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Grant Proposal

Optimal Attributes of the Marketplace Infrastructure: Applied Analysis in Guatemala

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Dr. Lynn Kennedy

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by Carlos Ignacio García
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1.0 Abstract

The increase in population of Guatemala has positioned the marketplace infrastructure under pressure, with problems ranging from sanitization to violent events. The general objective of this research project is the comprehensive understanding of the current situation of the marketplace infrastructure; specifically, it tries to identify and corroborate the need for improvement by exploring the attitudes of consumers toward current and new marketplaces; furthermore, it will identify the optimal valuable attributes, an important aspect in the formulation of policies, strategic management plans and future arquitectural design. Given that rural economies of Guatemala depend on local marketplaces for the exchange of goods, there is a need to identify the characteristics and management styles of these markets in order to formulate policies and define their course plotting within the society and government. Building a theoretical model for developing the marketplace infrastructure has the potential of generating national competitive advantages, bringing economic growth, stronger sense of capitalism and democracy in the nation. A case study will be used to conceptualize the problematic situation of the marketplaces; it will identify attributes and its levels. Conjoint Analysis will be used on the study of preferences toward the tangible and intangible attributes of the marketplace. The projected final outcome of this research is the increase of information about the current state and expectations of the citizens pertaining to the marketplace infrastructure, such information can be used by decision makers in the process of formulating policies and planning strategies for the economic development and food chain management of the nation.

Keywords: case study research, conjoint analysis, marketplace infrastructure, economic development, national competitive advantage, strategic planning.

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2.0 Project Description

Guatemala is divided in twenty two government divisions called Departments; with four geographical zones; coastal, orient, occident and north. The population of Guatemala has grown from a density of 39 persons per square kilometer (Fletcher, 1979) to 132 persons per square kilometer (CIA, 2004). The current population of Guatemala is 12.6 million according to the estimates reported by the World Bank (2006). It has been seen that in Guatemala even more than in other developing countries, agriculture is not a homogeneous sector, three subsectors can be readily distinguished and identified; traditional agriculture, export crops and commercial agriculture, therefore the conditions underlying production demand and marketing differ sharply between the subsectors, becoming meaningful to design policies and allocation of resources to each subsector (Fletcher, 1979). Those subsectors still coexist today.

The functions of any government include the establishment of programs for materializing goals that will make its people better off for advancing the country based on competitive strategies in the global economy. Given that ambition and the current state of the marketplace infrastructure, it is highly recommended to evaluate the feasibility of developing strategic planning of the development and transformation of such infrastructure that will enhance the market exchange of goods and services in the local economies; favoring farmers, wholesalers, retailers, consumers, tourists, exporters, manufacturers, importers, and business in general. Based on the political environment is essential to delineate a theoretical model for designing the policy and its course-plotting for the achievement of such national enterprise.

Observation and intuition provides us with information that may tell us that there is a need for developing and transforming the marketplace infrastructure. At the same time, observation and intuition can tell us that a pilot marketplace can be used as a tool for education, extension, and expansion of a program that will build up the marketplace infrastructure across the markets of Guatemala. However, observation and intuition are not enough to conclude and determine that there is a need for undertaking such enterprise; as a result, it is imperative to research the existence of the need for developing and transforming the marketplace infrastructure. Consequently if a need exist, further steps will be required toward the accomplishment of a developed marketplace infrastructure in Guatemala.

The logic towards the development of the marketplace infrastructure for local economies can be seen in figure 1. In the process, it has to be recognized and evaluated the impact of a program that organizes the development and transformation. This research project is focused primarily on the recognition of the need of developing and transforming the marketplace infrastructure of Guatemala.

It is also the aim of this research project, to explore and identify the marketplace's attributes that different individuals value the most, to identify potential outcomes that this program will bring to the economy of Guatemala, to determine and conceptualize the procedure toward the development of the marketplace infrastructure, taking into consideration the course-plotting of the policy and its design.

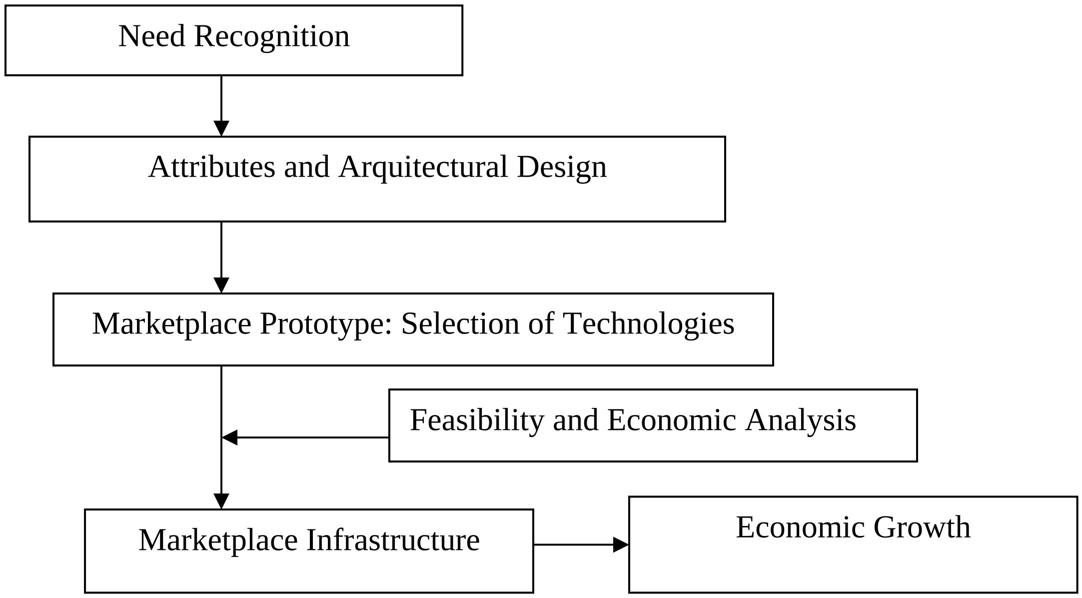

Figure 1: Flow for Developing the Marketplace Infrastructure of Guatemala.

