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ABSTRACT

This paper develops a framework and model for building trust by combining research on the creation of trust with the dimensions of trust: ability, benevolence and integrity. By combining these dimensions in a matrix with the types of trust production based on characteristics, process and institutions, the paper develops a robust 3 x 3 matrix with which to categorize and understand trust production. The framework is developed and analyzed in the light of literature on consumer trust. This framework can help researchers, practitioners and consumers understand trust creation and assist businesses in developing a comprehensive strategy for managing trust.

INTRODUCTION

> *"Without taking a comprehensive view of how consumer trust evolves and how it relates to specific actions, the desire by businesses to establish trusting relationships with consumers is like groping for a solution in the dark"*

> -Salam et al. (2005) pg 77.

Trust is one cornerstone of the digital economy, and a lubricant that makes efficient markets possible. Without trust, few transactions would take place. While mutual benefit is often the reason behind a transaction, trust is the insurance or likelihood that the purchaser will receive that benefit. Consumers will not buy from a seller if they do not trust the seller to deliver the product as agreed. Businesses will not trade if they do not trust the other party to follow through with its promises. Clients also may refuse to do business if they do not trust the security and privacy practices of the vendor. Lack of trust can lead to costly legal protections, inefficient contracts, lost sales, and business failure.

While trust is important for all types of business, trust is even more crucial in the online business environment. In the brick and mortar world, customers can alleviate some of their concerns through face-to-face interactions with a representative from the business. The physical presence of the business also offers assurance that it exists, is accessible, and can be trustworthy. In the online virtual marketplace, it is difficult (if not impossible) to develop trust from the visible presence of the business and personal interaction with its people.

Understanding how trust is created is crucial for e-business success in today's competitive environment. Trust has been identified by prior studies as a critical success factor for online businesses. It is imperative for organizations and researchers to study how online consumer trust is promoted and cultivated (Koufaris and Hampton-Sosa, 2004). Luo (2002) argued that the lack of online trust is one of the main reasons people drop out of online business transactions. Without a sufficient level of trust, many customers are unwilling to engage in e-commerce. Brynjolfsson and Smith (2000) found that online retailers who offer the lowest prices do not necessarily register the highest sales for those products. They argued that this result is partially due to differences in the levels of trust in these online sellers. As a result, some Internet businesses have lowered their prices in order to compensate for a lower level of consumer trust, a practice that hurts their long-term profitability and sustainability. By the same token, Ba and Pavlou (2002) found that high levels of trust enable vendors to charge price premiums.

Quelch and Klein (1996) showed that trust is a key factor in stimulating Internet purchases, especially at the early stages of commercial development. Greater levels of trust often lead to greater margins, sales and profits, which are

crucial for the survival and prosperity of an online business. At an international level, Huang et al. (2003) found that trust is an important factor in determining the Internet's penetration and usage across countries.

Clearly trust is an important part of any business, especially digital businesses, and the study and understanding of trust can be a useful part of building IS theory and advancing the diffusion of internet technology. This paper develops a framework for understanding the production and use of trust and how it can be applied to business settings. Without a comprehensive view of trust and trust creation, businesses trying to build trust are groping in the dark for nebulous solutions (Salam et al., 2005).

LITERATURE REVIEW

Trust Creation

Trust is defined 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 (Mayer et al., 1995). Thus trust plays a key role in helping consumers overcome the perceived risk of doing business online and helping them become willing to be vulnerable to those inherent e-business risks, real or imagined.

To better understand how trust is created, a look at the work of Zucker (1986), who did an extensive analysis of the production of trust, and the factors in society that can affect the nature and amount of trust is warranted. She found that trust grew out of several different processes that could affect a trustor's trust in a trustee. Understanding how trust is created is an important step to building an effective trust management strategy. Her methods for creating trust were based on processes of social exchange, institutions as intermediaries and trustee characteristics.

Process-based trust is created through a process of social exchange and experience between organizations and customers. Successful experiences build trust for future exchanges. This closely parallels Social Exchange Theory, which suggests that people look beyond the short-term transactions and evaluate long-term relationships and gains (Lou 2002). For example, if a consumer has done business with an organization in the past, and been satisfied, they are more likely to trust that it will go well in the future and have a higher level of trust (or distrust if it went poorly). A similar effect is noted based on observations of how they see perceive other consumers interactions with the organization, such as hearing stories from their friends. While factors other than process can play a more dominant role in initial trust formation, process-based trust creation plays an important role in maintaining and solidifying trust with current customers.

