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Executive Summaries

RESEARCH

Coordination Strategy Decisions in São Paulo's Fresh Produce Markets: An Empirical Validation of the Peterson, Wysocki & Harsh Framework

Denise Y. Mainville and H. Christopher Peterson

The Peterson, Wysocki & Harsh (PWH) framework for coordination strategy decisions draws from Strategic Management and New Institutional Economics fields to address some of the criticisms of Transaction Cost Economics' contributions to understanding coordination strategy decision-making. This paper provides additional empirical validation of the PWH framework, drawing evidence from four firms' procurement strategies in São Paulo's fresh produce markets. The paper begins by addressing criticisms of Transaction Cost Economics' applicability to the analysis of coordination strategy decisions, and argues for a framework that is theoretically consistent while operationally tractable. An overview of the PWH framework is then presented, and the empirical context of São Paulo's fresh produce market is introduced. Next, the evolution of four firms' (three retailers and one processor) coordination strategy decisions for fresh produce procurement is analyzed using the framework. The results support the hypothesis that the PWH framework provides empirical and theoretical insight into firm managers' coordination decisions. The case analyses demonstrate the effects of asset specificity and complementarity on the costliness of coordination decisions, how costliness drives the decision to change coordination strategies, and how feasibility and risk/return criteria also apply. Additional insights into coordination strategy decisions that were generated in applying the framework and their potential relevance to the framework are discussed.

Agricultural Producer Cooperatives as Strategic Alliances

Roslynne G. Gall and Bill Schroder

Defining a cooperative as any form of alliance formed by agricultural producers for their mutual benefit, the objective of this paper is to examine the linkages between four bodies of theory (transaction cost analysis, the resource-based theory of the firm (RBV), social network theory and theories of trust and cooperation) to the design, governance and operation of three types of cooperative; traditional, "new generation" and learning networks.

To date theories have tended to focus on dyadic relationships leaving a gap in the literature relating to the analysis of alliances with more than two members (such as cooperatives), so the linkages between the theories and cooperative types must be seen as being somewhat tentative. We hypothesize that the RBV, social network theory and trust and cooperation theories are in fact, applicable to multiple-member alliances, but their relevance is likely to become less as the number of members increase.

Two case studies provide examples of two different types of cooperatives, each with their own distinctive features and highlight a number of the insights developed from the literature. Tatura Milk Industries is a traditional cooperative that has reshaped itself to take on a number of aspects of the new generation cooperative model. Riverine Plains was established as a learning (through practical on farm research) and knowledge sharing network.

The important insights from the literature review and the two mini-case studies can be summarized as follows;

- Transaction cost analysis (TCA) is a major contributor to our understanding of design and governance issues in traditional cooperatives. New Generation Cooperatives (NGCs) incorporate governance mechanisms, which seek to overcome the TCA problems of traditional cooperatives.
- The Resource-based view (RBV) is highly relevant to the analysis of alliances between cooperatives (whether traditional or NGCs) as illustrated by the TMI case and also provides the underpinning for learning networks.
- Social networks are important in the establishment phase for all three types of cooperative.
- Trust and cooperation are seen as important for the on-going operation of the alliances, however, as far as trust between members is concerned, legal and institutional arrangements reduce both the need and opportunity for it in all three types of cooperative.

The application of the RBV and social network theory to learning networks appears to be an attractive research opportunity, given there is limited prior research in this area.

Guangzhou Buyers Preference for Premium Hawaiian Grown Product Gift Baskets

Catherine Chan-Halbrendt, Jin Yu, Helen Keun. Tun Lin and Carol Ferguson

Using survey data from Guangzhou, China, buyers' preference for premium Hawaiian grown product gift baskets using conjoint analysis method was examined. The gift basket attributes that were examined were types of container (made out of Koa, protea and bamboo), price and products and container origin (grown in Hawaii or not grown in Hawaii). Results showed that for business buyers the most

preferred basket profile is the Koa container, made in Hawaii and costs 1,200 RMB. For individual buyers, the most preferred basket profile is also the Koa container, made in Hawaii and cost 2,800 RMB. The study also estimated relative importance for each of the gift basket attributes. For the business buyer, price is the most important attribute, which carried a weight of 35% followed by the Koa container (29%). For the individual buyer, Koa container is the most important attribute, which carried a weight of 42%, followed by price (28%). Expenditure equivalent index was used to evaluate how much more the average respondent is willing to pay for a gift basket when comparing with the reference basket, which is the one with the lowest rating. Results showed that an individual buyer is willing to pay 2.47 times more for a Koa container, made in Hawaii as compared to the reference basket, which is bamboo, not made in Hawaii, and costs 800 RMB. In general, three main conclusions can be made from the study: (1) products and containers have to be 'made in Hawaii in order for the buyers to pay the premium price; (2) business buyers, when compared to individual buyers, are generally less willing to pay a high price for any gift baskets; and (3) individual buyers, when compared to business buyers, are more willing to pay for the higher priced Koa gift basket.

CASE STUDIES

The Amadori Group: Free-Range Chicken and the Impact of Avian Flu

Gregory A. Baker and Francesco Braga

This teaching case describes a challenge faced by the Francesco Amadori, the President of Amadori Group. Amadori is one of three large commercial chicken producers in Italy and the only commercial producer of free-range chickens. The case centers around the challenge of raising and marketing free-range chickens with the very real possibility that the avian flu virus may be found in areas where free-range chickens are raised. If the avian flu virus were to be found near a commercial poultry facility, one likely outcome would be that all birds would be required to be raised indoors, posing a particularly difficult challenge for producers of free-range birds.

The case is ideal for an upper-division or graduate level marketing or capstone class. Students may be asked to identify and analyze the principal alternatives that Amadori should consider and make a recommendation.



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Coordination Strategy Decisions in São Paulo's Fresh Produce Markets: An Empirical Validation of the Peterson, Wysocki & Harsh Framework

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Abstract

This paper provides an empirical validation of the Peterson, Wysocki & Harsh (PWH) framework for coordination strategy decisions, drawing evidence from four firms' procurement strategies in São Paulo's fresh produce markets. The results support the hypothesis that the PWH framework provides empirical and theoretical insight into firm managers' coordination decisions. The cases show how asset specificity and complementarity affect the costliness of coordination decisions, how this costliness drives the decision to change coordination strategies, and how feasibility and risk/return criteria also apply. Additional insights into coordination strategy decisions that were generated in applying the framework and their potential relevance to the framework are discussed.

Keywords: Coordination strategy, decision-making, fresh produce, transaction cost economics, strategic management

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Introduction

Managerial decisions about vertical coordination strategy (a.k.a. supply chain management) are increasingly critical to agribusiness executives as open markets have given way to various forms of managed coordination (e.g., strategic alliances, joint ventures, and contracted production). For economists, transaction cost economics (TCE) revolutionized understanding of coordination strategy decisions, bringing into the economic arena questions of how the attributes of a transaction affect the governance decision, particularly given the reality of bounded rationality and possibility for opportunism among partners in an exchange. Given the needs of managers to make effective coordination decisions, it would be helpful to translate this enhanced understanding based on TCE into a decision framework for managers.

Despite the explanatory power of TCE, it has been subjected to some criticism on theoretical grounds and for operational shortcomings. For example, Dow asserts that in order to compare transaction costs across different governance structures, the characteristics of the transaction must be constant regardless of the governance structure in question (Dow in Dietrich p 4). This is rarely the case in reality. In fact, the characteristics of both the transaction and production tend to shift between coordination strategies, making it more difficult to assign solely transaction cost explanations to governance structure decisions. Related to this is another issue: implicit in the transaction cost framework is the assumption that costs are the primary driver of transaction cost decisions, while benefits, particularly strategic benefits (which can not be written off merely as negative costs), play an insignificant role. Several operational shortcomings of the transaction cost model have also been named. For one, transaction cost economics has been criticized as providing such a general explanation of coordination strategy decisions that one can always find what one is looking for, making it impossible to reject hypotheses related to their determinants. Another criticism concerns the lack of discussion in transaction cost literature of the cognitive process by which transaction costs are taken into account. Together, these criticisms point to the need for an approach to analyzing governance structures that is both theoretically consistent and operationally sound. The need for such an approach has been felt not only in economics but also in the strategic management fields, where there have been appeals for a business literature that offers insight into strategic decision-making and also offers general theoretical insights into coordination issues for use in research and hypothesis testing (e.g., Zylbersztajn).

In their 2001 article, Peterson Wysocki and Harsh (PWH) address these issues, offering a theoretical decision-making framework for firms' coordination strategy decisions. The current paper applies the PWH framework to the analysis of coordination strategy decisions among firms in São Paulo, Brazil's fresh produce markets. The objective is to provide additional validation of the framework's

explicative power and to explore the unique insights that it offers into firms' coordination strategy decisions.

The paper proceeds as follows: The analytical methods and data are outlined, then the PWH coordination strategy framework is summarized. Next, the case study context and firms are introduced and the coordination strategies of each firm are analyzed using the PWH framework. The paper concludes with a discussion of the results focusing on the unique contribution that the PWH framework lends to the analysis of coordination strategy decisions and the implications for managers.

Methods and Data

Data is drawn from case study analyses of the evolution of coordination strategy decisions of three retailers and one processor in the fresh produce sector of São Paulo, Brazil. The case study approach is a suitable method of analysis in situations where a small sample permits in-depth consideration of the complex and interdependent factors entering into a decision (Yin). The PWH framework is itself a result of grounded theory (Bitsch; Glaser and Strauss) based on both review of the literature on coordination and inductive analysis of 25 producer case studies in two sectors of agriculture, celery and seed potatoes (Wysocki, Peterson, and Harsh). "Grounded theory is a methodology of developing inductive theories that are grounded in systematically gathered and analyzed data. Data collection, analysis, interpretation and theory development proceed interdependent and iterative [sic]." (Bitsch p77). The current research follows a case study design in which a firm's decision to change its coordination strategy is the unit of analysis, and each individual case is a theoretical replication used to confirm or refute the relevance of the PWH framework in explaining the decision (Yin). Consistent with qualitative research based on grounded theory, the cases thus support the external validity of the PWH framework if they confirm, or cause the framework to be revised if they disconfirm. Disconfirming evidence would include the observation of critical decision variables not hypothesized to be part of the framework, or the irrelevance of variables that are part of the framework (see footnote 2 for an example).

To collect the case data, a survey of the firms' fresh produce marketing and procurement strategies was implemented and interviews were conducted with each firm's management. To confirm the consistency and relevance of the data, at least two separate interviews were conducted for each firm, with multiple managers present for the interviewing. A total of eight coordination strategy decisions were analyzed among the four firms, thus generating eight cases for applying PWH. It is important to note that the data were collected as part of a larger study on the evolution of the firms' procurement strategies and was done without reference to the PWH framework (in fact, the interviewer was unaware of the PWH framework at the time of interviews). Data were collected in semi-structured interviews that had both open-ended and close form questions regarding the evolution of the firm's

procurement strategy and management's insight into the underlying factors that drove the evolution of their strategy. The interviewees were in no sense led to include or exclude particular factors. They were asked to be exhaustive in their recall of events and decision factors. The primary author (again without reference to the framework) wrote the case narratives based on the interview materials. Both authors, now conversant in PWH, then independently reviewed the case material and coded it with regard to the variables of the PWH framework. They then met to synthesize their independent analyses into one. As will be shown in the discussion section of the paper, the framework was able to fully explain the evolution of the procurement strategies, and an examination of the interview results failed to reveal any additional variables that were relevant to the coordination strategy decisions. An explicit search was made for disconfirming evidence.

Conceptual Framework: The PWH Framework¹

The main objective of the PWH theoretical framework is to identify the critical factors in the decision making process that lead to appropriate selection of coordination strategies. Appropriate strategies are those which accommodate issues of asset specificity, complementarity, and coordination strategy feasibility at an acceptable cost to the firm. As a foundation to the framework, PWH present a continuum of coordination strategies that range from low to high levels of intensity of control over the relevant transaction. At the level of least intense control are spot market transactions, which rely entirely on control methods that are ex ante to the transaction. Ever-increasing intensities of coordination control are seen in specifications contracts, relation-based alliances, and equity-based alliances, with accompanying shifts towards reliance on ex post rather than ex ante transaction coordination. At the far extreme of the continuum is vertical integration, in which one organization has complete control over the coordination transaction. Vertical integration occurs in situations where a single firm owns production resources at consecutive levels of the marketing chain.

PWH hypothesize that managers are motivated to adopt a new coordination strategy when an existing strategy results in unacceptably costly coordination errors (e.g., stock outs, poor quality, and inconsistent supply). The key variables that determine the costliness of a coordination error are asset specificity and complementarity. Asset specificity is the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrificing its productive value. Complementarity exists when individual activities produce more in combination than in sum across a specific transaction interface, so that the marginal productivity of each input cannot be measured. Asset specificity and complementarity are affected by private institutional arrangements or public

¹ The full paper is available at Peterson, H. C., A. Wysocki and S. B. Harsh (2001). "Strategic Choice along the Vertical Coordination Continuum." *International Food and Agribusiness Management Review* 4: 149-66.

institutions including those that govern transactions, by technology, and by the structure of the marketing chain. Asset specificity and complementarity can be experienced differently by individual firms. As asset specificity and complementarity increase, the optimal coordination strategy shifts from low intensities of control to higher intensities of control. The issue of complementarity is distinct from that of asset specificity. In the case of complementarity, it is in the interest of both buyer and seller to achieve smooth coordination, whereas asset specificity means that there are incentives for one to profit at the expense of the other, for example through holdup and re-negotiation of the terms of exchange. Put succinctly, the concept of asset specificity emphasizes opportunities for gains through opportunistic behavior, while the concept of complementarity emphasizes opportunities to gain through cooperative behavior.

PWH use results of inductive research to outline a decision process by which firm decision makers synthesize issues of asset specificity and complementarity with consideration of the firm’s characteristics and environment to determine a beneficial coordination strategy. The decision process consists of four sequential assessments, each of which must be answered in the affirmative in order for a shift in strategy to be made (Figure 1).

Initiating the decision process is the subjective question of whether the current strategy is too costly. Costliness can be judged on an absolute scale (for example the current strategy is too costly if it is causing coordination failures that are driving the firm to bankruptcy) or on a relative scale (where the coordination strategy is considered too costly relative to some perceived alternative). A strategy may be too costly if it causes costly coordination errors or if the cost of operating the strategy is too high, which can occur in situations where complementarity and asset specificity are present. An affirmative response to the question of whether the current strategy is too costly will lead the firm to initiate the process of considering specific alternative coordination strategies.

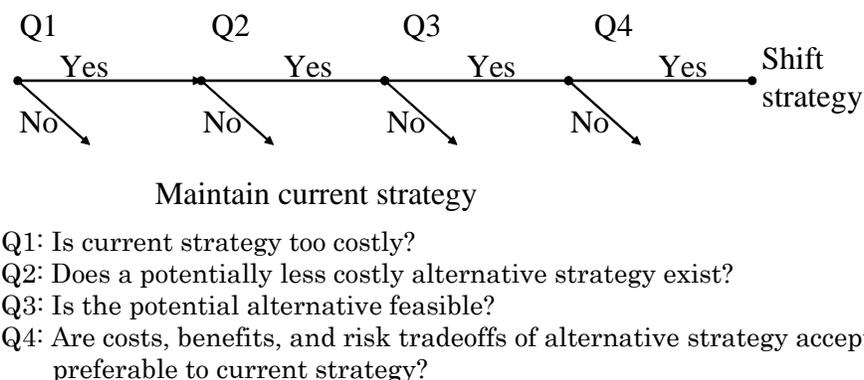


Figure 1 PWH Decision-making Process

Next is the question of whether an alternative strategy exists that might be less costly than the current one. Determining a potential alternative is a matter of matching the intensity of control offered by an alternative strategy to the combined levels of asset specificity and complementarity inherent in the transaction.

The third question is whether an alternative strategy that the firm has identified is feasible for the firm to implement and sustain. Four aspects of this feasibility question can be discerned: two internal and two external to the firm. They are 1) capital availability (including financial, labor, and other resources necessary to the successful implementation of the alternative strategy), 2) control competence (in terms of the firm managers willingness and ability to manage the coordination strategy effectively), 3) availability of willing and able transaction partners consistent with the alternative, and 4) institutional acceptability e.g., whether the alternative is considered a “fair” business practice under both cultural and legal views.