During the last decades, Guatemala has experienced an increasing population growth, approaching 13 million people. This growth in population raise concerns about the future of the marketplace infrastructure; first, how producers market their products to consumers? And second how consumers reach the products that they want for the satisfaction of their needs? Marketplaces controlled by local governments, historically have played an important role in the economy, especially in the agricultural market. The number of sellers and consumers that interact in these marketplaces had experienced growth, but at the same time the marketplaces have been kept relatively in the same size, with same management style and policies.

In fact, these marketplaces face a series of problems in reaching their maximum goal of allowing an effective market exchange between producers, wholesalers, retailers, exporters, importers, tourists and consumers; the problems that can be observed are: waste collection, food safety and food security, violence, lack of technology, lack of extension programs and education, scaling and measures, lack of marketing orders, outdated management with policies that does not ensure an effective food chain.

Local politicians are the decision makers regarding the policies toward the marketplaces, but in the decision making procedures it seems that there is a need for knowledge and law enforcement toward an orderly marketplace that allow the marketplaces to perform their objectives.
This context appears to offer an opportunity to the country for developing and transforming the marketplaces; accepting those challenges will allow local governments to learn systematically how to manage the marketplaces and how to make the strategic planning of the marketplace infrastructure. After reaching these goals, a developed marketplace infrastructure is expected to have a positive impact on national commerce, since it will permit not only the exchange of goods but also it will stimulate consumption and production, generating growth of the economy.

Based on the perspectives presented, politicians and the society of Guatemala should debate whether or not to pursue the development and transformation of the marketplaces. Observation and intuition make us think that Guatemala in its efforts to become into a developed nation is essential to bring into reality a program that provides solutions to this national enterprise. By doing so, the nation will experience an orderly growth of the economy, increasing the proportion of people participating in the market, generating new businesses, increasing the standards of food safety, food security and living conditions accompanied with an effective food chain.

2.1 Objectives

The projected final outcome of this research project is the increase of information about the current state and expectations of the citizens of Guatemala regarding the marketplace infrastructure, such information can be used by decision makers in the formulation and implementation of policies.

The general objective is the comprehensive understanding of the current problematic of the marketplace infrastructure of Guatemala. Specifically tries to:

- Identify and corroborate the need for improvement of the marketplace infrastructure in Guatemala; by exploring the attitudes of consumers towards current and new marketplaces.
- To identify and analyze the optimal valuable attributes of the marketplace for consumers and tenants.
- To formulate a theoretical model for transforming the marketplace infrastructure in rural and urban areas of Guatemala.

2.2 Significance of Research

Given that rural economies of Guatemala depend on great part on local marketplaces for the exchange of goods from producers to consumers. There is a need to identify the characteristics and management style of these markets, in order to formulate policies and its course plotting within the society and government by means of a theoretical model that incorporates both tangible and intangible attributes. Furthermore, by developing the marketplace infrastructure of Guatemala, a national competitive advantage will be generated, bringing economic growth, stronger sense of capitalism and democracy.

The marketplace infrastructure of Guatemala allows farmers, manufacturers, wholesalers, retailers, exporters and importers of different scales, and tourists to participate in the market. Current marketplaces administered by municipal authorities, have become the nest of many problems that distort the market. Developing a marketplace infrastructure in Guatemala will facilitate and expand the exchange of goods and services, increasing the effectiveness of the food chain, increasing the standards of food security and food safety, and the conditions of living. In addition, it will have an impact in the total output of the economy since consumption, investment, and government expenditures are expected to increase.

In support of these reasons, the development of the marketplace infrastructure in Guatemala will give to all of those people having a product a place where to sell it. And for those, who want to buy, it will allow them to purchase food products in a new restructured environment. The development and transformation of the marketplace infrastructure requires a series of steps; henceforth, for the development of such infrastructure the need must be recognized and measured; after having defined such a need; and if observation and intuition is in accordance with the measures of need recognition, it will be necessary to develop a theoretical model that will facilitate the development and transformation of such infrastructure, at the same time, is necessary to design policies and to delineate their course plotting within the society and government.

2.3 Literature Review

The strategic development and transformation of the marketplace infrastructure in municipal markets of Guatemala, in terms of the physical structure and management, will provide an advantage to the country since the food chain will be more efficient. It will create a point of departure toward a modern nation by which the market exchange is enhanced, and the standards of food safety and food security are going to be improved. For bringing to reality this aspiration, it entails the formulation of a strategic plan, the policy design and course-plotting, and a theoretical model that guides this venture.

This program can be framed within the goal of ensuring the economic, environmental and social development of Guatemala, in view of that there is a need to incorporate technology, education, applied research and transfer of knowledge, as seen in figure 2, which describes the conceptual model for developing national competitive advantages.

The conceptual model starts with the establishment of a need to develop and transform a subsector of the economy; following such definition, strategic planning and policy design is needed for the subsector, taking into account holistic perspectives or/and a systematic approach for achieving a national competitive advantage able to produce economic development. The development and transformation of the marketplace infrastructure, entails the improvement of the food chain and the market exchange, supported by adoption of technology, applied research, extension and education.

The marketplace infrastructure and its management can be seen as a strategic unit of the government to impulse development in Guatemala; changes in policies and regulations could have impact on the short term, while the infrastructure per se requires a long term perspective. Glueck (1980) sees strategic planning as a process that starts with the enterprise objectives, followed by analysis and diagnosis of the environment, choice of strategy, policy implementation, organization and evaluation of the chosen strategy on course. This research project is framed within a strategic approach, since it will diagnose the environment and preferences toward attributes of the marketplace, such information then can be used for implementation of policies and organizational strategies. Strategic planning has many applications; one of them is the development of competitive advantages, refer to Porter (1998, 2004).

