

Building Trust in Agribusiness Supply Chains: A Conceptual Model of Buyer-Seller Relationships in the Seed Potato Industry in Asia.

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Executive summary.

Greater numbers of organisational buyers and sellers are moving away from the traditional adversarial approach to purchasing towards the development of closer, more cooperative, buyer-seller relationships. Building on the extent literature of buyer-seller relationships, this paper establishes a conceptual model that describes the relationship building process in the Filipino seed potato industry, starting from the seed suppliers product offer, relationship building inputs, farmer's relationship satisfaction, trust and commitment. Arising from the development of a satisfactory relationship, the focal seed supplier is expected to enjoy a greater share of the farmer's patronage. The relationship building variables are examined in relation to the situational factors (uncertainty, prior purchase, dependency and the availability of alternative suppliers).

Key words; buyer-seller relationships, commitment, seed potatoes, trust

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Abstract.

In the absence of a certified seed system, potato farmers in Asia must purchase replacement seed tubers from an informal seed system. With no third party assurance that the seed tubers purchased are of good quality, the farmer's decision to purchase seed may be influenced by the long-standing relationships that have been established between buyers and sellers. Trust is the critical determinant of a good buyer-seller relationship. Through maintaining communication and the making of various relationship specific investments, a conceptual model is proposed which suggests that seed suppliers may engage in trust building behavior which should result in the preferred seed supplier enjoying a greater share of the farmer's patronage.

Introduction.

It is widely recognized that the greatest constraint to increasing potato production in Asia is the inadequate supply of reasonably priced, good quality seed of the desired varieties (Horton 1987; Crissman 1987; van der Zaag 1987; van der Zaag 1990; Rasco 1994; Rasco and Aromin 1994; Vrolijk 1994; Schmiediche 1995).

No aspect of growing potatoes is more important than the selection of the best possible planting material, for the yields obtained from different stocks of the same variety under the same conditions of culture depends more upon the quality of the planting stock than on any other single factor (Balaoing and Lazo 1967). Moreover, the use of high quality seed improves the productivity of traditional inputs such as labor, irrigation and cultivation practices (Monares 1981).

Where poor quality seed is the major production constraint, substantial gains in productivity can be achieved by promoting the production and use of quality certified seed to reduce the risk of distributing tuber borne pathogens (Monares 1979; van der Zaag 1987; Beukema 1990; Beukema and van der Zaag 1990). However, for a number of agro-ecological, technical and institutional reasons, there are very few successful certified seed potato programs operating in Asia (Schmiediche 1995). Currently, no formal seed certification program in Asia supplies more than 5% of a country's annual seed potato requirements (van der Zaag 1991).

That seed which the formal seed system is unable to supply is sought from the informal seed system. In an informal seed system, the farmer produces his own seed; obtains it from other farmers; or, purchases the seed from the ware market (Beukema 1990). In such seed systems, farmers of ware potatoes in favorable growing regions often become seed growers (van der Zaag 1987). However, while seed growers may use a number of techniques to improve the standards of health and to increase the yield of suitable seed sized tubers, there is no guarantee that the seed will be free from disease (Crissman and Hibon 1996). Furthermore, the seasonality of potato production, seed storage constraints and the isolation of seed producing areas from potato production areas often adversely affect the availability of seed.

Because of the potential variation between different size grades, varieties, the physiological age of the seed and the health of the seed tubers traded, seed sales are highly dependent on customized marketing programs (Horton 1987). Furthermore, because of the nature of the relationships often established between seed potato producers and farmers and processing companies and farmers (Crissman 1989), relationships between potato farmers and market intermediaries may influence an individual farmer's decision to purchase seed potatoes. In this respect, the farmer's decision to purchase seed may be influenced by the long-standing relationships that have been established between buyers and sellers, which consider the farmer's loyalty towards seed suppliers, trust, commitment and the perceived risks associated with changing suppliers.

Theoretical foundation.

Trust is the critical determinant of a good buyer-seller relationship (Han, Wilson and Dant 1993; Ganeson 1994; Morgan and Hunt 1994; Achrol 1997).