Finally, having ascertained the feasibility of the alternative strategy, the firm must reconsider the benefits, costs, and risks anticipated to result from its implementation. If these risks and returns are expected to be favorable relative to the current strategy, the firm will choose to implement it; otherwise they can be expected to maintain their current strategy.

Background to São Paulo’s Fresh Produce Markets

From the early 1980s to about 1994, the Brazilian economy was in a state of instability and stagnation. Inflation rates were high and consumers were extremely price sensitive. Correspondingly, there was little profitability in food retail markets. In the fresh produce sector, there was little specialization at the production level, and there were large fluctuations in the volume, price, and quality of produce available in the market.

Beginning in 1994 with the Real Plan, the economy stabilized and disposable incomes grew for consumers across all income strata. The potential to profit through investment in the food industry increased, drawing new retail entrants and increasing competition. Mergers and acquisitions increased the market share of large retailers—supermarkets currently account for 75% of retail food sales in Brazil (Farina 2002 p3). The emergence of supermarkets as major players and their competitive strategies stimulated investments upstream in the marketing chain, leading many suppliers to expand, modernize, and specialize their operations. This brought some reduction in the variability of prices, quantities, and quality of fresh produce available in the market.

Fresh produce markets are one area where large retail chains have had a significant impact on the structure and organization of the market, yet have not

come to dominate in terms of market share. Currently, fresh produce markets in São Paulo exhibit a remarkable diversity in terms of the nature of the retailers and their competitive strategies. Five coordination strategies for fresh produce procurement are common in São Paulo's fresh produce markets. Their places along the spectrum defined by PWH are depicted in Figure 2, and they are explained in greater detail below.

<i>PWH Coordination Strategies</i>				
Spot Market	Specification Contract	Relation-based Alliance	Equity-based Alliance	Vertical Integration
<i>São Paulo FFV Coordination Strategies Observed</i>				
Spot Market	Supplier Registry Contract			Vertical Integration
	Informal Relations			

Figure 2: Coordination Strategies

The coordination strategy reflecting the lowest intensity of control that is observed in São Paulo is spot market coordination, as defined by PWH. Two more coordination strategies, supplier registries and ongoing, informal exchange relationships, are observed lying between the spot market and specifications contracts. Supplier registries are lists of approved suppliers that retail buyers maintain. In applying to be listed on the registry, suppliers are apprised of basic parameters that will guide all transactions, such as product specifications, methods for price formation, and other rights and responsibilities of each party. Thus, they serve as an explicit foundation on which repeated at-will transactions take place, but do not actually include product orders or any commitment to buy or supply produce.

Informally-governed exchange relationships are based on familiarity between buyer and seller, and a sense of mutual benefits to be gained from the continuance of the relationship though there is no explicit commitment for these relationships to continue. In this situation, actors do not make relationship-specific investments on behalf of the other party, so that they maintain their autonomy and flexibility to leave the relationship with minimal losses. Thus these relationships do not reflect the degree of commitment and control seen in specification contracts.

Showing an even higher intensity of control are formal contracts between retail buyer and supplier. These include explicit provisions for exchange (for example a

commitment to buy or sell produce at regular intervals), in addition to the guidelines found in supplier registries.

Furthest to the right along the spectrum is vertical integration. Vertical integration is most commonly observed directed downstream, for example, by a farmer who decides to market his or her own produce; and involves single-ownership of production resources involved in several stages of the supply chain.

In fresh produce markets, a number of factors give rise to asset specificity and complementarity throughout the production, processing, and marketing process, with one of the above coordination strategies being chosen as a consequence. The major factor bringing about asset specificity is the perishability of fresh produce, which causes a loss in the value of the product if there is a time-delay in its delivery, such as might be caused by a transaction falling through (Farina and Machado). Investments that are specific to the needs of a buyer, such as greenhouses or cultivation of special varieties, are also asset specific. The primary factor inducing complementarity in fresh produce is the heterogeneity of supply and demand (Codron et al.), particularly given the perishability of the product. Large variations in the quality of what is produced and what is sought by consumers, and the fact that once it is produced it must move quickly along the marketing chain to the consumer so as to not lose value through natural processes of degradation, make it important for buyers and sellers to have some means of coordinating the product flow with one another.

Case Analyses

First firm: Companhia Brasileira de Distribuição

Companhia Brasileira de Distribuição (CBD) is the largest food retail firm in Brazil with approximately 15% of market share. With more than 400 retail outlets among three supermarket and hypermarket chains, CBD offers a broad line of food and general merchandise to consumers of all income categories. Perishables, including fresh produce, account for 33% of CBD's sales and are their most important sector strategically. Among perishables, fresh produce can contribute anywhere from 4% to 16% of each individual store's revenue depending on the clientele served and product line carried. Though they offer a broad range of fresh produce items, the focus here is on CBD's procurement of bulk produce.

Case 1:

Table 1 summarizes the case facts leading to CBD's first procurement strategy shift. CBD's challenge is to coordinate procurement of sufficient volume of consistent quality produce to serve their 400+ stores, and to distribute it among these stores in an efficient and timely manner. In the 1980s, CBD bought produce at the

traditional wholesale market from a registry of approved suppliers. Procurement was decentralized, with each store undertaking its own procurement activities. Quality was controlled by inspections of produce prior to purchase and subsequent sorting at the store level.

With economic stabilization, consumers' incomes grew and consumption patterns began to change, increasing demand for fresh produce. At the same time, in part responding to new opportunities in food retail sales, CBD began to expand both through increased sales per store and mergers and acquisitions that increased the number of stores. At this point, CBD's management was faced with the initiating question: Was their current coordination strategy too costly? The answer to this question was affirmative. They had difficulty obtaining adequate quality and volumes of produce and experienced high rates of waste. Furthermore, quantity and quality fluctuations in the market made planning difficult, and they had to compete with the rest of São Paulo's retailers for what produce was available in the market. Moreover, CBD saw an opportunity to reduce costs and improve quality by constructing centralized purchase and distribution centers for produce that would offer economies of scale and scope. They knew, however, that investment in a centralized procurement and distribution (P&D) center would only yield good results if they were able to assure a constant flow of produce throughput. This made them vulnerable to re-negotiation and holdup by suppliers that they could not control effectively under their current coordination strategy.

CBD took an alternative strategy which was to make entry onto their registry of suppliers more demanding, and to seek more services such as classification and delivery from suppliers. At the same time, they could vertically integrate the assembly part of the wholesale function using the centralized P&D centers as a base. CBD anticipated that these changes could reduce their coordination costs—tighter relations with suppliers would facilitate planning and the better product classification would improve the quality of incoming produce and reduce waste. Likewise, a smaller cadre of suppliers with whom they had more regular relations would help to ensure a constant supply of produce throughput for their centralized procurement activities.

The feasibility of the strategy seems apparent. Construction of a centralized P&D center would require much financial capital, but as a large firm that was well reputed in financial circles, CBD had adequate access to such capital. They also had the managerial sophistication (demonstrated in other areas) necessary to coordinate the logistical and contractual functions associated with a more intensely controlled supplier registry and centralized P&D. CBD anticipated that they would have an adequate number of suppliers who would be willing and able to serve their needs: suppliers would benefit from the smoother flows of information and product too, and appreciated the large volumes of product that CBD needed. Institutional acceptability of the alternative options also presented no challenge.

Given its feasibility, CBD apparently evaluated positively the risks and returns of making these large shifts in their strategy. The potential benefits—improved control over quality, and savings of from 20-30% on procurement costs through centralization—were clear, and CBD opted to make the shift.

Table 1 PWH Analysis of CBD Cases Facts in 1st Stage of Evolution

PWH Variable	Realization in Case
Initial strategy:	Informal supplier registry with individual store purchases from wholesale market. CBD then processes goods as needed.
Is initial strategy too costly?	Yes. Quality and volume requirements not met. Issue heightened by increasing demand and competition during decision period.
Does an alternative exist that is potentially less costly?	Yes. Alternative is centralized purchases direct from producers on a supplier registry with enforced quality standards. Supplier does processing. Alternative trades off low asset specificity of conducting decentralized purchases in wholesale market in favor of high asset specificity of investing in centralized facilities. Complementarity is high due to increased profit opportunities from having volume and quality demands met through tighter chain coordination. In balance, alternative is expected to be less costly.
Is alternative feasible?	Yes. CBD has financial capacity to make investment. Sophisticated management ensures control competence. Tighter relationship benefits producers ensuring availability of willing suppliers and alternative is legally and culturally acceptable.
Favorable risk/return?	Yes. Anticipated risk and return of alternative deemed preferable to current strategy.
Outcome	Alternative adopted as predicted by PWH—all decision process answers “yes.”

Case 2:

Table 2 summarizes the case facts relevant to CBD’s next shift in procurement strategy. Several years after making a shift to vertically integrated assembly functions and a more tightly controlled supplier registry, CBD found itself facing new challenges that made it once again reconsider the costliness of its coordination

strategy. CBD’s managers felt that the strategy of vertically integrated assembly operations was working well and felt no need to change. They saw, however, that the supplier registry was working sub-optimally given current market conditions. Consumers had become increasingly sophisticated and were concerned with issues like food safety. At the same time, CBD suspected that there were opportunities to increase their profitability by further improving the quality and regularity of their produce supplies, which was difficult under the current coordination strategy because some suppliers still lacked loyalty in times of product shortages. Moreover, the shift in coordination enacted in the previous period had increased the level of investment required for suppliers to qualify for the registry, and there were complaints from suppliers who perceived power imbalances in the registry system—particularly their having made investments to qualify for the registry without CBD making any commitment to buy from them on a regular basis.

CBD considered contracts with suppliers as an alternative coordination strategy for input procurement. These contracts could resolve the asset specificity and complementarity problems that were present in the existing strategy. A commitment on the part of CBD to purchase output from suppliers might pacify suppliers’ current frustrations and also provide them the security they needed to make even more specialized investments, for example in greenhouses and sophisticated irrigation systems, that would improve the quality and regularity of the produce they supplied. At the same time, contracts would help CBD weed out those suppliers who were not willing to commit to supply them regularly, regardless of market conditions.

Instituting such a shift would require investments to form the contracts, as well as additional managerial expertise to manage them, but these requirements did not present a barrier to CBD given its large size, ready access to investment capital, and highly sophisticated managerial expertise. Likewise, CBD anticipated that an adequate number of experienced suppliers would be willing to make investments to improve the quality of their production if they had an assured buyer. Institutional acceptability was also not perceived to be an impediment. The anticipated return and perceived riskiness of the shift was favorable to CBD, as increased sales and lower costs of coordination were anticipated. Thus, at the time of data collection, CBD was beginning to undertake activities to make this change.

Table 2 PWH Analysis of CBD Cases Facts in 2nd Stage of Evolution

PWH Variable	Realization in Case
Initial strategy:	Alternative adopted in first stage (centralized purchasing direct from producers, formal supplier registry with enforced standards; supplier does processing).
Is initial strategy	Yes. There is insufficient assurance of food safety given

too costly?	increasing consumer safety concerns, and a lack of loyalty exists among suppliers given their perceptions of a power imbalance with CBD.
Does an alternative exist that is potentially less costly?	Yes. Specification contracts—build on registry to include commitment to buy/sell. Asset specificity is high for suppliers (fixed investments to join registry and respond to new demands) but contracts guarantee purchase. Complementarity is also high due to additional opportunities for farmers to profit if they respond to food safety demands but need to more tightly coordinate supply to realize these opportunities.
Is alternative feasible?	Yes. Capital to institute contracts is available. Sophisticated management ensures control competence. Buy/sell commitments now make asset-specific investments by suppliers worthwhile. Alternative is legally and culturally acceptable.
Favorable risk/return?	Yes.
Outcome	Alternative adopted as predicted by PWH—all decision process answers positive.

Second Firm: Sapori

Sapori markets premium quality preserves and fresh produce items to the upper-income strata of metropolitan São Paulo’s consumers through independent retail outlets (i.e. ones not owned by Sapori) . Sapori has a 30-item product line, oriented to consumers who seek the healthfulness and novelty of premium and exotic products, such as mini-eggplant, mini-corn, and recipe-of-the-week combinations. The firm has also developed some of its own varieties for some of the exotic vegetables it markets.

Case 3:

Table 3 summarizes the case facts leading to Sapori’s first shift in procurement strategy. In order to market premium-quality, specialized fresh produce products, Sapori needs moderate volumes of a highly specialized input. When Sapori began operations, they were able to meet these special needs through vertical integration of their production and processing operations. As demand for their products grew, however, they found this strategy to be too costly. Though they had tight control over the quality of their produce, their volume and variety needs came to outstrip

their production and managerial resources. Acquiring all the produce they needed in this manner was too costly in terms of the firm-specific resources that it required. Case 3 is thus distinct from the first two cases. The existing strategy successfully avoided coordination errors, but the strategy itself became too costly to feasibly replicate for growth. Thus, a new strategy had to be found to avoid the re-emergence of significant coordination errors.

An alternative coordination strategy that was available to Sapori was to make purchases from the local wholesale market using spot market relations. Sapori hoped that purchases from the local market would be able to provide them with the volumes and types of produce that they needed, permitting them to specialize their firm resources on the value-added processing activities that were key to their success.

This option seemed feasible—it carried virtually no capital requirements and little control competence was needed to make such purchases. Likewise, numerous suppliers were already situated in the wholesale market who would be willing to supply them, and it was institutionally acceptable. Given the costs that they were facing at that point, the risk/return tradeoff of implementing the alternative seemed favorable, and Sapori took the step to vertically dis-integrate their production activities in favor of spot market purchases of raw material inputs.

In an explanatory sense, PWH works for this case as it did for the first two. However, changing the use of the framework to a predictive one proves useful. Given the highly specific input requirement, asset specificity and complimentary were high in this situation, which is consistent with the original decision to vertically integrate into production and intensely control the transaction. Moving from vertical integration all the way across the coordination continuum to spot markets, would thus not be advisable. The framework would predict that this strategy should not work to solve the problem, i.e., the selected strategy will decrease the costs of control but it will open the firm to costly coordination errors.

Table 3: PWH Analysis of Sapori Cases Facts in 1st Stage of Evolution

PWH Variable	Realization in Case
Initial strategy:	Vertical integration of production and processing activities
Is initial strategy too costly?	Yes. Growth in sales over-extends Sapori’s production capabilities. Managerial capital and space became inadequate to meet scope and volume requirements for inputs.
Does an alternative exist that is potentially less	Yes. Informal (spot market) purchases of raw material from local wholesale market would satisfy volume and scope requirements. [PWH model would question benefits of spot

costly?	market purchases given high asset specificity and complementarity of input (which are accommodated through current strategy of vertical integration) but actual decision makers expect alternative to be less costly given need to meet volume and scope requirements.]
Is alternative feasible?	Yes. Alternative has low capital and control requirements. Willing suppliers exist and the alternative conforms to common business practice. Alternative is legally and culturally acceptable.
Favorable risk/return?	Yes.
Outcome	Alternative adopted as predicted by PWH given all decision process questions answered “yes” by decision-makers, but PWH analysis brings into question ability of new strategy to accommodate asset specificity and complementarity.

Case 4:

Having made the strategy shift, Sapori came to realize that in resolving some of their coordination problems, they had created others! They were now able to get the volumes and types of produce that they needed, but they found that they were having trouble getting the quality that they were looking for. The day-to-day nature of spot market transactions meant that there was no advance planning, and Sapori could only purchase what was available in the market. They needed produce with special characteristics, however, such as “baby” cuts (harvested before full maturity) and they were also developing their own varieties of exotic produce and needed to be able to coordinate in advance if farmers were to grow these. As it was, with spot market purchases, suppliers were unwilling to accommodate these special needs because there was no guarantee that Sapori would be there to purchase from them, and the value of produce grown to meet Sapori’s needs was low for alternative buyers. Thus, the new strategy was generating costly coordination errors, as suggested by the predictive use of the PWH framework. Table 4 analyzes case facts relevant to Sapori’s second shift in procurement strategy.

To combat this problem, Sapori considered another change in strategy—they could establish relationships with a subset of highly qualified farmers, with specific transactions being guided by written purchase orders. The advance purchase orders permitted growers to plan their planting activities with the expectation of having a buyer for their output. This facilitated complementarity in moving high-value products more smoothly along the marketing chain, benefiting both Sapori and its suppliers. The ongoing relationships would assure suppliers of a buyer for their

product and permit them to make investments that would enhance their production for Sapori.