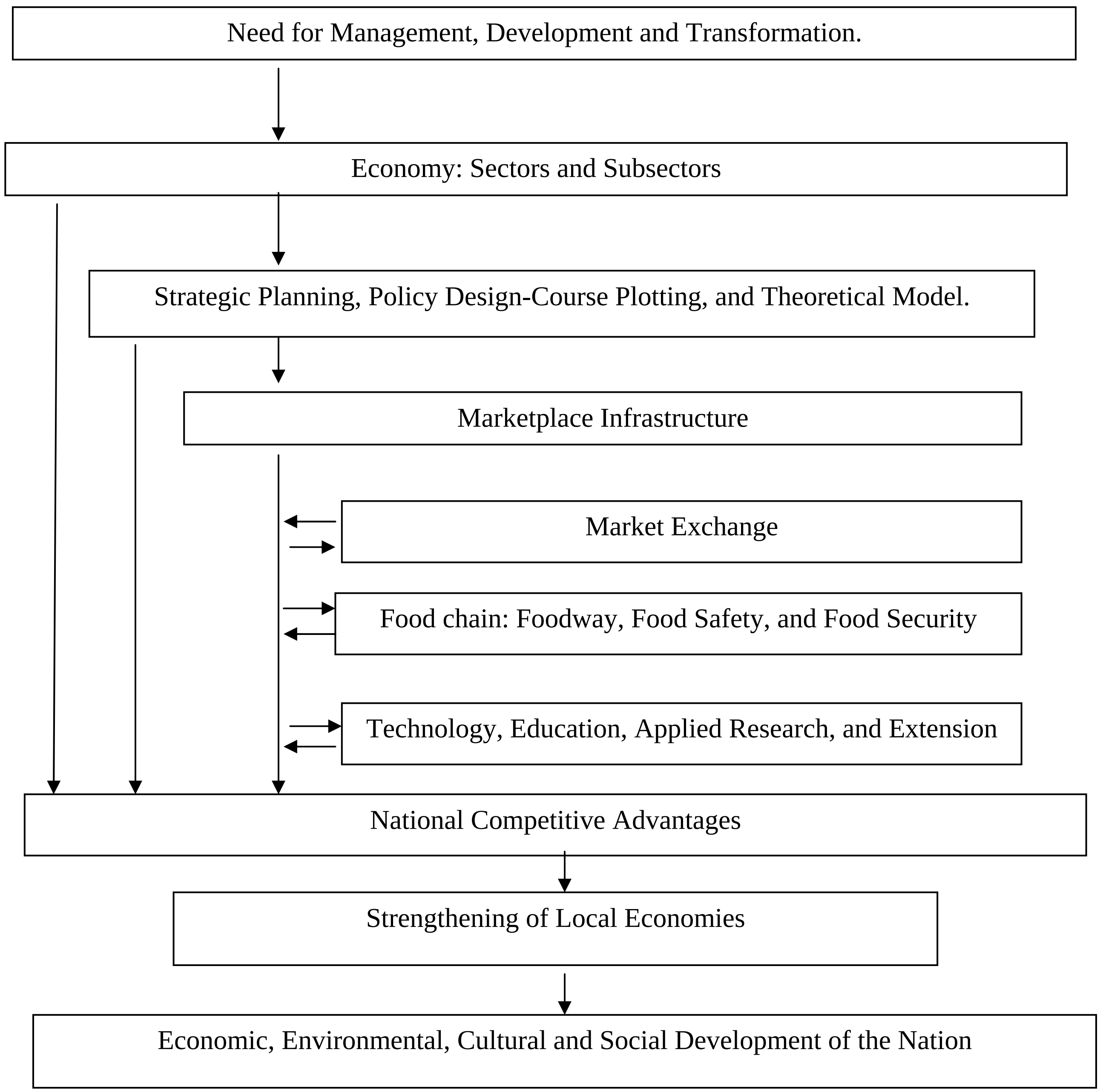

Figure 2. Conceptual Model for Development

Having envisioned the marketplace as an instrument for development, it is then imperative that the endeavor is achieved strategically by planning for the short and long term, keeping in mind that the marketplace is not only the backbone of the food marketing system but also of the nation and its future. Having a developed marketplace infrastructure it means having a national competitive advantage.

According to Khols and Uhl (1998) the food marketing system "is the collection of product channels, middlemen, and business activities involved in the physical and economic transfer of food from producers to consumers." Schaffner et al. (1998) says that the global food marketing system consists of three dimensions, the vertical dimension representing the food system from the suppliers of inputs to products to the end consumer, the horizontal dimension the different food products available in a particular market, and depth is defined as the different geographic markets that a nation can have. Thus, it can be seen that the food marketing system of a nation is formed by multiple participants, who performed different functions to accomplish a common goal, to ensure availability of high quality food products, such food products are the essence of the nutrition and therefore the health and productivity of the citizens.

The participants in the food marketing system can be seen interacting each other in the process described earlier; Kohls and Uhl (1998) see the food marketing process as flows between the components of the food marketing system, and puts the exchange activities as a component of the organizational structure of the system. Thus, the realization of the market exchange involves a continuous process that requires physical structures and intangible assets. Kohls and Uhl (1998) states that the marketing process involves functions like buying, selling, storage, transportation, processing, standardization, financing, risk bearing, and market intelligence. The functions that retailers and wholesalers perform depend upon the nature of the good, and how complex the marketing channels have evolved. Rosenbloom (1991) has described those functions, including the levels and interactions among participants in the marketing channel.