Institution-based trust is created through the use of a third party. This can be a government agency, a bank, or some other organization that assures the trustworthiness of the target organization.   In this case there is a transference of trust, because a person trusts the institution and the institution stands behind the organization, the company benefits from that trust. Srivastava and Mock (2000) discussed this type of trust production with the American Institute of Certified Public Accountants' (AICPA) WebTrust Assurance Program. By having a qualified third party audit approve the practices of a website, consumers are generally more willing to trust and do business with that site. There are two types of institution-based trust the person/firm level and the intermediary level. In the person or firm level trust is built because someone has a degree or other credential such as a medical license or CPA from an institution they recognize. In the intermediary variant they might trust the organization because of a level of trust they have in an organization such as a bank, or regulatory agency.

Characteristic-based trust is created through a sense of shared communality with the other party. This can be similar values, background, ethnicity, or experience. Trust is increased by having something in common with the other party or by possessing a characteristic the trustor finds desirable. For instance, it is found that the greater the extent of the cultural similarities, the greater the level of trust in the transacting partners (Lou, 2002). Murphy and Blessinger (2003) discuss how value and goal congruence can be used to build characteristic-based trust. Trust is tied to the organization because of something that the organization possesses or something for which it stands. For example, one may have trust in another because of a shared ethnic or cultural background, shared social or religious values or family ties. Cazier et al. (2006) showed that organizations could build trust through value congruence between the seller and consumer.

These methods of trust production can be very important to academics and professionals as they try to understand and improve trust in the digital economy. It is also important to understand that each of these methods of trust production is separate and distinct. As such, each method offers a different mechanism and tool that businesses can

use to build trust with consumers. They can also be combined with an understanding of the dimensions of trust to become even more relevant to business practice.

The Dimensions of Trust

Not all methods of trust production affect trust in the same way, and trust is not as simple as someone trusting or not trusting. An important consideration is that trust is not a uni-dimensional construct. Rather trust is a complex multi-dimensional construct that can be affected in different ways from different trust productions stimuli. Having a good understanding of these facets of trust and how the interact with different trust production methods can help companies develop and implement a better trust management program.

Mayer et al. (1995) developed a model illustrating the dimensions trust. These include the trustor's perception of the trustees ability, benevolence and integrity. McKnight et al. (2002) showed that trust is a multi-dimensional construct. They found people hold specific beliefs with respect to particular attributes (ability or competence, benevolence, and integrity), rather than being just trusting or not trusting. On page 352 the authors state "This study shows that, far from being unitary, trust has many dimensions. It contributes by validating empirically the distinction among the three dimensions of competence, benevolence, and integrity, showing that e-commerce consumers gauge Web vendors not in broad, sweeping terms, but in terms of specific attributes." Any view of trust would be incomplete without an analysis of the dimensions of trust.

Ability, referred to as competence in some of the literature, is the group of skills, competencies and characteristics that enable a party to have influence within some specific domain. Ability is more than just their service with an individual, but extends to all aspects of how they conduct business. While the ability dimension includes domain level service to the consumer, it is not limited to that. Factors such as quality, innovativeness, prestige and others can influence the perception of ability.

Benevolence is the extent to which a trustee is believed to want to do good for the trustor, aside from an egocentric profit motive. Do consumers believe that the organization sincerely wants what is best for them, or do they believe they are being manipulates solely for the good of the organization? Benevolence can be very important. White (2005) found that people solicited advice from experts (high on the ability dimension) when decisions were low in perceived emotional difficulty, but from benevolent providers when making emotional decisions. Thus companies with a more emotional component may want to focus more on the benevolent dimension.

Integrity is the trustor's perception that the trustee will adhere to a set of principles that the trustor finds acceptable. It is not just that they have principles, but the principles are ones that are acceptable to the trustor. For example if the trustee's values are to lie, cheat and steal every time they have a chance, this would not increase trust. More than anything else, integrity comes down to the question of will they do what they said they would do. Consumers want to know that if an organization promises something, will they follow though with that.