Table 4: PWH Analysis of Sapori Cases Facts in 2nd Stage of Evolution

PWH Variable	Realization in Case
Initial strategy:	Alternative adopted in first stage (spot market purchases of input)
Is initial strategy too costly?	Yes. Volume and scope needs met through shift, but advance planning of purchases precluded by spot-market nature of transaction. Sapori can't get special input needs met (early harvest, exotic varieties). Failures to accommodate asset specificity and complementarity make current strategy too costly.
Does an alternative exist that is potentially less costly?	Yes. Informal relation-based alliances with provision of some inputs and technical assistance. Asset specificity and complementarity will still be high, but the new strategy offers a better chance of accommodating them than the spot market.
Is alternative feasible?	Yes. Alternative has low capital requirements, and control is facilitated by full-time agronomist employees and Sapori's close proximity to most growers. Capable suppliers familiar with Sapori's needs exist. No challenges to institutional acceptability anticipated.
Favorable risk/return?	Yes.
Outcome	Alternative adopted as predicted by PWH—all decision process answers positive.

An assessment of the feasibility of this alternative was positive. The strategy carried moderate capital needs that Sapori could meet, and Sapori anticipated being able to maintain adequate control by providing technical assistance to their suppliers by the full-time agronomist they employed. Suppliers were available who were willing to specialize their activities to meet Sapori's needs, and they had the incentive to do so given the premium prices that Sapori was willing to pay. Institutional acceptability likewise did not present any problems.

Given the apparent feasibility of the alternative and its potential to alleviate the costly coordination problems that they were facing, Sapori's managers perceived the

risks and returns on the project to be favorable. The anticipated benefits were clear—making the shift could ensure Sapori the quality, scope, and volume of input that they required. Sapori thus ceased to make spot market purchases from the local wholesale market and instituted a system of ongoing purchases from a core of highly qualified suppliers. In a predictive sense, PWH would also lend support that this strategy as opposed to the spot market one had a much greater probability of success.

Case 5:

The shift in strategy improved Sapori's raw material procurement results remarkably. Eventually however, they once again had to face the question of whether errors and operational costs incurred under their current strategy were too costly. Two issues led them to consider another change: First, like CBD, Sapori became aware that their end consumers were increasingly concerned with the safety of the food they ate, and the level of control offered under the current coordination strategy (based on ongoing informal relations with suppliers and written product orders), seemed insufficient to truly guarantee a safe product. Second, they had become aware that some of the suppliers to whom they had provided seed (for exotic varieties that Sapori had developed) had sold the product of this seed to buyers other than Sapori. The growers who had done this lacked commitment to the relationship, and were apparently willing to compromise it for short-term opportunistic gain. Table 5 summarizes the case facts relevant to Sapori's final shift in procurement strategy.

The next change that Sapori contemplated for their coordination strategy was to institute written contracts with their suppliers that would specify the rights and responsibilities of each party, define planting schedules, and make other aspects of the relationship clear. Sapori's managers felt that by formalizing the relationship with suppliers, they would increase complementarity in the relationship—especially as it related to the marketing of a safe product—by further tightening coordination. They also hoped to protect the asset specificity of their investments in varietal development by making it explicit that they had the right to all the output from the seed they provided.

Consideration of the feasibility of this strategy yielded encouraging results. Relatively little capital was required to define and establish the contracts, and Sapori had the managerial competence required to successfully implement them. Sapori anticipated that suppliers with whom they already worked would be amenable to the change, as it carried little implication for actual operations, facilitated their planning, and strengthened their market. Institutional acceptability was not expected to be a problem.

The benefits that were anticipated in instituting a contract seemed apparent/ At the time of data collection, Sapori was poised to initiate this shift in strategy.

Table 5: PWH Analysis of Sapori Cases Facts in 3rd Stage of Evolution

PWH Variable	Realization in Case
Initial strategy:	Alternative adopted in second stage (informal, relation-based alliance with producers)
Is initial strategy too costly?	Yes. Consumer concerns for food safety increase coordination requirements for input acquisition and a lack of commitment on the part of some suppliers (who divert seeds to other uses) threatens the value of investments in exotic varieties.
Does an alternative exist that is potentially less costly?	Yes. Formal contracts with some input provision and advance purchase commitments. High asset specificity faced by suppliers (specialized production) is already accommodated through current strategy; however Sapori's asset specific investments in exotic varieties are threatened by some farmers' diversion of these to other uses, Sapori anticipates formal contracts might quell this activity, increasing long-term profitability. Furthermore, they anticipate formal contracts will increase farmers' willingness to investment in traceability and other food safety assurances, increasing complementarity.
Is alternative feasible?	Yes. Capital is available for the definition and implementation of contracts and little change to control needed. Suppliers of proven availability are already working with Sapori. No problems with institutional acceptability are anticipated.
Favorable risk/return?	Yes.
Outcome	Alternative adopted as predicted by PWH—all decision process answers “yes”.

Third firm: Sacolão FLV

Sacolão FLV (SF) is one of metropolitan São Paulo's government-promoted discount green grocers. Established in 1992, SF is oriented to lower income consumers and sells a range of about 80 fresh produce items at a uniform price per kilogram. SF

falls into the class of “small” food retailers for São Paulo with a sales area of approximately 500 square meters, all of which is used for fresh produce sales. Though privately administered, the government supports many discount green grocers through provision of space in which to operate and basic utilities such as water and light, in exchange for which the discount green grocers must adhere to the municipal government’s price guidelines.

Case 6

SF’s primary challenge is to obtain a consistent volume and quality of fresh produce so that it can meet its clients’ needs. A key constraint is the single price per kilo format and the need to keep the costs below this price, while covering their costs despite fluctuating fresh produce supply and prices.

When the firm opened in 1992, SF purchased fresh produce in São Paulo’s wholesale market, relying entirely on spot market coordination. Each day a buyer would compare prices, inspect products, and choose a supplier on the basis of the day’s product availability. This strategy was appropriate for the time—economic instability meant that fresh produce was a relatively unprofitable sector, and although SF’s procurement would have been facilitated through tighter coordination in order to mitigate the high variability in prices, volumes and quality of produce that was available in the market, the low profitability of the sector left neither SF nor suppliers with incentive to do so.

Gradually market conditions shifted, and SF considered the costliness of their strategy given current market conditions. With economic stabilization, demand for fresh produce had grown, stimulating greater levels of production and investment in specialized production by many suppliers who were now able to offer consistent quality produce on a regular basis. SF’s management suspected that they could have better control over supplies and lower costs if they updated their strategy to reflect these changed conditions. Table 6 summarizes the case facts relevant to SF’s shift in procurement strategy.

As an alternative to their spot market coordination strategy, SF considered forging ongoing, informal relations with a relatively small number of suppliers. An informal alliance could permit mutual familiarity between SF and a limited number of regular suppliers, providing benefits of cooperation from longer term “preferred supplier-preferred buyer” relations. The give and take of the relationship would increase complementarity, benefiting both buyer and suppliers. The provision of services such as protection from price fluctuations and responsiveness to the specific quality and price needs would make the acquisition of fresh produce easier and less costly. At the same time, neither firm would need to make any relationship-specific investments so that they could maintain their autonomy and exit the relationship at will.

This shift in strategy was feasible for SF—it required no explicit capital requirements and an increasing number of specialized suppliers in the market would be interested in having a relatively assured outlet for their product on a longerm basis. Control competence was not a problem as it required little change in management, and institutional acceptability was not anticipated to be a problem, given that such relationships were common.

The risk and return assessment was likewise favorable—SF expected to benefit by having easier access to produce and lower price fluctuations, without having to incur any significant costs in making the transition. Thus, the strategy was implemented as envisioned.

Table 6: PWH Analysis of Sacolão FLV Case Facts

PWH Variable	Realization in Case
Initial strategy:	Spot market purchases from wholesale market from many suppliers
Is initial strategy too costly?	Yes. Gradual increases in supply in market, reductions in price, volume, variety variability cause difficulty getting consistent volume and quality needed.
Does an alternative exist that is potentially less costly?	Yes. Purchase from the wholesale market but rely on informal relations (specification contract) with fewer specialized suppliers. Asset specificity is low—only perishability of product. Initially little complementarity because suppliers profit by playing market. Complementarity increases because increased market supply makes having pre-arranged outlet preferable and buyers want quantity, quality and availability needs to be met.
Is alternative feasible?	Yes. Alternative has no explicit capital requirements. Little change in management needed for control competence. Willing partners exist in specialized suppliers who will benefit from having an assured buyer. Alternative is legally and culturally acceptable.
Favorable risk/return?	Yes.
Outcome	Alternative adopted as predicted by PWH—all decision process answers “yes”.

Fourth Firm: Galeria dos Pães

Galeria dos Pães (GP) is an upscale self-service restaurant and supermarket located in one of São Paulo's most affluent neighborhoods. Established in 1992, GP enjoys a strong reputation for the provision of fresh, premium quality food through both its restaurant and retail sectors. The supermarket specializes in perishables, bakery items, and imports, and contributes approximately 50% to GP's approximately US\$300 thousand monthly revenue. GP sells approximately 200 fresh fruit and vegetable items in the 100 square meters of its fresh produce department. Many of the supermarket products are produced on-site in complement to the restaurant's activities guaranteeing that maximum quality and freshness are consistently maintained. Their marketing strategy emphasizes their premium quality, variety, and convenience to its demanding clientele with a small area dedicated to the presentation of each item and quick turnover. GP doesn't sell any bulk produce items—approximately 50% of its sales are of select quality, pre-packaged produce, with the remaining 50% divided among sales of organic, hydroponic, and pre-processed produce. Profit margins for individual products can reach over 30%.

GP is an interesting case in that it has not enacted any significant shift in its procurement strategy since its inception in 1992, nor do they plan to alter their current strategy. This case analysis attempts to validate the PWH framework by (1) examining the explanation for the lack of change, and (2) explaining the difference in coordination strategy between two different types of produce—pre-packaged produce, and fresh-cut and organic produce, which present coordination challenges given their high value attributes—convenience and food safety, and production with organic processes, respectively. The firm has significantly different coordination strategies for the procurement and marketing of each of these.

Case 7

Pre-packaged produce: Table 7 presents case facts relevant to the PWH analytical model. GP's strategy for the marketing of pre-packaged produce is to use a hybrid of a spot market and specifications contract (reflected in ongoing informal relations with suppliers, much as SF has) for the assembly of produce. GP then sorts and packages the produce on site. Ongoing relations with suppliers permits GP ready access to high qualities of produce in the market—they intentionally buy from relatively small suppliers to maximize the complementarity inherent in two firms selling to one another on a regular basis, and suspect that if they bought from a larger supplier it would not appreciate their business sufficiently and complementarity would be lost. The potential asset specificity inherent in purchases of fresh produce is low, and moderate in processing. By conducting their own processing operations, GP minimizes this asset specificity because they have relatively small investments in equipment, and use produce that is not sold in their

restaurant operations. The strategy is highly feasible because it is relatively simple and has minimal managerial requirements, and because it takes advantages of resources that GP readily has at hand, such as a large labor force for the processing activities. Numerous trade partners are willing to supply them and benefit from the ongoing relationship, and the strategy is acceptable institutionally.

Table 7: PWH Analysis of Galeria dos Pães Case Facts for Pre-packaged Produce

PWH Variable	Realization in Case
Initial strategy:	Spot market – specification contract hybrid for coordination of purchases; vertical integration of processing.
Is initial strategy too costly?	No. Asset specificity and complementarity are accommodated through on-site processing. Operational costs are low.
Does an alternative exist that is potentially less costly?	No.
Is alternative feasible?	—
Favorable risk/return?	—
Outcome	No change to coordination strategy.

Case 8

Fresh-cut and organic produce: Fresh-cut and organic produce present a different challenge to GP. They present a high degree of complementarity in that their highly valued attributes (food safety in the case of fresh-cut, and organic production in the case of organic produce) are highly specialized and need to be marketed effectively (e.g., identity to be preserved) in order for their value to be realized. Vertical integration of production would not be in GP’s interests as it requires substantial managerial competence and investment, and because if they are not sold their high value is forfeited. There is also a relatively competitive supply of these products in São Paulo’s market. A summary of case facts for the PWH analysis of GP’s organic and fresh-cut produce coordination strategy is presented in Table 8.

The relatively high risk in their production and marketing, high managerial requirements, and high level of complementarity result in an interesting coordination strategy, in which suppliers vertically integrate downstream,

conducting not only production and processing operations, but also taking responsibility for much of the marketing operations, for example deciding how much and what to stock in GP’s shelves, and even stocking it. They are also responsible for the value of any produce that is not sold.

GP is not presented with an incentive to change this coordination strategy. It allows them to offer a high value product that their consumers value, with little risk in either marketing or liability (e.g., in the case of a food safety failure) as their suppliers’ take on virtually all the responsibility. The suppliers benefit by the complementarity that is achieved—they overcome the barriers to market access by carrying out their own marketing activities and taking on risk inherent in these activities.

Table 8: PWH Analysis of Galeria dos Pães Case Facts for Fresh-cut & Organic Produce

PWH Variable	Realization in Case
Initial strategy:	Suppliers (vertically integrated downstream) responsible for production, processing and management activities.
Is initial strategy too costly?	No. GP does not bear risks in carrying fresh-cut and organic produce line. Suppliers accommodate asset specificity and complementarity through vertical integration, bear risk of participation in market, but this strategy allows them access to the market.
Does an alternative exist that is potentially less costly?	No.
Is alternative feasible?	—
Favorable risk/return?	—
Outcome	No change to coordination strategy.

Discussion and Conclusions

Analyses of the evolution of the three firms' coordination strategies appear to provide powerful evidence supporting the determinants and processes of decision-making that PWH posit in their framework. For all eight cases, the framework provides a theoretically consistent justification for the decisions made in practice. In five of the eight cases, costly coordination errors ultimately resulted in motivating an effective change in coordination strategy. In one case, the unacceptable cost of extending an existing strategy to support firm growth, resulted in a change in strategy. However, this change was not effective as would have been predicted by the framework. In two cases, the lack of change in strategy was explained in a theoretically consistent manner, as well the reason for the differences in strategy across two different product categories represented by the two cases. Collectively, the case study results provide considerable insight into issues of incentives and feasibility, as well as the influence that asset specificity and complementarity have on coordination strategy decisions. This case-based empirical work thus expands the external validity of the PWH framework beyond the prior theoretical development and empirical application. The framework proves useful in produce sectors and for grocery firms. Additional cases from additional sectors are needed to further support the validity of the framework as an explanatory and predictive tool.

Three additional insights into coordination strategy decision-making can be drawn. First, in seven out of the eight cases, the strategies were changed to increase the intensity of control over transactions, i.e., the firm moved to the right on the strategy continuum. In the one vertical integration case, the strategy proved too costly to expand with demand growth, yet an effective alternative emerged even if it took some trail and error to find it. Strategies in the middle of the continuum may thus be more effective today as demand increases for special attributes (and with them transaction asset specificity and complementarity) and contracting systems become more sophisticated. In general, the movement away from spot markets does not necessarily indicate that the firms initially made the "wrong" coordination strategy choice. Instead, it suggests that both retailers and suppliers benefited from the gradual intensification of coordination control, over which period they learned to work better with one another and adjusted to the greater levels of interaction and interdependence, while incompatible partners were identified and weeded out. There were also important driving forces, namely the shifts in underlying demand and supply conditions faced by the firm, that drove these strategic shifts towards ever-increasing levels of control.

Second, differentiation between issues of complementarity and asset specificity permit a considerably richer insight into issues of coordination than a single-minded focus on asset specificity. The defining difference between the two concepts highlights that coordination can be costly even where there is no reason to

anticipate opportunistic behavior on the part of either party, i.e., in situations of complementarity where both parties will benefit from the successful completion of transactions.

Third, as one moves from lesser to greater degrees of control intensity, one can observe early shifts rightward to be oriented to resolving issues of complementarity, with the resolution of these issues leading to gradual increases in the levels of asset specificity implicit in the transaction; and this in turn leading to the need for additional shifts in coordination strategy. For example, in the first phase of CBD's coordination strategy, they sought to facilitate the achievement of complementarity benefits by tightening control through the supplier registry, which led to relationship specific investments whose asset specificity later needed to be accommodated through further shifts in coordination. This observed phasing needs to be tested with additional cases to see if it can be generalized.