The market exchange is the process in which goods and services that posses value for the buyer are exchanged for cash; the amount of cash reflects the value of the goods. In the case of most municipal marketplaces in Guatemala, food products are exchanged for cash. The marketplaces have evolved from city designs brought to America by Spaniards, located at the center of the town, such tradition has continued. Refer to Bromley and Symanski (1974) for historical perspectives of the evolution of the marketplace trade in Latin America. Producers, retailers, and wholesalers can be seen participating on the same market. Transportation facilities ensure a constant flow of consumers. This is a brief description of the foodway observed in rural and urban Guatemala. The expansion of cities and the increase of the population in the last decade have positioned the marketplace infrastructure on tremendous stress.

The marketplace infrastructure facilitates the market exchange. The market exchange must occur constantly under ideal conditions. The market exchange must occur under safety, consumers and producers must be able to achieve their goals. The goods provided to the buyer must have grading and quality standards, and retailers and wholesalers must work under sound policies and controlled regulations.

An efficient market exchange requires effective management of the operations that occur in the marketplace infrastructure, thus, it requires control and regulation of its tangible and intangible attributes. Managing effectively the marketplace infrastructure means then that the food chain of a country is being managed successfully. As a final result, it can be said that the government controls the level of efficiency of the market exchange, controls the levels of wellbeing of its citizens and the standards of food safety and security.

Bennion and Scheule (2000) state that food safety is a judgment of the acceptability of the risk involved in eating a food; to warrantee food safety to the consumer is necessary to incorporate into manufacturing procedures Hazard Analysis and Critical Control Points, cross contamination controls, proper handling of food products, avoidance of food fermentation, food intoxication and food infection; the authors also mention that the United States Department of Agriculture in 1996 started requiring written standard operating procedures. Although the procedures mentioned by Bennion and Scheule are focused on food manufacturing, they can be applied into the marketplace infrastructure with certain variations and additions that researchers need to determine.

So far we have discussed the interaction between consumer and the marketplace. Now our focus changes to the tenants of the marketplace infrastructure. Tenants offer into the market goods and services. Retailers sell durable and non-durable goods while those who offer intangible goods can vary from agricultural consulting to medical services. The objective of tenants like any other business is to obtain profits. Therefore, understanding the determinants of profits for groups of tenants is very important since it will dictate whether or not tenants will be able to pay rents and taxes. Bowman and Narayandas (2004) states that understanding customer profitability can stimulate a stronger relationship in business-to-business markets, profitability depends on competition, company factors and customer factors.

Customer profitability is well known in the market for retail outlets, and depends basically on the economics of different sectors in the region, as stated by Mills and Hamilton (1993), each economic sector has a different rent-offer curve. The understanding of the profitability requires the understanding of the functions of retailers in the marketplace and the retail management decision process that guides their business operations.

Retailers undertake activities or perform functions that increase the value of the products and services they sell to customers, the functions are: providing and assorting of products and services, breaking bulk, holding inventory and providing services (Levy and Weitz, 1995). Profitable retailers also increase the tax base of a region.

The retail strategy indicates how the firm plans to focus its resources to accomplish its objectives. It identifies the target market toward which the retailer will direct its efforts, the nature of the merchandise and services the retailer will offer to satisfy needs of the target maket, and how the retailer will build a long tem advantage over competitors (Levy and Weitz, 1995).

The size of the retail industry of a particular market will depend upon the level of development and urbanization. Mills and Hamilton (1993) explains that urbanization in developing countries can be characterized by the level of industrialization, income, income growth, income distribution, population growth, size of the city , expansion trends, poverty levels, and the housing market. Mills and Hamilton (1993) states that a nation undergoing rapid urbanization is committed to a high level of investment in urban infrastructure, rapid growth in urban population places a heavy burden on investment funds, and of necessity, reduces the funds available for plant and equipment, as well as for agricultural modernization. Perhaps, in developing countries symbiotic relationships between the private and public sector are needed, as it has been the case in the United States, refer to Pongrakz (2003) and Reuschke (2001). Seeing the marketplace as an investment and instrument of development, it implies that the emergence of the marketplace infrastructure requires a business model, a strategic plan and a business plan, refer to Clause, et al. (2003) and Roe and Diao (2004).

The development of U.S. supermarket chain store operations in the 1950's and 1960's was spurred in part by infrastructure development; the U.S. interstate highway system and the growth of refrigerated truck transportation freed produce shippers from dependence on railroads and allowed deliveries to facilities outside central market districts. This enabled chain stores to build their own distribution centers and accommodate high-volume direct shipments from producers under central inventory control (ERS/USDA, 1998).

In real state markets is well known that appreciation and rents of a property depends upon its location. Thus, retailers must determine locations that will provided them with optimal profits. Therefore, those involved in the business of providing space to retailers must consider the location, since it will determine the retailer's profitability. Ghosh and Craig (1986) have developed a model for optimal location of network services, incorporates demand, network size, location of centers, travel distance, pricing and operating characteristics of the service. The model is an optimization algorithm subject to constraints defined in the conceptualization of the model and scenarios that are built.

Many of the most recent innovations in store formats have involved manipulation of only a few store characteristics, including (1) store size (and the accompanying impact on assortment of both food and nonfood merchandise), (2) price, (3) merchandising display techniques including cut cases and vertical merchandising, (4) location, (5) level of service, and (6) quality and assortment of fresh foods (Arnold et al., 1983).

The mentioned factors are at the retail level, and need to be aggregated when considering the marketplace as a whole. The researcher needs to differentiate between preferences in store attributes and the marketplace defined as a group of retailers under the same physical structure. Taking into consideration vending strategies, social relations among vendors, competition, the role of tourism and globalization; refer to Little (2002). In Guatemala (Fletcher, 1979) most of key marketing problems involving corn are in some way related to the lack of adequate corn storage and drying facilities, causing price variations and losses in the handling and marketing process. The decision making process of marketplace traders and consumers, and those of market officials and others responsible for marketing schedules, are poorly understood (Bromlye and Symanski, 1974).

