GAINING A COMPETITIVE ADVANTAGE THROUGH
MARKET RESEARCH INTO HOME BUYER PREFERENCES
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Submitted to the Center for Real Estate Development in partial fulfillment
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Master of Science in Real Estate Development.

ABSTRACT

This thesis argues that home builders can gain a competitive advantage through accurate and systematic market research into home buyer preferences. Its purpose is to devise a pragmatic, cost effective, and highly insightful methodology for gathering and analyzing information related to home buyer preferences.

To develop this methodology, qualitative and quantitative data were collected from a comprehensive review of literature relating to preference measurement from the fields of real estate and consumer products. The insights from these data were then expanded upon through a series of in-depth interviews with several of the leading home builders in the United States and Canada and from consultants to the home building industry.

An argument for why home builders can gain a competitive advantage through market research is established. This argument utilizes the tools of competitive strategy developed by Michael Porter.

Five major forms of market research into home buyer preferences are described, including their application, means of administration, analysis, and implications for the home builder: competitive monitoring, focus groups, survey questionnaires, conjoint analysis, and perceptual mapping.

When applied systematically, each of these forms of market research provides valuable information about home buyer preferences. Home builders who utilize this information to develop and deliver homes that more closely reflect both the home buyer's needs and the firm's capabilities and constraints will achieve a competitive advantage, and thereby increase the profitability of the firm.

Thesis Supervisor: Thomas A. Steele
Title: Chairman, Center for Real Estate

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To my parents and grandparents,
for their love and encouragement,
and to Tracey, my wife, for her love,
understanding, and moral support,
and to whom with gratitude and love
I dedicate this thesis.

apb

To my mother, Beverly Jane Major,
who makes me strong.
And for Scot,
who makes me joyful.
This is for you, given with much love.

maio

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INTRODUCTION

A large percentage of home builders makes only a cursory investigation of the marketplace before launching housing projects.[1] The decisions to buy undeveloped or developed sites, build specific floor plans, include or exclude specific products or amenities, price and finance the homes are often made without the benefit of validated market research. However, as the housing market gets increasingly disaggregated, a growing number of successful home builders are relying on systematic market research procedures to provide information necessary for rational decision making.

There is no single sanctioned method of approach in conducting housing market research. Rather, housing market analysis is a process of determining present and prospective housing demand/supply relationships in a local housing market. Demand is generally a function of demographic and economic variables (e.g., employment, income, price, age, households, and interest rate). However, these objectively measurable criteria do not completely define the demand function for homes. Subjective variables, such as home buyer preferences as well as expectations concerning price, income, and interest rates also impact demand.[2]

Information on home buyer preferences is generally sparse and of uneven quality when compared to information on objective criteria (e.g., interest rates, starts, permits). Most information on home buyer preferences is stored in the minds of those involved with the housing market---developers, builders, planners, architects, and brokers. Yet frequently,

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[1]In a recent survey by *Builder*, February 1992, p. 57, only 50% of respondents stated that they always do market research on products and amenities. 10% of builders never did market research on products and amenities. Big builders were most likely to always do market research (67%).

[2]Theron R. Nelson and Joseph Rabianski. "Consumer Preferences in Housing Market Analysis: An application of Multidimensional Scaling Techniques," *AREUEA Journal*, Vol. 16, No. 2 (1988): p. 139.

housing developments succeed or fail on the basis of qualitative factors derived from home buyer preferences. It is our hypothesis that competitive advantage and increased profitability can be gained by practitioners who employ decision making procedures that are market driven.

The primary purpose of this thesis is to devise a pragmatic, cost effective, and highly insightful methodology for gathering and analyzing information related to home buyer preferences. There are two important premises of this thesis: (1) even small improvements in the learning about home buyer preferences and making creative use of this market information can have a major effect in eliciting more favorable responses to a builder's product; and (2) there is no home building organization of any size or nature that cannot substantially improve its use of information on home buyer preferences to develop and deliver homes that more closely reflect both home buyers' needs and the firm's capabilities and constraints.[3]

This thesis is organized into a number of chapters. The first chapter applies Michael Porter's research into competitive strategy to the home building industry. The second chapter addresses how home buyer preferences can be determined through competitive monitoring. Various survey techniques are presented in the third chapter. The use of focus groups is discussed in the fourth chapter. The fifth chapter reviews the design, construction and use of questionnaires. The sixth chapter examines the use of conjoint analysis and perceptual mapping to gain insight into home buyer preferences. The seventh chapter briefly discusses perceptual mapping and the final chapter presents a synopsis of our finding vis-a-vis market research into home buyer preferences, recommends paradigms for different sizes of home builders, and discusses recommendations for future research.

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[3]Adapted from Vincent P.Barabba and Gerald Zaltman. *Hearing the Voice of the Market* (Boston, Harvard Business School Press, 1991): p. ix.

