trust are highlighted.

2 Web-Based Supply Chain and Trust

Web Value Chain: The literature on the supply chain is relatively balky. However, from the Toyota tier structure to Dell and Cisco web chain, the supply chain has evolved considerably. The traditional supply chain is still embedded in Porter's value chain model (Porter and Millar, 1985), which is based on value-adding members. The new value chain (web-

based value chain) does not look like a chain of value-adding members; "it looks like a web of virtual enterprises that behave like living ameba-like organisms – constantly changing shape, expanding, shrinking, multiplying, dividing, shifting, and mutating" (Andrews & Hahn, 1998).

Two forces of equal importance are reshaping value chains: (a) perpetual changes in the roles of value-chain members, which subsequently and almost inevitably result in power shifts within the traditional value chains; and (b) customer/consumer preference for personal customization and quick gratification, encouraging value-chain members to surround their joint customer(s) in new and exciting ways. Combined, these forces are helping to transform traditional value chains into web-value chains. This transformation is gradual but is accelerating in speed and fuelled by advances in web technology. Within a web value chain, each virtual enterprise looks like a mini-web of its own, encompassing all of its businesses (including joint ventures and subsidiaries) and partners – thousands of strategic, tactical, and virtual partners and suppliers around the world, spread over many tiers. This new form of supply chain model requires trust infrastructures. It requires also the design and the development of a web based interactive information support system for enhancing trust, which aims to support the generation of shared understanding and trust.

Supply Chain Uncertainties: The sources of supply chain risks and uncertainties are multiple. These sources can be overreactions to external or internal events, unnecessary interventions, lack of visibility, distorted information throughout a supply chain, and mistrust. The financial consequences of these risks and uncertainties can be enormous (e.g., Inventory costs due to obsolescence, markdowns and stock-outs, etc.). As stressed earlier a web supply chain must be responsive to changing market trends, customer preferences and dynamic network supply chains. Mutual trust can be viewed as one of the primary factor that may reduce risks and uncertainties and lead to web supply chain efficiency. Trust is based on the "willingness to be vulnerable to the actions of another party based on expectations of trustworthiness" (Mayer et al., 1995). In the domain of supply chain, trust takes the form of having confidence in aspects such as order cycle time, order current status, demand forecasts, suppliers' capability to deliver, manufacturing capacity, product quality and service delivery.

To improve web supply chain performance, dyad or collective trust must be established and developed. Mutual trust can minimize inventory (as a buffer against risks and uncertainties), reduce lead-time and increase visibility, which in turn will enhance trust (Kumar, 1996). For example, a supply chain partner that has detailed information and knowledge of the real picture (about finished goods inventory, material inventory, work-in-process, actual demands and forecasts, production plans, capacity, yields, and order status) in each part of the web chain can make better decision and consequently improve the performance of the web supply chain. Thus, building and developing mutual understanding and trust can yield better outcomes.

Table 1 highlights business areas where mutual understanding and trust can improve outcomes.

Supply chain outcomes	Impact of mutual understandings and trust
Minimizing inventory	Sales are not driven by over order to hold inventory for key customers and hedge against the risk of stock-out
Winning orders	Over quoting on delivery times to customers is minimized which translated in winning orders
Customer loyalty	Accurate information reduces the gap between customer expectation and supply chain capability and thus increases customer loyalty.
Cooperation among supply chain partners	Increases cooperation among managerial functional areas (such as between marketing & engineering) in each enterprise and consequently interorganizational relationships
Efficient operation of supply chain management	Accurate information and transparency of demand along the supply chain improve operation efficiency for each partner and for the whole supply chain