FRAMEWORK DEVELOPMENT AND VALIDATION

Different merchandise categories require the development of different levels and types of trust with the consumer (Newholm et al., 2004). To better understand and meet explore this need a model was developed. In figure one the model for the trust creation process is presented. As demonstrated by McKnight et al. (2002), trust is shown to be a set of beliefs around several dimensions of trust, ability, benevolence and integrity, rather than just a broad level of to trust or not to trust. Also we use the ground breaking work of Zucker (1986) to show the various methods for creating trust, which would do so on the respective dimensions of trust. These are process, characteristic and institutional based trust creation methods.
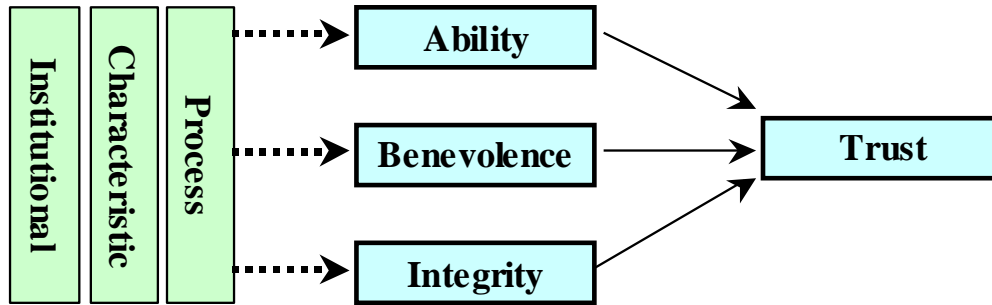
Figure 1. Trust Creation Model

The model proposes that each of the methods for creating trust can work on one or more dimensions of trust. It is important to note that while the method of trust creation may affect more than one dimension, it is likely to affect each dimension at different levels and should have a primary impact on one of the dimensions stronger than the others, depending on the way trust creation is implemented and how it is designed to affect the consumer.

These two views of trust, and the above model, can be combined into a framework in which research in trust and ways to increase it can be categorized into one or more of the squares in the 3x3 matrix below.

Table 1: Trust Creation and Dimension Framework.

Trust Dimension	*Process Based Trust*	*Institutional Based Trust*	*Characteristic Based Trust*
Ability	Process/Ability	Institution/Ability	Characteristic/Ability
Benevolence	Process/Benevolence	Institutional/ Benevolence	Characteristic/Benevolence
Integrity	Process/Integrity	Institutional/Integrity	Characteristic/Integrity

Combining the matrix in this way shows the impact of the method of trust production on each dimension of trust. This is important because the properties of each dimension of trust and the method of production may be different in customer impacts, as well as have differences in stability, degree and choice. Stability is a measure of how long a trust perception may last, degree is a measure of the strength of a trust perception and choice is a proxy for which ones can affect a given customer or business more. Note that these matrix cells are not mutually exclusive: it is possible, even likely and desirable, for an organization to appeal to customers from multiple cells. This framework focuses on the primary impact from the trust creation action.

Now that the theoretical framework has been developed, let's turn to an in-depth analysis of the relevant trust literature to test how well this model fits the scientific data and prior work on trust, and to see the level of trust that can be placed in this framework for future work. By looking at each cell in the developed framework and analyzing

how the literature applies in each area we can better understand the process. While some types of trust creation can affect multiple areas, this analysis focuses on the most likely cell of impact.

Process/Ability Cell

In the *Process/Ability* cell, an individual's trust is affected on the ability dimension by a process of social exchange through interacting with an organization over time. As predicted by social exchange theory, the more positive interactions the customer has regarding the ability of the firm to fulfill its obligations to the customer, the greater the level of trust for this cell. Likewise, negative interactions would reduce the level of trust in this cell. If an organization feels that customers have a weak perception of their ability, they may choose to focus on building or restoring trust in this cell with a process focusing on their ability to deliver the best product or service. Not only should they do things to improve their service in this area, but they need to let consumers know what they are doing in order to influence their perceptions.

An example of this would be an organization that builds a strong reputation on this dimension by having quality products and following through on their order and delivery process. This could also be built by having good return/refund policies to give customers some assurances of what recourse they have if there is a problem. Dell computer is viewed as having competence based on innovative and high quality products, on-time delivery, after sale service, evolving into an overall competence belief (Salam et al., 2005).

In addition, Ba (2001) looks at how a community responsibility system in which members monitor and control how certain interactions can affect trust. This type of systems fits into increasing the ability of consumer to protect themselves by having a clear process to arbitrate disputes. Here Ba developed and evaluated a feedback system that would create a process where the ability of organizations to deliver products can be judged and rated. Using game theory, he showed that having online communities can be an effective way of building trust. By having a process in place where community members can see the interaction of others over time, trust was created in the ability of the organization to deliver the promised goods.