It is empirically found that abundant resource endowment per se does not contribute to economic development, but if a government has sufficient ability to formulate and implement sound and effective policies for managing natural resources, natural resource richness is conducive to economic growth (Iimi and Ojima, 2005). Therefore, sound policies and strategic management are instruments for good governance that stimulates economic growth. The findings of Iimi and Ojima are interesting, in the sense that their recommendations can be applied to the current marketplace infrastructure, bringing results in the short term.

Availability of sites or buildings is a key factor in the attraction of new commercial activity, utilities like water, sewers and electric power have to be available, as well as adequate road access; a site does not only have to have an adequate number of acres, but also the suitable geometry. In order to ensure adequate sites, a community can take various steps. The most direct one is the public provision of sites. It can use public funds to acquire and develop sites or even a municipal industrial park. The prepared sites are then sold or leased long-term to firms which erect and operate manufacturing or other commercial buildings on them (Pongrakz, 2003). The mentioned conditions for increasing local trade in a local market of the USA, are not that different from the marketplace conditions in Guatemala; refer to Yaworsky (2006) and Sobel et al. (1998).

Three elements of the retail mix that are particularly useful for classifying retailers are the type of merchandise sold, the variety and assortment of merchandise sold, and the level of service provided to customers (Levy and Weitz, 1995). They presented the Standard Industrial Classification System for retailers, ranging from building materials sellers to eating and drinking places. In Guatemala, most of the retail categories can be seen in one single market. Though, food retailers predominate in the marketplace. The organization of food markets is being shaped by numerous trends, including: the industrialization of agriculture, specialization and diversification of firms, technological change in food marketing, decentralization, integration, globalization, government regulation, the information revolution, and the shift from a commodity oriented to a merchandise oriented food industry (Kohls and Uhl,1998).

The efficiency of a market is determined by how quick resolutions of conflicts can be generated, that is a product of the organizational capabilities of a society to regulate itself. Laws, regulations and ethical standards should exist and being enforced to the maximum extend; as indicated by Mann and Roberts (2002) the primary function of law is to maintain stability in the social, political, and economic system; the law accomplishes this basic function by performing a number of specific functions like dispute resolutions, protection of property, and preservation of the state.

2.4 Research Methods

The present research project will be accomplished in two stages. In the first stage an exploratory case study will be performed to conceptualize the problematic of the marketplace infrastructure. The second stage will consist on evaluating the preferences of tenants and consumers toward the tangible and intangible attributes and its levels that determine an optimal infrastructure. Thus, the case study will facilitate the identification of attributes and levels to be evaluated in the conjoint analysis.

2.4.1 Case Study Research

According to Yin (1994) case study research facilitates the use of multiple sources of evidence, investigates a contemporary phenomenon within its real context when the boundaries between phenomenon and context are not clearly evident.

2.4.1.1 Case Study Research Design

Every type of research has an implicit, if not explicit, research design. In the most elementary sense, research design is the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions (Yin, 1994). Therefore the research design makes research easier, since it provides a systematic procedure for analyzing any problematic situation that needs an effective solution.

The rationale for attempting to solve the marketplace problematic lies on the assumption that once the marketplace infrastructure is being developed; it will make easier to develop strategically the country, establishing a point of departure toward a developed nation. Additionally, since Guatemala has an economy driven by market forces, it is imperative that the marketplaces perform without distortions and maximize the benefits for the society as a whole.

Two paths exist for achieving a developed marketplace infrastructure. The first consists on transforming the actual marketplace and dictating new policies. The second path consists on developing a new marketplace accompanied with formulation of new policies. It can be seen in figure 3 this decision flow; it seems that both paths should coexist for achieving this enterprise.

The units of analysis of the case study are going to be the marketplaces, consumers, tourists, farmers, manufacturers, wholesalers, retailers, exporters, importers, and politicians. History will be taking into consideration, dividing it into pre-colonial, colonial, modern, and contemporary. In order to ensure quality of the research, this project will be using a Type 4 Case Study Research. According to Yin (1994), type 4 Case Study Research, provides construct validity, internal validity, external validity and reliability. Case studies will be accomplished for different geographic areas: the capital city of Guatemala, a urban city in a selected department, and a municipal marketplace in a rural area.

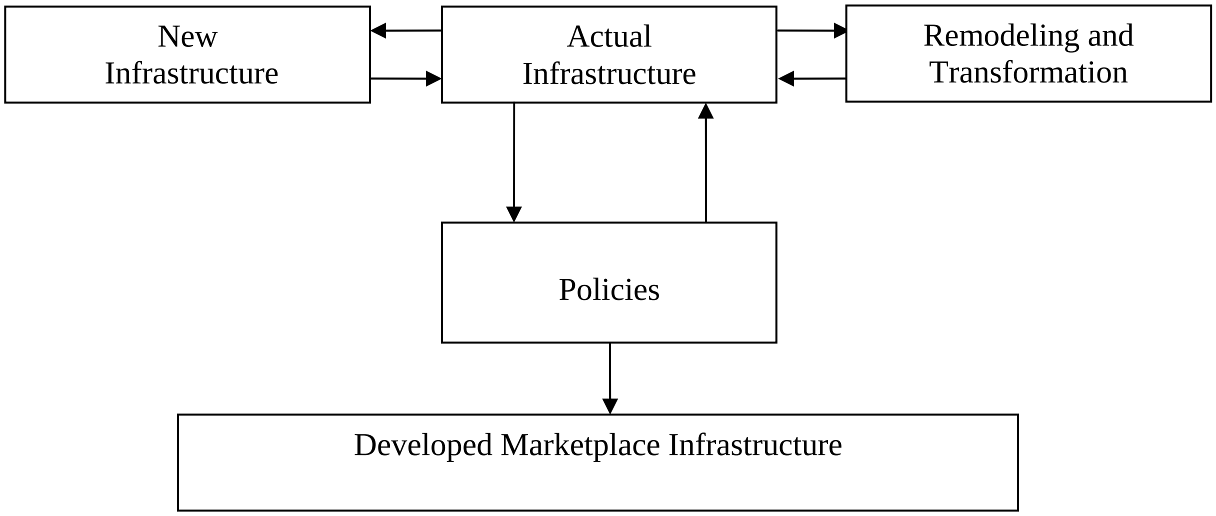

Figure 3. Framework for Achieving a Developed Marketplace Infrastructure.