CHAPTER ONE

COMPETITIVE STRATEGY:
An Overview of Why Market Research Into Home Buyer
Preferences Leads to Competitive Advantage

The goal of competitive strategy is to establish a profitable and sustainable position---a

position that is aligned with the forces that determine industry profitability. This section:

(1) utilizes the strategic tools developed by Michael Porter to analyze the home building

industry[4]; and (2) makes the argument that pragmatic use of market research into home

buyer preferences is one element of competitive strategy that will provide a home builder

with a competitive advantage.

Porter suggests that two central questions underlie the choice of competitive strategy.

The first is the attractiveness of the industry for long-term profitability and the factors that

determine it. Industries have unique characteristics which determine their attractiveness

for sustained profitability. The second central question in formulating competitive strategy

is the determinants of relative competitive position within an industry. These two

questions will be explored in the ensuing text.

I. Structural Analysis of the Home Building Industry

Porter utilizes two tools to analyze the structure of the home building industry: the

segmentation matrix, and the five forces model.

A. The Segmentation Matrix

Competitive strategy must grow out of both a thorough understanding of who the

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[4]The strategic tools used can be found in two of Porters books: (1) Michael E. Porter. *Competitive Strategy, Techniques for Analyzing Industries and Competitors*, New York, The Free Press, 1980, and (2) Michael E. Porter. *Competitive Advantage, Creating and Sustaining Superior Performance*, New York, The Free Press, 1985.

participants are in the industry, and of the rules of competition that determine the industry's profitability. The home building industry is not homogeneous----a firm can choose to participate in a number of different industry segments. Porter's segmentation matrix is a useful tool that helps visualize the home building industry as an array of products and buyers. (See Figure 1.1). An important aspect of the home building industry is that the segmentation matrix can be expanded to include a very large number of narrowly defined buyer and product variety segments---each home buying segment possessing a unique set of preferences.

B. The Five Forces Model

The rules that determine industry profitability are embodied in five competitive forces: (1) the entry of new competitors; (2) the rivalry among the existing competitors; (3) the threat of substitutes; (4) the bargaining power of buyers; and (5) the bargaining power of suppliers. (See Figure 1.2).

Figure 1.1
The Segmentation Matrix

| | Types of Builders and Homes | | | | |
| | Custom Builder | Semi-Custom Builder | | Production Builder | |
Home Buyer Types	Single-Family	Single-Family	Multi-Family	Single-Family	Multi-Family
First time - single					
First time - married w/o children					
First time - married w/children					
Move-up family					
Established family					
Luxury family					
Move-down family					
Empty nesters					
Snowbirds					
Divorcees					
Investors					

Source: Derived from Michael E. Porter, Competitive Strategy

Figure 1.2
The Five Forces Model


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                    ┌─────────────────────────┐
                    │   Potential  Entrants   │
                    └─────────────────────────┘
                               │ Threat of
                               │ New Entrants
                    ┌─────────────────────────┐
┌──────────┐        │   Industry  Competitors │        ┌──────────┐
│          │ Bargaining Power          Bargaining Power │          │
│ Suppliers│ of Suppliers              of Buyers        │  Buyers  │
│          │                                            │          │
└──────────┘        │ Rivalry Among Existing Firms │    └──────────┘
                    └─────────────────────────┘
                               │ Threat of
                               │ Substitute Products
                               │ or Services
                    ┌─────────────────────────┐
                    │   Substitute Products   │
                    └─────────────────────────┘
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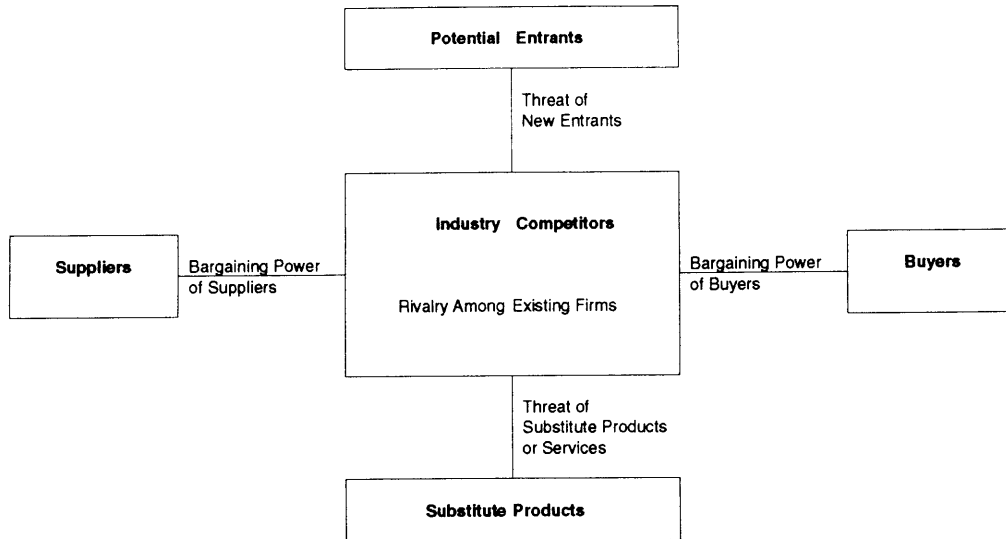
Source: Michael E. Porter, Competitive Strategy

