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Master of Science in Engineering

**Dynamic Strategies for Enhancing
Apartment Brand Equity in Korean
Housing Market**

by

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Abstract

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Apartment brand has been used as a new strategy of construction companies in Korean housing market to fulfill customer's changing needs for buying houses. A number of construction companies have succeeded in brand awareness and image building, however, they still struggle to establish brand loyalty and manage brand equity elements in balance. The purpose of this study is to analyze the brand equity building process of apartment products in Korean housing market and determine causal relationships among variables to propose strategies for long-term prosperity of the construction companies. System Dynamics modeling method is applied to describe how variables affect and are linked to each other in terms of building equity and enhancing company profits from customers' brand awareness to brand loyalty. Based on the analysis model, strategies for construction companies

depending on their market share were proposed and this may support the company to achieve financial success and competitiveness among its competitors in the fast-changing market.

Keywords: Apartment Brand, Brand Loyalty, Brand Equity, System Dynamics

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Chapter 1. Introduction

Korean housing market was switched from supply-centered market to demand-centered market due to various economical, social, and political changes in 1990s. To fulfill customer's evolving needs during a purchasing process, construction companies developed apartment brand based on product itself rather than the company's name.

The new marketing strategy with apartment brand has brought economic prosperities to construction companies in terms of purchasing preferences and price premiums. For instance, famous brand of apartment led to strong numbers in sales and twice higher selling price compared to former apartment without any brand (Economic Review, 2012).

However, brand awareness and image did not seem to have critical impacts on resident's satisfaction and brand loyalty which are one of the most important elements for long-term success of companies with their brands (Samsung C&T, 2010). In order to drive company's business success, none of the brand equity elements should be ignored or managed poorly and a comprehensive management with thorough consideration of each elements consisting brand is essential (Aaker, 1991).

Thus, the objective of this paper is to propose strategies for comprehensive and balanced brand management for construction companies that aim to obtain a long-term prosperity with apartment brands. The necessity of brand management in Korean housing market is described with the research background, objectives, scope, and process through this chapter.

1.1 Research Background and Objectives

The various events including IMF, repealing price ceiling regulation, and resolving over-demand problem caused changes in the Korean housing market environment. The structure of supply-demand became demand-centered which was opposite to past years. As the demand (i.e., buyers of houses) became more dominant in the market, they started to express their evolved customer needs when buying houses. Construction companies put much effort on improving exterior, floor plans, and functions of apartments to satisfy their potential customers. However, variety and luxuriousness of house were considered as more important value in purchasing process, and construction companies were in urgent needs of fulfilling the customer's requirements. As a result, apartment brands based on the product itself was developed by big-sized construction companies (Kim, 2007).

Brand management has been implemented in the market for a decade, however, a different approach with consideration of the apartment product attributes should be considered. An apartment has different attributes from common goods which make it difficult to implement a general brand marketing method to the product. The most important attribute is the high price of house. Since it is very expensive compare to other common goods, the period of consumption is relatively long and the number of purchasing is limited (Kim, 2005). Brand manager may struggle managing brand especially when it comes to deal with factors such as customer satisfaction or repurchasing intention due to the product attributes. With respect to its

complexity in management, the factors take a long time to prove their effectiveness with profit increase. Even though, they may require a burdensome management skills to become worthy elements in brand managing, the brand manager need to put efforts to develop and make profits by using the factors. From this approach, a balanced management for successful brand marketing can be achieved.

Therefore, the objective of this paper is to assist apartment brand managers in construction companies by proposing strategies to achieve successful brand management. The research is carried out by constructing brand equity building models and analyzing causal relationships among the variable with System Dynamics modeling methodology. System Dynamics was adopted with its strength of performing comprehensive analysis of the entire system and define feedback relationships including human factors.

1.2 Research Scope and Methods

This research consists of three main parts; description of brand equity building process using a flow diagram, analysis on feedback relationships of the variables using System Dynamics causal loop diagram, and strategy proposal for brand management in construction companies.

Main players of building brand equity are divided into buyer and seller to explain different effects on brand equity elements. The causal loop diagrams are based on characteristics of apartment products, and feedback relationship and external variables' effects on the entire system are considered thoroughly.

The research is developed in the following procedures:

- (1) Existing brand equity models are analyzed through reviewing literatures and theories.
- (2) Attributes of the housing market and apartment are defined through reviewing literatures and theories.
- (3) Brand equity elements are determined considering its applicability to the market and product.
- (4) System Dynamics causal loop diagrams are constructed with effective variables for visualizing the system.
- (5) Reference modes of the causal loop diagrams to real-life problems are developed to prove the validity of the developed model.
- (6) Finally, Brand management strategies for market leading and later starting construction companies are derived, respectively.

The entire research process of this paper is summarized in Figure 1-1.

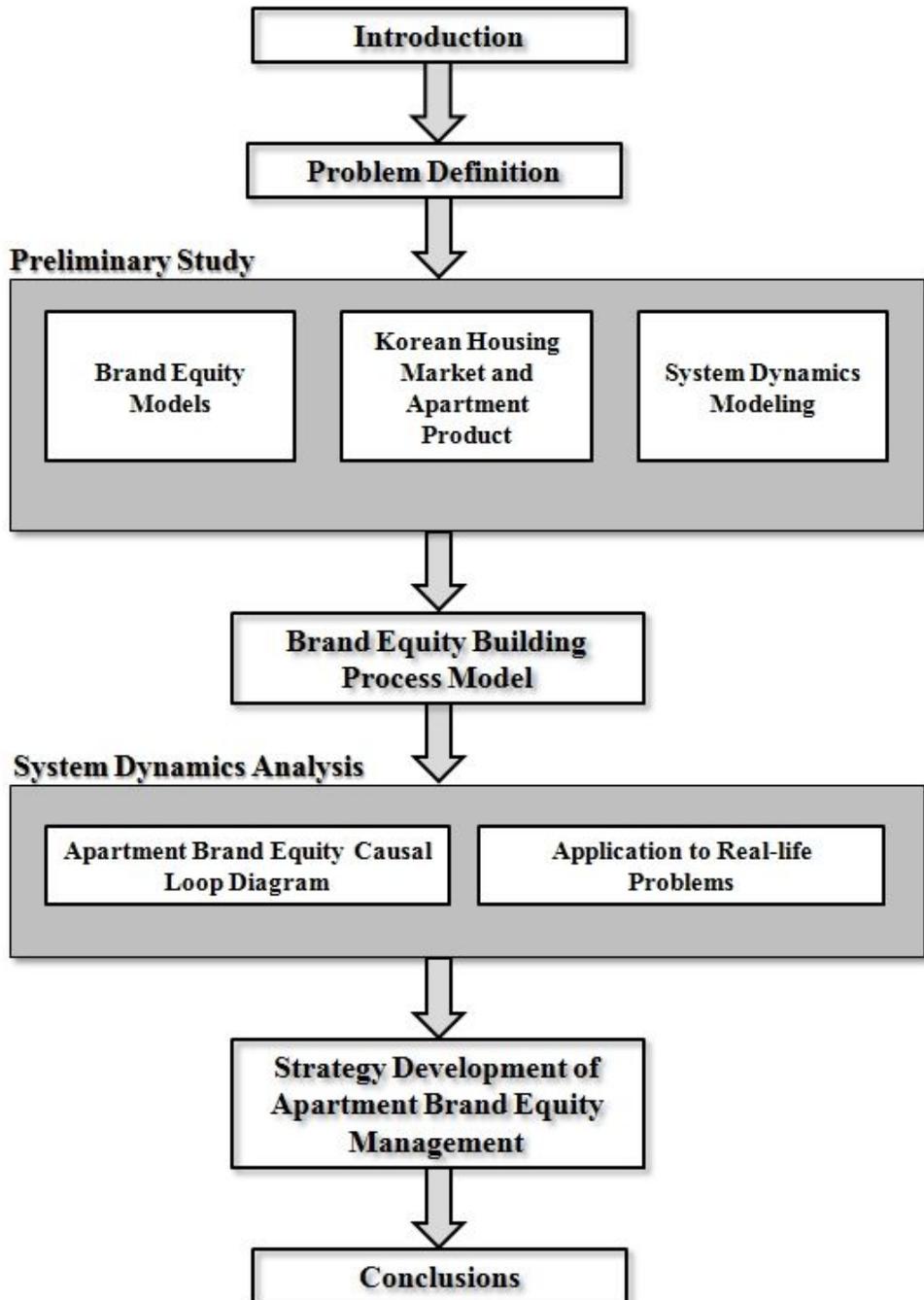


Figure 1-1 Research Process

Chapter 2. Preliminary Study

There are numerous amounts of researches on brand management, housing market and products, apartment brand management, and system dynamics methodology. This chapter presents definitions of important terms, relevant literature, and academic limitations of existing studies.