Three significant management implications come from this work. First, asset specificity and complementarity appear to be very useful in explaining and predicting effective coordination strategy. They are not merely theoretical niceties. They have their real world expression that practicing managers should know about and use to guide the coordination decisions. Second, and more broadly, the PWH framework appears to provide a concise and valid means of guiding the firm-level decisions about coordination strategy. Managers can assess four key variables related to such decisions: (1) is the existing strategy too costly in coordination errors generated or in expense of implementation; (2) what do the levels of asset specificity and complementarity suggest a better strategy to be; (3) can the alternative strategy be implemented in terms of capital, control expertise, availability of a compatible partner, and institutional acceptance; and (4) is the risk/return tradeoff sufficiently better for the new strategy than the existing one. Finally, vertical coordination strategies must evolve as the economic and competitive environment evolves. In only one of the six cases of strategy change was the change motivated by an ineffective strategy choice in the past. In five of the six cases, it was the changing external environment that rendered a once effective strategy ineffective and in need of change. Managers must continually assess the shifting levels of asset specificity and complementarity and their own changing capabilities to manage new forms of coordination strategy.

In conclusion, it is argued that the case study analyses provide significant support for the PWH framework, as well as new insight into the firms' coordination strategy decisions that might be forgone when analyzed using a framework that lacks the operational approach and consideration of incentives and feasibility guiding the PWH model.

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Introduction/Objectives

Defining a cooperative as any form of alliance formed by agricultural producers for their mutual benefit, the objective of this paper is to examine the linkages between four bodies of theory (transaction cost analysis, the resource-based theory of the firm (RBV), social network theory and theories of trust and cooperation) to the design, governance and operation of three types of cooperative; traditional, “new generation” and learning networks. The approach is also applicable to relationships between individual cooperatives or cooperatives and proprietary companies. Two case studies illustrate both support for the theory and also generate additional insights

The paper begins with a discussion of theories of business-to-business relationships. This is followed by a brief description of the three types of cooperative. The implications of the four selected bodies of theory for the design, governance and management of the three types of cooperatives are discussed. The two case studies are followed by the Overview and Conclusions

Theories of Business-to-business Relationships

Introduction

Business-to-business (B to B) relationships occur in both vertical (supplier/customer relationships) and horizontal dimensions (between firms at the same level in the supply chain). The literature is predominantly focussed on the vertical dimension. In both dimensions, organisational structures range from “arms length” relationships between firms (as in the economic model of perfect competition) to administrative control, where all activities are under the control of one firm (Schaffner, Schroder and Earle, 1998). In between these two extremes lies the reality of most B to B relationships where they are managed through a range of formal or informal contracts and alliances.

Relationship strategy is broadly defined as firms managing B to B relationships to achieve mutually beneficial ends. Child and Faulkner (1998) point out that there appears to be no unified theory or approach to provide the basis for understanding relationship strategy and list eight bodies of theory that provide “useful, but partial insights” (page 17). These eight theoretical perspectives are:

1. Economics:
 - Market power theory
 - Transaction cost economics
 - Agency theory
 - Increasing returns theory
2. Game Theory
3. Strategic Management Theory

4. Organization Theory

- Resource dependence
- Organization of alliances

To this list, we might add further contributions from theories of trust and cooperation, leadership, social network theory. Eisenhardt and Schoonhoven (1996), suggest that failure to include social and strategic explanations creates an impoverished view of alliance formation and management.

Our selection of four bodies of theory is based on their perceived relevance to agricultural cooperatives. However, we recognise that a case could be made for the inclusion of alternative theoretical viewpoints – for example agency theory in the examination of the relationship between the members, board and management of a cooperative.

Transaction Cost Economics

Transaction cost analysis (TCA) has traditionally been applied to relationships between the firm and its suppliers or customers. Coase (1937) argued that market transactions between independent firms are costly, and that vertical integration may be able to reduce these costs by internalising activities, previously carried out by independent firms, within a single firm (Clemons and Row, 1992). Thus, TCA provides a vehicle for determining the boundaries of the firm that minimise the sum of production, distribution and transaction costs (Williamson, 1971).

Asset specificity is a key dimension of TCA. It occurs when the firm makes sizable investments in assets specific to ongoing relationships with suppliers, customers, or alliance partners (Knoeber, 1989). Once in place, these relation-specific assets generate the incentive for opportunistic behaviour. A balanced investment commitment between the parties to the transaction, contracts designed to discourage opportunism, vertical integration, or a controlling equity in a joint venture seek to limit such behaviour (Williamson, 1979). However, the effectiveness of any type of contract is limited by bounded rationality, adverse selection, moral hazard and difficulties of monitoring and control (Milgrom and Roberts, 1992).

All the TCA arguments relating to the limitations of contracts and outlined above apply to horizontal alliances (Gulati, 1998). In addition, alliances that involve sharing information (as is likely in modern alliances) suffer from “the hazard of misappropriation” (Han, 2004) arising from incomplete and vaguely-defined property rights.

The Resource-Based View

In the history of economic thought, the resource-based view (RBV) has its origins in the contributions of Chamberlin (monopolistic competition), Schumpeter (entrepreneurial innovative activity) and Penrose (firms have unique ways of combining resources to generate opportunities for sustained growth) (Chamberlin, 1933; Schumpeter, 1934 ; Penrose, 1959) The RBV argues that resources that are valuable, rare, non-substitutable and, in combination, difficult to imitate are a source of sustained competitive advantage for the firm possessing them (Barney, 1991)

In the context of establishing and managing B to B relationships, the RBV focuses on pooling resources to achieve mutually-beneficial outcomes (Das and Teng, 2000). The RBV focuses on the pooling of dissimilar resources (for example selecting cooperative directors with different types of expertise) but the resources that are pooled may be similar (as in the case of dairy farmers pooling financial resources and milk to establish a processing cooperative).

A key element in the establishment of an alliance is symmetry in the resource exchange process – “firms must have resources to get resources” (Eisenhardt and Schoonhoven, 1996, page137). This symmetry must continue if the alliance is to be sustained (in a similar way to the TCA view of symmetry in investment in relationship-specific assets). The maintenance of symmetry between contributions and rewards underpins the “horizon problem” in the governance of agricultural cooperatives (Cook, 1995)

Alliances have the potential to do more than the simple sharing of resources; they can facilitate the development of new “idiosyncratic resources “which are unique to the alliance and possibly unanticipated at the time of its establishment

Social Networks

Social Network theory proposes that economic activity is always embedded in a social context and that, for researchers, the social and economic dimensions of a business relationship are likely to be confounded. (Granovetter, 1985; Gulati, 1998). BarNir and Smith argue that the importance of a social network to an individual manager lies in; access to information (for example, about potential alliance partners), emotional and tangible support, status (through association with other network members of perceived high status) and a governance mechanism that facilitates trustworthy and predictable behaviour.

Eisenhardt and Schoonhoven (1996) suggest that B to B relationships are established because of strategic needs and their establishment is facilitated by social opportunities. Social networks facilitate alliance formation by enlarging the circle of potential trustworthy partners. This is influenced by the size of the top

management team, the number of previous employers, and the level of position held with previous employers. (Eisenhardt and Schonhoven, 1996). Gulati (1998) observes that often firms identify new opportunities for alliances through their existing relationships and that the manner and extent to which firms were embedded influenced key decisions such as the frequency with which firms entered alliances, choice of partner, type of contract used and evolution of the alliance over time. Positive prior experiences with an alliance partner (or, through the network, the partner's other alliances) creates a favourable environment for the establishment and maintenance of continuing relationships (Gulati, 1995)

Socially embedded ties within an alliance may also facilitate its continuing performance by engendering confidence and trust, and "a natural deterrent for bad behaviour that will damage reputation" (Gulati, 1998, Page 309).

Trust and Cooperation

Trust has been studied from a number of aspects, bringing richness to the understanding of its impact in strategic alliances and cooperative arrangements. However, Rousseau et al. (1998, p394) point that irrespective of the underlying discipline of the authors (psychology to organisational behaviour), confident expectations and a willingness to be vulnerable are critical components of all definitions.

Child and Faulkner (1998), following a number of other authors, identify three perspectives on trust: *calculative*, "based on the assurance that other people will do as they say because the deterrent for violation is greater than the gains and/or the rewards from preserving trust outweigh any from breaking it" (Page 48); *shared cognition* – based on the length and depth of the relationship; and *personal identity* – holding common values.

Like trust, *cooperation*, is defined in various ways. The common thread is that it involves proactive behaviour to achieve mutually beneficial outcomes (Anderson and Narus, 1990; Schroder and Mavondo, 1998). The links between cooperation and trust are that cooperation both engenders trust and requires some degree of trust to initiate it.

Das and Teng (1996) argue that both trust and control are needed to engender a high level of confidence in partner cooperation. Control is achieved through legal structures and contracts. Das and Teng (1996) identify the benefits of trust B to B relationships which, as well as lowering transaction costs, include inducing desirable behaviour, reducing the need for formal contracts and facilitating dispute resolution.

Three Types of Agricultural Producer Cooperative

Traditional Cooperatives

Cook (1995) provides two economic justifications for the formation of traditional cooperatives; excess supply/depressed prices and market failure (opportunism/holdup). Traditional cooperatives usually involve some degree of vertical integration. Thus their establishment involves their members becoming involved in two new and unfamiliar organizational structures; a horizontal alliance and using that alliance to operate a supply, processing or distribution business.

The shortcomings of traditional cooperatives are primarily transaction cost based and have been documented by Cook (1995) as: free rider problems; the horizon problem (cooperatives are discouraged from making long-term investments because members believe that restrictions on transferability of shares limit the possibility of them achieving a satisfactory return); the portfolio problem (the cooperative's risk/yield profile may not match that of individual members); control problems relating to relationships between the members and board, and the board and management; influence costs problems (the time and effort put in by particular groups of members to influence the board, or perhaps, management directly). Cook (1995) argues that these problems are felt most acutely in multifunctional, diversified regional cooperatives.

New Generation Cooperatives

One variation on the traditional cooperative model that has received considerable attention in the literature is the "New Generation Cooperative" – NGC (Cook, 1995; Katz and Boland, 2002; Fulton and Sanderson, 2002). The term originated in the mid 1990s in the United States and is now widely used in both the US and Canada. The core characteristic of NGCs is that capital is not treated as common property (O'Conner and Thompson, 2001). The elements that distinguish NGCs from traditional cooperatives relate to: closed membership, tradable delivery rights (initially priced to secure the required start-up investment capital), contractual obligations to deliver, and (usually) more focus on value-added niche products than traditional cooperatives (Chaddad and Cook, 2004; Olson et al, 1998; Fulton and Sanderson, 2002; Katz and Boland, 2002).

Learning Networks

networks are associations of individuals of organisations who share experiences and learn from each other for mutual benefit (Holmlund and Fulton, 1999). Networks are thus distinguished from traditional and new generation cooperatives by their relatively loose structure and limited financial commitment. Collaboration between network members allows them to improve their knowledge base, increase their

adaptive capacity, improve information access and increased opportunities for flexibility, innovation and learning (Kanter, 1994; Barlow and Jashapara, 1998; Newton, 2000).

Cooperative Governance and Business-to-business Relationship Theory

Introduction

This section explores the linkages between the four bodies of theory outlined above and the three types of cooperative. The first point to note is that the theories usually focus on dyadic relationships (recognizing that alliance members are embedded in a number of social networks – Gulati, 1998), while cooperatives have more than two members. The limited literature on multiple-member alliances reflects the business reality that two firm relationships predominate in the universe of alliances (Hwang and Burgers, 1997). However multi-firm alliances that join together for a common purpose have emerged in a number of industries particularly knowledge based industries and research and development alliances. Given the paucity of literature on multi-member alliances, we have made the broad assumption that the theories underpinning the analysis of dyadic strategic alliances apply to alliances with more than two members. The propositions seem, at least, to be intuitively plausible. There is also an argument for including number of members as a variable in any future research.

Traditional Cooperatives

From a TCA perspective, members of traditional farmer cooperatives do not see themselves as competitors. There is little “domain overlap”. Therefore the TCA arguments concerning horizontal B to B alliances have limited relevance in establishing the cooperative. The issues identified by Cook (1995) relate to the ongoing governance and management of the cooperative.

Because cooperative membership is, in many cases, fundamentally important to the member’s livelihood a strong control (TCA-based) ethos tends to emerge - the control and influence issues in Cook, 1995. Monitoring and control issues occur at three levels; between members, between members and the board and between board and management. The issues are similar to those that occur in joint ventures where parties seek control through majority ownership or detailed contracts. The cost of managing the three types of relationship is probably higher than in other forms of business and positively related to the number of members.

From an RBV perspective, traditional cooperatives pool similar resources. The purpose of pooling is to achieve economies of scale rather than diversifying and enriching the resource set available to members. The issue of symmetry in the

initial and ongoing resource contribution underlies the “horizon problem” identified by Cook (1995).

There appears to be limited research on the role of social networks in the formation and governance of traditional cooperatives. However, it seems likely that social networks would be a key variable in facilitating the establishment of a cooperative and continue to play a role in its ongoing operation (this role may be divisive, as in the case of the formation of rival groups within the cooperative membership).

There is widespread agreement in the B to B relationship literature that trust lowers transaction costs by reducing the negative impact of bounded rationality, relationship-specific investment and opportunism (Child and Faulkner, 1998; Poppo and Zenger, 2002). Madhok (1995) argues that the expected value of a governance scenario based on trust can logically exceed that of one based on preventing opportunism. The extent to which this argument applies to the three types of relationships within a cooperative is an empirical question.

New Generation Cooperatives

New Generation Cooperatives (NGCs) are strongly contract-based. Thus, contract-related TCA issues would be expected to be significant. There may be investment in membership-specific assets required to meet the terms of the contract.

NGCs have a restricted membership of like-minded business people. There is potential for a diverse range of competencies to be brought to the governance of the cooperative through board membership (an RBV viewpoint). Contracts may be used, perhaps with difficulty recognising the TCA issues involved, to utilise supplier diversity (for example in the production of premium wine).

Social networks are likely to be important in establishing a NGC. One of the competencies recognised in selecting board members could be the breadth of their present networks and their ability to establish new ones. The social networks of NGC members can be used to seek new members if required.

On the one hand, a relatively small membership might be expected to facilitate trusting relationships at the three levels discussed above. On the other hand, the contractual nature of the relationship between the cooperative and its members is not one that encourages the development of trust.

Learning Networks

Transaction costs are not seen as a major issue in learning networks as they are a relatively informal type of organisation. There may be an adverse selection issue in that members who see themselves as getting the most benefit from the group are

also those that have the least to contribute. A related issue is on-going reciprocity of member contributions.

Sharing the diversity of member resources and competencies is the basic reason for the establishment of learning networks. They have the potential to generate unanticipated beneficial outcomes - for example identifying a new market opportunity in a production technology oriented network.

As for the other types of cooperative, the establishment of learning networks is facilitated by social networks. Learning opportunities are facilitated by face-to-face contact in an informal environment. Trust and cooperation are needed to “oil the wheels” of information exchange.

The hypothesised relationships between the three types of cooperative and the four bodies of theory are summarised in Table 1.

Table 1: Linkages Between Strategic Alliance Theory and Cooperative Structure

Alliance Theory and Key Insights		Type of Cooperative and Distinctive Features		
Theory	Insights	Traditional Distinctive Features:	New Generation Distinctive Features:	Learning Networks Distinctive Features:
		Limited shareholder investment capital. Restricted transferability of shares Rewards according patronage Control and influence costs issues	Closed membership Contractual delivery rights/obligations Tradable delivery rights Significant equity investment in start-up capital. Focus on value-adding	Limited financial commitment: Loose structure Importance of : trust, commitment, shared vision, leadership , reciprocity, personal relationships Support from outside “champions”
Transaction Cost Analysis	Alliances seek to internalise exchanges because of high transaction costs. BUT: Contractual alliances generate their own transaction costs: <ul style="list-style-type: none"> - bounded rationality - adverse selection and moral hazard - asset specificity and opportunism - Vaguely-defined property rights - Control issues 	Significance: High Deriving mainly from vaguely defined property rights and control issues Asset specificity and opportunism are important in motivating the establishment of traditional coops, but become less important in their ongoing operation	Significance: Moderate-High TCA issues in supply contracts. Investment in specialised plant and equipment may be required.. Tradable delivery rights limited by constitution.	Significance: Low Possibility of adverse selection. Intellectual property rights issues

Table 1: (Continued).