Following is an analysis of the five competitive forces that make up the model:

1. Threat of New Entrants

New entrants into an industry bring in additional supply. In a competitive industry an increase in supply, keeping demand at a fixed level, generally results in prices being bid down thereby reducing industry profitability. The threat of new entrants depends upon the barriers to entry that are present, coupled with the reaction from existing competitors that the entrant can expect. The barriers to entry in the home building industry are discussed below.

a. Economies of Scale. Historically, housing economists have argued that economies of scale are present in home building, but only to a certain point, after which diseconomies of

scale occur. The average cost curve describes the extent to which the cost of constructing

a home changes as the number of homes being built changes. Therefore, the average cost

curve is U-shaped. (See Figure 1.3). The short-run average cost curve (a) is based on

given fixed expenses (e.g., equipment). The long-run average cost curve (b) refers to the

cost structure generated by the envelope of all the firm's short-run average cost curves.

The cost of construction per unit falls with increasing levels of production until an annual

production level of 300-500 units is met. At this level, costs begin to rise, primarily due to

the difficulties in managing the larger organization that is required to handle this level of

production.[5]

Figure 1.3
Average Cost Curves
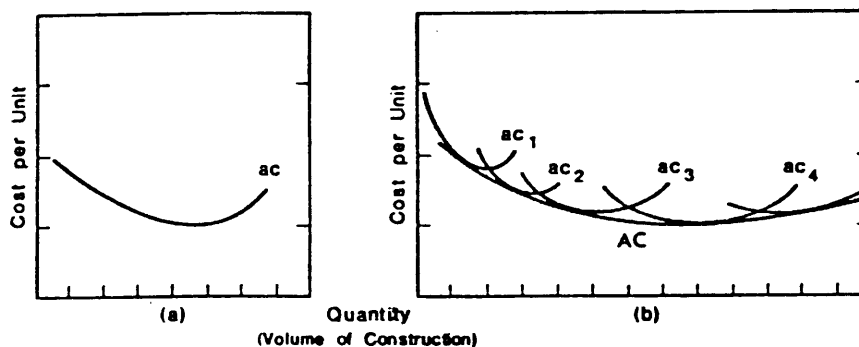
Source: Cassimatis, Peter. p. 56

Arguably, economies of scale increase as the homogeneity of the housing being built

increases. Furthermore, standardization allows prefabrication to take place.

Prefabrication results in firms lowering their production costs and increasing their

[5]Peter Cassimatis. *Economics of the Construction Industry*, New York, National Industrial Conference Board, 1969, p. 56, and Leo Grebler, *Large Scale Housing and Real Estate Firms*, New York, Praeger Books, 1973.

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product's quality.

Conversely, as the housing being built gets more and more heterogeneous, economies of scale decrease. Custom home builders who produce a small number of very different homes are able to create a higher quality, more heterogeneous product more efficiently than a tract builder. That is, large scale and hence lower costs may involve trade-offs with quality and ability to create heterogeneous products.

b. Economies to Vertical Integration. Home builders who have integrated into land development may create barriers to entry to home builders who have not. Here the entrant must enter the industry integrated or face a cost disadvantage for the purchase of lots, as well as foreclosure from obtaining lots to build homes if most established competitors are integrated. Foreclosure, in this situation, results from integrated firms only selling lots in-house to their home building business unit. Furthermore, if the land development business unit of an integrated firm sells lots to other non-integrated home builders as well as its in-house unit, the non-integrated firm may be unable to get comparable prices on lots and/or obtain inferior quality lots.

c. Locally Oriented Markets. Home builders with a local presence are generally more familiar with the market and therefore can spot opportunities more quickly than builders without a local presence. Because housing is such a heterogeneous good, niche opportunities are available to those home builders who have the greatest ability to spot them. These niche opportunities are particularly suited to smaller home builders who have the flexibility to adapt their organizations to the opportunity. Thus, locally oriented markets combined with heterogeneous products, create opportunities and easy entry for smaller firms.

d. Capital Requirements. The need to invest a large amount of capital in order to compete creates a barrier to entry. In the home building industry, capital is required for purchasing key inputs, such as equipment and land holdings. Equipment requirements are limited---a pickup truck and a phone are the only essential ingredients.

However, as the scale of the home building operation progresses from custom building to integrated production building, the amount of necessary capital for land holdings also increases. Recently the scarcity of financing has eliminated many smaller, poorly-capitalized firms from obtaining the necessary capital to participate in the market. This credit situation is the prime reason why small and mid-size home builders are being forced out of the market. As a recent article in the Wall Street Journal pointed out:

> Smaller builders are accustomed to borrowing money on a project-by-project basis, with the loans secured by the value of the land or unbuilt homes. While the smallest, "spot-lot" builders may put up only a home here and there, mid-size builders generally buy tracts of land, then put in roads, sewers and utilities, with the payback coming only after the houses are built and sold. But countless banks have simply stopped making loans for such projects, determined to cut their exposure to real estate. They often cite pressure from regulators for just that.
>
> In contrast, most large builders don't operate through project-by-project loans, and they certainly don't borrow 100% of needed funds, as smaller builders often must. When they can't finance a project from cash on hand, the stronger firms may dip into a revolving credit line---which smaller builders rarely can get, lacking the track record and equity of many large publicly held firms. These credit lines are not secured by the real estate. "As far as a big bank is concerned, that's not a real-estate loan---it's a corporate loan," says Kent Colton, executive vice president of the National Association of Home Builders.[6]