2.1 Definitions

American Marketing Association defines Brand as a name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers. Even though, there is uncountable number of definition of the word *brand*, they mostly share similar concept with the one mentioned above.

Brand Equity can be defined as a set of brand assets and liabilities linked to a brand's name and symbol that adds to (or subtracts from) the value provided by a product or service to a firm and/or that firm's customers (Aaker, 1996).

In this paper, the definition of the word brand and brand equity is in accordance with AMA and Aaker's concepts.

2.2 Literature Review

2.2.1 Brand Equity Models

David A. Aaker(1996) presented a Brand Equity Model which consisted of 5 different components; brand loyalty, brand awareness, perceived quality, brand associations, and other proprietary assets. The author explained value of brand equity asset in relation with each component, and later suggested ways to enhance the values by both customer and firm. The main effects of brand equity are 1) attracting new customers, 2) reduced marketing costs, 3) Help process and retrieve information, and 4) reason to buy. The model can be used to get to grips with a brand's equity and gain insight into the relation between the different components and performance (EURIB, 2009). However, his model does not 1) make a strict distinction between added value for the customer/consumer and brand owner/company, 2) list market share as a brand equity components. Figure 2-1 explains Aaker's Brand Equity Model with each component and value.

Brand Equity				
Brand loyalty	Brand awareness	Perceived quality	Brand associations	Other proprietary assets
<ul style="list-style-type: none"> • Reduced marketing costs • Trade leverage • Attracting new customers • Time to respond to competitive threats 	<ul style="list-style-type: none"> • Anchor to which other associations can be attached • Familiarity-liking • Signal of substance/commitment • Brand to be considered 	<ul style="list-style-type: none"> • Reason to buy • Differentiate/ position <ul style="list-style-type: none"> • Price • Channel member interest • Extensions 	<ul style="list-style-type: none"> • Help process/ retrieve information • Differentiate/ position <ul style="list-style-type: none"> • Reason to buy • Create positive attitude/ feelings • Extensions 	<ul style="list-style-type: none"> • Competitive advantage
Provide value to <i>customer</i> by enhancing: <ul style="list-style-type: none"> • Interpretation / processing of information • Confidence in the purchase decision • Use satisfaction 			Provide value to <i>firm</i> by enhancing: <ul style="list-style-type: none"> • Efficiency and effectiveness of marketing • Brand loyalty • Prices / margins / competitive advantage • Brand extensions / trade leverage 	

Figure 2-1 Aaker's Brand Equity Model (1996)

To overcome the limitations in Aaker’s model, Riezebo(1994) proposed a Brand-added Value/Brand Equity Model (figure 2-2). The model separates brand-added value and brand equity to define values added to customer and company clearly. Brand-added value consists of perceived performance, psycho-social meaning, brand name awareness and they provide functional and expressive benefits to customers. This explains how customers’ information process boost, purchase decision confidence, and consumer satisfaction can be achieved through value components. Company also obtains value such as market share size, market share stability, brand margin, and proprietary assets through brand equity. The components are categorized into financial, strategic, and management benefits and give company more sales, greater margins, reputation, and global branding opportunities. A research from Korea Housing Institute(2005) also supports the model applicable to the housing market by stating apartment brands with a greater market share size and stability tend to spend relatively small money on selling expenses.

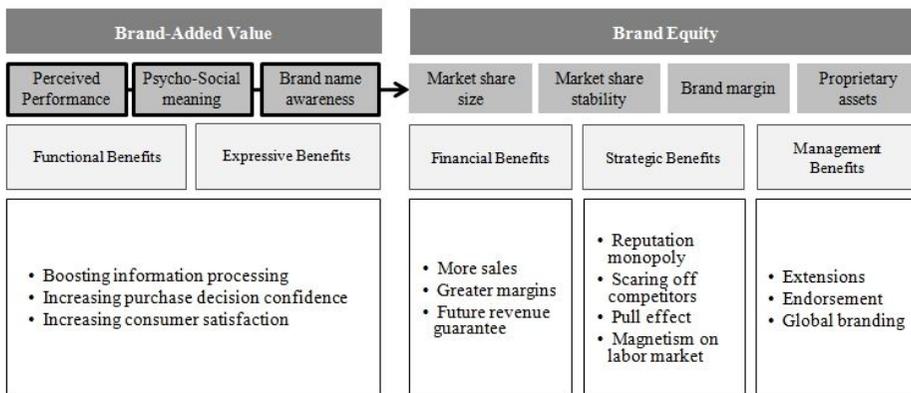


Figure 2-2 Riezebos’ Brand-added Value/Brand Equity Model (1994)

The firm-related side of brand equity emphasizes such brand-related outcomes as relative price and market share, whereas customer-based equity appears to hinge at its core on psychological associations with the brand (Keller, 1993). By developing such idea, Keller(2002) proposed the Customer-based Brand Equity Model (figure 2-3) which is defined as follows: the differential effect that consumers' brand knowledge as on their response to the marketing of that brand. The model is made up of six stages; Brand salience, Brand performance, Brand imagery, Consumer judgments, Consumer feelings, and Brand resonance. The highest level of brand equity is realized when the top of the pyramid, brand resonance, is attained.

Resonance comes about when the consumer has a high level of awareness of and familiarity with the brand and holds some strong, favorable, and unique brand associations in memory (Keller, 2002). This research supports Keller's model and considers that brand equity is made and developed mainly based on customer's response and company's marketing approach and strategy is the factor that affect customer's response.

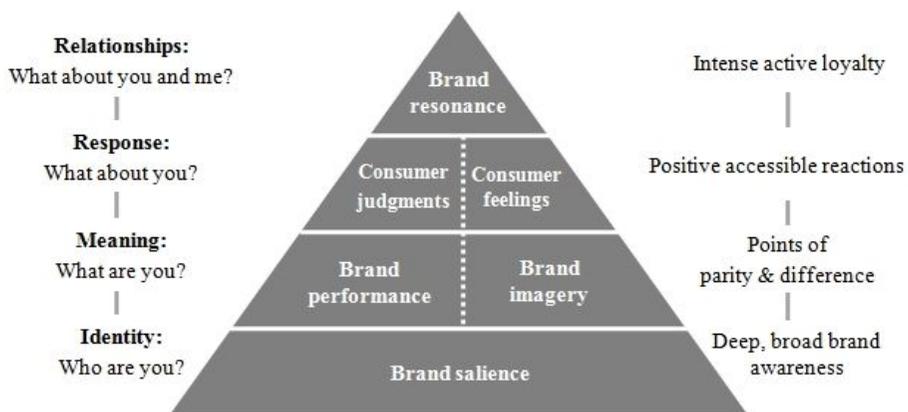


Figure 2-3 Keller's Customer-based Brand Equity Model (2002)

2.2.2 Brand Loyalty

The existing study on brand loyalty is characterized by two different perspectives; stochastic approach and the deterministic approach (Odin, 2001). Stochastic approach conceptualizes brand loyalty as a certain behavior of a customer. The individual who performs repeatable purchase of the same product is said to be loyal in such context. The problem lies in the fact the stochastic approach considers loyalty behavior as too complex to be comprehended (Bass, 1974; McAlister and Pessemier, 1982). Thus, it is difficult for a company to influence repurchasing behavior, as the actual cause of loyalty has not been figured out.

On the contrary, researchers considering loyalty as deterministic approach exist as well. This approach defines brand loyalty as an attitude. The researcher investigates the psychological commitment of the consumer in the purchase, without necessarily taking the effective purchase behavior into account (Jacoby, 1969; Jacoby and Olson, 1970; Jarvis and Wilcox, 1976).

Jacoby and Kyner(1973) combined these two approaches of brand loyalty and named it conceptual approach. Conceptual approach is defined as the biased behavioral response expressed over time by some decision-making unit with respect to alternative brands out of a set of such brands, and is a function of psychological processes (J. Jacoby and Kyner, 1973). This research pays attention to Jacoby and Kyner's definition of brand loyalty with conceptual approach. Biased behavioral responses such as repeat purchase, favorable word of mouth, and strong preferences based on brand trust are the basis for brand loyalty and they are affected from company's marketing

efforts and other brand equity components. The importance of brand loyalty has been highlighted in a number of literatures with different values. First, Brand-loyal consumers may be willing to pay more for a brand because they perceive some unique value in the brand that no alternative can provide (Jacoby and Chestnut, 1978; Pessemier, 1959; Reichheld, 1996). Second, Brand loyalty leads to greater market share when the same brand is repeatedly purchased by loyal consumers, irrespective of situational constraints (Assael, 1998). To sum up, increase in market share and company profit may result from great customer loyalty including repeat purchase, favorable word of mouth, strong preferences, and price premium.