Table 1: Impact of trust and mutual understanding on supply chain outcomes

3 Background on trust

Trust is a key lubricant in achieving goals that require social interdependence (Atwater, 1988; Bazerman, 1994; Giffin, 1967). Trust enables many cooperative human endeavours (e.g. Dunn, 1988; Gambetta, 1988). Trust can be viewed as a relationship between: a) one person (a trustor) and another (the trustee), b) one person and another object (e.g. a web site, a server, a group, a society, an institution), and 3) one person and another person. In this case the trustee is a being to which we are willing to ascribe intentions, motivations, interests, reasons and goals. We can refer to it as an «agent» (i.e. individuals, families, groups, organizations, communities, institutions, etc.). The literature on trust is becoming bulky. For five decades the concept of trust attracted the attention of scholars. During the fifties and sixties scholars (Deutsch, 1958; Rotter, 1967) highlighted the importance of trust in personal relationships. During the seventies the concept of trust continued to attract the focus of researchers (Gabarro, 1978; Corazzini, 1977; Williamson, 1975). In the eighties and the nineties the body of research becomes significantly large (Barber, 1983; Dwyer & Lagace, 1986; Håkansson, 1982; Luhmann, 1988; Grayson and Ambler, 1999; Gwinner et al, 1998; Mayer et al., 1995; Morgan & Hunt, 1994). Trust is a multidimensional concept that has been discovered to contain various dimensions. The table 2 highlights variety of dimensions and related authors. The table shows that trust dimensions focuses on issues that may directly influence the trust in an individual or an organization. It also shows that trust is a complex concept that apprehend variety of behaviours and convey different meanings. This variety of views is at the source of multiple definitions.

Dimensions of trust	Authors
Predictability	Coleman, 1990; Gambetta, 1988; Lewis & Weigert, 1985; Luhmann, 1979; Rotter, 1967; Parsons, 1964; Deutsch, 1958.
Ability/Competence/ Expertness	Ability: Mayer et al., 1995; Cook & Wall, 1980; Deutsch, 1960. Competence: Butler, 1991; Lieberman, 1981; Kee & Knox, 1970. Expertness: Giffin, 1967.
Benevolence	Mayer et al., 1995; Larzelere & Huston, 1980; Solomon, 1960.
Integrity	Mayer et al., 1995; Butler, 1991; Gabarro, 1978; Lieberman, 1981.
Confidence	Dwyer & Lagace, 1986; Luhmann, 1979, 1988; Kwant, 1965.
Perceived security	Zand, 1978.
Loyalty	Butler & Cantrell, 1984.
Altruism	Frost, Stimpson & Maughan, 1978
Consistency	Butler, 1991; Butler & Cantrell, 1984.
Goodwill	Ring & van de Ven 1992.
Fairness	Butler, 1991; Hart et al., 1986.
Congruence	Sitkin & Roth, 1993.

Table 2: Dimensions of Trust

Toward a more precise definition and characterisation of Trust

Economists, psychologists, and sociologists, and management theorists are all in agreement on the importance of trust (Sitkin & Roth 1993; Hosmer, 1995; Tyler & Degoey, 1996). However, the definition of trust is still elusive. Scholars coined trust from variety of view: economic transactions (Williamson, 1975), social structures (Braithwaite & Levi; 1998; Rotter 1980; Rothstein, 1999; Sally, 1995), individual expectations (Mayer et al., 1995) and interpersonal relations (Arrow, 1974; Fox, 1974; Lewis & Weigert, 1985).

The importance of trust as a theoretical construct is reflected in the considerable body of literature dedicated to defining trust and identifying its antecedents and outcomes. Mayer et al. (1995) proposed a model of trust in dyads to model and understand the antecedents and outcomes of trust. There are two sets of antecedents to trust. First, the trustor brings to the relationship an inherent willingness to trust. This trait is situation independent and relatively stable over time. Second, the trustor has expectations of trustworthiness about how the trustee will behave. These expectations are based on the trustor's perception of the trustee's ability, benevolence, and integrity.

Benevolence measures the trustee's level of desire to do "good" to the trustor. Integrity measures the trustee overall conformance to a set of principles that the trustor agrees as acceptable. Therefore, trust implies truth based on mutual acceptable principles. Ability is difficult to consider as a factor of perceived trustworthiness. While benevolence and integrity are related to ethics and moral judgments, ability is related to innate mental, physical characteristics and backgrounds (family, school etc.) that may limit a trustworthy person's performance despite his desire of willing. Ability tends to relate more to competence, which, relate to cognitive trust based on objective knowledge of the other party. Some competent people are not trustworthy and vice versa. Consequently, separating ability (competence) from expectations of trustworthiness can improve our understanding of trust.