Thus, financing for capital requirements has become a barrier to entry to build anything

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[6]Jim Carlton and Mitchell Pacelle. "Weak Home Market Confers an Advantage On Largest Builders," *Wall Street Journal* (January 27, 1992): pp. A1, A5.

more than just a couple of homes per year. Some housing analysts feel that the credit crunch will create enormous growth for the publicly held home building companies who have a source of funds that smaller builders do not have. This may be true in the short-term, but in the long-term, financing is available to industries that are profitable. Hence, in the long-term, financing for capital requirements will not present a barrier to entry.

e. Government Policies. Government policies can foreclose or limit entry into markets with no or slow growth policies. Markets with these policies face an additional barrier, with the advantage conferred to those builders holding zoned, permitted land.

Overall, the structure of the home building industry reveals that there are **no sizeable barriers to entry**. This is particularly true for smaller-scale home builders (e.g., custom home builders), but less so for larger-scale home builders. Entry barriers can exist, largely in the form of capital requirements, economies of scale, and ability to obtain zoned land and obtain land at reasonable prices. However, offsetting factors, such as the ability for smaller firms to create heterogeneous products, tend to limit the magnitude of this barrier.

2. Intensity of Rivalry Among Existing Competitors

Rivalry among existing competitors in the home building industry takes the form of price competition, incentives, increased advertising, and increased customer service and warranties. Rivalry occurs because one or more firms feels the pressure to increase sales, (due to such factors as the desire to grow, heavy inventories, and to utilize idle capacity). Intense rivalry is the result of a number of structural features in the home building industry: (a) numerous and equally balanced competitors; (b) high storage costs; (c) lack of differentiation; (d) cyclical demand; (e) diverse competitors; (f) high exit barriers; and (g) low growth of the industry.

a. Numerous or Equally Balanced Competitors. The home building industry is characterized by numerous firms with equal power within their segment. This increases the likelihood that one of the firms will behave in a highly competitive manner, believing that its moves will go unnoticed by its competitors.

b. High Storage Costs. High storage costs, in the form of interest on inventory (built product, serviced land, or raw land), leads to price cutting by competitors when inventory costs are putting a strain on the firm's profitability. High storage costs particularly affect those firms who speculate and hold inventory. Therefore, periods of suppressed demand, following a period of rapidly increasing demand, will generally find speculators with a large degree of inventory. This results in price cutting, which augments the cyclical nature of prices in the industry.

c. Lack of Differentiation. As homes become more and more commodity-like---a condition that is increasingly prevalent in new subdivisions created by integrated production builders---buyers are more likely to base their purchasing decision on price rather than the differentiating attributes of the housing. Results from a recent survey indicate that 56% of buyers first consider price when selecting a new home. Conversely, style and appearance is the first factor considered by 37.8% of new home buyers.[7] As homes produced by production builders tend to be more homogeneous than homes produced by custom builders, heightened price competition and rivalry is more of a factor in this segment of the industry.

d. Cyclical Demand. Demand for new homes is generally cyclical. "Cyclical demand not only guarantees overcapacity in downturns but also seems to lead to excessively

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[7]Susan Bady. "What 1992 Buyers Want in Housing," *Professional Builder and Remodeler* (December 1, 1991): p. 79.

optimistic expectations in upturns."[8] Compounding the problem of cyclical demand is the long lead time required to add capacity, (especially true for the process of converting raw land to serviced lots). These long lead times require firms to base their decisions on projections of future demand and supply. If these projections are overly optimistic and do not materialize, firms find themselves with excess capacity which leads to increased price competition. Perhaps excess capacity is also a function of the entrepreneurial characteristic of most home builders, who prefer the risk of excess capacity to the penalty of not capitalizing on opportunity if demand materializes.

e. Diverse Competitors. The home building industry is composed of participants ranging from the single craftsman with a pickup truck and a phone, to large public firms with thousands of investors. Such a range of competitors ensures the presence of differing strategies for how to compete. In particular, owner-craftsmen may be satisfied with a lower return on their capital (resulting from lower prices) in order to maintain their independence, and to keep doing the work they love. This conflicts with the goals of public firms, who must produce returns on investment that are competitive with other publicly traded firms. Hence, the willingness of small firms to cut prices and accept lower levels of profitability may limit the profitability of the larger concern.

f. High Exit Barriers. "Exit barriers are economic, strategic, and emotional factors that keep companies competing in business even though they may be earning low or even negative returns on investment."[9] A large number of home builders are composed of owner managers who have spent their lives in the industry. They know how to do nothing else, and thus their skills are non-transferable. These high psychological exit barriers create excess capacity that does not leave the industry. Participants are willing to fight to