2.2.3 Attributes of Housing Market and Apartment

Housing market and apartment product have distinctive features which set them apart from common goods. Market price of common goods are normally determined based on basic supply and demand rules, however, apartment price is based on Hedonic Price Theory where price is determined by overall value of attributes consisting the product. Apartment's location, surroundings, and physical characteristics are included in the value, and their importance is consistently changing based on the market condition. Due to the fact, apartment price can vary within the same market unlike any common goods market where price difference of same product within the same market does not exist. This led to an intervention of government policy and regulation to control the price and demand-supply group. In addition, other differences between housing market and general competitive market are summarized in Table 2-1.

Apartment product's distinctive attributes are categorized into two perspectives; monetary and product based perspectives (Kim, 2005). Apartment product cannot be relocated once they started construction, thus it reflects the regional property to house value and price. For instance, the price of a house located in the center of urbanized city and rural area vary greatly in despite of the same size. There are also strong demand forces who aim to increase their assets by house investment. The investment demand may react actively when house price increases, and amount of actual demand enlarges even with price escalations. Monetary values including factors mentioned above make it inevitable for the government to intervene in the market crisis

to control supply/demand and promote effective use of land. However, such intervention may be a cause for another market crisis and change in supply/demand structure.

From product based perspective of apartment products, relatively high price and lasting durability cause a long period of consumption. The number of product's repurchase frequency is based on the period of consumption and such attributes can provide obstacles when customer's repurchase rate needs to be managed and improved. Newly purchase may also be influenced by limited amount of product's information before consumption which increases the perceived risk at pre-purchase stage.

Table 2-1 Attributes of Housing Market (Ha, 2006)

Attributes	Housing Market	General Competitive Market
Price	<ul style="list-style-type: none"> • Various prices in a market • Relatively high price to earnings 	<ul style="list-style-type: none"> • Uniform price in a market
Identical Alternatives	<ul style="list-style-type: none"> • Identical product do not exist 	<ul style="list-style-type: none"> • Identical products exist
Trader	<ul style="list-style-type: none"> • Limited seller and buyer in a region 	<ul style="list-style-type: none"> • Unlimited seller and buyer in a region
Product Quality	<ul style="list-style-type: none"> • Various qualities 	<ul style="list-style-type: none"> • Uniform quality
Movement of Product	<ul style="list-style-type: none"> • Settles in one location 	<ul style="list-style-type: none"> • Mostly movable depending on its size
Exchange Process	<ul style="list-style-type: none"> • Huge Effects of laws/regulations 	<ul style="list-style-type: none"> • Small Effects of laws/regulations
Information obtain	<ul style="list-style-type: none"> • Limited source available • Time and money consuming 	<ul style="list-style-type: none"> • Easy
Range of Market	<ul style="list-style-type: none"> • Local markets in particular regions 	<ul style="list-style-type: none"> • Local, national, global market
Types of Market	<ul style="list-style-type: none"> • Ownership/rental housing market, • New/second-handed housing market 	<ul style="list-style-type: none"> • Depends on types of products • Limited second-handed products market

2.2.4 Apartment Brand Management

Many researchers have been proposed studies considering both brand management and apartment product to depict domestic market situation. Comprehensive studies on apartment brand management across various types of academic fields are implemented to enhance company's profits and brand equity. The effect of brand equity element on preferences and actual purchase (Shin, 2001; Lee, 2012; Kim, 2003) and correlation between brand equity elements (Kim, 2006) were analyzed using one-way ANOVA, regression analysis, and case studies. Bae(2006) intended to investigate the effect of Integrated Marketing Communication (IMC) implement in apartment brand and proved that IMC implementation achieved customer's trust and purchasing intention. Table 2-2 summarized relevant literatures of apartment brand management. Existing studies have made a contribution to adopt marketing theories to apartment market and product in different point of views, however, they had a number of limitations such as: 1) deriving research outcome from simple survey or statistical data, 2) considering insufficient volume of apartment product attributes, 3) analyzing causal relationship and dynamics of brand equity elements, and 4) taking only short-term forecast of effectiveness proposed policy into account.

Table 2-2 Apartment Brand Management Researches

Topic	Author	Title	Results	Methodology
Brand effects on purchasing decision	Shin (2011)	Analysis of Purchase Factors which are Effected by Apartment Brand Images	The abstract value system of a brand name led consumers to have purchasing commitments	One-way ANOVA
	Lee (2012)	Effects of Apartment's Brand Equity on Customer's Loyalty and Purchase Intention	Brand equity/loyalty, and purchasing intention had positive effects on one another	Multi-regression analysis
	Bae (2006)	The Effect of Integrated Marketing Communication Strategy in Samsung Raemian	Integrated marketing communication strategy helped acquiring customer's trust and purchasing intention	Multi-regression analysis
Brand Elements Analysis	Park (2008)	The Effects of the Residential Satisfaction and Brand Image on the Customer Loyalty in the Apartment Market	Perceived quality, and brand image had positive effect on residential satisfaction and customer loyalty	Principal Components analysis
	Kim (2006)	The Correlation of Brand Loyalty and Identity	Ideology identity of a brand played an important role to enhance loyalty	Case studies analysis
	Kim (2003)	The effect of brand image and corporate image on the consumer's preference of the apartments	Perceived quality had effects on the purchase decision making process than regional variables	Multi-regression analysis
Corporate Strategy	Park (2005)	Apartment Brands Positioning Analysis by Correspondence Analysis	Different brand recognitions existed among residence types as well as demographic segments	Correspondence analysis
	Kim (2007)	A Study on Development of Apartment Brand Equity Evaluation Model	Advertisement had positive effects on brand image, price premium, and perceived quality.	Multi-regression analysis

2.2.5 System Dynamics

System Dynamics is an approach for framing, understanding, and discussing the behavior of complex systems and problems over time (Sterman, 2000). Established by Jay W. Forrester in MIT in 1961, the methodology has been used in a wide variety to interpret issues in industrial, economic, social, and environmental problems. It deals with internal feedback loops and time delays that affect the behavior of the entire system. The internal feedback loops consist of Balancing Loop causing balancing and stable effect of the system and Reinforcing Loop generating reinforcing and growth effect of system's positive or negative influence (Forrester, 1961; Ahmad and Simonovic, 2000). System dynamics modeling is implemented in this study to provide a comprehensive analysis of brand equity building process and determine the causal relationship among factors consisting brand equity and consumer's purchasing process.

Table 2-3 Legends in the Causal Loop Diagrams (Sterman, 2000; Park, 2010)

Legend	Explanation	
	When other conditions are the same	When Factor A increases(decreases), Factor B increases (decreases)
		When Factor A increases (decreases), Factor B decreases (increases)
	Including weighted delay time between two factors	
	Flows: Define the rate of change in system states and control quantities flowing into and out of stocks, also called 'Rate'	
	Stocks: Define the state of a system and represent stored quantities, also called 'Levels'	

Intangible aspects of brand management may provide limitations to understand clear relationship between variables and to quantify the accumulated knowledge from real-life experience and convention. Application of System Dynamics modeling is appropriate for assisting such problems with its comprehensive analysis ability of the entire system and dynamics among variables. It can be adopted particularly effective when dealing with problems, such as housing market, including strong interdependency and relationship between stakeholders or system variables and external factors(i.e., market environment and demand supply structure) having significant impact on the system (Fredrik Elg, 2000).

Otto(2001) proposed a brand management strategy using System Dynamics and analyzed the dynamic process of brand equity building process with simulations. With respect to the brand equity building process, the aim of the study was to assist decision making of brand manager dealing with fast-moving consumer goods. The ideas of analyzing brand equity building and proposing managerial strategy have parallels in this research too. However, there are limitations on the equity analysis which are not appropriate to adopt to housing market and product due to the significant differences between characteristics of fast consuming goods and service/investment goods that apartment product contains. Thus, the purpose of this study is to reflect distinctive features of housing market and its product which differentiate purchasing intention and process from other goods to the analysis of brand equity building process and determine effects of various human factors and external factors to the entire system and feedback structure.

2.3 Summary

The definition of important terms (i.e., brand and brand equity) and relevant researches to this paper were reviewed in the previous chapters, 2.1 and 2.2. Numerous numbers of studies were conducted in various academic fields with different point of views.

However, they were mostly focused on determining relationships between only a few brand equity elements with statistical data from surveys and the results were challenging to be applied universally. In addition, it was unclear to identify the causal relationship of variables consisting of the entire brand equity system.

To derive an effective outcome, this study requires overcoming the limitations of existing studies by:

- (1) Analyzing the dynamics and causal relationship of all the critical variables in apartment building equity process.
- (2) Including distinctive factors of housing market and its product.
- (3) Considering human factors influencing customer's purchase intention in system analysis.

Chapter 3. Brand Equity Model

This chapter proposes a flow-diagram model of apartment brand equity building process based on literature reviews on the brand equity and housing market attributes mentioned in the previous chapter. The model provides a basis for the System Dynamics modeling of brand equity building process and theoretical support to the causal relationship and feedback loops.