Mayer et al (1995) analysis has resulted in a general definition of trust that fulfills generalized theory needs. Enterprises can approach trust as the "...willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party." (p. 713). This definition allows generalized theories to be extended to interorganizational relationships and particularly to cyber interorganizational relationships.

In a web based value chain, interorganizational relationships grows out of well designed communication channels that ensure shared meanings and understandings providing the necessary foundation for non-opportunistic behaviour.

Summing up, we define trust for cyber interorganizational relationships as fellow: *Trust is a communicative process that conveys meaning, alters business partner's degree of belief and conduct providing conditions for trustworthiness and consequently a favourable climate for cyber business transactions.*

4 Research on Collaboration

Research on collaboration covers at least three main domains: 1) the theory of learning organization, 2) alignment theory, and 3) the dialogue theory.

Learning organization: The theory of learning organization studies how organizations can learn (Senge, 1990). A particular portion of this theory (the shared vision) explores how collaborators define and generate vision and goals, which really can be shared. The new emerging extended enterprise tends to bind partners together along the supply chain around common goals, which provide a basic level of trust among collaborators inside or across enterprises boundaries.

Senge (1990, 1999) recommends a set of practices, the five "learning disciplines," for building learning capabilities in organizations: 1) personal mastery, 2) systems thinking, 3) mental models, 4) building shared vision, and 5) team learning. The last three learning disciplines are particularly relevant to building and enhancing trust.

Mental Models: The vision of current reality is a projection of mental models. Mental models are important, argues Senge, because they set the way we perceive reality. From this view, what we observe is not reality itself as an objective quality "out there," but our perception of reality, which is invariably shaped by our view of the world. To gain more capability that governs actions and decisions, people develops awareness of the attitudes and perceptions that influence thought and interaction. By continually reflecting upon, inquiring, and reconsidering these internal pictures that people use to interpret and make sense out of the world one can expect a better outcome.

Building Shared Vision: The concept of building shared vision stresses a focus on mutual purpose. This shared vision or a kind of understandings is an ongoing process. This process feeds a group or organization's sense of commitment by developing shared images of the future they seek to create, and establishing the necessary principles and guiding practices.

Team Learning: All-important decisions occur in groups and thus the learning units of organizations are "teams," groups of people who need one another to act. Through techniques like dialogue and skilful discussion, teams transform their collective thinking and learning to channel their energies and actions to achieve common goals, and accumulate common knowledge, intelligence and ability greater than the sum of individual members' talents and competencies.

The three disciplines can be extended for building trusted interorganizational relationships. One can argue that the winning organization is the Learning Organization that can master these disciplines in the virtual market-space.

Alignment Theory: Team building theory that seeks teams' effectiveness by strengthening the working relationships of the team members (Katzenbach & Smith, 1993) is becoming important for organization competitiveness and survival. Culbert & McDonough (1980) research whose theory is based on the critical assumption "that each person finds a unique way of aligning self-interests with the needs of his or her job, and, further, that work teams whose members understand and respect one another's "alignments" function more effectively". The development and practice of such respect and shared understandings are fundamental ingredients to interpret the motive of another person behaviour without projecting potential inaccurate intentions. This kind of understanding does not imply agreeing with another person way of thinking, vision of the world or framework of logic. It means simply that one can understands the other person motivation, behaviour and things that have value (Jarvenpaa et al., 1998).

How alignment theory can be useful to enhance trust, support, and extend web supply chain? The basic premise of the alignment theory is that people who can understand each other's needs and alignment build a kind of shared understanding and enhanced mutual trust. Consequently, it can improve communication, develop and extend web based supply chain.