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[8]Michael E. Porter, *Competitive Strategy*, p. 328.
[9]Ibid., p. 20.

maintain their presence and this can result in strong rivalry among firms. Hence, the profitability of the entire industry, except in periods of rapidly increasing demand, can be persistently low.

g. Growth of Industry. Rapid growth of an industry tends to mask strategic errors and most companies in the industry tend to survive and prosper. The boom in the home building industry during the late 1970's and early 1980's created conditions of easy entry into the market.[10] When the market grows rapidly, an entrant will take away market share from incumbent home builders, but the incumbents' absolute sales will generally not decrease. Thus, capacity added by the entry home builder is quickly utilized without triggering retaliation, and destroying prices. As the market for new homes decreases and enters a slow-growth period, entry into the market will not only take market share away from incumbents, but will decrease the incumbents' absolute sales. Therefore, entrants into a slow growing market will be particularly unwelcome, and vigorous retaliation is likely.

Overall, the structure of the home building industry lends itself to **a high degree of intensive rivalry** among existing competitors. Rivalry exists primarily in the form of price cutting. Price cuts can be quickly matched by rivals, which may leave the entire industry worse off from the standpoint of profitability.

3. Pressure from Substitute Products

Substitute products to new homes come primarily from two sources: resale homes, and rentals. The availability of these products limit the potential prices that new home builders

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[10]The homebuilding industry peaked in the late 1970's with over 2 million starts. Annual starts have been on the decline since 1986. In 1991, there were only 1.02 million starts. Many housing analysts predict only 1.25 million starts a year until at least the mid 1990's. See, Carlton & Pacelle. *Wall Street Journal*, p. A1.

can charge for their product. Pressure from substitutes is particularly keen at the lower price points (e.g., starter homes). Even small price increases in new starter homes may make these homes unobtainable (due to mortgage constraints) to first-time home buyers. Hence, people will seek either rental or resale housing to accommodate their needs (i.e., these forms of housing tend to have lower prices, and are therefore more affordable).

Overall, **the pressure from substitute products is moderate** in the home building industry. Housing is a basic need, and needs change. The ability of home builders to offer new homes with characteristics that mirror the needs of home buyers decreases the pressures from substitute resale and rental properties. This is especially true at the upper-end of the market. Home buyers in this segment are more likely to buy homes based on style, appearance, and amenities, rather than on price. New home builders that offer these features are less likely to compete with substitute rental and resale products that, by definition, cannot offer these features.

4. Bargaining Power of Buyers

As the bargaining power of buyers increases, prices are usually forced down, or buyers bargain for higher quality and more services. Hence, the greater the bargaining power of buyers, the more value is captured by the buyers, and the less profitable is the industry. The following two factors affect the bargaining power of buyers in the home building industry:

a. The purchase of a home represents a significant fraction of a consumer's total expenses. Generally speaking, as the cost of a product increases, the amount of time spent shopping for that good also increases. Therefore, home buyers are prone to expend a considerable amount of resources to shop for the home that most closely matches their needs, at the most favorable price.

b. Home buyers have full information. The amount of information available to new home buyers is increasing. With greater amounts of information, home buyers are in a better position to ensure that they receive the most favorable prices in a cost/benefit scenario.

Therefore, although home buyers individually do not exert a large amount of buyer power on home builders, the collective searching actions of home buyers ensure that home builders remain competitive vis-a-vis price and amenities.

5. Bargaining Power of Suppliers

Suppliers to home builders consist of landowners, land developers, planners (who supply zoning), construction material manufacturers, and subcontractors. The theory is that powerful suppliers can exert bargaining power over industry participants by raising their prices, thereby capturing a larger share of the value that the industry creates.

The state of the economy has a lot to do with the bargaining power of suppliers. In periods of rapidly increasing demand, the power of each supplier group increases dramatically. For example, periods of rapidly increasing demand generally create a shortage of skilled labor. There is substantial empirical evidence that scarce, highly skilled employees and/or tightly unionized labor can bargain away a large fraction of potential profits in an industry.[11] Furthermore, periods of high demand allow city planners to extract concessions from builders, such as open space and greater landscaping requirements, thereby capturing a larger share of the builder's profits than in periods of slower growth.

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[11]Michael E. Porter, *Competitive Strategy*, p. 28.

Subcontractors also possess the ability to forward integrate into home building. This provides a check against the home builder's ability to improve on the bid he can get from the subcontractor. However, during periods of "normal" growth, the fragmented nature of subcontractors tends to limit the amount of power they have over home builders.

Overall, depending upon the state of the economy and the type of supplier, **suppliers generally tend to exert only a moderate amount of bargaining power** over home builders.

II. Competitive Strategy

Once the forces that determine industry competition and the underlying structural reasons for their presence have been identified, the firm is in a position to assess its strengths and weaknesses, and derive competitive strategy to create a defendable position against the five competitive forces.