3.1 Apartment Brand Equity Building Process

Figure 3-1 visualizes a development process of brand equity and values generated from the development. There are a number of bodies who play important roles during equity building process, however, the process models focuses mainly on the two most important players, customer and company. Customer's decision making for purchasing (i.e., purchasing consideration, purchasing, and consumption) affects and activates the process, and brand equity and company's marketing strategies have impact on the customer's decision making process again. To illustrate the entire process in an effective way, the model consists of three parts; Pre-Purchase Stage, Purchase Stage, and Post-Purchase Stage. Each arrow represents customer's or company's brand equity uses and benefits received from increased brand equity and both acts are summarized into a term brand equity development.

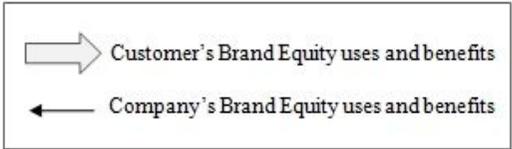
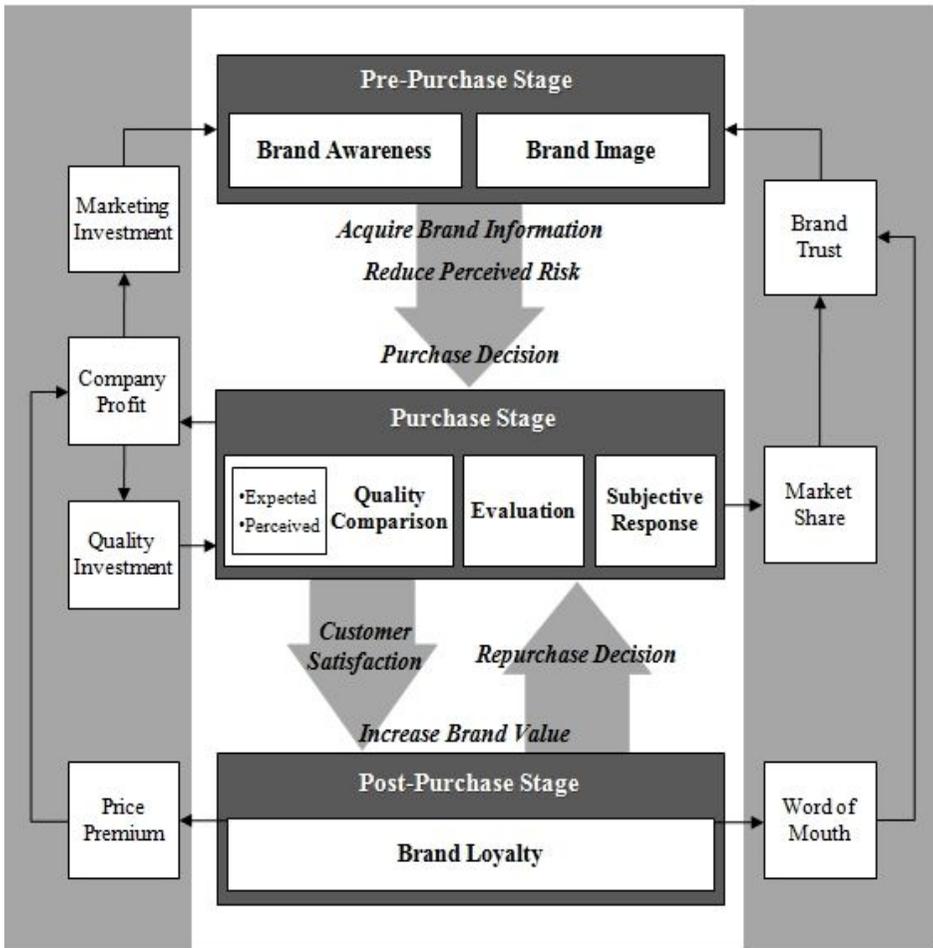


Figure 3-1 Apartment Brand Equity Building Process

3.1.1 Pre-Purchase Stage

Apartment brand awareness and image can be described as ability to be recalled or reminded the brand in the product group by customers, and to be included in a purchasing consideration group as one of the alternatives.

Aaker(1996) defines brand awareness as the extent to which a brand is known among the public. Marty(2004) explains brand image as a customer's mental picture of a brand and as a result of company manipulated communication which is in contrast to the brand identity, assembly of factors reflecting how the brand owner wants the consumer to perceived the brand. The concept of brand image is visualized in Figure 3-2.

The brand awareness and image can be obtained from various means including market share, advertisement, word of mouth, marketing promotion. As the amount of means change, brand's impact to customers also change over time. Once being aware of a certain brand and forming an personal brand image, customers choose purchase alternatives based on their awareness and knowledge about the brands. This is the most important first step for a brand to be purchased in the future (Macdonald and Sharp, 2000). When customer has high level of brand awareness and image, they have more chance to obtain information about the brand and this reduces their perceived risk caused by uncertainties at pre-purchase stage (Jarvenpaa & Todd, 1997; Mitchell, 1999). To sum up, brand awareness and image are critical factors to be considered as purchasing alternatives, and customers may decide to purchase the brand product based on the information and trust provided by the brand.

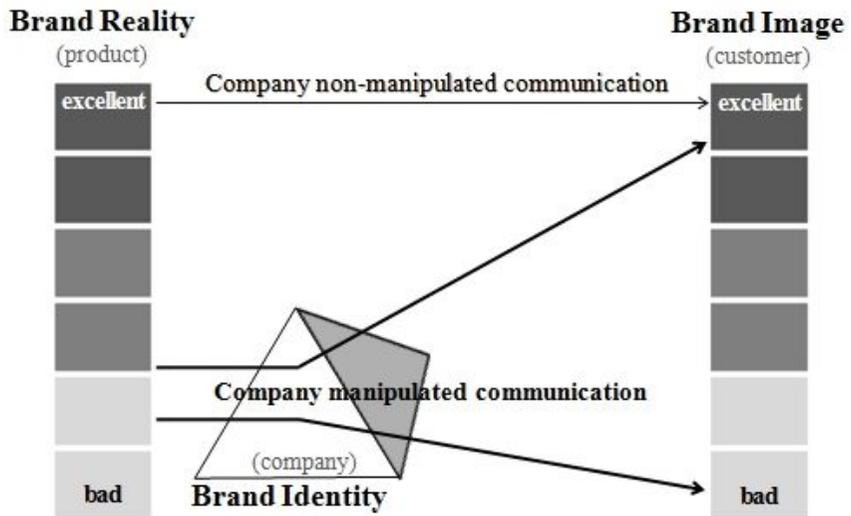


Figure 3- 2 Brand Reality, Brand Identity, Brand Image (Marty, 2004)

3.1.2 Purchase Stage

Customers put efforts to select the most optimal alternative within the budget when they decide to purchase a brand product. Purchasing apartment requires selecting optimal choice to both buyer him/herself and family members who also live in the house. This leads to comparison and evaluation of various factors such as price, location, size, surroundings among alternatives with residents' expectations and values. At the pre-purchase stage, customers generate an expected quality based on the brand's trustful image and their expected values. During the consumption stage, they constantly compare and evaluate their perceived quality, the consumer's judgment about the superiority or excellence of a product (Zeithaml, 1988), with their previous expected quality. Perceived quality can be influenced by provisional variables such as customer's financial status, purchasing motivation, social environment (Holbrook & Corfman, 1985).

The result from the comparison and evaluation becomes a key factor in forming customer satisfaction which is defined as an evaluation rendered that the (consumption) experience was at least as good as it was supposed to be (Hunt, 1977).

Experienced quality, a basis of perceived quality, includes both extrinsic cues and intrinsic cues. Extrinsic cues (e.g., price, brand name, manufacturer name) are not product-specific where as intrinsic cues involve the physical composition of the product (Zeithaml, 1988). Perceived quality which is the customers' subjective response to experienced quality based on brand image may have influenced on market share, brand profit, brand power and equity

(Aaker, 1996; Aaker & Jacobson, 1994; Garvin, 1984; Jacobson & Aaker, 1987). This enables the company to reinvest on extrinsic (marketing based) and intrinsic (product based) cues of the brand product and it will lead to increase in brand awareness and customer satisfaction. In addition, expansion of the market share will also eventually increase the brand awareness and image to the public again by generating brand trust.

3.1.3 Post-Purchase Stage

Customers feel satisfied or unsatisfied with the brand after the evaluation process, and trust and value of the product may increase or decreased based on the result. From the brand satisfaction and the value he/she received, customer becomes a loyal customer with brand commitment. Brand commitment or loyalty is defined as customer's emotional or psychological attachment to the brand. The loyal customers have strong preferences over the brand and frequent repurchase can be carried out from them. They are also less resistant to price premium and they are willing to pay more price to the brand if needed. These behaviors of loyal customer enhance the company profit and make reinvestment on future marketing and product quality possible. Furthermore, their loyal commitment is also expressed with favorable word of mouth. This guarantees product's quality and brand value to expected customers and provide trustful information for reducing perceived risk before purchase (Ruben, 2007).