The Resource Based View (RBV)	Focus on exchanging and pooling firm resources that are rare, non-substitutable and, in combination, difficult to imitate. Importance of symmetry in the exchange of resources Possibility of synergistic development of “idiosyncratic resources” unique to the alliance.	Significance: Low The members of traditional cooperatives provide two types of resources: investment capital (usually limited) and raw materials. Neither of these have the characteristics of resources in the RBV	Significance: Moderate Contracts can facilitate the supply of differentiated raw materials requiring unique resources A relatively small number of members may facilitate their unique competencies contributing to the governance of the cooperative	Significance: High The RBV is the fundamental reason for learning networks. Conversely, if members’ resources are <u>not</u> heterogeneous, the learning network is likely to fail. Possibility of real synergy in the sharing of ideas
Social Networks	Economic activity is always embedded in a social context. Social networks provide: access to information, emotional and tangible support, status. Facilitates trust-worthy and predictable behaviour. Social networks facilitate alliance formation by enlarging the circle of potential trustworthy partners and facilitate alliance performance by engendering confidence and trust	Significance: Low May make some contribution at the establishment stage. Becomes increasingly less important as membership increases and the cooperative matures and becomes more diversified	Significance: Moderate Like-minded business people in a rural community are likely to have multiple network linkages. Similarity in status may be significant. Social networks may facilitate expansion	Significance: Moderate-High Social networks facilitate the establishment and ongoing operation of learning networks. Given the individualistic and sometimes lonely nature of farming, the emotional support component may be significant
Trust and Cooperation	Key ideas: Confident expectations and a willingness to be vulnerable Dimensions of trust : - Calculative - Shared cognition - Affect-based (friendship, shared values) Cooperation: Proactive behaviour to achieve mutually-beneficial outcomes	Significance: Low At a fundamental level, members place their trust in the concept of a cooperative as a way of marketing their output. This trust is however, more of a religious nature than a behaviour that meets any of the three dimensions of trust. Cooperative members certainly behave in a way that seeks to achieve mutually beneficial outcomes when the cooperative is established but “cooperation” in this sense is limited in the ongoing operation	Significance: Low-moderate Confident expectations and a willingness to be vulnerable are required for the cooperative to be established. A relatively small number of like-minded members of similar status should facilitate trust and cooperation. On the other hand, in a similar fashion to traditional cooperatives, institutionalizing arrangements for the supply of raw materials and trading delivery rights diminishes both the need and motivation for trust and cooperation between individual members and also between members and the cooperative.	Significance: High Good potential for trust and cooperation based on shared cognitions and values. Opportunities for pre-emptive cooperative behaviour (cf Prisoners’ Dilemma Game) and “Tit For Tat”.

The implications and conclusions from Table 1 are discussed following two case studies.

Two Case Studies

The following case studies provide examples of two different types of cooperatives each with their own distinctive features and highlight a number of the insights developed in Table 1. Tatura Milk Industries was established as a traditional cooperative that has taken on many of the feature associated with New Generation Cooperatives such as value adding, reliance on information sharing alliances and investment in specialised resources.

Riverine Plains was established as a learning (through practical on farm research) and knowledge sharing network. Members have a very limited financial commitment to the group but place a high value on social networks, trust and cooperation. The sharing of resources in the form of technology, know-how, information and at times emotional support (eg unfavourable seasonal conditions such as drought when more complex decision making is required) being the core principles of the network.

Case Study 1:

Tatura Milk Industries: Competitive Advantage Through Alliances

Tatura Milk Industries (TMI) was established in 1907. It has remained an independent cooperative in the face of increasing concentration through mergers and acquisitions. Exports comprise 60 percent of sales.

Tatura Milk Industries (TMI) could be described as a traditional cooperative that has reshaped itself. TMI have attempted to address some of the shortcoming of traditional cooperatives by incorporating some aspects of new the generation cooperative model, it is a defined member cooperative with all members being active shareholders. The active membership rule ensures that producers are able to redeem shares on exit, at an independently-determined valuation, overcoming the problem of share transfer associated with traditional cooperatives. A further distinctive feature of TMI has been its willingness to commit to a strategic network through a series of strategic alliances. These alliances have focused on value added products. The alliances that have been developed include knowledge based R&D alliances with Tatua a New Zealand Dairy Cooperative, Ingredia a dairy processor based in France, and Andadis a biomedical company in Australia. TMI has sought out these alliances to complement their own strategic position in the market and build on their capabilities, including access to milk supply and specialist colostrum collection techniques as well as particular processing expertise.

TMI has an extended alliance network. Each alliance is unique in its own way but each is based on a strong foundation of trust. This supports Gulati (1998) who argues that firms having prior alliances are more likely to enter into new ones

The alliance with Tatua is based on resource complementarity, with Tatua having a very strong research and development philosophy which supports the TMI strategy of focusing on value added product. These similarities in philosophy, background, size and focus on value-added products, have contributed to the development of a strong trusting relationship based on mutual understanding and respect that has facilitated openness in information sharing and knowledge transfer. Social network theory contributes much to understanding the impetus for such an alliance. Social networks can serve as important basis for enforceable or deterrence based trust (Burt and Knez, 1995). This shared understanding motivates “good behaviour” by both parties as each partner is aware that the other has much to lose from behaving opportunistically and in turn enhances confidence in each other (Gulati, 1998).

The alliance with Ingredia, a French cooperative was formalized in 2004. Ingredia is a similar sized farmer based processing cooperative that also focuses on value added products particularly in the functional foods area. Ingredia were keen to develop a relationship with TMI as changes in the dairy industry in France threaten the sustainability of current milk flow volumes. The attraction for both companies in developing the alliance was the similarities in background size strategy and philosophy. Ingredia have strong R&D capabilities while the processing capabilities of TMI complement their R&D focus. The initial alliance provides a platform for future shared innovation.

The alliance with Anadis exhibits a number of characteristics consistent with the RBV as discussed by Barney, (1991) whereby the alliance creates a set of resources that met the conditions necessary to develop a sustained competitive advantage through resource sharing ie valuable (colostrum is high value) rare (has been difficult to access) imperfectly imitable (patented colostrum harvesting technology) and colostrum is without substitutes. TMI's share purchase injected over \$4.25 million into Anadis and provided security of cash reserves. Again the Anadis philosophy, which is based on the belief that intellectual property is better developed and commercialisation is faster with the assistance of other “clever” organisations fits well with that of TMI. Similar to TMI, Anadis have formed several strategic alliances. A key feature of the Anadis alliance is the “Anadis – Tatura Innovation Engine Room (ATIER)”, a collaborative web to co-develop new products. The relationships fostered in this group are considered crucial to the success of the alliance. Through the strong trusting, committed relationships that develop at this level, measurable outcomes that contribute to financial success are ensured. Corporate level relationships whilst still essential for alliance success produce less tangible outcomes and will not result in sustainable profitable outcomes without successful new product development.

Overall the success of TMI alliances can be attributed to strong leadership that supports the alliance philosophy at all levels and through all functions of the company. Alliances are developed in engineering, processing, technical, commercial and logistical functions as well as in the corporate and marketing/sales areas.

Governance structures have become increasingly varied, catering for broad diversity in alliances. Contracts and trust both contribute to predictable behavior (Gulati, 1998). The governance structures adopted by TMI generally involve formal contracts. However one executive commented at interview that:

“contracts remain in the bottom draw where they belong – once you reach for the contract the relationship is effectively over”

The familiarity developed through prior alliances has enhanced trust which has enabled TMI to rely less on formal structures. Similarly Barney (1991) acknowledges the contribution of social factors in his discussion on “social complexity”. Whilst several firms may all possess the same physical technology only one firm may possess the social relations, culture and traditions to fully exploit the relationship. In the case of TMI, these personal social relations occur at a number of levels which is consistent with the view developed by Granovetter (1985) who stated that it is not only at the top levels that firms are connected by networks of personal relations, but at all levels where transactions must take place.

Case Study 2:

Riverine Plains Inc – Knowledge Network

Riverine Plains Inc (RPI) was established in 1999. Total membership is 200. The group’s establishment recognised the need to develop research capability and knowledge sharing. It is supported by government agencies and a University.

RPI exhibits distinctive features associated with learning networks; limited financial commitment, relatively informal structures strong personal relations, shared vision, trust and focused leadership. The focus of the group is articulated as follows:

- Establishment of a proactive farmer group to coordinate and initiate research
- Consolidation of fragmented groups across the region
- Development of a group which was able to attract leading farmers who valued their membership of the group
- Attract funding to support meaningful research.
- Support the economic and social development of rural communities

The synthesis of these objectives resulted in the following mission statement for the group:

“Farmers promoting excellence in farming systems by providing quality information, leading research and sharing ideas for the economic, environmental and social benefit of the Riverine Plains.”

The success of the group can at least in part be attributed to the strong drive commitment and enthusiasm from the leaders in ensuring the momentum of establishment was maintained, along with outside assistance from government and a University (Trechter and Murray-Prior, 2003).

Discussions with past and current members of the executive committee indicate that the leadership team had existing social networks and that these existing networks influenced the opportunity, motivation and willingness to pursue the formation of the new network. This is in line with research by Granovetter (1985), Eisenhardt and Schoonhoven (1996) Gulati (1998) and BarNir and Smith, (2002) relating to alliances and social networks provide support for this finding.

RPI has continued to develop and grow over the last five years. Strong commitment, open communication and support from external agencies are cited as the principal reasons for this continued success. This is consistent with Harris et al (1995), Bessant et al (2003) and Trechter and Murray-Prior (2003). Membership enthusiasm and support is maintained through frequent communication.

“One of Riverine Plains’ main achievements has been the quality of information it has been able to present, both through a range of seminars and an annual publication”

Social networks and emotional support, that are important features of the Riverine Plains group, are achieved through a number of mechanisms including field days, seminars, local farm tours and an annual tour to other areas.

This in turn contributes to trust which is essential to the successful operation such a large group. Decision making and management of the knowledge generating agenda is in the hands of the executive committee and therefore members need to trust that opportunistic behaviour will not take place, outcomes will benefit the majority and cooperation continue long term¹.

¹ Whilst the case studies outlined above are not typical of case study research as defined by Yin (1992) they are designed to illustrate insights developed through the literature review. Further quantitative and qualitative analysis is required to test the hypotheses developed from Table 1.

Overview and Conclusions

The important insights from the literature review and the two mini-case studies can be summarised:

- Transaction cost analysis (TCA) is a major contributor to our understanding of design and governance issues in traditional cooperatives. New Generation Cooperatives (NGCs) incorporate governance mechanisms which seek to overcome the TCA problems of traditional cooperatives, but the contractual relationship between members and the cooperative generates a new set of TCA-related issues. TCA becomes less relevant to the design and governance of Learning Networks.
- The Resource-based view (RBV) is highly relevant to the analysis of alliances between cooperatives (whether traditional or NGCs) as illustrated by the TMI case. The RBV also provides the underpinning for learning networks. However, the Riverine Plains case shows that learning networks can be beneficial to members without an active and reciprocal exchange of ideas amongst members. When the network was established, “leading farmers” shared their experiences with the group as whole, but as the group matured, it appears that its main purpose has been to provide a vehicle for regionally-focussed research through government agencies. This knowledge is available equally to all members and the reciprocity of exchange between members, implied by the RBV has become less important. However, reciprocal exchange of ideas still occurs at an informal level through the networking that occurs at seminars, field days etc.
- Social networks are a key element in the formation and maintenance of inter-organisational alliances by TMI. Building and maintaining alliances is seen as an embedded competence (in the RBV sense) in TMI and included in the appointment criteria for successive CEOs. It seems likely that social networks are important in the establishment phase for all three types of cooperative.
- Trust and cooperation are seen as important for the on-going operation of the alliances established by TMI and become a basic requirement for the operation of more “open-ended” alliances such as the one with Tatuá. As far as trust between members is concerned, legal and institutional arrangements reduce both the need and opportunity for it in all three types of cooperative. (Even in the Riverine Plains case, where we would expect trust and cooperation to be fundamental, members have, in a sense, been happy to distance themselves from each other and leave the running of the network to the governing committee with the support of the two (quasi) government

representatives. However, the significance of informal networking should not be underrated).

- Related to the previous point, we speculate that there is a relationship which might be called the cooperative “law of large numbers”, which is based on the idea that, for TCA-type reasons, generating trust, cooperation and reciprocity has a cost and that this cost will increase as the size of the group increases.
- The cases bring to mind the importance of other factors we have not discussed in any detail, but are clearly significant; in particular the importance of leadership and “champions”, not only at the Board level, but also at the operational level (where committed people from government and universities can play an important role).

Table 1 provides the basis for the development of testable hypotheses. The segments of the matrix for which a particular theory is seen to be moderately to highly significant, along with the volume of previous research in this area, indicate opportunities/priorities for future research. For example, the application of the RBV and social network theory to learning networks appears to be an attractive research opportunity and there is limited prior research in this area.

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Guangzhou Buyers Preference for Premium Hawaiian Grown Product Gift Baskets

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Abstract

Guangzhou buyers' preference for premium Hawaiian grown product gift baskets with conjoint analysis was examined. Relative importance of three gift basket attributes: container type, products origin, and price were examined. Expenditure equivalent index to evaluate how much more each of the gift basket attributes is worth to the buyer was estimated. Main conclusions are: products have to be 'made in Hawaii' to receive the premium price; business buyers are generally less willing to pay a high price; and individual buyers are more willing to pay the higher priced Koa gift basket.

Keywords: Chinese survey data, conjoint analysis, buyer preference, Hawaii gift baskets

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Introduction

Government and business decision makers have been striving for the past twenty years to diversify Hawaii's economy and lessen its reliance on tourism. Moreover, the decline of plantation agriculture in Hawaii gave rise to available arable land for raising unique tropical and sub-tropical agricultural products. For example, in the next decade in Hawaii, about 75,000 acres of agricultural lands are expected to be available due to the shrinking of the sugar and pineapple industries (HRS0163D 2004). It is considered that if the fallow acres are used to grow products unique to Hawaii and export to high-end niche markets, the potential returns to farmers and processors can be significant.

Small-scale entrepreneurs in Hawaii have been investing in value-added agricultural products that are competitive in the global market. However, they face many challenges such as high input labor, materials, transportation costs, and consistent supply. Therefore, many Hawaiian entrepreneurs focused on the production of high-value, low-volume agricultural products which, cater for high-income consumers, particularly those who value the Hawaiian image. Nevertheless, small companies need assistance to explore new markets and develop new distribution channels for their diverse and small-volume products in the competitive global markets. With a USDA/FAS grant of \$75,856 for marketing Hawaiian agricultural products in China, the Hawaiian Agricultural Research Center (HARC) led the effort with collaborations from the University of Hawaii, the Hawaii State Department of Agriculture, the Farm Bureau and an independent marketing consultant to strategize how, where and what are feasible Hawaiian agricultural products to export.

Exporting to China

The Chinese market is a prime candidate for importing high-value agricultural products from Hawaii. The reasons are numerous: China, with an average annual GDP growth rate of over 8%, led the economic growth across the Asia-Pacific region in recent years. China's economic boom nurtures a new middle to upper class of consumers; about 211,000 in 2002 and 236,000 in 2003 of the country's 1.3 billion people are millionaires in US dollar terms, according to the World Wealth Report (Merrill Lynch and Capgemini 2004). Their per capita disposable income growth is also remarkable. For example, Guangzhou, a city in Southern China, is one of the Chinese cities with the high annual per capita disposable income. Figure 1 shows that Guangzhou's rural and particularly urban per-capita disposable income growth has been phenomenal in the past two decades.

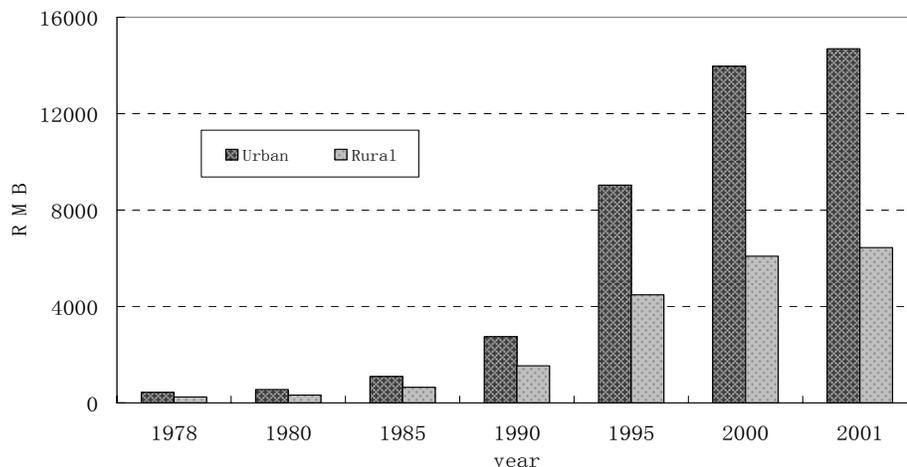


Figure 1: Rural and Urban Per capita Disposable Income in Guangzhou
 Data source: 2002 Guangzhou Statistical Yearbook

Moreover, there have been more contacts between China and the United States. Chinese are traveling more and getting more exposed to the American and Hawaiian cultures. In 2002, there were 40,000 tourists from China visiting Hawaii compared to 11,000 in 1992 (University of Hawaii 2003). Hawaii, which locates closer to Asia than mainland America and being historically influenced by the Asian culture, attracts Chinese visitors. Furthermore, the recent membership of China in the World Trade Organization (WTO) requires China to open its market for foreign trade. The mandated transparencies in public policies and trade rules facilitate increasing international trade between China and Hawaii.