The home building industry is a classic case of a fragmented industry. A fragmented industry is "an industry in which no firm has a significant market share and can strongly influence the industry outcome."[12] The principle causes of its fragmentation are: low entry barriers, absence of significant economies of scale, highly cyclical sales fluctuations, high storage costs, little advantages of size when dealing with buyers or sellers, diseconomies of scale when having to build heterogeneous housing types, diverse market needs (different buyers each desiring special features and willing to pay for this non-standardized product), high exit barriers, and local regulation.

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[12]Ibid., p. 191.

Although it is a fragmented industry, there are numerous factors which indicate that a structural change may occur in the home building industry. This structural change will see a dichotomy in the firms competing. At one end of the spectrum will be the better-capitalized larger home builders, and at the other end will be a revolving number of smaller custom and semi-custom home builders.

Porter suggests that there are two ways to compete in a fragmented industry. The first is to overcome fragmentation by formulating strategy that will consolidate the industry. The second is to cope with fragmentation by endeavoring to become one of the most successful firms in the industry, albeit garnering only a modest market share. The strategies used to compete are all derivatives of the three generic strategies developed by Porter, and illustrated in Figure 1.4. Please note that our discussion concentrates on strategies that specifically deal with market research into home buyer preferences.

Figure 1.4
Generic Strategies Model

Competitive Advantage

		Lower Cost	Differentiation
	Broad Target	1. Cost Leadershp	2. Differentiation
Competitive Scope	Narrow Target	3A. Cost Focus	3.B Differentiation Focus

Source: Michael E. Porter, Competive Strategy

A. Overcoming Fragmentation

Overcoming fragmentation can present significant rewards to firms that are able to pursue this high risk strategy. The larger, well-capitalized firms are more likely to utilize

strategies that can overcome fragmentation due to the costs of implemention. Generally speaking, these strategies fit into the generic strategy labelled "Cost Leadership" in Figure 1.4. Porter describes some common approaches to overcoming fragmentation:

1. Create Economies of Scale or Experience Curve

As discussed earlier, home builders are faced with a U-shaped average cost curve which exhibits diseconomies of scale after 300-500 units. To create economies of scale, firms should set up independent business units capable of producing 300-500 homes per year (more or less at the minimum average cost level). Each successive business unit will be faced with a lower overall average cost curve due to the sharing of fixed costs and the transfer of skills. This allows the firm to produce homes at a lower cost than its competitors, thus achieving a competitive advantage.

2. Standardize Diverse Market Needs

Product or marketing innovations can standardize market needs that previously were diverse. Diverse market needs generally require many diverse competitors, each with a high degree of specialized market knowledge and capabilities. RAYCO, a San Antonio-based home builder, has introduced both product and marketing innovations aimed at standardizing diverse market needs, resulting in a market share of over 65% (1st quarter 1992).

RAYCO offers a standardized home to different price points in the market. Home buyers are able to choose from a large variety of floor plans and elevations within each price point, but generally speaking, the basics of the homes remain the same. These plans are designed to appeal to 70% of the market at that price point, and are designed according to results generated from systematic and comprehensive market research programs.

RAYCO's marketing innovation is the 12,000 sq.ft. showroom which home buyers visit to choose from a large number of options. For example, 32 different varieties of brick are displayed on 4' X 4' pedestals. This showroom accomplishes a number of innovative marketing solutions. First, it allows home buyers to customize an otherwise standardized product to more closely fit their needs. Secondly, it allows RAYCO to concentrate all of its product marketing efforts in one location, thereby eliminating the need to have product samples at various model home locations. Third, the showroom emotionally attaches home buyers to RAYCO.

3. Recognize Industry Trends Early

Recognizing trends early and positioning the company to take advantage of them is another strategy suggested by Porter. This strategy requires that firms undertake comprehensive, systematic market research programs, and be willing to make market based decisions.

B. Coping with Fragmentation

At the other end of the spectrum will be a revolving number of smaller custom and semi-custom home builders who exist primarily by taking advantage of niche opportunities too small for the larger home builders to take advantage of. These firms will be revolving because one mistake can put a poorly-capitalized smaller firm out of business, and ease of entry into this segment will permit new firms to enter. Smaller home building firms are better off coping with fragmentation via strategic positioning than creating strategies aimed to consolidate the industry.

There are a number of possible strategic alternatives that home builders can pursue to cope with the fragmented nature of the industry. These strategies are all derivatives of Porter's "differentiation" generic strategies:

1. Specialization by Customer Type or by Product Segment

An effective strategy for achieving above-average results is to specialize on a tightly constrained type of housing, such as custom one-of-a-kind housing, retirement housing, golf course communities, and garden apartments.

This focused strategy, also called a niche strategy, allows a firm to acquire expertise in developing the product. This expertise allows a focused home builder to have a competitive advantage over its competitors. The key to developing competitive advantage is to become better informed than competitors through market research. Market research into home buyer preferences will allow the focused builder to make better programming and marketing decisions, thus creating product that has a higher value to the home buyer, and increasing the profitability of the builder.