The dialogue theory: Taking its roots in the ancient Greeks, dialogue is a very old concept. As it emerges as a major dimension of organizational learning, it borrows heavily on the work of three scholars. Buber (1957), a philosopher, emphasized the dimension of dialogue that "requires full acceptance of the other individual(s), turning to them in a way that is fully genuine, open, and affirming". DeMare (1991), a Psychologist, thinks dialogue can "foster a sense of community and allow the healing of social conflicts". Bohm (1985), a quantum physicist transformed to a philosopher, asserts that dialogue would encourage the group move to a higher level of thinking.

Recently Isaacs (1993) defined dialogue as a "sustained collective inquiry into the processes, assumptions, and certainties that compose everyday experience" (p.3). For Isaacs, dialogue's basic intent is to facilitate people learn how to think collectively. The collective thinking goes beyond problem solving but in terms of assumptions surfacing and formulating new and clearer insights into why those assumptions arise. Consequently, dialogue can foster the creation of shared meaning and understanding and the development of new and aligned actions. How to conceptualize dialogue?

Schein (1993) proposes a comprehensive model of mapping forms of talking together along two basic paths. One path consists of emphasizing competition and logic; this leads to debate where one side wins and another side loses. The alternative path is a strategy that avoids early judgment and emphasizes a path of reflection and exploration to see what might emerge from the conversation.

Senge et al. (1994) use dialogue as a higher level of communication to allow individuals explore and evaluate complex issues from many different lens. A successful dialogue allows teams to gain new insights and reach "higher order" of communication and ultimately new level of understandings and trust. However, to enhance understandings and new level of trust, stakeholders (e.g., teams) have to move through successive stages.

Although used as a critical medium of learning for maximizing organization potential, dialogue can be extended to become a creative process for building a healthy communication channel that allows new business partners to reach each other mental model (Senge et al., 1994) and reveal their own vision.

Extended to interorganizational collaboration, dialogue can surface deeply ingrained assumptions that influence how the world is viewed and how business is conducted. It can also make explicit the underlying reasoning that is implicit and consequently enhance understandings. The potential for "higher order" communication, thus, may lead through a careful designed process to shared vision. By clearly revealing their way of thinking and surfacing hidden assumptions, potential business partners can generate a set of principles and guiding practices by witch they achieve their shared vision. This may shape a kind of behaviour that greatly enhances the probability that trust will occur. One can theorize that trust can have a significant impact on establishing and nurturing business relationships, as well as on overall quality of life, sense of satisfaction, and even physical health for individuals.

5 The theoretical Framework

Drawn upon trust theory, and collaboration theory, a theoretical framework is constructed as shown in Figure 1. The framework shows that trust and shared understanding, which are the basic foundations for transacting, can be generated through three basic processes where value web members (called also collaborators) working in different organizations use variety of protocols and web technology to slowly disclose their needs, goals, reveal their preferences, values, frames of references, attempt to understand each other's expectations and emotional feelings.

Antecedents of Trust

- Willingness to trust
- Expectations of trustworthiness: benevolence, and integrity.
- Cognitive trust: competence, reputation, predictability, reliability, and credentials
- Emotional trust: goodwill, loyalty, and confidence

Processes

- Learning Organization Theory:
  - Mental Models
  - Shared Vision
  - Team Learning
- Alignment Theory
- Dialogue Theory