Historically, practicing conspicuous consumption to impress friends and colleagues has been a Chinese tradition (Davis 2000). It is becoming more plausible with a rapid growth of per capita disposable income in China. Particular premium brands of food items, designer clothing and expensive banquets are often used by Chinese status seekers to impress their friends and colleagues to anchor social standing in high society. The trend has re-emerged particularly in the past decade thus creating a new-rich class of consumers in China. In addition, the traditional discreet consumption behavior that conveys political influence and cultural status has resurfaced. By the early and mid-1990s, the readily accessible foreign and high-quality goods at premium prices shifted the accent of the discreet consumption symbolism from purchasing expensive domestic goods to more expensive western made goods (Deloitte Consulting 2003). To take advantage of the economic growth and demand for niche products in China, HARC formed a Marketing Committee to devise a plan to market Hawaiian agricultural products to China.

In 2003, the Marketing Committee conducted a survey to test whether there is a high-end niche market in China for Hawaiian grown specialty food products packaged in a high-value container. Below are findings from the survey.

Market Survey

The Marketing Committee conducted a survey in a food exhibition in China to study buyers preference for attributes of premium Hawaiian grown product gift baskets, for instance, whether Chinese consumers would pay a higher price for products and the container, which are made in Hawaii. The Committee set up a booth, put together a few sample Hawaiian gift baskets, and conducted interviews with attendants of the 3rd International Food, Drink, Supermarket, Hotel, Restaurant and Food Service Exhibition held in June 23-25, 2004 in Guangzhou. This is an annual event where wholesalers and retailers of high-end food products attend. The choice of site was decided after consultations with various exporting entities in Hawaii including the Department of Business, Economic Development and Tourism (DBEDT), and the United States Agricultural Trade Office in Hong Kong and Guangzhou, China.

The Marketing Committee collected sample products from Hawaiian specialty food producers suggested by the Hawaii Department of Agriculture. Among the group of producers, the Marketing Committee identified those who were interested in exporting their products to China and were willing to supply the project with product samples. The Committee then selected three different gift containers and a variety of food samples from those supplied by the group of producers emphasizing the products are grown in Hawaii and the suppliers are small entrepreneurs.

For the survey, the Committee chose three sample containers, of which two were made of material from Hawaii, Koa and Protea. Koa is only grown in Hawaii and is a very costly material. Protea is grown in Hawaii and elsewhere and is world famous for its many colorful varieties. The third container was a bamboo basket, which in most cases is made outside of Hawaii. The mix of sample food products included chocolate coated macadamia nuts, coffee, tea, raw sugar, honey, macadamia oils, vanilla extracts and beans, chocolate coated coffee beans, macadamia rum cake, and tropical fruit jams.

Data Collection

In the 3rd International Food, Drink, Supermarket, Hotel, Restaurant and Food Service Exhibition in Guangzhou, the Marketing Committee trained a group of student researchers to conduct face-to-face interviews with attendants to collect data on buyer preference. The student researchers were chosen from the South China Agricultural University, Guangzhou, China.

Student researchers selected exhibition attendants to respond to the questionnaire by random sampling. The researchers first described to the attendants the purpose of the research, the voluntary participation and confidentiality nature of individual results. If the attendants agreed to respond, they were exposed to photographs and

description of 12 different sample gift baskets as shown in Figure 2. After the respondents were familiar with the gift baskets, they were asked a list of questions on the respondents' background and preference on gift baskets.



Figure 2: Sample of Gift Baskets Shown to Respondents

The survey questions on buyer preference followed an established data gathering method for conjoint analysis. Respondents were asked to rate their preference on gift basket profiles based on different container and other product attributes and their levels. (Green and Srinivasan 1978, Green and Wind 1975, Cattin and Wittink 1982). The three attributes differentiating the baskets were price, container type, and product origin. The range of the gift basket price was estimated by summing the wholesale price of the container and food products, and transportation cost from Hawaii to Guangzhou through Federal Express. The food products put in each basket and the transportation cost for each basket were the same, thus the difference in price among gift baskets was the container price.

The selected gift baskets' attributes and attribute levels are presented in Table 1:

Table 1: Gift Basket Attribute and their Levels

Basket Attributes	Attribute Levels
Price	800 RMB
	1,200 RMB
	2,800 RMB
Container Type	Koa
	Protea
	Bamboo
Origin	Made in Hawaii
	Not Made in Hawaii

Since there were three price levels, three types of containers and two options for origin, there were theoretically 18 possible combinations of product profiles. However, there were some constraints, which reduced the possible combinations to 12, for example, Koa containers were only made in Hawaii; Koa and Protea baskets would not be sold for less than 800 RMB. The final selected profiles used for evaluation by respondents are shown in Table 2. The actual gift baskets were displayed at the exhibition booth for the respondents to examine. The respondents then rated their order of preference of the gift basket profile: one being the least preferred and ten the most preferred.

Table 2: Gift Baskets Profiles Evaluated by Respondents

Profile number	Price (RMB)	Container Type	Origin
1	1,200	Koa	Made in Hawaii
2	2,800	Koa	Made in Hawaii
3	1,200	Protea	Not Made in Hawaii
4	2,800	Protea	Not Made in Hawaii
5	1,200	Protea	Made in Hawaii
6	2,800	Protea	Made in Hawaii
7	800	Bamboo	Not Made in Hawaii
8	1,200	Bamboo	Not Made in Hawaii
9	2,800	Bamboo	Not Made in Hawaii
10	800	Bamboo	Made in Hawaii
11	1,200	Bamboo	Made in Hawaii
12	2,800	Bamboo	Made in Hawaii

Survey Results

164 surveys were completed during the three-day exhibition. Of the 164 surveys, 119 were responded by business representatives and 45 by individuals so classified as their firms do not buy those particular food products or they are simply attendees. As the two groups of respondents are assumed to state different buying patterns, results of business respondents and individual respondents were analyzed separately and compared.

Table 3 shows the profile of business respondents: the majority of them were small national traders in food wholesale, retail and service industries. Over 40 percent of the businesses were engaged in food wholesale business, 30 percent in food retail business and 17 percent in food service business. 97 percent of the business respondents focused on national trade only. Over 80 percent of them represented companies with 20 or less employees. 76 percent of the business respondents worked for companies with an annual sales turnover of 10 million RMB or less.

Table 3: Profile of the Business Respondents

Business Type	%	Location	%	Employees	%	Annual Gross Sales	%
Wholesale	43.0%	Specific city in China	34.8%	1 to 5	37.8%	< 2 Million RMB	33.0%
Retail	30.1%	Specific region in China	45.7%	6 to 20	45.6%	2-10 Million RMB	43.2%
Food Service	17.2%	All of China	16.3%	21 to 50	7.8%	10-20 Million RMB	12.5%
Other	9.7%	International	3.3%	> 50	8.9%	> 20 Million RMB	11.4%

Table 4 shows the socio-demographic profile of the individual respondents. Most respondents were young educated individuals engaged in trade, management and sales and personnel services. 55 percent were male respondents. Over 50 percent of the respondents were between the ages of 20 to 29. Most individuals have household members between 3 and 4. And 77 percent of the respondents have some tertiary or completed tertiary education.

Table 4: Socio-demographic Profile of the Individual Respondents

Gender	%	Age	%	Household Members	%	Education Level	%	Occupation	%
Female	44.8	< 19	3.0	1	4.5	Finished secondary School	14.5	Professional	12.1
Male	55.2	20-24	28.4	2	6.0	Some tertiary Education	45.2	Trading	28.8
		25-29	29.9	3	34.3	Tertiary educated	32.3	Management	19.7
		30-34	17.9	4	41.8	Completed some post-graduate school	4.8	Sales and personal services	22.7
		35-39	10.4	5	6.0	Other	3.2	Clerical	4.5
		40-49	9.0	6	6.0			Homemaker	0.0
		50-59	1.5	7	0.0			Laborers and workers	1.5
		60-69	0.0	8	1.5			Plant and machine operator	0.0
		70 >	0.0	9	0.0			Self-employed	3.0
								Retired	1.5
								Other	6.1

Specification and Estimation in Conjoint Analysis

Stated preference model¹ is used to estimate the importance of food basket attributes from respondents' stated preferences through their ratings of the sample product profiles. Conjoint analysis assumes that each respondent makes one's choices to maximize utilities, which can be measured by preference rating (R). This study assumes that the preference rating is a function of the product attributes such as: types of container (C)² container origin (G), and purchase price (P):

$$1) R = f(C_1, C_2, G, P)$$

Where:

- R = preference rating given to hypothetical food gift baskets by survey respondent
- C1 = container made with Koa wood or not
- C2 = container made with Protea material or not
- G = container origin (made in Hawaii or not)
- P = purchase price (800 RMB, 1,200 RMB and 2,800 RMB)

The preference rating can be expressed in terms of utility. If U^0 is the utility level of the least preferred choice and U^* is the utility level of the most preferred choice, then the relationship between utility (U) and preference rating (R) can be presented as follows:

$$2) R = (10 - 1) \frac{U - U^0}{U^* - U^0} + 1$$

Qualitative attributes generally are presented by 'part-worth' or dummy variable specification in marketing studies (Halbrendt et al. 1995). In this case, qualitative attributes are types of container and product origin.

Stated preference model data derived from the conjoint model are excellent for describing hypothetical or virtual decision contexts such as one of this study's profile of premium specialty foods in a Koa wood basket. The model also can include existing and/or proposed and/or generic choice profile such as the bamboo basket with Hawaiian food products. Also, the data are especially rich in attributes tradeoff information. Finally, another merit for using stated preference model is that it yields multiple observations per respondent at each observation point. Two major limitations for using stated preference models are the reliability of the responses and the attributes interactive effects. Responses are more reliable when respondents understand, are committed to and can respond to the tasks. Face-to-

¹ Since the Hawaiian gift basket is new product concept that consumers are not currently purchasing, the stated preference model result could be interpreted as likelihood of purchase (intention to buy).

² Two dummy variables (C_1, C_2) are used to specify the types of container attribute

face interviews which this study used intended to offset the potential limitation. Although main attribute effects are of primary interest in practical applications of state preference methods which typically, the main effects already account for over 70 to 90 percent of the explained variations, but they are not the only effects that may be of interest. In particular, two-way interaction effects frequently are of theoretical interests and without them may under and over predict the model (Louviere, Hensher and Swait 2000). This study did not include any interactive terms between the qualitative attributes as they are not logical. For example, Koa wood could not grow outside of Hawaii and it would be meaningless to interact with the container origin attribute. A linear functional form is selected for the purchase price as the squared-term of the price variable was not significant.

Least square method is used as our dependent variable as preference rating is interpreted as metric (interval scale) variable. Furthermore, the weighted least square approach is used to estimate the model because of within-respondent correlation problem (Grizzle, Starmer and Koch 1969). Since each respondent was asked to rate multiple product profiles in the survey, the ratings given by the same respondent were likely to be correlated. Such possible correlation is taken into account in the estimation by using the weighted least square estimator. Two models were estimated, one for business respondents and another one for individual respondents.

Estimation Results

Table 5 shows the mean preference ratings for the 12 sample products along with their standard errors and standard deviations.

Table 5: Statistical Description of Respondents' Ratings

Rating	Individual Respondents	Business Respondents
Mean	5.210	5.174
Standard Error	3.067	3.147
Standard Deviation	3.069	3.148

Businesses rated profile #1 (Koa basket, made in Hawaii at 1,200RMB) the best, followed by #5 (Protea basket, made in Hawaii at 1,200RMB) and then #10 (Bamboo basket, made in Hawaii at 800RMB). Individuals rated profile #1 the best followed by profiles #2 (Koa basket, made in Hawaii at 2,800 RMB) and profile #5 (Protea basket, made in Hawaii at 1,200RMB) (See Table 2). Business buyers are less willing to pay higher than 1,200 RMB, while individuals are willing to pay more for the Koa baskets than businesses. In all of the above situations, all of the top three gift baskets preferences are 'made in Hawaii'.

For the least preferred basket profiles, business respondents rated profile #9 (Bamboo basket, not made in Hawaii at 2,800RMB) as the least preferred, followed by #4 (Protea basket, not made in Hawaii at 2,800RMB) and #8 (Bamboo basket, not made in Hawaii at 1,200RMB). These three baskets were not Hawaiian made. In addition, the results showed that business respondents were less willing to pay a higher price of 2,800 RMB for a container, which was not made of Koa wood. They were also less willing to pay 1,200RMB for a Bamboo basket not made in Hawaii.

Individual respondents also rated profile #9 as the least preferred followed by profile #4, but they rated profile #6 (Protea basket, made in Hawaii at 2,800RMB) to be the third least preferred basket, which was different from business respondents. Individual respondents also preferred products made in Hawaii; however, they were less willing to pay 2,800 RMB for a Protea container even though it was made in Hawaii. It seems that individual buyers are willing to pay for the premium quality gift basket or get the cheaper one.

Model parameters estimated by weighted least square approach are reported in Table 6. The estimated parameters of both the business group and individual group are all significant at the 0.01 level. The sign of the parameters were as expected: positive for the Koa and Protea containers when compared with bamboo containers; positive for gift baskets made in Hawaii versus not made in Hawaii; and negative for price which is consistent with consumer price theory. When comparing the relative effect of the different explanatory variables (types of container and price) on the basket preference rating between the business group and the individual group, the individual group placed a higher weight on Koa container (1.9 vs. 1.2); while the business group placed a higher weight on price (-.0008 vs. -.0006).

Table 6: Estimated Conjoint Model Parameters

Variable	Estimate	
	<i>Business Group</i>	<i>Individual Group</i>
Intercept	5.6105 (0.238)	5.4177 (0.267)
Koa Container (C1)	1.2884 (0.278)	1.9096 (0.314)
Protea Container (C2)	0.7622 (0.208)	0.6332 (0.233)
Hawaii Origin (G)	0.8294 (0.199)	0.7177 (0.223)
Price (P)	-0.0008 (0.000)	-0.0006 (0.000)
WLS Estimate	Obs. = 1109	Obs. = 823
R-Square	0.081	0.095
Adj R-Sq	0.078	0.091

Note: All results are significant at the 0.01 level. The values in the bracket are standard error.

Relative Importance (RI) of Gift Basket Attributes

Marketing representatives and managers are interested in which features of their products attract their consumers. Measuring the relative importance of different basket attributes is a way to examine buyers preference. In this case, the RI of four gift basket attributes, Koa Container (C1), Protea Container (C2), Hawaii Origin (G), and price (P) level, are examined separately for the business group and the individual group. The methodology of estimating the RI is detailed in the article by Halbrendt, Wang, Fraiz and O’Dierno (1995).

The formula for estimating relative importance is as follows:

$$3) RI_i = 100 \times \frac{UR_i}{\sum_{j=1}^n UR_j}$$

Where RI_i is the relative importance of attribute i , UR_i is the utility range of attribute i .

The RI estimation results suggest that price is very important in their decisions for the business group (35%). The next most important attribute is the Koa container (29%), followed by the Hawaiian origin attribute (19%), and then Protea container (17%). For the individual group, however, Koa container is the most valued attribute (42%), followed by price (28%), the Hawaiian origin attribute (16%), while the least valued attribute is Protea container with an importance value of 14%. The results are presented in Table 7.

Table 7: Estimated Relative Importance (RI) in percent

Basket Attributes		Business Group	Individual Group
		RI	RI
Koa Container	(C1)	29.1	42.1
Protea Container	(C2)	17.2	14.0
Hawaii Origin	(G)	18.8	15.8
Price	(P)	34.8	28.2
Total		100	100

The results suggest that businesses make their decisions more so on prices while individual consumers placed more value on containers made of Koa wood. This discrepancy shows that businesses have a different perception of what their consumers want. It is likely because businesses would add a profit margin to the wholesale price and they considered that the retail price after profit might be higher than their customers could bear.