For ensuring construct validity, the instruments and measures that will be developed in this research will be focused and adjustable to the hypothesis and objectives. Internal validity will be ensured, using economic theory and rigorous analysis of evidence. The results of this research will have generalization to the marketplaces of Guatemala. This research will be reliable, by using, a case study research design, case study protocol, a case study database and multiple sources of evidence.

2.4.1.2 Case Study Protocol

The protocol is a major tactic in increasing the reliability of the case study research and is intended to guide the investigator in carrying out the case study; providing an overview, field procedures, case study's questions and guide for the report (Yin, 1994). In addition to the protocol, a chronogram of activities will be used for taking control of time and performance during the research timeframe. The following case study protocol will be used:

1. Case description: context, goals, units of analysis and case study research questions.
2. Problem statement: Goals, Justification and Hypothesis.
3. Alternative Solutions to the problem and review of literature.
4. Implementation of research.
5. Results, policy implications and theory modification.
5. Conclusions, recommendations and summary.

For validation of the instruments for data collection, a pilot case study will be used. The pilot case study will provide ideas for improving the instruments, guiding the direction of the research and is expected to provide hints for improving the quality of the research.

2.4.1.3 Formulation of Hypothesis

The null hypothesis is the belief that is maintained until the evidence convince us that is not true, in which case the null hypothesis is rejected; the alternative hypothesis is flexible and depends on economic theory (Hill, 2000). The following hypothesis will be tested for rejection or failure:

1. Ho: There is not a need for developing and transforming the marketplace infrastructure (MI) in Guatemala.

   Ha: There is a need for developing and transforming the marketplace infrastructure (MI) in Guatemala.

2. Ho: Attributes for an ideal marketplace are equally important and valuable by the participants.

   Ha: Attributes for a marketplace are not equally important and valuable by the participants.

3. Ho: It is not helpful a theoretical model for achieving a MI in Guatemala.

   Ha: It is helpful a theoretical model for achieving a MI in Guatemala.

4. Ho: Course-plotting of a policy and its design does not provide an input for achieving a developed MI in Guatemala.

   Ha: Course-plotting of a policy and its design does provide an input for achieving a developed MI in Guatemala.

5. Ho: Public administration of the MI in Guatemala is not the best.

   Ha: Public administration of the MI in Guatemala is the best.

6. Ho: The incorporation of services in the MI in Guatemala it does not have an impact in the economy.

   Ha: The incorporation of services in the MI in Guatemala has an impact in the economy.

2.4.2 Conjoint Analysis

Conjoint analysis, also called multi-attribute decompositional model, is a statistical technique that originated in mathematical psychology and was developed by marketing professor Paul Green at the Wharton School of the University of Pennsylvania (Wikipedia, 2006). Conjoint Analysis is a decompositional model since uses ranking or a rating scale as a dependent measure of preference, given attributes that the researcher controls. Those preferences evolve on the consumer from complex interactions with its environment in its maximum asception. Walters (1978) breakdowns such environment mainly on conditions from different points of view such as economic, cultural, psychological, anthropological, and sociological. As a result of the individual's preferences and environment, consumers engage in decision making, frequently such decisions translate into purchase decisions and market exchange; refer to Lamb et al. (1991) and Kotler (2003) for a deep discussion on this topic.

Conjoint analysis is used specifically to understand how respondents develop preferences for products or services; it is based on the simple premise that consumers evaluate the value of a product/service/idea (real or hypothetical) by combining the separate amounts of value provided by each attribute (Hair et al., 1998). From this definition it can be inferred that attributes and the levels evaluated must come from a complete understanding and conceptualization of the problem that is being solved. Hair et al. (1998) states that factors must be differentiable, actionable and communicable. For example, Bruchhaus (2005) used conjoint analysis to examine consumer preferences for selected product attributes of fresh strawberries in Louisiana, utilizing conjoint designer, developed nine hypothetical strawberry products, and two holdout products that were created from the attributes (container, pesticide strategy, price, and origin/brand) and their respective levels. Sambidi (2003) studied the factors that are related to location decision of the broiler industry in the USA.

Distance between feed mill and growers, cost of feed ingredients, and community attitude toward the broiler industry are found to be the most important factors influencing the location decision of broiler growing, feed mill, and broiler processing respectively. Results from bridging design indicate that cost of feed ingredients is the most important attribute affecting the location of a broiler complex (Sambidi, 2003). That research project is perhaps the most similar to our endeavor, there is great similarity on the application of the conjoint analysis; therefore the methodology used by Sambidi will be followed closely. Current research in channels of distribution uses conjoint analysis; Bernard (2006) utilized a choice-based conjoint analysis to evaluate consumer's preferences toward retailers with multiples channels of distribution.

Generally, focus groups, surveys or previous experience of the researcher is used as part of the conceptualization of the problem. Hansen and Schmidt (2006) used conjoint analysis to determine driving factors in the consumption of pork in Denmark; they used cluster analysis of panel data followed by focus groups made out of consumers and brainstorming sessions with producers on the exploratory phase of their research. Demonstrating how important is to conceptualize the problem when conjoint is selected as a quantitative method to analyze consumer preferences.