2. Specialization by Type of Order

Another approach to coping with the fragmented home building industry is to segment the industry into order types, and focus on satisfying the customers who place certain types of orders. That is, customers who require a unique, one-of-a-kind home can be better serviced by a custom builder who can efficiently provide the service and quality that the home buyer expects in his heterogeneous home. Conversely, customers whose first requirement is an affordable place to live can be better served by a production builder who can offer a product more in keeping with the buyers' needs, at a more competitive price.

The key to success in this strategy is to know the customers' needs. A production builder, who is going to invest a great deal of money in finished lots and model homes had better be sure that the product being created is what the home buyer wants. Market research into home buyer preferences will allow insight into the market. Thus the firm can produce homes more in line with buyer needs, thereby capturing greater value for the firm.

3. Focused Geographic Area

Concentrating on a given market area will allow a home builder to economize on certain costs (e.g., sales force, marketing). More importantly, focusing on a specific geographic area will allow the builder to become more intimately familiar with buyer needs than builders with a national scope. This is only true if the geographically concentrated builder employs a more insightful market research program than the national home builder. Hence, home builders who undertake this strategy must faithfully undertake market research into home buyer preferences to keep one step ahead of the competition, thereby providing homes more in tune with buyers' needs.

C. The Value Chain

The above strategies require a firm to undertake market research into home buyer preferences so that it designs, produces, markets, delivers, and supports its products in a way that provides the firm with a competitive advantage. Porter's value chain disaggregates a firm into strategically relevant activities, and thus allowing a systematic evaluation of the activities that a home builder performs and the interaction between these activities that leads to competitive advantage. (See Figure 1.5).

The firm value chain consists of value activities and margin. Value activities are the distinct activities a firm performs to create a product that is valuable to buyers. Margin is the difference between what it cost to create a product (i.e., what it cost to create "value" for buyers) and how much buyers are willing to pay for the product (i.e., how much buyers value the product).

Value activities are divided into primary activities and support activities. Primary

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Figure 1.5
The Firm Value Chain

Support Activities	Firm Infrastructure				M A R G I N
	Human Resource Management				
	Technology Development				
	Procurement				
Primary Activities	Inbound Logistics (Land)	Operations (Constr.)	Marketing & Sales	Service	M A R G I N

Area in which Market Research activity is located
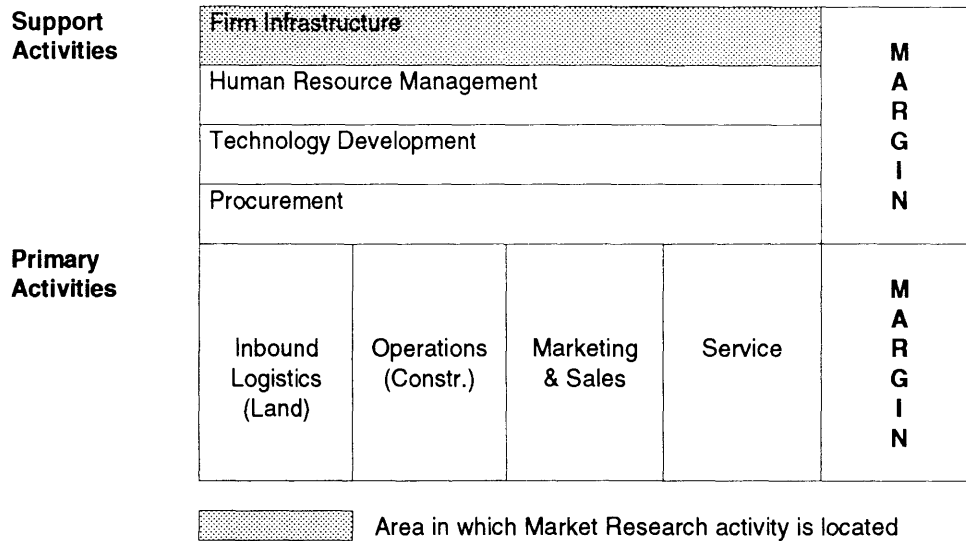
Source: Derived from Michael E. Porter, Competitive Advantage

activities are involved in the physical creation and sale of the home, as well as after sale assistance. Support activities support the primary activities and each other by providing such functions as procurement, human resources, accounting, market research, and R & D.

Market research is part of the value activity labeled "Firm Infrastructure" in Figure 1.5---a value activity that supports the entire chain. Porter's firm value chain allows us to visualize what happens when a firm makes market-based decisions. Market-based decisions are translated into strategy through programming decisions. This strategy is linked to all other activities in the firm value chain. For example, if the market research department concludes that the empty nester market prefers to have the master bedroom on the main floor, this type of product can be systematically designed, produced, and marketed to empty nesters. This is why market research into home buyer preferences is so

crucial to the success of a development. If the development does not contain the features that home buyers prefer, it does not matter how well the housing is constructed or marketed, it will not create the same degree of value to home buyers as housing that more closely resembles their needs.

III. Conclusion

The home building industry is populated with a large number of small and medium-sized companies and exhibits all the criteria of a classic fragmented industry. Firms in fragmented industries have few choices when it comes to strategy---either develop strategies to overcome the fragmentation, or develop strategies to cope with the fragmentation.