Basket Attributes Quality and Expenditure Equivalent Index (EEI)

Further to the relative importance of gift basket attributes, tradeoffs between the attributes are examined. The tradeoff depends on the change in quality that has occurred as a result of a change in the attribute. For example, if the type of container was changed from Koa to Protea, how much the consumer is willing and able to pay, keeping utility constant?

Based on equation 4 and a set of assumptions of utility functions such as separability, Payson developed an expenditure-equivalent index (EEI) of quality change:

$$4) EEI_j = 1 - \frac{\sum_{i=1}^k \beta_i dc_i}{\gamma p}$$

Where β_i is the estimated parameter for the i th attribute, dc_i is the change in the i th attribute level, γ is the estimated parameter of purchase price, and p is the base price level.

EEI can be interpreted as the proportional change in product price with respect to the change in product attribute level, which is necessary for the consumer to be indifferent with a reference gift basket profile.

The gift basket with the lowest mean rating was selected as the reference profile for analysis. The reference profile is a bamboo basket, not made in Hawaii with a price of 2,800 RMB (product profile #9). For the analysis, the EEI for the reference gift basket profile is equal to one since the second term in equation (4) equals zero for this profile. The EEI for all other gift basket profiles compared to the reference profile is shown in Table 8. For example, the EEI of 2.47 for the individual buyer indicates that an individual is willing to pay 2.47 times more for a gift basket made out of Koa wood with products made in Hawaii, which is equivalent to 6,918 RMB.

Table 8: Estimated Expenditure Equivalent Index (EEI)

Price	Koa Container	Protea Container	Hawaii Origin	Business Group	Individual Group
				EEI	EEI
	1	0	1	1.98	2.47
	0	1	1	1.74	1.75
	0	0	1	1.38	1.40
	0	1	0	1.35	1.35
2,800	0	0	0	1.00	1.00

Concluding Remarks and Implications for Potential Exporters

This study sets out to find which product profiles Guangzhou buyers most preferred, the relative importance of gift basket attributes, and the expenditure equivalent index to evaluate what buyers are willing to pay more in comparison to the reference basket. The main conclusions of this study are: containers have to be made of Koa wood and products made in Hawaii in order to ask buyers to pay the premium price. The comparison of results between business buyers and individual buyers shows that business buyers are generally less willing to pay a high price for any gift baskets; while individual buyers are more willing to pay the higher priced Koa gift basket. The results also showed that individual buyers are willing to pay over 6,900 yuan for the most preferred gift basket. Factoring in the high import tariffs and VAT taxes in China (15-30% and 17% respectively), the net returns to Hawaiian entrepreneurs are quite attractive. Based on the results of this study, one can conclude that there is a new-rich class of consumers who possibly exhibits the conspicuous and discreet consumption behavior in China that will purchase the premium Hawaiian gift basket. An important implication for the Marketing Committee is that the study confirms that there is a market in Guangzhou for the premium Hawaiian grown gift basket. Through the course of this project, the authors have acquired extensive trade related experience and knowledge which can be shared with small specialty food exporters who want to profitably sell to China—an emerging market:

First, the results of the study show there is a potential niche market in China for premium specialty food baskets for holidays and special occasions such as Christmas, Chinese New Year, Valentine's Day, and the Moon Festival.

Second, there is definitely a need to educate Chinese consumers through marketing promotions on uniqueness and high quality premium products in order to expect the Chinese to pay a premium price.

Third, in order to charge a premium price, there is a need to develop a brand identity promoting Hawaiian grown food baskets that differentiates it from competitors. When someone eats the food it makes one think of what a special place Hawaii is, with the sun, pristine beaches and waters (Briggs, 2001).

Fourth, one must use local advertising and media firms to help promote the products since they can assist in translating and advising in marketing matters such as logos, slogans, and colors which are appropriate to the local culture. For example, this project used a beige ribbon made of coarse jute to tie the basket. Although this is suitable in the United States; in China, it is taboo since one of the uses of this material is in making special garments which relatives wear to funerals.

Fifth, to successfully distribute any products to China where written and signed contractual agreements for marketing services are the exception rather than the rule, the exporter must secure the services of a reliable agent/distributor. Exporters can accomplish this by consulting with their country's Agricultural Trade Office (ATO) in China. Generally, the ATO office has a list of recommended businesses that exporters can feel secure working with. Finally, the costs of doing business in China vary due to the wide range of import duties for different food products and the fluctuating exchange rate. One way to deal with exchange rate fluctuations is to pay a local agent's fees in Chinese RMB. Exporters can save the cost of currency exchanges paid for imported goods in both foreign and local currencies by negotiating with their distributors. The latter two insights came from the recent experiences of the authors trying to negotiate with a distributor to market the gift basket in China.

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The Amadori Group: Free-Range Chicken and the Impact of Avian Flu¹

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Abstract

Amadori is one of three large commercial producers of chickens in Italy and the only commercial producer of free-range chickens. The threat of the avian flu virus poses a challenge to Amadori because of the possibility that authorities may order all birds to be kept indoors. The crux of the case is to identify and analyze alternatives that Amadori should consider for its line of free-range Il Campese chickens in response to an avian flu virus outbreak.

Keywords: avian flu, poultry

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IAMA Agribusiness Case 9.4.A

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Introduction

In June of 2006, Francesco Amadori, the President of Amadori Group, sat in his office and pondered the impact that avian flu may have on his company². The company that he founded with his brothers in the 1950s had been very successful and had exhibited steady growth. However, the threat of avian flu had not only hurt sales, but it also threatened one of their most recent and promising product introductions, the Il Campese brand of free-range chickens, positioned at the absolute pinnacle of the company product portfolio.

The threat of avian flu had a chilling effect on poultry sales throughout Europe, even though there was no danger of virus transmission to humans from eating poultry that was properly raised and cooked. However, the damage to the free-range poultry industry was potentially devastating as one of the key measures used by governments in order to minimize the spread of the virus was to isolate poultry in buildings, thereby minimizing the chance that they would be infected by migratory birds, the most likely carriers of the virus. How could Amadori continue to market Il Campese chickens as free-range if the local health authorities ordered the birds to be raised entirely indoors?

Italian Chicken Industry

The Italian chicken industry is dominated by vertically integrated producers. The great majority of chicken (broiler) production takes place in the “commercial” chain (93%), with the balance occurring in the “rural” chain (7%). The “commercial” chain is best described as producing chicken meat, whereas the “rural” chain produces live birds. The “commercial” chain is characterized by an integrated process including genetics (breeding), incubation, feed production, growing, slaughtering, processing, packaging, and distribution. Growing takes place either in company-owned facilities or is coordinated by contract with independent farmers. Producers in the “rural” chain are typically small farmers who buy most of their inputs and market the birds in local markets.

Italian producers take pride in their achievements. Over the last several decades the industry has shown substantial growth and has achieved international recognition for the high quality of the product. Furthermore, poultry is the only meat product in which Italy has attained self-sufficiency. In 2005, imports (all frozen product) accounted for only about 3% of total consumption, by weight. Approximately 14% of poultry production, by weight, was exported. This figure,

² Much of the information contained in this case was obtained from Amadori’s public website (Amadori). Many of the quotations have been translated from Italian to English. Additional information was obtained from personal communication with one of Amadori’s employees.

high by historical standards, reflects unusual conditions in the latter part of 2005 when producers were forced to sell abroad what could not be sold domestically due to the severe drop in demand following the avian flu scare. Historically, Italian chicken exports represent 5 to 6% of production, by weight.

In 2005, the commercial Italian broiler market produced about 670 thousand metric tons of broilers, with approximately 97% marketed as fresh product. The market is highly concentrated among three major producers. Veronesi produced approximately 300 thousand metric tons, followed by Amadori and Arena, with 200 and 140 thousand metric tons, respectively.

The market for broiler meat is increasingly for meats and further processed products. In 1985, 45% of broilers were sold whole, 52% were sold as parts, and 3% were further processed. By 2005, only 16% of broilers were sold whole, and 65% and 19% were sold as parts and further processed products, respectively.

Per capita consumption of chicken in Italy grew until 2001 (exhibit 1). Since that time, per capita consumption has fallen and it is projected to continue to decline in 2006 because of consumer fear surrounding the avian flu virus. Poultry consumption as a percent of total meat consumption has been relatively stable at 23% over the last 40 years.

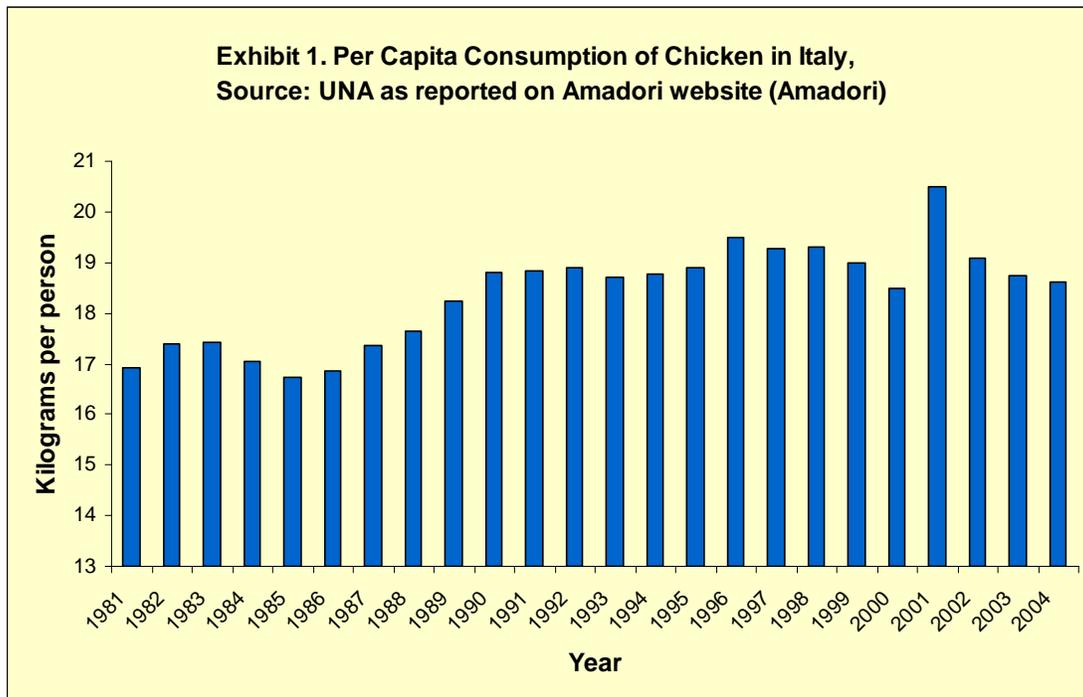


Figure 1: Per Capita Consumption of Chicken in Italy

In 2005, the value of poultry production was €1.45 billion (10% of the value of total livestock production) and egg production was valued at €0.92 billion (7%).

Production is concentrated in Northeastern Italy, with Veneto accounting for 43% of Italian poultry production, followed by Emilia-Romagna and Lombardia with 28% and 10% of production, respectively.

More than 75% of the cost of production of a broiler is due to feed cost (56%) and chick cost (20%). Labor and energy each account for 5%, with amortization at 4%, health costs at 3% and interest at 2%. Other miscellaneous costs account for the remaining 5% of the average 2002-2004 production cost of €2.16 per bird (Corradini and Montanari).

2005 opened as a balanced year ... until August. Then avian flu fear hit, fueled by what many industry observers considered to be media hysteria. The tension built until the discovery of the first positive identification of avian flu in migratory birds in Italy in February 2006. Over this period, domestic consumption dropped from 29.5 million broilers per month to 15.4 million. The industry reacted initially by cutting production by about 1 million broilers/month, increasing exports by 40% to 6 million broilers per month, and freezing excess production. During the September to December period, approximately 31% of total broiler production remained unsold and in storage. When the available refrigerated storage space was filled, all current production had to be sold immediately, causing an average price drop of 30.5%. Careful calculations of industry losses for the 2005 year indicate a total of approximately €358 million. Total losses for the September to December 2005 period reached €158 million, and totaled €378 million for the first quarter of 2006.

The supply chain for commercial broiler production is highly integrated. The large commercial producers control the genetic stock, i.e. the stock of hens and roosters used to produce the chicks that will be raised for broiler production. They operate their own hatcheries and produce their own feed using formulations that are carefully controlled for optimal weight gain. Broilers are raised in carefully controlled environments. Most broilers are raised indoors in enclosed buildings with equipment that automatically provides feed and water to the birds. Many commercial growers use contract growers to raise the birds. Contract growers typically receive the young chicks from the producer and raise them according to detailed specifications. Once the broiler reaches the desired weight, it is transported to the slaughterhouse where it will be slaughtered, packaged, labeled, and prepared for distribution.

The large commercial producers control their primary and secondary distribution networks in order to ensure timely delivery of fresh product to the retail and foodservice accounts. Refrigerated trucks make daily deliveries of product to regional distribution centers, which in turn deliver product directly to retail accounts, foodservice, wholesalers, and supermarket distribution centers.

A relatively small percentage of broilers grown by commercial producers are raised as free-range chickens. Although official statistics are not readily available, industry experts indicate that the market for free-range chickens likely constitutes less than 5% of the domestic market. This premium segment is a recent development for the industry, and is evidence of the continuous search for higher quality products. Amadori is the only commercial producer active in this segment of the market.

Major competitors

Veronesi Finanziaria S.p.A. is the largest producer of poultry in Italy and the third largest producer in Europe. Veronesi participates in several agribusiness segments, primarily related to animal and feed production and processing. In 2004 it had approximately 6400 employees and €1.7 billion in sales. Poultry products are produced by the subsidiary AIA, which was started in 1968. Veronesi's four brands are Palladio, COK, Pavo, and Ovo Mattino. In 2005, AIA produced and processed a total of 300 thousand metric tons of chicken and 200 thousand metric tons of turkey, distributed as fresh, frozen, or processed products. They do not compete in the market for free-range chickens. AIA also produces 1.2 million eggs per year, which are distributed directly to wholesalers and retailers. As the industry leader in the poultry sector, their business strategy is based on quality, distribution, and attention to consumer needs. Veronesi's distribution network utilizes more than 500 refrigerated trucks to transport product from their 27 subsidiaries to their 18 distribution centers in Italy. From these centers, approximately 460 trucks deliver product several times a week to the 25,000 retail outlets and large distribution centers. The Veronesi group also produces approximately 7 million rabbits, 500,000 hogs, and 30,000 head of specially bred beef cattle. Veronesi Mangimi, the first of the Veronesi companies, was founded in 1958 as a producer of animal feed. It currently produces over 2.2 million metric tons of animal feed per year.

The Arena Group is a large diversified Italian food processor. In 2003, it posted sales of over €775 million. The Fresh Food Division, the group's core business, was responsible for 54% of Arena's sales, including poultry and red meat. The other divisions, European Ice Cream Division, Frozen Food and Italian Ice Cream Division, and Cold Cuts, Dairy and Fresh Gastronomy Division, represented 27%, 14%, and 5% of sales, respectively. The Fresh Food Division markets poultry, beef, pork, and lamb products under five brands, Arena, Ruspantino, Grandi Orizzonti, Garbini, and NatuRicchi. They produce both fresh and pre-cooked products. Poultry products are advertised as being of high quality, produced using only plant products, and GMO free. Arena does not produce or sell free-range chickens.

The Italian chicken market is almost entirely supplied by Italian producers. At one time, approximately 40% of the chicken sold in Italy was imported. For years, non-EU producers took advantage of a lower import duty on salted products and

captured a significant share of the market because of their lower cost of production. However, the EU has since closed this loophole by raising the duty.

The three major commercial competitors pursue similar strategies in the chicken industry. They all invest heavily in their brands and emphasize the high quality and traceability of their products. Two factors have driven this push for quality. First, Italian consumers tend to be very discriminating in their food purchases. Second, recent concerns over food safety – the most recent one over avian flu – have led Italian producers, pushed by their industry trade association, to focus heavily on quality, safety, and traceability.

As an example, Amadori exceeds the EU requirements for traceability, and does so in a user-friendly manner. They provide online information for their fresh products, whereas the information for processed products (where the broiler meat is an ingredient) may be requested online and sent via e-mail. For processed products, the current requirement is that the country of production must be provided, whereas Amadori provides traceability back to the actual location where the broiler was raised.