A buyers trust in their supplier; reduces the perception of risk associated with opportunistic behavior; it increases the buyers confidence that short-term inequities will be resolved; and, it reduces transaction costs in an exchange relationship (Ganeson 1994; Doney and Cannon 1997). Buyers who trust their suppliers are less likely to use alternative sources of supply and are more likely to accept any short-term inequities arising in the exchange relationship (Kumar 1996).

Trust has been defined as the willingness to rely on an exchange partner in whom one has confidence (Moorman, Deshpande and Zaltman 1993). A firm's trust in its partner is a belief that the partner will, without the exercise of influence or control, strive for outcomes that are beneficial for both firms in the exchange (Achrol 1997). Anderson and Narus (1990) describe trust as the belief that a partner will perform actions that will result in positive outcomes for the firm as well as not to take unexpected actions that may result in negative outcomes.

However, trust is also a behavioral intention that reflects reliance on a partner and involves some degree of both uncertainty and vulnerability (Moorman, Deshpande and Zaltman 1993). Without vulnerability, trust is unnecessary because the outcomes are inconsequential for the trustor. Similarly, in the absence of uncertainty, trust is unnecessary, for the trustor may either be able to control the exchange partners actions, or have complete knowledge about what those actions may be. Reliance on a partner without a concomitant belief about the partner's trustworthiness may indicate power and control more than trust.

High levels of trust enable both firms to focus on the longer term benefits of the exchange (Ganeson 1994; Doney and Cannon 1997). Firms with a long-term orientation rely on relational mechanisms of market exchange to enhance competitiveness, reduce costs and maximize profits. Trust therefore reduces the need for structural mechanisms of control (Achrol 1997) and the firms become more interdependent (Kumar 1996). Once trust is established, firms learn that coordinated joint efforts lead to outcomes that exceed those that either firm could achieve if they were to act solely in their own best interest (Han, Wilson and Dant 1993).

A conceptual model of trust in buyer-seller relationships.

Quality, price and the ability to deliver are regarded as the most important criteria by which organizational buyers evaluate potential suppliers (Cunningham and White 1973; Dempsey 1978). All buyers emphasize the importance of the reliability of delivery (Lehmann and O'Shaughnessy 1974; Hakansson, Johanson and Wootz 1977; Ellram 1990). However, a farmer's decision to purchase seed may also be expressed in rational economic terms as value-for-money (Kool, Meulenberg and Broens 1997). Seed is the most expensive input to produce potatoes in Asia (van der Zaag and Horton 1983; Horton 1987; Rasco and Aromin 1994; Vrolijk 1994; Crissman and Hibon 1996). Seed which is substantially free of pathogens costs more to produce and therefore it will cost more to purchase (Monares 1981; van der Zaag 1987; Beukema 1990). However, improved seed is generally more productive.

When exchange between the buyer and seller takes place in a manner that the seed supplier's exchange performance exceeds the farmer's performance expectations, satisfaction will arise. High levels of satisfaction will have positive consequences for the relationship, encouraging greater loyalty and a longer-term working relationship (Frazier 1983; Anderson and Narus 1990). Satisfaction results in increased moral and greater cooperation between the channel members (Ganeson 1994; Morgan and Hunt 1994).

Satisfaction also increases when non-coercive sources of power have been used (Frazier 1983). A farmer's satisfaction with past outcomes will indicate equity in the exchange. Equitable outcomes provide confidence that neither party has been taken advantage of in the relationship and that both parties are concerned about the others welfare (Frazier 1983; Anderson and Narus 1990; Ganeson 1994). Firms that are able to reduce the level of conflict in their relationship will experience greater satisfaction (Anderson and Narus 1990). Therefore, we assume that there is a positive relationship between satisfaction and the development of trust (Figure 1).

However, even when there is an expectation of repeat business, if there is to be a meaningful long-term relationship, respective buyers and sellers must learn to trust the opposite party to fulfill their obligations (Hakansson and Wootz 1977; Hallen, Johanson and Seyed-Mohamed 1991; Han, Wilson and Dant 1993; Morgan and Hunt 1994). However, trust between firms does not occur automatically (Hakansson and Wootz 1979). Decision makers on both sides must first convince themselves of the other partners ability, reliability and their integrity (Ganeson 1994). Experience with the channel partner breeds trust (Dwyer, Schurr and Oh 1987; Anderson and Narus 1990; Doney and Cannon 1997). The level of trust that a farmer places in their seed supplier can be indicated by the seed supplier's sincerity, reliability, loyalty and willingness to refrain from engaging in opportunistic behavior. Therefore, we assume that there is a positive relationship between the farmer's prior experience and the development of trust in the seed supplier.