Trust and Shared Understanding

Perceived Risk

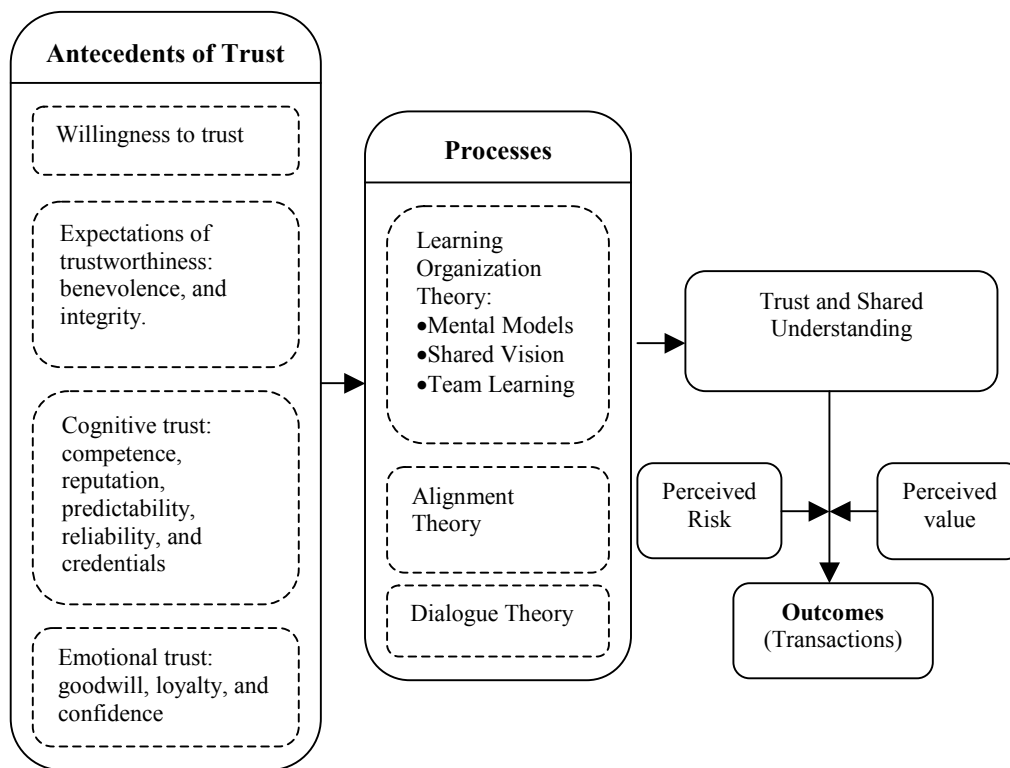Perceived value

Outcomes (Transactions)

Figure 1: Theoretical Framework for Developing Trust & Shared Understanding

The overall structure of the framework shows three main components: 1) antecedents of trust, 2) processes for developing trust and shared understanding, and 3) outcomes. Although antecedents of trust (which embodies factors of perceived trustworthiness, cognitive trust and emotional trust) have been widely discussed in the e-business literature, their linkages to trust formation and the generation of shared understanding are still not well understood. The source of this misunderstanding is due to the incomprehension of the role of processes such as the dialogue, team learning and alignment in creating gradually the conditions of trust and shared understanding. Among these processes the dialogue play a major role.

Dialogue is a process that evolves and "unfolds" as individuals of the same team or individuals belonging to different organizations practice it. One of several paradoxes that define dialogue (Senge et al., 1994) is that no matter how badly individuals want it to "happen," it cannot be forced. However, as individuals improve their skills of communication and use better channels, they can discover themselves dialoguing.

Isaacs (1993) operationalized the theory of dialogue. The main foundation of this theory is the need to create an environment, or container, in which dialogue can occur. This container can be conceptualized as a climate as well as a set of explicit or implicit norms that allow people to take risks and reveal controversial issues without enduring negative consequences (Schein, 1993). The four stages of dialogue in figure 2 as identified by Isaacs can be extended and applied to enhance trust and shared understanding in the virtual market space.
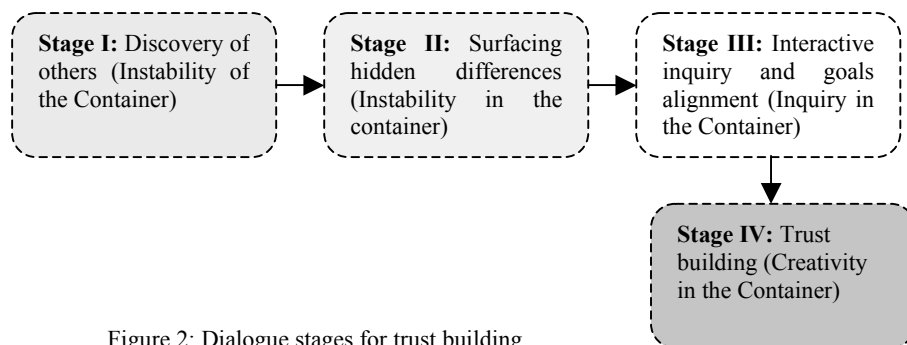