3.2 Summary

The flow diagram model highlights the importance of brand equity components in each purchasing process level, and customer plays significant role in developing them. At Pre-Purchase Level, customers are provided with the relevant information on brand through brand awareness and image, and perceived risk could be reduced by considering such factors. At Purchase and Consumption Level, customers repeat the process of quality comparison and evaluation until they make sure their purchase choice was appropriate or inappropriate. Satisfied subjective response generates customer satisfaction at Post Purchase Level, and with increased brand value, the customer become loyal to the brand. Through this process company receives increased benefits such as company profit, investment opportunities, brand trust, and market share. This diagram in this chapter shows in the equity building process:

- (1) Causal relationship between brand equity element and customer/company benefits exists.
- (2) Feedback effect of brand equity element and customer/company benefits exists.

Chapter 4. Apartment Brand Equity Analysis using System Dynamics Model

System Dynamics model of apartment brand equity building process is developed in this chapter to identify causal and feedback relationships among consisting variables. The model is separately constructed on customer's and company's point of view to clarify value and effectiveness of brand equity components provided to each. This chapter consists of four parts each with System Dynamics causal loop diagram; Apartment Customer – Pre-Purchase Level, Apartment Customer – Post-Purchase Level, Apartment Company – Sales Level, and Apartment Company – Investment Level.

4.1 Customer's Perspective – Pre-Purchase Stage

Figure 4-1 represents the feedback process of favorable brand image gaining and purchase. As favorable image of the brand increases, increase in purchase and market share would take a place. Market share expansion eventually leads to another gaining of favorable brand image. This process is explained in the loop R-a (Favorable Brand Image → Consideration for purchasing → Purchase → Market share → Image changing) in Figure 4-1.

Various means such as advertisement, word of mouth, media and market share are used to enhance the level of brand image's favorability. Once the favorable image is established to the public, expected customers start

including the brand into their purchasing consideration groups. High possibility of being considered for purchasing alternative means high possibility of getting purchased later on. However, market and product attributes of apartments may cause a long time delay between consideration and actual purchase. Unlike common goods, there are many external factors affecting the purchase of house such as investment value, price, location superiority which are influenced by regulation, policy, and market/company situation. Act of actual purchase takes place when these external factors meet the customer's expectation. Otherwise, customers are willing to wait for the optimal time for the purchase to minimize their economic loss in the future. Market share expands with more purchase of apartment and it will lead to increase of favorable brand image again as forming a strong reinforcing loop. Loop R-b (Favorable Brand Image → Perceived risk before purchase → Purchase → Market share → Image changing) shares some similarity with Loop R-a. However, it reduces the time delay between Favorable Brand Image and Purchase variables by reducing the Perceived risk before purchase. The perceived risk grows as the price of product increases. Apartment is one of the most expensive goods customer purchases, thus it is inevitable for the customer to have relatively high perceived risk before buying an apartment. Based on the favorable brand image, the risk can be reduced dramatically. Favorable apartment brand image implies financially strong company image as well as product reliability. Even though an apartment is a experience good where product quality is assumed only with product experience, trustful brand

image and its reliability could reduce customer's uncertainties before actual purchase (Durovnik, 2006).

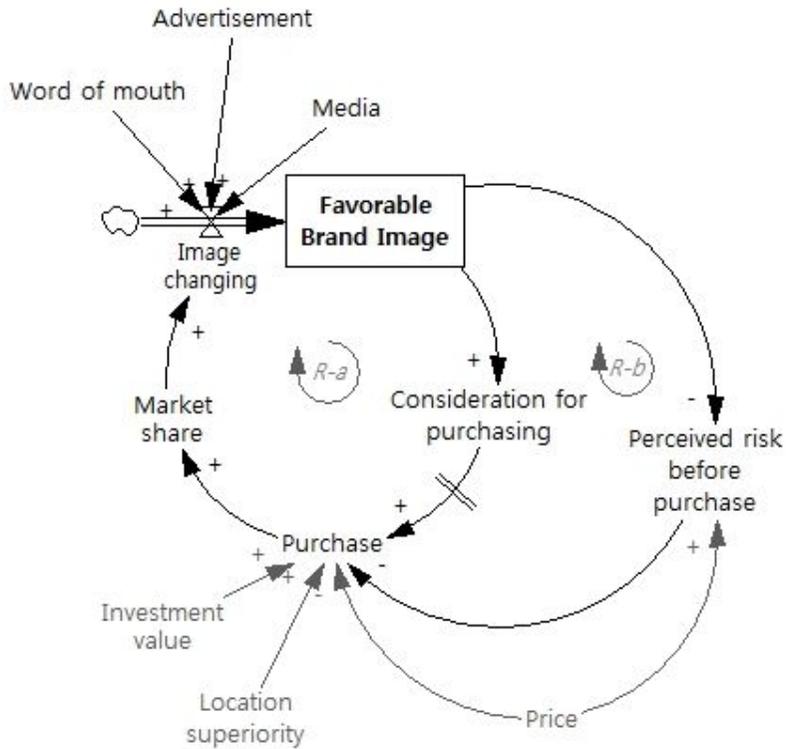


Figure 4-1 Customer's Perspective - Pre-Purchase Stage Causal Loop Diagram

4.2 Customer's Perspective – Post-Purchase Stage

The development process of resident satisfaction and dissatisfaction is visualized in Figure 4-2. The concept of resident satisfaction is based on the dual factor theory, which is similar to the Herzberg's two-factor theory of job satisfaction (Herzberg, Mausneer and Snyderman, 1959). According to the two-factor theory, satisfaction and dissatisfaction are different constructs, which are caused by different facets of interaction between product and a consumer (Yi, 1989). Swan and Combs(1976) modified the theory and proposed two different types of performance; Instrumental Performance and Expressive Performance. In this study, instrumental performance (i.e., product quality) affects dissatisfaction level and expressive performance (i.e., brand value perceived by resident) affects satisfaction level of the customer. Loop R-c (Resident Satisfaction → Favorable brand image → Residents perceived brand value → Satisfaction) depicts how resident satisfaction is formed. It is based on the brand image and value of the brand perceived by resident. This represents customer's aspect of wanting to fulfill not only the material wants but also social/psychological desire by purchasing brand products (RICON, 2002).

On the other hand, resident dissatisfaction is generated from instrumental performance of the apartment product. Loop B-a (Resident Satisfaction → Favorable brand image → Expected quality before purchase → Quality difference) describes how product quality can have impact on dissatisfaction of resident. This research assumes that for the product with relatively high

purchase price (e.g., apartment) must guarantee its customers certain level of product quality and increase in product quality does not affect resident satisfaction. Favorable brand image which caused resident satisfaction can also increase dissatisfaction at the same time. As the favorable brand image increases, product expected quality before purchase and perceived quality after purchase also get higher. Dissatisfaction is an outcome of quality difference which compares expected quality before purchase and perceived quality after purchase. With higher expectation on the product quality, it is more likely to have bigger difference between two variables and lead to resident dissatisfaction. To reduce the difference and avoid resident dissatisfaction, increasing the level of experienced quality, which influences perceived quality, is required.



Figure 4-2 Customer's Perspective – Post-Purchase Stage Causal Loop Diagram

4.3 Company's Perspective – Sales Level

Figure 4-3 describes the effect of sales increase and price discount promotion to brand image. Unsold apartment deteriorates financial stability of construction company and active marketing strategies are needed to overcome the problem (Jo, 2010). Loop B-b (Purchase → Residual apartments → Price discount promotion → Purchase) shows the effectiveness of active promotion strategy (i.e., Price discount promotion) in a short-term perspective. When apartment supply increases and purchase decreases, residual apartment is remained to be sold and extra efforts on marketing are required to ease the situation. From short-term perspective, active promotions such price discount may work well to attract customers for purchasing houses. However, as it becomes a long-term strategy, the purchase of apartments may greatly influenced by amount of price discount. Thus, there would be no other option to sell the houses except continuously setting the purchase price down. Loop R-d (Purchase → residual apartments → price discount promotion → favorable brand image → purchase) visualizes how price discount promotion can negatively affect the brand image. With the price discount promotion, favorable brand image would be dropped and this will directly have impact on purchase rate. Low purchase rate increases number of residual apartments even more, thus price discount promotion is needed again. To sum up, price discount promotion for resolving residual apartment problems may lead to other big troubles on purchase(Loop B-b) and brand image(Loop R-d) in long term perspective.