The greater the perceived importance of the purchase, the greater the perceived risk of the purchase decision. Importance is defined as the perceived impact of the purchase on organizational profitability and productivity (McQuiston 1989). Importance can be viewed in terms of; financial importance, as measured by the investment sum required to purchase the input; the end-product importance in terms of the importance of the input to the quality of the end product; and, the production process importance, which measures the consequences of a sudden drop-out of the input for the continuation of the production process (Kool, Meulenbergh and Broens 1997).

Long-term, buyer-seller relationships are more likely to develop as the quantity of goods purchased increases and as the criticality of the purchased input increases (Heide and John 1990). The criticality of the input captures the degree of technical or market substitution and its contribution margin (Krapfel, Salmond and Spekman 1991). Good quality seed is the most important input with regard to potato production in Asia. Good quality seed not only impacts upon the productivity and profitability of the current potato crop, but it may also influence the productivity and profitability of any other potato crops grown from that same seed or grown in the same soil (Beukema and van der Zaag 1990). Therefore, we assume that there is a positive relationship between the importance of the input and the development of trust.

When the outcomes obtained from the relationship are important or highly valued; when the outcomes from the relationship are higher or better than the outcomes available from alternative suppliers; and, when fewer alternative sources of exchange are available to the firm, dependence is said to increase (Heide and John 1988). A firm is more dependent upon its partner when that partner provides a greater proportion of its business. Dependence is also increased when the outcomes from the relationship are higher or better than the outcomes available from alternative relationships. Firms dealing with the best supplier are often more dependent because the outcomes associated with that supplier are better than those available from alternative suppliers. However, the need to interact with a specific seed supplier will depend on the number of alternative suppliers available (Hakansson and Wootz 1979; Anderson and Weitz 1986; Oliver 1990). Where there are many alternatives, the need to interact is reduced, but as the number of alternative seed suppliers declines, the need to interact will increase.

Dependence in an exchange relationship makes a firm more susceptible to the power and influence of another; the more powerful partner may be in a position to create more favorable terms of trade for itself. Market channel leaders have often used various reward and coercive powers to entreat and coerce cooperation among channel members (Achrol 1997). However, this kind of power is not conducive to the development of long-term relationships (Anderson and Weitz 1992; Moorman, Deshpande and Zaltman 1993). Long-term relationships bound by dependence signify forced collaboration rather than cooperation (Ganeson 1994). Consequently, both partners will constantly search for ways to reduce dependence.

The more relational an exchange becomes, the less likely it becomes that firms will exercise coercive power (Achrol 1997). Trust is facilitated where exchange occurs among persons of equal status rather than between unequals. Furthermore, trust building is greatly enhanced if interactions are perceived as being non-evaluative, spontaneous rather than planned, empathic rather than neutral and suggestive rather than directive. Therefore, we assume that there is a negative relationship between dependence and the development of trust.

Trust building behavior.

It is a characteristic of organizational markets that many important market exchanges are conducted within the context of rich and stable relationships (Easton and Araujo 1994). An exchange relationship can be viewed as an intangible resource, created through past investments and the object of future investments.

Relationship specific investments are investments made specific to a channel relationship. Such investments are difficult if not impossible to redeploy to another relationship, therefore, they lose substantial value if the relationship is terminated (Jackson 1985; Dwyer, Schurr and Oh 1987; Morgan and Hunt 1994). High termination costs lead to the relationship being considered important, thereby encouraging a longer term orientation to maintain the relationship.

When trust exists, both buyers and sellers believe that long-term relationship specific investments can be made with limited risk because both parties will refrain from using their power to renege on contracts, or to use a change in circumstances to extract additional profits in their favor (Ganeson 1994; Morgan and Hunt 1994). Relationship specific investments provide tangible evidence that the supplier can be believed, that it cares for the relationship and is willing to make sacrifices through such investments (Ganeson 1994).