Kim et al. (2004) offers another example, they found that while there are many sources for trust, for repeat customers who have previously engaged in a process of exchange with the organization, the primary determinant of trust for them in customer satisfaction is based on how that prior process turned out and their ability to deliver the product/service in the past exchange. Likewise Black (2005) demonstrated that internet exposure and online experience lead to greater trust in online security and thus a greater willingness to make online payments.

Institutional/Ability Cell

For the *Institutional/Ability* cell, trust is produced with the interaction of a third party that vouches for the ability of the firm or individual providing the good or service. A business can have trust built (or destroyed) through a third party, such as the media or an organization like Consumer Reports, which rates or gives information on products or services. For example the Better Business Bureau online keeps track of an organization's reputation to fulfill their business obligations. A consumer looking at an unfamiliar website might look at how they are rated when forming their initial trust perceptions. Even though they may not have a basis to trust the company, if they trust the Better Business Bureau and they show a favorable history, this can increase trust in this cell.

Kaplan and Nieschwietz (2003) investigated the relationship of web seals on trust and demonstrated that web seals can have a positive impact on trust. In this case they tested a variety of web seals and found that the seals improve trust in the organization and improved perceptions of product quality, which is an important factor in the ability of the firm to provide a quality product or service.

Stewart (2002) demonstrated the importance of trust transfer, which is an institutional type of trust production where trust in one organization can be moved to another. Stewart showed that trust in a trusted company could be transferred to another through web site links suggesting an affiliation between organizations. If they trust the first organization originating the link on a dimension or set of dimensions, that trust could be transferred to the receiving organization through the institutional-based trust process.

Characteristic/Ability Cell

For the *Characteristics/Ability* cell, trust in the ability dimension is affected by the perceived characteristics of the firm. This is trust in the ability which is influenced by the nature of the firm or individual providing the good or service. For example, if the Japanese have a reputation for making quality electronic products, the fact that a product is made by a Japanese firm may increase a consumer's trust in the ability of that organization to make a quality product, increasing the likelihood of purchase.

Gefen and Straub (2003) show how trust can be increased through the concept of social presence. Social presence is a type of characteristic based trust, where trust is created based upon the characteristics of a website in having a live person available to answer questions and help with the purchase process (usually through text messaging). It is likely that this interaction increases trust on the ability dimension the greatest, though it may also impact some of the other dimensions.

McKnight et al. (2004) showed that during the exploratory stage of trust, perception of site quality was a primary influence of trust in ecommerce sites. This is an example of the characteristic of site quality influencing the consumer's perception of the organization's ability to provide the promised service.

Process/Benevolence

In the *Process/Benevolence* cell, trust and goodwill are created over time as the individual observes that the organization appears to care about the best interest of the customer, beyond a strict profit motive. This usually happens when the firm goes above and beyond the call of duty with a customer and exceeds their expectations, or when they have an opportunity to take advantage of a customer but instead put the customer and their interest first. By focusing on the long term value of the customer and giving them value, businesses can build trust on the benevolence dimension through this process. For example, if over time, a customer observes an organization that has a chance to cheat them, but does not, this can build trust in this cell because they show goodwill to the customer. Having a good community service strategy can also build trust in this cell, as well as looking at customers for their lifetime value, rather than at their onetime transaction value can also assist in building this type of trust.

Luo (2001) discusses how organizations such as Dell.com are building trust on the benevolence dimension through the mechanism of process-based trust. By providing free gifts, extra advice, web hosting and/or other IT consulting services, companies are building goodwill in a mutually trusting relationship. This process of helping and exchange builds a belief that the other company genuinely wants them to succeed and has their best interest at heart, increasing trust.

Child and Mollering (2003) look at the process of creating trust through positive actions, referred to as active trust. In their study of trust in developing Chinese markets, they found that actors can create trust by initiating a process of dialog before engaging in transactions. This type of trust is most likely on the benevolence dimension, as it is primarily based on the good will of the other, after getting to know them.