Figure 2: Dialogue stages for trust building

Stage I: Discovery of others (Instability of the Container). During this stage managers using the web as a channel of communication and a support for dialoguing go through an informal electronic exchange that aims to know each other while recognizing that each individual has a different frame of reference, beliefs and perspectives. The basic challenge during this first stage is not deny differences, but to find a way to explore them. The potential for the instability stems from these differences and the probability of conflicts that can be generated. One way to move forward and continue to listen is to properly manage this potential internal crisis through positive behaviour that avoid fast conclusions regarding the accuracy of the collaborator views and put aside our own certainty and view about the world.

Stage II: Surfacing hidden differences (Instability in the Container). Tolerating uncertainty can foster an environment in which people start revealing their goals and needs. It also allows people to question their own beliefs and make the necessary effort to know others. As mentioned earlier, the understanding of another person's frame of mind can lead to explain and interpret better the real intent of this person action and may ultimately improve communications. However, this kind of behaviour that aims at understandings others may lead to frustration caused primarily by surfacing the apparent lack of coherence in others assumptions, beliefs, and thoughts. The highlighting of these real differences may lead to a second crisis. The use of proper electronic channel, electronic documentation and the repudiation of negative behaviour (withdrawal or judgment) may lead to an interactive strategy of inquiry and listening called inquiry in the container.

Stage III: Interactive inquiry and goals alignment (Inquiry in the Container). An environment characterizes the third phase of electronic dialogue where collaborators in the virtual market space begin to inquire together as a whole, and often goals alignment emerge. The intensity of information flow due to confrontation of deeply held beliefs and assumptions can lead people to align their goals/needs with other collaborator's goals and self-interests. This alignment stems from the development of new kind of understanding, which is a fundamental ingredient to interpret the motive of another person behaviour without projecting potential inaccurate intentions. This kind of understanding can lead to a relatively stable "alignment" where collaborators perceive events and assign meaning and value to them. Once collaborators begin understand each other's needs and alignment, team building may follow and a new kind of shared understanding and enhanced mutual trust can emerge. How this new kind of shared understanding enhances trust and ultimately extends web based supply chain? The answer depends on infrastructure support (technology infrastructure) and how creative collaborators are.

Stage IV: Trust Building (Creativity in the Container). As shared understandings begin to emerge, shared ground rules (tangible) and norms are formulated. Assuming the use of proper technology infrastructures (particularly technology interfaces), collaborators raise the level of interaction and communication to new heights. This new level of interaction and communication creates new environment where words and messages start convey meaning. Collaborators will determine then, rules that are clear (means rules that will create no future misunderstandings) and rules that are ambiguous and equivocal to them (means rules that may create future conflicts). Collaborators can establish the area of clear meanings and area of fuzzy meanings. This dichotomy helps them determine future potential conflicts and assess potential risk. As the dialogue progresses, inflexible and ingrained mental models are loosened, allowing new levels of creativity, shared understanding and trust to emerge. Moreover, collaborators can test the shared ground rules and verify the shared meanings. The process can be repeated until a satisfactory level of mutual understanding and trust is reached.

What are the outcomes of this kind of process? The framework outlined in figure 1 shows how enhanced shared understanding and trust allow collaborators to perceive risks and benefits associated with the transaction. This trust building and shared understanding allow value web members to promote a fully integrated infrastructure that links together all the members. This infrastructure allows the exchange of critical information/knowledge in real time and synchronizes their efforts to respond and produce the desired results also in real time. The ultimate outcome will be fast cycling transaction and extending web supply chain activities.

6 Toward building web-based support systems for enhancing trust

Successful computer systems supporting collaborative works are not numerous. GDSS (Group Decision support systems) or GSS (Group support systems) developed during the eighties and the nineties are designed to support tasks not social interaction (Dennis et al., 1988; Dennis, 1996; Dennis & Garfield, 2003). Although Microsoft's NetMeeting system integrates the latest state of the art technologies to provide a full range of multimedia support for collaborative work and group interactions, including audio, video, file transfer, on-line textual chat, it doesn't provide any theoretical structures to support and enhance the establishment of shared understanding and trust. Further, it does not support asynchronous social interactions, which is a major requirement for building relationships in the virtual market space. To fill this gap a prototype of web based support system is proposed.