Relationship specific investments include training and or dedicating staff towards servicing a specific firm's product, adopting common order processing systems, or, building specialized facilities to handle a specific firm's product (Anderson and Weitz 1992). The form of investment is likely to vary, but may also include adaptations of either product or production processes, delivery procedures, quality systems and social norms (Easton and Araujo 1994; Ganeson 1994).

Where individuals interact with one another for more than short periods, they often adapt to each others needs (Hallen, Johanson and Seyed-Mohamed 1991). Adaptations are important because most business relationships are based on some kind of match between the operations of two firms. One or both parties may make adaptations to bring about an initial fit between their needs and their capabilities, but adaptations may also be necessary in an on-going relationship, due to changing business conditions. Through adapting to each others needs, firms demonstrate their trustworthiness to the exchange relationship. Therefore, we assume that there is a positive relationship between the adaptations made by the seed supplier and the potato farmer's trust in the seed supplier.

In situations characterized by high uncertainty, buyers will form a complex communications network involving many different organizations who have regular contact with the firm (Hakansson, Johanson and Wootz 1977). Communication enables any uncertainty about a customer's or supplier's organizational structure, viability, methods of operation, technical expertise or competence, to be resolved by personal contact between the parties (Hakansson and Wootz 1975; Cunningham and Turnbull 1982). Communication improves the supplier's credibility (Cunningham and Turnbull 1982) and is the process by which participative decision making is fostered, programs are coordinated, power is exercised and commitment and loyalty are encouraged (Gaski 1984).

Trust is developed by a constant and detailed exchange of information which reduces the uncertainty of performance (Han, Wilson and Dant 1993). Buyers are more likely to pursue more cooperative negotiations and are more willing to share confidential information where high levels of trust are found (Kumar 1996; Doney and Cannon 1997). Timely communication fosters trust by resolving disputes, realigning perceptions and expectations and leading towards the development of more cooperative behaviors that are more conducive to the long-term success of the relationship (Anderson and Narus 1990; Morgan and Hunt 1994). Communication in relational channel structures is more frequent, it has a more bi-directional flow and is both more informal and more indirect. Channel members under relational channel structures are more interdependent and hence a higher level of communication takes place (Mohr and Nevin 1990). Consequently, we assume that there is a positive relationship between communication by the seed supplier and the farmer's trust in the seed supplier.

Because many new technological process innovations are complex and may alter existing production processes, buyers often need to be educated about the potential applications of the new technology, before they can evaluate its appropriateness or use the innovation to its full potential (Athaide, Myers and Wilemon 1996). Product demonstration and trial aims to reduce the buyer's perceived risk of adoption. Risk most frequently revolves around ascertaining whether the product will deliver the promised benefits, hence evidence of product performance will enable seed suppliers to articulate the relative advantages of the innovation and to earn the buyer's trust. Therefore, we assume that there is a positive relationship between the provision of education and training programs by the seed supplier and the potato farmer's trust in the seed supplier.

Engaging in relationships during new product development will result in the development of products that better satisfy market needs (Athaide, Myers and Wilemon 1996). Suppliers who maintain good relationships with buyers

during new product development will need to spend less time earning the buyers trust through product demonstration and trial. It is widely acknowledged that one of the key success factors in the Dutch seed potato industry is the industry's ability to continually produce new and improved products for changing requirements in existing markets and to develop appropriate varieties for new emerging markets (Lamont 1993). Not only do Dutch seed potato exporters maintain close contact with customers, but customers are also actively encouraged to interface with potato breeding programs in the Netherlands. Given that it may take up to ten years for a successful new variety to progress from initial screening to full commercialization, we assume that there is a positive relationship between product and process innovations and the farmer's trust in the seed supplier.

However, a potato farmer's decision to purchase seed is also based on their expectations of future market prices (Crissman and Hibon 1996). In a well developed market where production is relatively stable and supply is fairly predictable, ware potato prices seldom vary in real terms. In this instance, there is a high rate of improved seed use. However, in regions where the market prices of potatoes fluctuate and yields are unpredictable, the demand for improved seed is much lower (Beukema and van der Zaag 1990). Farmers are therefore more likely to establish long-term relationships with those seed suppliers who are most able to reduce the uncertainty in the output market. Reciprocal buy-back arrangements between seed suppliers and potato farmers are therefore highly likely.