This research project will use an exploratory case study for the conceptualization of the problematic of the marketplace infrastructure and the understanding of the underlying relationships among factors and levels. The process, value and importance of case study in market research have been recognized (Perry, 1998). According to Hair et al. (1998) the final outcome of a conjoint analysis is to recognize optimal combination of attributes, relative importance of attributes, identification of market opportunities, and prediction of preferences and market segments.

A conjoint variate will be estimated for each analyzed market, and there will be a conjoint variate at the aggregate level. Depending upon the number of most important attributes resulted from the case study, a conjoint methodology will be chosen. Three main conjoint methodologies are available: choice based conjoint, traditional conjoint and adaptive choice.

The following decisions will be made contingent upon the results of the case study: composition rule of preferences, design of stimuli, selection of part-worth relationship, presentation method to the respondent, and selection of best estimation techniques. The sampling and data collection instrument will be formulated taking into consideration the recommendations of Burns and Bush (1998) and Fowler (2001).

One of the most significant events in recent conjoint research has been the emphasis placed on the development of optimal products. At best, most conjoint choice simulators (including those offered by commercial software packages) show the user which limited set of simulated profiles is “best” in the sense of largest market share. Bearing in mind that the full array of possible profiles may number in the hundreds of thousands (or even millions), limiting one's considered set to a dozen or so simulated profiles is unduly restrictive (Krieger, Green and Wind, 2004).

Elicitation of product’s profile preference can be made by choosing, rating and raking. Rating can be tiresome for the consumer. Raking appears to be an easy way for the consumer to elicit preferences when the number of choices is low. Another problem that is unique to trade-off analysis was the respondents’ difficulty in performing the ranking task; although this task is simple to describe, its actual execution is beyond the capability of many respondents (Johnson, 2005).

Because most conjoint studies are conducted in hypothetical situations with no consumption on sequences for the participants, the extent to which the studies are able to uncover “true” consumer preference structures is questionable (Ding et al., 2005). They tested such bias, by constructing experiments with conventional (hypothetical) conditions and parallel incentive-aligned counterparts. Their results provided enough evidence for researcher to consider conducting studies in realistic settings using incentive structures that require participants to “live with” their decisions.

Clearly, there appears to be a need for optimal-product selection procedures (Krieger, Green, and Wind, 2004), refer to Vriens et al. (1998) for an example of optimal product design. Consequently, conjoint analysis will allow us to optimally determine the ideal marketplace from the perspective of tenants and consumers.

2.4.3 Data

The advantage of case study research is the flexibility of the incorporation of multiple sources of evidence in the analysis (Yin, 1994). But the collected information should be relevant to the goals and hypothesis, taking into consideration the advantages and disadvantages of the instruments to be developed for researching this problem. A case study database will be used, in which all the evidence will be recorded as journal. Within the sources of evidence to be used for the case study are mainly but not limited to interviewing by means of a structured survey; another sources of evident to be considered are direct observation, documentation, archival records, secondary data, and the internet. Data from the surveys of the conjoint analysis will be collected by a survey.

2.4.4 Analysis

The collected evidence will be analyzed using different criteria adequate to the instrument involved. As recommended by Yin (1994) the evidence will be analyzed using pattern matching, time series and explanation building. In any case, the evidence will be analyzed in terms of the context and the logic that economic theory provides for linking causes and effects. The analyzed evidence will provide results and the logic to originate conclusions and recommendations.

As can be seen in the following tables, case studies will be implemented for both consumers and tenants for each geographic area. While conjoint analysis will be estimated for consumers and tenants separately, jointly and for each different geographic area. By following this strategy, it will permit to have different perspectives in terms of geography and type of users of the marketplace. Therefore, when evaluating the feasibility of investing on the marketplaces of Guatemala, investors can determine outputs for different alternatives and scenarios.

Research Method	Consumers	Tenants
Case study	X	
Conjoint analysis	X	X
Conjoint analysis	X	

Research Method	Guatemala City	Urban City	Rural City
Case study	X	X	X
Conjoint analysis	X	X	X
Conjoint analysis		X	

2.5 Training and Dissemination Plan of Findings

This research project will train a M.S. student, preference will be given to a student who presents interest in the economic development of Guatemala. The student will come from an accredited university. The idea behind this requirement is that the future graduate will be able to collaborate and provide continuation to the project, thus the human capital will be increased as well. Furthermore, alignment of interests and commitment will be achieved.

The final report of this research project will be structured in similar way as the format of a M.S. thesis; the guidelines of such format are provided by the graduate school. A preliminary report will be released; the final report will be presented after the presentation of results. The review of the report will be carried on by professionals in the areas related to the research goals, they will be the members of the graduate committee. Three copies of the paper version and a three CD's containing the PDF version will be distributed to the donor.

The research findings of this project have the potential to be published in a scholarly research journal, like the Journal of Food Distribution Research, Agribusiness, International Agribusiness Management Association, and the American Journal of Agricultural Economics.

3.0 Budget, Resources and Time Management
(Contingent to RFP, guidelines of potential donor and LSU**)**

3.1 Budget

Proposed Start Date: August 2008	Proposed End Date: August 2010		
Project: Optimal Attributes of the Marketplace Infrastructure: Applied Analysis in Guatemala.			
Principal Investigator: Graduate Student to be Hired			
Cost Category	LSU	Requested	Total
1. Salaries and wages:			
-Tuition	20,000	0	20000
-M.S. Graduate Student	0	36,000	36000
-Graduate Advisor	5000	10000	15000
-Committee Members	3000	5000	8000
-Ph.D. Grad. Assistant	5000	5000	10000
Total salaries and wages	33000	56000	89000
2. Fringe benefits	0	0	0
3. Supplies	0	1000	1000
4. Equipment	0	0	0
5. Consultants	0	0	0
6. Travel	0	8000	8000
7. Other direct costs	0	1000	1000
8. Total direct costs	33000	66000	99000
9. Indirect Costs	7000	6000	13000
10. Total estimated cost	$40000	$72000	$112,000

3.2 Budget Description (Contingent to RFP, guidelines of potential donor and LSU)

1. Salaries and wages

The M.S. graduate student to be hired will receive an assistantship of $1,500 per month. Graduate advisor and committee members are compensated for consulting on qualitative and quantitative research methods, and for evaluating the student's progress, The Ph.D. graduate student will be collaborating with the M.S. student, providing tutoring and vision of the project.