The theoretical framework (figure 1) and the dialogue four stages for trust building (figure 2) provide the overall components and structure for designing a web based support systems (WBSS) for enhancing shared understanding and trust (Figure 3). A WBSS may embody four modules:

Module 1: Web-value Chain requirements
- Focus on end consumer
- Infrastructure Integration
- Shared knowledge, resources and approaches
- Improves joint process
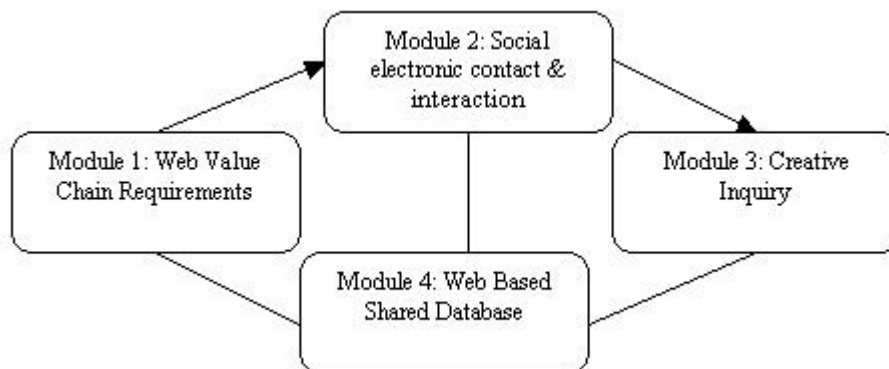- Leveraging competencies of all partners

Figure 3: Web based support systems for enhancing trust

Module 2: Social electronic contact
- Social electronic contact, discover others & positive reciprocity
- Electronic interaction: know each other and accept differences
- Goals/needs generation, alignment /Self Disclosure

Module 3: Creative inquiry
- Creative inquiry, surface mental models
- Generation of shared ground rules and norms
- Idea organization, exchange and   evaluation
- Meanings of shared rules, area of clear meanings and area of fuzzy meanings

Module 4: Shared Database
- Online public databases
- Web-value requirements folder
- Value web members shared files
- Value web member personal files
- Specialized supply chain databases

We believe that a WBSS that incorporates the four modules and that integrates Internet technologies and existing multimedia systems (e.g. netMeeting System) may enhance trust and collaborative work. Further, incorporating some powerful functions for both synchronized and asynchronized collaborative work will support different needs.

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7 Conclusion

Communication is a fundamental aspect to all relationships. Internet based relationships is relatively new phenomenon. The core feature in the initial phase of a relationship is trust. Trust is established through the interplay of honesty and disclosure. As one person discloses information the other will reciprocate and disclose personal information. Trust, honesty and personal disclosure are the central factors in developing Internet relationships. It is the interplay of these factors that encourages a sense of trustworthiness. This results in a positive cycle of disclosure – honesty – trust leading to further disclosure and so on. Internet relationships develop trust quickly and at times, unexpectedly as a result of communicating in an online environment. This process of self-disclosure is relatively uninterrupted by external demands. Web-based systems may speed this trust cycle leading to creative inquiry and surfacing mental models. This may lead to another level generating shared ground rules and norms, idea organization, exchange and evaluation.

Moreover, trust has usually been studied as static rather than dynamic variable. Trust phenomenon appears to be very dynamic and should be viewed and studied as a dynamic construct (e.g., "Trust is fragile or easily destroyed" -Luhmann, 1991; "Trust takes a great deal of time to form" -Ring & Van de Ven, 1994; "Trust may form very quickly" -McKnight, 1994). By adding the time dimension to WBSS (web based support systems), user can continuously check the state of sharing understanding and trust through inquiring, and consequently improve support of trust building.

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