Crissman (1989) describes how small potato farmer's often take out loans with farm input suppliers to purchase potato seed and other farm inputs including fertilizers and agricultural chemicals. At harvest, the loan is repaid in kind, with the financier marketing the potatoes, and after deducting the costs, including interest, the balance is returned to the farmer. Long-standing personal relationships often exist between the farmer and their supplier-financier. In other instances, potato processing companies make contracts either individually with farmers or community groups to cultivate potatoes. Seed is loaned to the farmer under the strict understanding that, after deducting the cost of the seed loan, all production will be purchased at guaranteed prices. By sharing the risk, the potato processing companies believe that farmers will manage the crop more closely. Therefore, we assume that there is a positive relationship between reciprocal purchase agreements and the farmer's trust in the seed supplier.

Firms that trust one another are more committed to the relationship (Morgan and Hunt 1994; Kumar 1996; Doney and Cannon 1997). Commitment refers to an implicit or explicit pledge of relational continuity between exchange partners (Dwyer, Schurr and Oh 1987). Commitment involves the desire or intention to maintain a valued relationship (Moorman, Deshpande and Zaltman 1993), which the partners value as important (Morgan and Hunt 1994).

Committed partners are prepared to make short-term sacrifices to realize longer term benefits (Dwyer, Schurr and Oh 1987). Committed partners are more willing to make investments in valuable assets specific to the exchange, demonstrating that they can be relied upon (Anderson and Weitz 1992). These investments help stabilize the relationship, alleviate the uncertainty and the cost of continually consummating new exchanges. By making relationship specific investments, either firm creates an incentive to maintain the relationship by creating barriers to exit. Observing the other party's pledges may cause a channel member to be more confident of the others commitment to the relationship. Where credible commitments are jointly pledged, their presence cultivates trust and the development of social norms which work to maintain the relationship and to constrain opportunistic inclinations (Ganeson 1994; Gundlach, Achrol and Mentzer 1995).

Commitment is thought to be closely related to mutuality, loyalty and the forsaking of alternatives (Gundlach, Achrol and Mentzer 1995). Firms that are committed to one another are prepared to forgo exploring alternative relationships during the course of their relationship (Moorman, Deshpande and Zaltman 1993). Morgan and Hunt (1994) suggest that commitment and trust are central to successful marketing relationships because they encourage marketers to cooperate with exchange partners. Channel members are more likely to commit to a relationship characterized by an open sharing of information (Anderson and Weitz 1992).

A supplier can demonstrate commitment to a customer by directing its efforts solely towards meeting the needs of that buyer (Ford 1984). Commitment may result from favoring the customer in times of product shortage; responding quickly to customer requests for a salesmen to call; providing detailed technical information and following-up on how products are used; the provision of delivery information; and, not directing marketing activities towards acquiring new customers. However, a supplier may also demonstrate commitment to a geographic market by; establishing a sales and service office in the market; providing instructions and technical documentation in the customer's language; employing local sales staff; and, introducing or developing a new product specifically for that market. We assume that

there is a positive relationship between the trust that the farmer has in the seed supplier and the farmer's commitment to that seed supplier.

Relationships generally develop from the social exchange processes that occur between the individuals taking part in the transaction (Håkansson and Snehota 1995). Social exchange, kinship and friendship, altruism and gift giving and many other psychological and sociological elements are an integral component of economic exchange (Easton and Araujo 1994).

Relational norms evolve in exchange relationships when parties contemplate bilaterally, strategies and goals with a long-term orientation (Gundlach, Achrol and Mentzer 1995). These norms include the extent to which unity or fellowship arising from common responsibilities and interests will dominate the relationship and the degree to which monitoring of individual transactions is tempered by trust. Other facets that are considered important include the extent to which exchange arrangements can be modified if conditions require it and conflict resolution is tempered with situational appraisal and compromise.