The impact of the EU closing the trade loophole and consumer concern for avian flu has been a stagnant market dominated by branded chicken products produced principally by domestic producers. Unbranded, commodity-like broilers may still be found, although these birds, which are mostly sold whole, represent a very small proportion of production. Despite the emphasis on quality by all of the major competitors, no producer has been able to substantially differentiate itself from its competitors and charge a significant premium for its products. Rather than being a differentiating feature, a high quality product is expected of any market participant.

The Amadori Company

The Amadori company has its origins in the 1930s when Ondina and Agostino Amadori began to raise poultry on a commercial basis with their sons Francesco, Arnaldo, and Adelmo. In the mid-1950s, Francesco and Arnaldo started their own chicken farms. The success of these farms led them to grow, increasing the number of farms, and production. In the 1960s, the Amadoris opened a feed mill, hatchery, and slaughterhouse. The 1970s were a period of growth for the company. They began to raise free-range chickens, established a nationwide distribution system, and opened a second slaughterhouse. In the 1980s the company continued to grow, adding value-added poultry products to its product line and initiating advertising campaigns. By the 1990s the Amadori Group had expanded its line of products to include pork, sausages, breaded products, and other protein products. Sales of value-added products fueled much of its growth.

The Amadori Group is the second largest poultry producer in Italy. In 2004, it had sales of €645 million. Amadori employs approximately 5,500 people. It has 20 plants including 5 feed mills, 6 hatcheries, 6 slaughterhouses, and 3 production plants and over 30 subsidiaries. Exhibits 2 and 3 provide information on Amadori poultry production and sales.

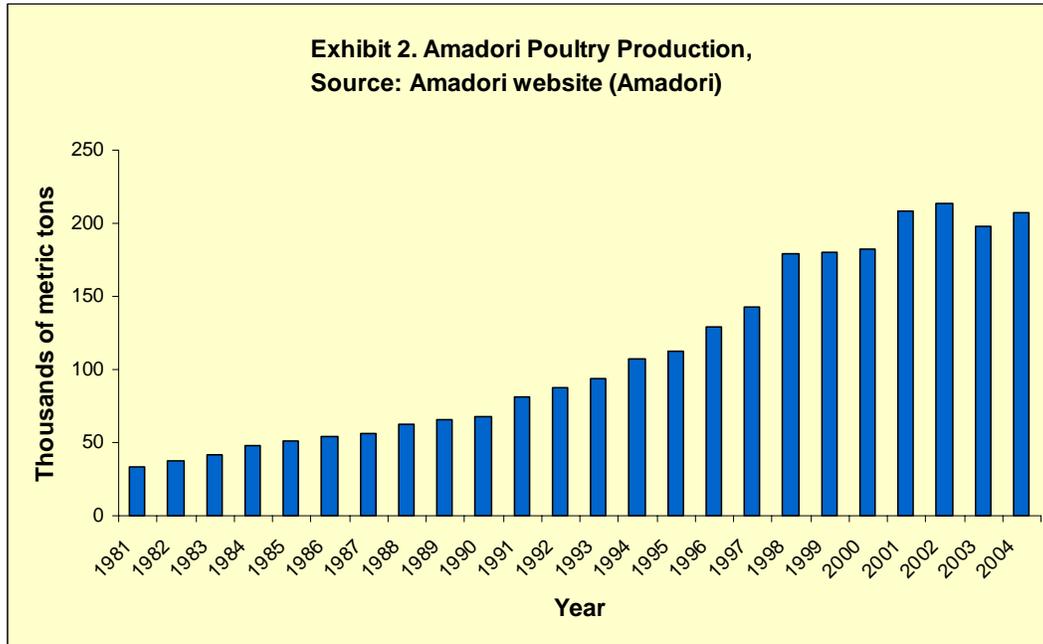


Figure 2: Amadori Poultry Production

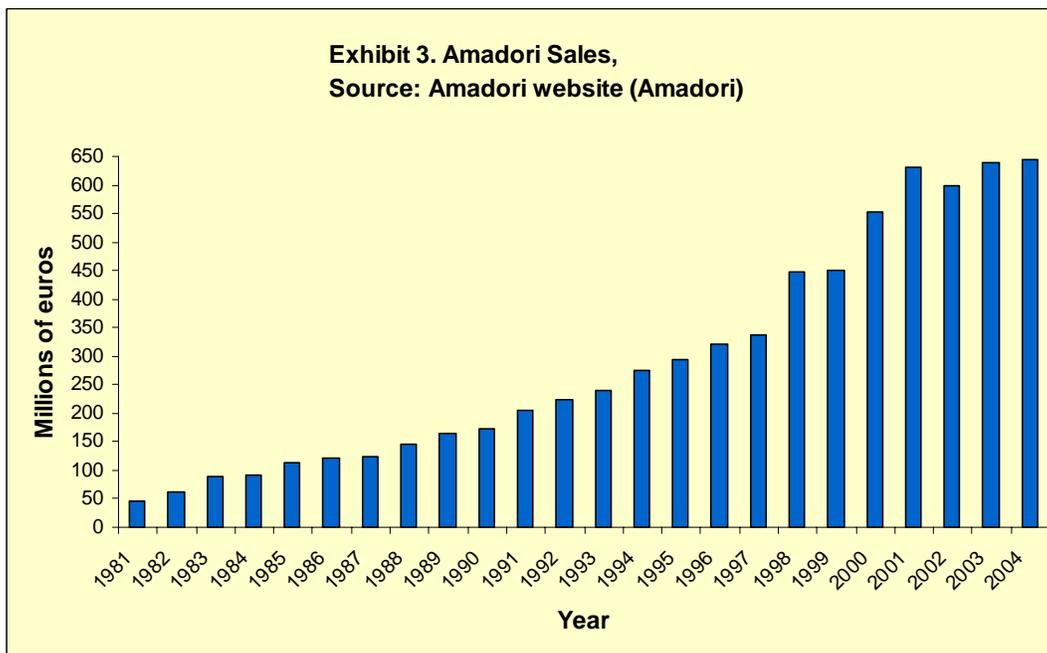


Figure 3: Amadori Sales

Amadori considers its products to be “well rooted in tradition and innovation.” Their positioning in the market is built on the high quality profile of their broiler products and their recent expansion in other “white” meats. Indeed, they pride themselves on being the “Italian innovative company” and a “reference point for meat-based dishes.” They state that they have a large team and that “with passion and experience we develop innovative meat-based delicatessen solutions. Our work is to secure food safety, transparency and trust” (Pippi, translated).

Their ambitious positioning objective is to emphasize Amadori’s roots in the socio-economic and cultural reality of their land, as well as its family traditions. These values are stressed in all advertising by the company, always featuring Francesco Amadori. This loyalty to the Italian culinary tradition is completed by an awareness of modern needs and lifestyles, and of modern nutritional and dietary requirements. The resulting products offer freshness and quality, are versatile and easy to prepare, while remaining true to traditional flavors and Italian tradition. Amadori’s product portfolio is rich, ranging from fresh poultry meats to processed poultry and pork products that are table-ready in 10 minutes.

In 2001, Amadori launched a line of products called 10+. The purpose of this line was to assure consumers that 10+ poultry products were “completely safe and wholesome, in line with Amadori’s ethical standards.” The introduction of the line followed the BSE (mad cow) crisis, which devastated the European market for commercially-raised beef. Chickens raised under the 10+ label are raised using sophisticated production standards. They are fed a diet free of animal meals and fats, growth-promoting hormones, antibiotics, and GMOs. They are raised entirely in Italy, and meet other stringent specifications. Amadori also guarantees advanced, detailed traceability of 10+ products, exceeding the minimum requirements of recently passed legislation. Traceability results are available online for all 10+ products, and are provided by e-mail for all further processed products. This is done to “provide transparency to the system of food production and reestablish a bond of trust between producers and consumers” (Amadori).

The introduction of the 10+ line was followed in 2002 by the introduction of the “Il Campese” brand of free-range chickens. Il Campese chickens are advertised as being raised “in the open air.” While the birds are provided shelter, they have open access to the outdoors. The density of the Il Campese broilers is approximately 12 chickens per square meter indoors and 1 chicken per square meter outdoors. This compares to a density of 16 to 18 broilers per square meter for conventionally raised broilers, which are raised exclusively indoors. Il Campese chickens are selected from special breeds with reddish feathers and Amadori indicates that the meat is “characterized by longer and thinner legs and a thinner and more pointed breast.” The Il Campese brand was an instant success. Amadori currently produces approximately 80,000 Il Campese broilers per week out of a total production of 1.5 million broilers.

Amadori reports that in blind taste tests that it carried out with over 800 consumers the meat of its Il Campese chickens was preferred over traditional broiler meat by almost 75% of the respondents. Participants in the taste tests noted that the meat was firmer and more muscular and that it had a different flavor. More than 95% of the taste test participants indicated that they would purchase the product.

The production system used by Amadori is similar to the vertically integrated production system of other commercial growers. The company controls the entire process of chicken production from breeding to distribution. Approximately one-third of the chickens are raised by contract growers, with the balance being raised on Amadori's farms. Amadori also produces feed for its poultry in company-owned feed mills.

Preserving freshness is a hallmark of Amadori's distribution system. Direct delivery of chicken products using company-owned trucks is made to large accounts within 12 to 24 hours of slaughtering. Distribution through company-owned distribution centers is also normally completed within 24 hours.

The Amadori line of products is highly promoted. All of the products are branded with the Amadori *Passione di Famiglia* (Family Passion) label. Amadori advertising focuses on the family-based traditions of the firm. Recent advertising campaigns have focused on the high quality of the products and the introduction of the 10+ product line. The commercials end with the familiar "Francesco Amadori's word."

Avian Flu Events

The H5N1 avian influenza virus is a highly pathogenic virus that has become commonly known as avian (or bird) flu. Table 1 contains some of the key events reported in the form of a timeline.

The EU has enacted regulations designed to stop the spread of avian flu from wild birds to domestic birds and among domestic birds (European Union). These regulations include the mandatory culling and destruction of any poultry confirmed to be infected with the H5N1 avian flu virus. Furthermore, all eggs and poultry products from infected birds must be destroyed. The meat from any birds that were slaughtered during the incubation period of the virus must be traced and destroyed.

The current EU regulations make little distinction between actions to be taken in the protection zones and surveillance zones. In the case of a suspected or confirmed case of highly pathogenic H5N1 avian flu in wild birds, EU members must establish a protection zone of 3 kilometers and a surveillance zone of 10 kilometers around the area. In both zones, all poultry and captive birds must be kept indoors, on-farm biosecurity measures must be applied, the movement of poultry and other captive

birds within and from the zones must be restricted and wild bird hunting and assembly of birds is prohibited. In the case of a suspected or confirmed outbreak of highly pathogenic H5N1 avian flu in domestic poultry the EU mandates that a 3 kilometer protection zone and a 10 kilometer surveillance zone be established. In addition to the culling of the infected birds, birds on neighboring holdings suspected of infection must be culled. All poultry is to be confined indoors in both zones.

Table 1: Timeline of H5N1 avian influenza (WHO)

1996	H5N1 virus isolated from a farmed goose in Guangdong Province, China.
1997	H5N1 outbreaks in poultry reported in Hong Kong.
1997	18 human infections of H5N1 are reported in Hong Kong (6 fatal). This is the first known occurrence of human infection.
February 2003	Two human cases (one fatal) reported in Hong Kong. The family had recently traveled to Fujian Province, China.
2003-2004	Cases of H5N1 in poultry are reported in Korea, Vietnam, Japan, Thailand, Cambodia, Laos, Indonesia, China, and Malaysia.
August 2004	Vietnam reports 3 cases of human H5N1 infection (all fatal).
September 2004	Thailand confirms a fatal case of human H5N1 infection.
December 2004	Outbreaks of H5N1 in poultry are ongoing in Indonesia, Thailand, and Vietnam, and possibly in Cambodia and Laos.
July 2005	Russia reports an outbreak of H5N1 in poultry.
August 2005	Kazakhstan reports an outbreak of H5N1 in poultry. Mongolia reports an outbreak of H5N1 in migratory birds.
October 2005	Turkey and Romania confirm H5N1 in poultry. Croatia confirms H5N1 in wild birds.
December 2005	Ukraine reports first H5N1 in domestic birds.
February and March 2006	Iraq, Nigeria, Egypt, India, Malaysia, Niger, Albania, Myanmar, Afghanistan, Israel, Pakistan, and Jordan report H5N1 in poultry. Azerbaijan, Bulgaria, Greece, Italy, Slovenia, Iran, Austria, Germany, France, Hungary, Slovakia, Bosnia-Herzegovina, Georgia, Switzerland, Serbia-Montenegro, Poland, Denmark, Sweden, and Czech Republic report H5N1 in wild birds.
February 25, 2006	France confirms first H5N1 in farmed turkeys. This marks the first case of H5N1 in domestic poultry in the EU.

EU member states are free to adopt more stringent measures in the event of an outbreak. Currently, vaccination against the disease is not recommended. Vaccination may keep birds from getting sick and dying. However, it is possible for vaccinated birds to be infectious and thereby spread the disease.

The February 2006 discovery of the H5N1 virus on a farm with 11,000 turkeys in Eastern France sent shock waves through France's poultry industry. Sales of poultry in France declined by 30 to 50 percent following the discovery. France immediately took aggressive measures in response to the arrival of the virus.

Likewise, the discovery of a case of the H5N1 virus in migratory birds in Italy triggered the recent drop in consumption and prices of poultry in Italy.

Impact of Avian Flu on Free-Range and Organic Chicken

The discovery of avian flu in domestic poultry and the resulting actions of the French government (including a requirement that all poultry must be raised exclusively inside) were particularly problematic for Bresse poultry producers. Producers in this region sell poultry under the coveted Bresse Appellation d'Origine Controlée (zone of origin). Sold at very high prices, Bresse poultry must meet strict criteria in order to be sold under the Bresse appellation. These rules include genetic purity, a strictly defined geographic area in which the chickens must be raised, and precise rules for breeding and presentation. These criteria also mandate that the chickens be raised in free-range conditions for nine weeks.

After the discovery of avian flu in the Bresse area, the Bresse poultry producers appealed to the French government for permission to vaccinate their chickens in order to keep them outdoors. This request was denied. However, the Bresse producers were allowed to keep their birds indoors without losing the "Bresse" denomination.

Following an EU decision, the Italian government recently made a similar ruling for organic poultry, which, by law, is required to be raised outside. Italian officials have ruled that in the event that health authorities order poultry inside, the Italian government will allow organic poultry in the affected areas to continue to be marketed as organic for the duration of the health threat.

Situation and Problem

Mr. Amadori was concerned about the fate of the highly successful Il Campese brand. What would happen to the brand if they were forced to bring the chickens inside? This could happen at any time at the discretion of the local or national health authorities. Such an action may be simply precautionary or in response to a reported or confirmed case of avian flu in domestic or wild birds. Furthermore,

because the Il Campese chickens are raised in several locations, an order to raise poultry indoors may affect only a part of the Il Campese production.

He ruled out vaccinating the chickens as a way to keep the chickens outside. It was simply too expensive to vaccinate a broiler raised to maturity in two months. Another option that he considered was to seek an exemption from the Italian government that would allow him to maintain the existing label indicating that the chickens were free-range, even though the chickens may be raised exclusively indoors during all or part of their lives. Would consumers understand the rationale behind this decision or would they find it deceptive? A third option was to change the label and/or the brand. Of course, they could always stop production (temporarily or permanently) of the Il Campese chickens in response to an avian flu crisis.

Tests performed by Amadori indicate that Il Campese chickens raised inside would still be substantially different than those raised conventionally – they are a different breed, are raised with more space, and given different feed. The meat still retains a distinctive flavor, although the difference between the taste of Il Campese chickens and conventionally-raised chickens diminishes somewhat when the chickens are raised exclusively indoors.

Mr. Amadori pondered what actions his firm might take, both for the short-run and to preserve the long-term integrity of the brand, in response to an order by health authorities to keep chickens inside.

Questions

Based on the information in the case, prepare a plan for Amadori for their Il Campese brand of free-range chickens in the event that all chickens are ordered to be raised exclusively indoors for an indefinite period in response to the threat of avian flu.

1. Identify two or three alternatives that you believe Amadori should consider.
2. Provide an analysis for each of your alternatives, identifying the major implications.
3. Recommend a plan for Amadori and support your recommendation.

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