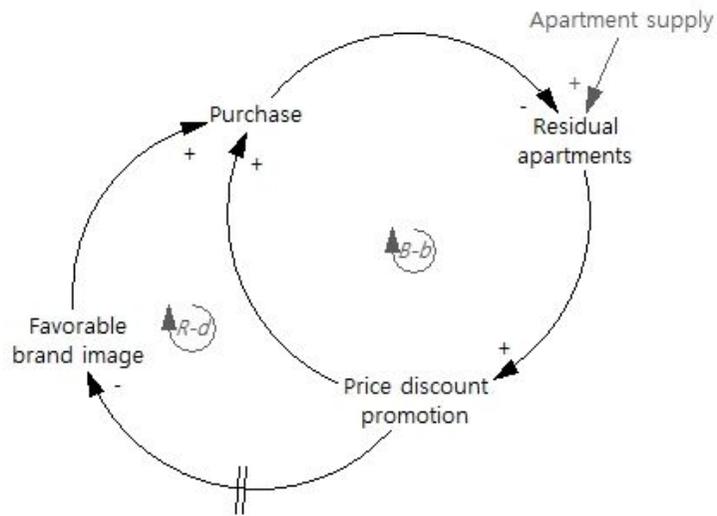


Figure 4-3 Company's Perspective – Sales Level Causal Loop Diagram

4.4 Company's Perspective – Investment Level

The feedback effect of continuous investment on brand marketing, quality, and service is explained in Figure 4-4. When the profit is increased, investment on the product development becomes more affordable to the company. Investment on quality and service generates resident satisfaction. The effect can be this described using the loop R-d (Company profit → Investment on quality and service → Resident satisfaction → Brand loyalty of resident → Repurchasing intention of resident (Word of mouth) → (Favorable brand image) → Purchase → Company profit). The reinforcing effect of R-d influences company profits directly by repurchasing from loyal customer, and indirectly by enhancing favorable brand images. The loop R-e (Company profit → Investment on brand marketing → Favorable brand image → Resident satisfaction → Word of mouth → Favorable brand image → Purchase → Company profit) also reinforces the structure by the feedback effect between favorable image, resident satisfaction, and word of mouth. Improvement of favorable brand image generates not only direct purchase of new customers but also resident satisfaction which lays favorable word of mouth to positively affect brand image. The loop R-f (Company profit → Investment on brand marketing → Favorable brand image → Resident satisfaction → Brand loyalty of Resident → Repurchasing intention of resident → Purchase → Company profit) describes impact of favorable brand image on loyal customer's repurchasing intention. Price premium of the brand can be increased with the loop R-g (Favorable brand image → resident

satisfaction → Brand loyalty of Resident → Price premium → Favorable brand image). It is an outcome of marketing investment which leads to resident satisfaction and by maintaining price premium, the brand contains more investment value which becomes a significant strength in apartment products. This various types of reinforcing effects make it possible for company to continuously increase their profits and invest on their brand development. Figure 4-4 highlights the importance of the brand loyal customers to company profit and investment opportunity (Oliver, 1999; Assael, 1998).

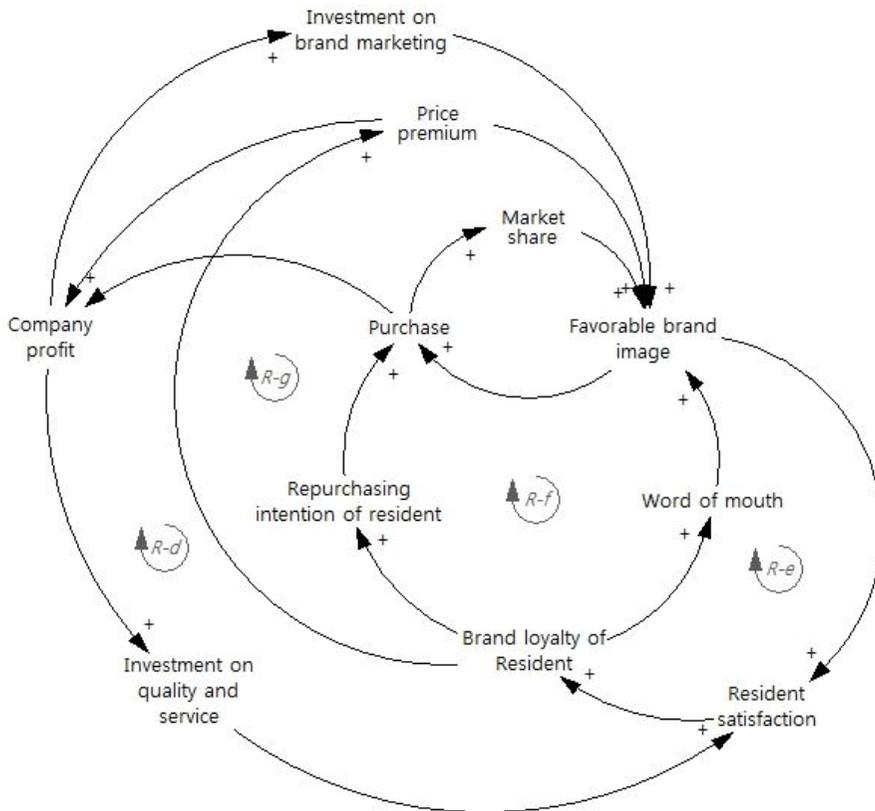


Figure 4-4 Company’s Perspective – Investment Level Causal Loop Diagram

4.5 Model Application

To validate the effectiveness of the System Dynamics model, a real-life case of market leading company in Korea is applied. Despite of the fact that “A” construction company was a late comer to the apartment market, it launched its own apartment brand in 2000 and became a new leading company in the market. “A” company was able to achieve its goals in such short period of time and became the most well known apartment brand to the public. Its effort was proven with official indexes such as K-BPI (Korea Brand Power Index) and NBCI (National Brand Competitiveness Index) by being ranked as the winner for nearly 10 years in a row. The market leading companies including “A” company obtain their creditability from the public based on their company images. Their enormous company size and financial stability enable them to invest and develop on brand marketing providing competitiveness in the market. The loop R-a in Figure 4-1 is useful for explaining such situation in the market. Its reinforcing effect generates continual increase in favorable brand image and market share. In particular, “A” company set pride as their brand identity and implanted Integrated Marketing Communication skills to maximize the effectiveness of various media (Jeon, 2004). This effort could be summarized as advertisement and media variables in Figure 4-1 and provided solid foundations for consistent brand image growth. Reference mode of favorable brand image based on the causal loop diagram shows a similar behavior with actual data and this implies the proposed causal loop diagram is effective to describe the real-life problem

and forecast the future. Figure 4-5 compares reference mode of favorable brand image of “A” company and market average with actual data excerpted from 2004-2009 NBCI data.

“A” company came into apartment business with the company’s high creditability and trustful image. This enables them to start establishing favorable brand image with higher initial value than that of market average. In addition, effective advertisement and marketing was implemented to keep up the difference with the market average image. The loop R-a and R-b in Figure 4-1 were activated with reinforcing effect, and this made it possible for the company to maintain continual difference with the market average for a long time. To forecast changes in the behavior of the favorable brand image, based on its strong sales rate and market share, the loop R-a in Figure 4-1, R-c in Figure 4-2, and R-e in Figure 4-4 are expected to influenced the entire system with reinforcing effect and favorable brand image may increase even more. Growth of favorable brand image is likely to have impact on resident satisfaction and brand loyalty variables in particular and eventually lead to formation of price premium and word of mouth with positive impact on brand image again. This strong feedback structure will finally be resulted in a significant increase of brand awareness and image.

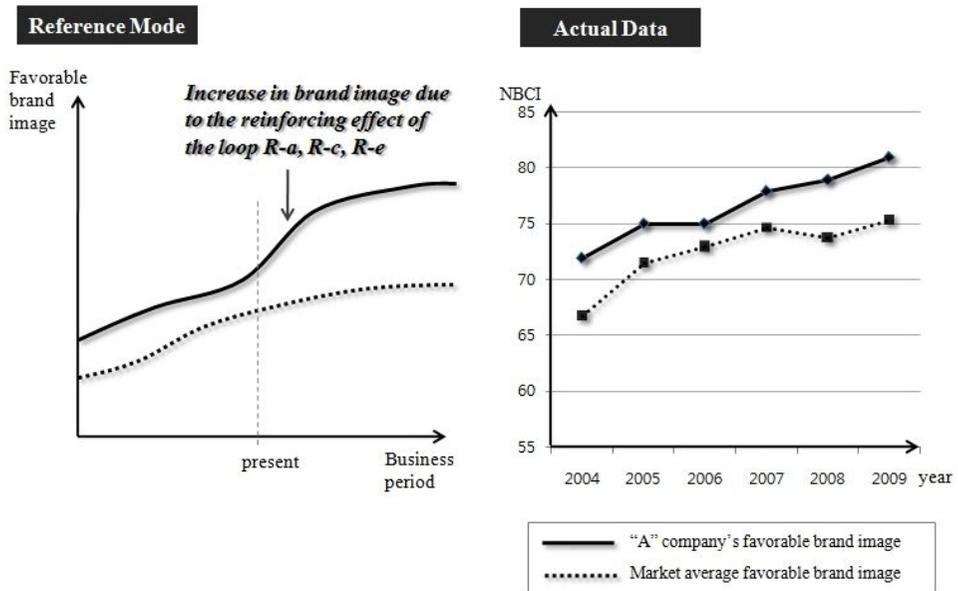


Figure 4-5 Reference Mode of Favorable Brand Image
(Actual Data: 2004-2009 NBCI Reports)