Institutional/Benevolence

For the *Institutional/Benevolence* cell, trust is created by the audit or endorsement of a third party institution as to the goodwill that an organization has for them. An online example of this would be the Dove organization (whether or not you agree with their politics). Dove, as an organization, looks at companies and/or products and rates them based on their perception of how they affect their version of "family values". Likewise, the certified organic food label can be seen as demonstrating that the business supports values important to some consumers. The certifying institution transfers trust to that product regarding quality and practices on this dimension. Similarly an endorsement from a political or environmental group, such as the American Family Association or the World Wildlife Fund can impact this dimension.

Kimery and McCord (2002) found that privacy seals, which foster a type of institutional based trust, have a significant positive impact on consumer trust. Since privacy deals with use of personal information, this is expected to have the greatest impact on the benevolence dimension involving goodwill and how the organization intends to use their private information.

Murphy and Blessinger (2003) found that institutional promises around information security practices increased trust specifically on the benevolence dimension of trust, and also that good information sharing practices promote trust on this dimension.

Characteristic/Benevolence

With the *Characteristic/Benevolence* cell, trust is based on the perceived characteristics of the firm. These characteristics can include ethnic background, religious beliefs, association with a university and others. McAllister (1995) also indicated that emotional ties and social similarity can be a basis for the development of trust. Individuals are more likely to perceive those outside of their group as dishonest, untrustworthy, and uncooperative than those in their group.

For example, trust based on a certain religious persuasion (i.e. sell religious books), can be created in those who have respect for and trust in those values; likewise with social causes like environmental activism. These social similarities can give these organizations a competitive advantage among customers sharing similar beliefs (Cazier et al., 2006).

Klang (2001) examined virtual communities and found that in some groups there is a strong sense of community and good will because of the shared goals and values of the community. Here there is a good deal of benevolence for the group, with many contributing without monetary compensation. One example given was the Linux open source community, where the ideology is so strong there is very little fraud in the community. The characteristics of the community with their shared goals and vision creates trust on the benevolent/characteristic cell of trust.

Koehn (2003) discusses how the website characteristic of customization and feedback can build trust. By allowing customers to customize the buying process to their taste and liking, they can build consumer trust and goodwill.

Process/Integrity

In the *Process/Integrity* cell, trust is produced by observing over time that the organization acts with integrity and repeatedly does what it promises. Thus a customer has observed that this organization does what they say they are going to do and has an increased level of trust because of that. This may take time and also a good reputation. An example of this would be when a customer sees that a given online company consistently does what it says it will do and keeps its promises, increasing trust. Trust can also be influenced by the reputation of others who have had similar experiences.

Kollock (1999) discusses the use of reputation systems that build trust through a process of monitoring exchanges that buyers and seller have had with different individuals and provide feedback, affecting the trust that others have in that user. While process can also be used to leave feedback on the benevolence and ability dimensions, this paper seems to fit best in this category as pertaining to the integrity of the user in doing what they say they will do.
Culnan and Armstrong (1999) look at procedural fairness and its process based effect on trust. They show that having a process in place, and participating in that process, can increase trust. This would impact trust on the integrity dimension.

Institutional/Integrity

In the *Institutional/Integrity* cell we see an impact similar to the last cell, except that rather than developing in a process over time, trust is developed by a trust transfer of a third party. This is where an outside institution vouches for the integrity practices of the organization of interest. For example, an organization such as eTrust certifies that the organization does what it says it will do with regards to certain aspects of its business, such as it following and obeying its privacy policy. Another example would be having an accounting firm auditing the books or practices of an organization and report on them.

Ratnasingam et al. (2005) discuss how uniform product descriptions established by third party institutions can build trust in electronic markets. This increases trust on the integrity dimension by reducing the chances of product description fraud.

Tan and Thoen (2002) analyze the importance of control mechanisms and how important those control mechanisms are to developing institutional trust in the integrity of the other party to follow through with their part of the business transaction, and how this was especially important in transaction over the internet and with different countries and customs.

Characteristic/Integrity

With the *Characteristic/Integrity* cell, trust is created on the integrity dimension based on the characteristics of the firm. For example, if it is a company or organization that is believed to have a certain code based on the ethnic, religious or cultural background of the firm, the individual may have greater trust in them based on their perceptions of this group.

A good example of this would be www.factcheck.org, a politically neutral organization sponsored by the Annenberg Public Policy Center of the University of Pennsylvania. Because the organization has the characteristic of being sponsored by a perceived non-partisan university research center, consumers are more likely to trust their finding than those of more political organizations with a perceived agenda.