2. Fringe benefits

3. Supplies

Paper, pencils, printing of surveys, books for research that to be purchased.

4. Equipment

5. Services or consultants

6. Travel
Three trips to Guatemala.

7. Other direct costs

8. Total direct costs

9. Indirect Costs

10. Total estimated cost

3.3 Facilities, Equipment and Resources

Louisiana State University has access to books and research reports deposited on paper and electronically on the library. The Department of Agricultural Economics & Agribusiness will facilitate office space, computer hardware, computer software, in order to successfully accomplish this project in a timely manner.

3.4 Chronogram of Activities

This chronogram shows transitions on the research project. It emphasizes the development of methodologies before field work during summer time. Deadlines are in accord to the student's academic responsibilities.

Activity	Fall 2008	Spring 2009	Summer 2009	Fall 2009	Spring 2010	Summer 2010
Literature Review	X	X				
Survey Design	X	X				
Case Study	X	X	X			
Preliminary Report			X	X		
Conjoint Analysis			X	X	X	
Writing of Final Report				X	X	X
Presentation of Final Report						X
Student's Progress Report	X	X	X	X	X	X

*Subject to change based on donor's requirements and funding starting date.

4.0 Organization

4.1 Advisory Committee

The graduate student to be hired will be advised by faculty members of the graduate committee. The graduate advisor and one committee member will be professors from the department of Agricultural Economics; the other committee member will be professor from the Department of Experimental Statistics, Department of Marketing or Department of Finance. The graduate student will have direct assistance from the PhD student Carlos Ignacio García.

4.2 Responsibilities

The following responsibilities are draw for increasing the efficiency of the modus operandi.

Individual	Responsibilities
M.S. Graduate Student	He is the principal investigator, thus he is the responsible for the final report in thesis format.
Graduate Advisor	To warrantee the overall success of the research project. To control, monitor and evaluate the research progress. To provide timely suggestions. Teaching to the student how to approach the research problem.
Committee Members	To provide knowledge in qualitative and quantitative research methods. To evaluate preliminary and final reports.
Ph.D. Grad. Assistant	To assist M.S. Graduate Student, specifically: tutoring in search of information, technical writing, thesis format, data collection, tabulation and analysis, and to provide vision to the research project.

4.3 Evaluation

It will be the responsibility of the graduate advisor to monitor the student's progress during the semester. The student must present to the advisor a progress report every semester. The graduate committee and student will present a preliminary research report to the donor by the end of the first summer or second fall semester. As part of the academic evaluation, the final thesis will be evaluated by the graduate committee under the requirements of Graduate School; such requirements will be presented to the student as soon as he is hired.

5.0 Biographical Sketches of Researchers

5.1 Profile of M.S. Graduate Student

The student will come from an accredited institution of higher education. The potential graduate student will have to comply with the requirements of admission of the LSU Graduate School and the Department of Agricultural Economics & Agribusiness. Preference will be given to that student who presents interest on Guatemala and has leadership potential, especial consideration to those with a background in agricultural economics, economics, agriculture, or marketing research.

5.1.1 Alignment of Interests

Alignment of interests and commitment will be achieved by selecting a student who has proven interest in the economic development of Guatemala. Leadership potential and dedication will be essential for the continuation and achievement of this endeavor.

5.1.2 Provisional Program of Study

This program of study is going to be subject to change based on the scholastic record of the student; it has emphasis on the foundations of Microeconomics, Research Methods and Business Operations. The student will obtain a Masters of Science degree in Agricultural Economics with concentration in Agribusiness.

Semester - **Fall 2008**

Course	**Number**	**Title**	**Credit Hours**
AGEC	7113	Agribusiness Research Applications	3
MKT	4451	Marketing Management	3
AGEC	7123	Operations Research in Ag. Economics	3
AGEC	8000	Research	3
		Total	12

Semester - **Spring 2009**

Course	**Number**	**Title**	**Credit Hours**
ECON	4720	Microeconomic Theory	3
ECON	4710	Macroeconomics	3
MKT	3411	Consumer Behavior	3
AGEC	8000	Research	3
		Total	12

Semester - **Summer 2009**

Course	Number	Title	Credit Hours
AGEC	7700	Agribusiness Internship*	3
AGEC	8000	Research	3
		Total	6

*In the Government of Guatemala.

Semester - **Fall 2009**

Course	Number	Title	Credit Hours
AGEC	7203	Adv. Agricultural Marketing Theory	3
ECON	7700	Price Theory I	3
ECON	4630	Introduction to Econometrics	3
AGEC	8000	Research	3
		Total	12

Semester - **Spring 2010**

Course	Number	Title	Credit Hours
EXST	7003	Statistical Inference I	4
*FIN	3351	Real State Finance	3
*FIN	3715	Business Finance	3
AGEC	8000	Research	3
		Total	13

*Optional, contingent to work load and research deadlines.

Semester - **Summer 2010**

Course	Number	Title	Credit Hours
AGEC	8000	Research	6
		Total	6

5.2 Vitae of Graduate Advisor

5.3 Vitae of Graduate Committee Member

5.4 Vitae of Graduate Committee Member

5.5 Vitae of Ph.D. Graduate Student

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