However, strong favorable brand image may also become burdensome to companies who aim to enhance their resident satisfaction and brand loyalty. This concern is expressed in the loop B-a in Figure 4-2 where favorable image enlarges the gap, the main reason for resident dissatisfaction, between expected quality and perceived quality. Simultaneously, the favorable image also have impact on growth of the perceived quality, thus with improvement of experienced quality, the difference gap between expected and perceived quality may be reduced. Furthermore, achieving direct increase of resident satisfaction is possible through increasing the favorable image and perceived brand value of residents (Loop R-c in Figure 4-2). This reinforcing loop, R-c, deteriorates the negative effect of the balancing loop, B-a. The combination of these loops with opposite aspects lays a difficulty in increasing brand loyalty within a short period of time. This behavior is visualized in Figure 4-6 by

using reference mode of brand loyalty. The proposed reference mode and its supporting loops may be said to be effective by comparison with actual data which shows “A” company’s unstable statistics for brand loyalty.

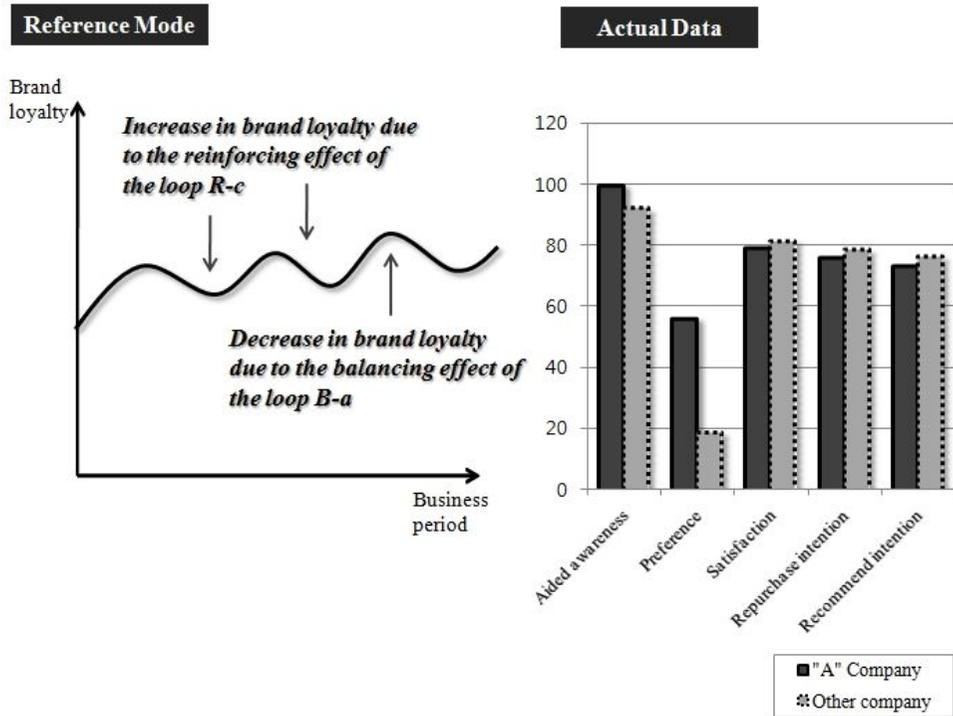


Figure 4-6 Reference Mode of Brand Loyalty
(Actual Data: Bae, 2006)

4.6 Summary

System Dynamics causal loop diagrams were introduced through chapter 4. Strong feedback and causal relationship among variables consisting of apartment brand equity have been identified. In addition, importance of brand loyalty, which was considered to be insignificant factor in the apartment brand management, was highlighted by emphasizing the effect of loyal customer to company profit directly or indirectly. The effectiveness of proposed models was also tested by comparing reference mode with application to real-life data.

Chapter 5. Dynamic Strategy Development of Apartment Brand Equity Management

This chapter suggests post strategies for apartment brand equity management which can be applied to construction companies in Korean housing market. An integrated System Dynamics causal loop diagram of apartment brand equity building process is suggested to logically support the strategies. Different strategies were developed for leading and late starting companies in the market considering their market share and strengths.

In addition, the 4P mix which stands for Price, Product, Promotion, and Place was taken into consideration in connection with the model variables in the causal loop diagrams.

5.1 Managerial Strategies for Leading Companies

The market leading companies already have succeeded in brand awareness and image establishment. They manage to have strong market shares and need to set up new strategic goals to maintain their leading position (Lee, 2004). It is important for them to secure the top position in the market as well as keep the distance from newcomers. The goals can be achieved by utilizing brand loyalty to enhance brand image and attract new customers. The true values of loyal customers include favorable word of mouth, price

premium, repurchase, and market share expansion. These values may be the key factors for the leading company to approach their next business step if they utilize them well.

By increasing the effective advertisement and promotion, a Promotion factor in 4P, to the public, the company can enhance their favorable brand image and this will enlarge the image gap with market average(Link a,b in Figure 5-1). Resident satisfaction which is a basis for brand loyalty would grow with image gap and residents' perceived value of the purchase brand. The promotions are also appropriate method to get customers involved with the brand. The customers become loyal to their brand by participating and getting involved in the brand or its related communities. For instance, riders of Harley Davidson motorcycles are famous for their brand involvement by forming owners' community and this participation makes them even more loyal to the brand. Based on this idea, the effective apartment promotion can include events such as active resident community, consistent brand contact through on/offline, supporting individual's leisure or free-time. The customers continuously aware the impact of their apartment brand by contacting the brand often in their daily lives. The positive involvement of brand in customer's daily life will generate strong affinity and psychological value to the customers. Such promotion would activate the loop R-2(Favorable Brand Image → Image superiority → Residents perceived brand value → Satisfaction → Resident Satisfaction → Brand loyalty of Residents → Purchase → Market share → Image changing) and particularly influence link

a and b directly, and produce reinforcing effect for Resident satisfaction, Market share, and Favorable Brand Image variables.

The loop R-3(Resident Satisfaction → Brand loyalty of residents → Price premium → Investment value → Residents perceived brand value → Satisfaction → Resident Satisfaction) describes the positive effect of price premium coming from loyal customers. Price premium strategy is implied to the Price factor in 4p marketing mix. One of the most important considerations in purchasing an apartment is its value as investment goods. Priced premium based on the brand loyalty and image creates promising investment value and luxury image to the public. With increased investment value, residents' perceived value of brand becomes higher, and this may lead to more resident satisfaction as they are able to sell the house with more expensive price compared to the point of purchasing time (Loop R-3, Link c and d). The price premium also attract new customer with increased investment value and it is represented in the loop R-4(Price premium → Investment value → Purchase → Market share → Favorable Brand Image → Image superiority → Residents perceived brand value → Satisfaction → Resident Satisfaction → Brand loyalty of residents → Price premium). Attracting new customer to purchase the product expands the market share, more favorable brand image is obtained. This will again affect residents' perceived value of the brand and eventually lead to price premium, and develops a strong feedback loop to the entire system. However, negative impacts of the price premium also exist in the system. The link e expresses the effect of price premium as financial burdensome to customers. Purchase price

gets higher with extra price premium and this may reduce actual purchase of new customers(Loop B-1). In addition, price premium activates the balancing loop B-2(Resident Satisfaction → Brand loyalty of residents → Price premium → Investment value → Purchase → Market share → Image changing → Favorable Brand Image → Expected quality before purchase → Quality difference → Dissatisfaction) which affects resident satisfaction. With higher price and favorable brand image, customers expect better quality at pre-purchase stage and this enlarges the gap with the perceived quality after purchase. Quality difference between these two qualities leads to dissatisfaction of resident and negatively influence brand loyalty. To reduce the quality gap from price premium, companies need to consistently invest and develop their product quality, the Product variable in 4P, and enhance customers' experienced quality. In addition, decrease purchase of new customer due to price premium can be helped by putting loyal customer's word of mouth to use. The favorable word of mouth coming from loyal customers may significantly reduce perceived risk of new customers before purchase. Their recommendation from real experience is trust worthy and guarantees the brand value and product quality. This would become the most reliable source for reducing the perceived risk of the brand.

Finally, the market leading companies should pay attention to amount of housing supply by conducting considerate market research and demand survey. As mentioned in Figure 4-3, the activation of loop B-b and R-d caused by residual houses is critical to brand's favorable image. It is important for

them to minimize the unsold house and price discount promotion for securing their own profit and brand image.