Norms are expectations about behavior that are at least partially shared by a group of decision makers (Gundlach, Achrol and Mentzer 1995). Such can be defined as the extent to which partners have beliefs in common about what behaviors, goals and policies are important or unimportant, appropriate or inappropriate, right or wrong (Morgan and Hunt 1994). High levels of ideological agreement, goal compatibility and role satisfaction contribute to high levels of cooperation (Frazier 1983). For as long as both partners see their goals being best achieved by joint action, they are motivated to maintain the relationship (Wilson and Moller 1995).

Relationships occur for the purpose of pursuing mutually beneficial goals and interests (Oliver 1990). The essence of a reciprocal relationship is that both parties anticipate that any disadvantages that may arise from the loss of independence, plus the costs of managing the relationship, are more than offset by the benefits that arise (Blois 1996). Parkhe (1993) describes how the expectation of net positive outcomes, both now and in the future, motivates both firms to pursue cooperative relationships. Cooperation is maintained as each firm compares the immediate gains from engaging in opportunistic behavior with the possible sacrifice of future gains.

The incentive to engage in opportunistic behavior in cooperative relationships occurs because either party may find it advantageous to maximize their own gains at the expense of the relationship (Parkhe 1993). However, if either party chooses to behave opportunistically, it is likely to provoke retaliatory behavior (Gundlach, Achrol, and Mentzer 1995). Opportunism begets opportunism. With trust and confidence in the relationship undermined, the aggrieved party will seek to withdraw or to limit their commitment to the relationship over time. Furthermore, developing a reputation as a selfish, exploitative and unreliable partner will decrease the likelihood of participating in future cooperative relationships. Most firms will avoid entering into exchange relationships with those firms who are perceived to have a questionable reputation (Parkhe 1993). Committing only to reputable trustworthy partners reduces the risk of being mistreated (Anderson and Weitz 1992; Ganeson 1994). Consequently, we assume that there is a positive relationship between compatible social norms and the farmer's commitment to the seed supplier.

Managerial implications.

With increasing turbulence and greater uncertainty in the market, more firms are moving away from transaction orientated marketing strategies towards more relational marketing approaches for enhanced performance (Noordewier, John and Nevin 1990). More industrial firms are recognizing that customer retention is more cost effective than customer creation (Han, Wilson and Dant 1993; Achrol 1997).

Firms are establishing relationships with their suppliers because it enables them to be more efficient and to be more effective (Kalwani and Narayandas 1995). Through becoming closer to customers and better understanding and satisfying customer needs, suppliers can achieve greater customer loyalty and higher repeat sales. Relational marketing provides a stronger, longer-term customer benefit that is harder for competitors to match and it becomes more difficult for competitors to enter the market. Buyers become less sensitive to price competition and suppliers may benefit from higher prices.

The model we have developed is based on the key assumption that most potato farmers in Asia have adopted a long-term orientation towards securing regular supplies of seed potatoes. The uncertainty of supply in the input market

(Balaoing and Lazo 1967; Beukema 1990; Beukema and van der Zaag 1990; Crissman and Hibon 1996); the performance ambiguity of the seed purchased (Crissman 1989); the uncertainty of price in the output market (van der Zaag 1986; Crissman and Hibon 1996); and, large seasonal variations in productivity (Monares 1979; Beukema and van der Zaag 1990; Crissman and Hibon 1996) would suggest that potato farmers often form long-term relationships with seed suppliers. As such, it becomes worthwhile for seed suppliers to consider making long-term investments to win and retain the potato farmer's business through generating continuous satisfaction and increasing farmer's trust and commitment.

However, social and cultural differences may prevent a relationship from ever starting because of the different styles of individual and corporate behavior (Cunningham 1982). These differences arise from conflicting and incompatible protocols and procedures for buying and selling, particularly the manner in which bargaining and negotiating is conducted. Differences in ethical and moral values between individuals may either prevent effective interaction or impose a severe deterrent to its development. The use by some customers of multiple supply sources for an input may have the effect of making the customer-supplier relationship non exclusive.

Fortuitously, the seed supplier's behavior and ability to provide promised benefits reliably and effectively can change the farmer's disposition. Through making relationship specific investments, the supplier indicates that they are not only willing to enter into a long-term relationship, but having done so, their actions may induce a reciprocal investment from the farmer, thereby creating a mutual barrier to exit. This situation should lead to the chosen seed supplier enjoying a greater share of the farmer's patronage.

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