Warrington et al. (2000) discussed how characteristics of the web site, such as professional appearance, can influence and create (or destroy) trust and that users are more likely to perceive a professional looking website as doing what they say they will do than one that lacks that appearance.

Walczuch and Lundgren (2004) discuss the concept of perceived similarity, that perceiving the other to be similar to oneself, and how this can build trust. This is a type of characteristic based trust and is believed to build trust on the integrity dimension due to the similar goals and values. Likewise, consumers perceive the service warranty as signaling a firm's good intentions and honesty (San Martin and Camerero, 2005).

Table 2: Examples of Trust Found in Each Cell.

Trust Dimension	*Process Based Trust*	*Institutional Based Trust*	*Characteristic Based Trust*
Ability	Dell Computers innovativeness, on-time delivery, service	Better Business Bureau Online Consumer Reports	Japanese reputation for quality products
Benevolence	Overtime company has chance to cheat customer, but does not	Organic Foods World Wildlife Fund	Online site selling books with religious/philosophy affiliation
Integrity	Reputation for integrity developed overtime	Outside institution audits and vouches for integrity	Factcheck.org creating trust by being a perceived non-partisan fact based organization

Table 3:   Prior Trust Research Classification.

Trust Dimension	*Process Based Trust*	*Institutional Based Trust*	*Characteristic Based Trust*
Ability	Ba (2001) Kim et al. (2004)	Kaplan and Nieschwietz (2003) Stewart (2002)	Gefen and Straub (2003) McKnight et al. (2004)
Benevolence	Luo (2002) Child and Mollering (2003)	Kimery and McCord (2002) Murphy and Blessinger (2003)	Klang (2001) Koehn (2003)
Integrity	Culnan and Armstrong (1999) Kollock (1999)	Ratnasingam et al. (2005) Tan and Thoen (2002)	Warrinton et al. (2000) Walczuch and Lundgren (2004)

CONCLUSION

The literature on trust and ecommerce fits very well into this framework, providing a useful tool to explore and further develop the trust literature. This framework is very useful for giving academics a way to explore, classify and develop consumer trust literature in a defined methodological manner. This will also allow researchers to further look for gaps in the literature and propose further studies to explore those areas.

This framework and model can also be used to understand the creation and sources of trust and give organizations a way to categorize trust based on its dimension and means of creation. Using this tool, managers and academics can see where businesses may be weak in certain areas and can develop a trust management strategy to build trust where it is needed to hopefully lead to a competitive advantage. Managers can use this model to see where they are weak in certain cells and devise means to strengthen trust on those areas, helping them to develop a competitive advantage by having superior trust.

While this work makes an important contribution by developing this model and framework, future research should explore how this model can be used, develop scales for measuring the trust in each of the cells to more accurately understand where an organization is and how they can improve trust. This would make this model more useful to businesses in the digital economy and assist them with trust management efforts. Future research should also look at how differences in international culture and its impact trust since culture and trust environments have been shown to impact technology adoption (Nath and Murthy, 2004; Lu et al., 2005) and there could be a relationship. Information sharing has many advantages to organizations (Gangopadhyay and Huang, 2004; Fedorowiez et al., 2004), future research should also explore how creating trust using this framework can be used to improve information sharing.

In addition, business managers should carefully think about each cell in this matrix and analyze how consumers perceive their organization on each cell. They can then look at the strategies they are currently using in the marketplace and how they can impact each cell. Future research should examine the different characteristics of each cell and how they interact with different types of organizations. For example, for some product types one cell may be more important or useful than for other companies or products. An analysis of these characteristics can lead to a more unified approach and avoid the groping in the dark for a good trust strategy.

While most of the above discussion concerns trust creation, it is likely that trust can also be destroyed in each of the cells based on the matrix. While many measures can be used to create trust, it is also very important to avoid its destruction. It is likely that destroying trust on one cell can cancel the trust created in other cells, similar to multiplying by zero. For example, if a person needed to go to a medical doctor, and the doctor had high trust on the dimensions of integrity and benevolence, but not on ability, a person would not be likely to trust the doctor. Results would likely be the same if they had high on ability, but low on integrity and they thought they might be sold services they did not need. Thus it is very important to be cognizant of all cells of trust, not only for creation, but also for the avoidance of trust destruction. Future research should explore trust destruction as well as creation. It will also be very important to further explore how the cells are related to each other and if any interaction takes place.

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