5.2 Managerial Strategies for Late Starters

Later starters in the apartment market has relatively low market share due to getting into the business late, and are required to set up strong strategies for a huge leap by targeting the leading company's missing points(Lee, 2004). Since their market share and brand power is relatively low to the leading companies, the use of market share and word of mouth to enhance favorable brand image is limited. Thus, Effective advertisement and promotion variable, the Promotion variable in 4P mix, becomes the only available mean for increasing brand image. Thus, late starters are required to set up their brand identity in a clear and distinctive way to differentiate themselves from similar images in the market. The activation of the loop R-1(Favorable Brand Image → Image superiority → Purchase → Market share → Image changing) is the priority mission for later starters. By establishing distinctive brand identity and implementing effective marketing strategy to make public be aware of the brand, the loop R-1 and R-a in Figure 4-1 could create a reinforcing effect.

The reinforcing effect of the loop R-b in Figure 4-1 can also be generated by actively providing brand information through various media to customers. Brand with low awareness and image are likely to have high perceived quality before purchase and due to the uncertainty on brand value and product quality, customers hesitate to choose a new brand as their purchase alternative. Providing customers with detailed brand and quality information may ease their concerns based on uncertainties and give a new brand a chance to be considered as one of the purchasing options.

However, small amount of favorable brand image builds lower expected quality of the product than that of the market leading company(Link f). This reduces or even clears the gap with perceived quality, and resident dissatisfaction may happen at quite low level. This could be considered as a chance for later starters to minimize the dissatisfaction to their brands by improving their product quality a little higher than customer's expectation. It is possible because the brand image's impact on expected quality is yet small, and there would be not much difference between expected quality and actual product quality.

In addition, setting lower price, the Price variable in 4P mix, and better location, the Place variable in 4P mix, could be taken into account to weaken the effect of investment value and brand loyalty variable at the purchasing stage(Loop R-4, Link 3). Setting lower price may attract customers for purchasing by providing higher value than that of investment and location variables. As the purchase increase, the reinforcing effect of loop R-a will become stronger and slowly lead to favorable brand image increase. This may also applied to the Location superiority factor and generates similar effect to the system. This suggests that it may be more important for them to launch a project based on their location superiority than its size. Even if the apartment complex is small, with its location superiority, it will increase new purchase and investment value which will eventually lead to price premium and market share expansion. The impact of this strategy can be described using the loop R-3 and R-4's reinforcing effect and will positively influence the most

important variables in the system including Purchase, Favorable brand image, and Resident Satisfaction in the future.

5.3 Summary

Apartment brand equity development strategies were proposed in this chapter using integrated version of causal loop diagrams in chapter 4. The strategies are divided for two types of companies; market leading companies and later starting companies. 4P marketing mix which consists of price, product, promotion, and place was applied to derive more effect and useful outcomes.

The integrated model and proposed strategy suggests that:

- (1) It is essential for the leading companies to enhance resident satisfaction which is a source for most positive reinforcing effect in the system.
- (2) Price premium may increase the resident satisfaction and purchase with higher investment value, however, considerate decision making on price premium is needed due to possible problems such as purchase decrease and resident satisfaction.
- (3) Price and location superiority can reduce the impact of investment value and brand image for later starters of the apartment market.

Chapter 6. Conclusions

It has been addressed in a number of researches that launching of apartment brand brought financial success to many construction companies until recently. However, regarding the life cycle of brand management, it is inevitable for the apartment brands to face either decline or re-incline at this point of time. Thus, the System Dynamics causal loop diagrams of apartment brand equity building process has an attempt to show its entire system, variable relationship, and post strategies for the future use.

Finally, this chapter will summarize the research results and implication with possible contribution to the industry. A future plan for further study is then indicated at last.

6.1 Results and Discussions

In this research, the building process of apartment brand equity and various relationships among consisting variables are identified using the System Dynamics modeling method. It aims to propose effective strategies to construction companies for long-term and stable financial benefits by utilizing apartment brand equity. In particular, separate analysis based on main players and purchasing process is implemented to assist the company struggling with a balanced brand management.

The proposed strategies are summarized as follows:

For market leading company, it is important to

(a) Improve level of resident satisfaction by increasing perceived brand value and decreasing a difference between expected quality and perceived quality.

Increasing perceived brand value can be achieved through favorable brand image which set them apart from market average brand image. The superiority in the brand image may provide resident more brand value which is basis for resident satisfaction and brand loyalty. The difference gap between perceived quality and expected quality is likely to reduce by improving experienced quality with consistent product quality investment. Then, resident dissatisfaction could be minimized.

(b) Set appropriate amount of price premium to the brand based on brand image superiority and brand loyalty.

Allowable amount of price premium with respect to its brand value and product quality may help increasing investment value and actual purchase. However, possible negative effects of price premium should always be considered such as purchase decrease and resident satisfaction.

(c) Make a good use of loyal customers as marketing method with favorable word of mouth to attract new customers.

Brand evaluations from experienced customers could become a great source to reduce potential customer's perceived risk at a pre-purchase stage. Their favorable word of mouth assures the brand value and product quality, and reduces the biggest fear before purchase, uncertainty.

For late starting company, it is important to

(a) Provide customers distinctive and enough information on the brand using various media and methods to acquire brand awareness and favorable image.

Since the apartment brand market is already saturated with uncountable number of brands, later starters need to establish distinctive brand identity and provide relevant information to the public. In this manner, potential customers become aware of the brand and consider them as one of the purchasing alternatives.

(b) Set lower selling price overcome the limitation of market share and brand loyalty.

Setting lower price can become powerful strength that deteriorates the effect of investment value and favorable brand image to customer. Within many limitations, securing market share with lower price is important and it will lead to favorable brand image eventually.

(c) Develop small size apartment complex with superior location options.

Residual apartment can have serious impact on financial status to later starting companies. Instead of developing big size apartment complex without any strong feature, it would be more effective to construct a small size complex with outstanding location. In this manner, it is able to increase the brand's investment value and satisfy the resident as well as attract new customer regardless of brand image.

6.2 Contributions and Further Studies

Brand has become the most important method in apartment marketing these days. Various types of practices have been applied to enhance the brand equity, however, they were mainly focused on increasing brand awareness and image.

This study has shown importance of a balanced management of apartment brand equity and effect of each element to the entire system. It also highlighted the significance of brand loyalty in apartment brand which has been often ignored to be taken care of due to its complexity in managing. Identifying the value of each brand equity component would help brand manager to focus and manage more on underestimated values until now and suggest them the long-term effect of the variables.

In addition, the integrated causal loop diagram and proposed strategies considering apartment attributes are expected to assist decision making process of brand managers in construction companies and reduce misuses of common marketing strategies which have limitations for application to apartment products.

However, the developed model is mainly based on the existing theory and the academic resources and has not been testified in the real market situation.

Thus, further studies on the similar topic are required and they need to include:

(1) Quantification and simulation of the causal loop diagram.

As noted earlier, the developed model is based on existing theories and only shows causal and feedback relationships among variables. Therefore, quantification of the variable and simulation process of the entire system will be needed in the further study to support logicity of the causal loop diagrams and proposed strategies.

(2) Various case studies to reflect and explain the real market situation.

In this study, only “A” construction company is considered to explain the market situation based on developed model. Various case studies from different tier groups are needed to be applied and used to describe the effectiveness of the model and logics.

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국 문 초 록

아파트 브랜드는 급변하는 국내 주택 시장 환경과 함께 변화하는 수요자의 사회적·심리적 욕구를 충족시키기 위한 대안으로 개발되어, 주택 판매 수익 창출에 장기간 긍정적 효과를 창출하였다. 그러나 브랜드 인지도와 이미지 향상에 집중한 판매 전략을 수행한 건설회사들은 거주자 만족도 및 재구매, 구전효과 등을 포함한 브랜드 충성도 구축에 어려움을 겪게 된다. 본 연구는 이러한 한계를 극복하고 균형있는 브랜드 자산의 발전을 통해 건설 회사의 지속적 수익 창출을 위한 전략 제시를 목적으로 한다. 이를 위해 국내 건설 시장 및 브랜드 자산 요소들의 특성을 파악하고, 이들의 인과관계 및 자산 형성 과정의 단계별 분석을 실시한다. 또한, 모델링을 통한 브랜드 관리의 무형적 측면에 대한 고려와 형성 과정의 포괄적 분석을 위해 시스템 다이내믹스(System Dynamics)가 적용되었다. 브랜드 자산 요소의 인과관계 모델링에 기초하여 주도기업 및 도전기업을 위해 제안된 전략은 건설회사의 장기적 수익창출 및 브랜드 발전을 위해 활용 가능할 것으로 예상된다.

주요어: 아파트 브랜드, 브랜드 충성도, 브랜드 자산, 시스템 다이내믹스

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