It is unrealistic to presume that changes are forthcoming that will revolutionize the home building industry into a consolidated industry. Hence, a home builder must focus on creating strategies that cope with the fragmentation by becoming one of the most successful firms in the industry. One strategy that will lead to success is to conduct systematic and comprehensive market research into home buyer preferences.

Therefore, home builders should strive to create a disciplined approach to the gathering, management, and application of market research into home buyer preferences. Market researchers should strive to present information of great decision making value, (in a form that is clearly placed in a decision context, that facilitates the making of better judgements, and is easily synthesized with the decision maker's other knowledge). The greater the quality of the home buyer preference data, the greater the market-based decision quality. The greater the decision quality, the greater the value the home builder can create for home buyers, thereby giving the firm a competitive advantage and increasing the profitability of the firm.

CHAPTER TWO

COMPETITIVE MONITORING

Market research into home buyer preferences can be thought of as a demand analysis. That is, research is conducted into preferences, and preference is the forerunner to demand. Conversely, competitive monitoring can be thought of as a supply analysis. The theory is that if Builder "A" is selling more homes than Builder "B," home buyers prefer Builder "A's" homes. Thus, by studying Builder "A's" homes, a competitor can get a "feel" for home buyer preferences.

The goal of competitive monitoring is to: (1) gain general insight into home buyer preferences through analysis of permit/sales data; (2) find out who the leading builders are; (3) find out where the top subdivisions/projects are located; and (4) gain insight into home buyer preferences through a micro level analysis of the leading builders.

It is important to recognize that competitive monitoring will only allow insight into what home buyers prefer given the range of homes from which they have to choose. If competitive monitoring was the only market research a builder performed, his product would simply represent the status quo. He would never have a product capable of giving him a competitive advantage. Furthermore, just because all of the leading builders are offering an array of home attributes, this does not mean, whatsoever, that these attributes represent home buyer preferences.

Hence, competitive monitoring does not give a builder a competitive advantage. It does, however, accomplish two important tasks. First, it helps ensure that a builder does not create a product that has the attributes of the poorest selling home. Second, it provides

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the home builder with a general feel for home buyer preferences, the market, and the competition. Moreover, competitive monitoring must be undertaken as the supply side of the equation when completing a gap analysis. That is, market research into home buyer preferences tells the builder what kinds of homes buyers demand, competitive monitoring tells what is being supplied, and the difference is the gap---the hole---the opportunity! **(See page 120).**

This chapter is organized into a number of sections. The first section discusses how permit surveys are analyzed for insight into home buyer preferences. The second section addresses the analysis of sales data. Micro-level competitive analysis is discussed in the third section. The fourth section examines how builders can gain insight into home buyer preferences through historical tracing of resale units. The last section reviews how analysis of phased developments can suggest home buyer preferences.

I. Permit Surveys

A permit survey is the cornerstone of an insightful market research program. It provides the builder with information on the total number of permits granted, which builders received the permits, the location where the homes will be built, and what is going to be built. The goal of the permit survey is to zero in on the builders who have taken out the greatest number of permits and try to identify the general attributes of their homes---the attributes that are contributing to their success.[13]

Permits should be studied monthly to provide timely information that the builder needs to keep abreast of changes in the market. If time is an issue, particularly for a small builder, the permit survey should be part of a comprehensive quarterly review of the competition.

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[13] Besides product factors, marketing factors play a large role in the sale of homes. This study focuses only on product attributes.

It is extremely important that this survey be done on a systematic basis. An analysis of permits for only one period provides but a snapshot of the market, and this one period may not present an accurate view of the market. Only through the analysis of **why** the numbers change from period to period does the builder really begin to understand home buyer preferences.

The builder must be aware that the issuance of building permits is not completely dependable as an indicator of units that will be shortly completed. For example, a downturn in market conditions may result in builders allowing permits to lapse. Furthermore, the information on permits is sometimes inaccurate. Hence, permits should be one of only several measures of supply. Other measures include sales, starts, and closings. Thus, the builder should check on the accuracy of the permit information before basing major decisions on it.

There are two steps involved in conducting a permit report. The first step is gathering the data, and the second is analyzing the data.

A. Gather the Data

Permit data is typically available from the county or city planning office. Some offices have computerized data bases, and can perform custom permit report for a minimal charge. (See Appendix I for an example of a customized permit report).

B. Analyze the Data

The second step is to analyze the data. Analysis is performed on data that have been cross tabulated. The following sections suggest various forms of analysis that lead to insight into home buyer preferences.

1. Permit Summary Report

The permit summary report provides a general overview of what is happening in the market. Table 2.1 reports the cross tabulation of location and price point, and then compares the current quarter's permit data to the comparable quarter in the previous year.

Table 2.1
Single Detached Housing Permit Values
Edmonton, May 1992

Area	1991		1992		1992 vs 1991		Comments:
	#	%	#	%	#	%	
Greater than $150,000							
Southwest	7	50%	11	55%	4	57%	Not a lot of action
Mill Woods	1	7%	0	0%	-1	-100%	in this price point
West	5	36%	5	25%	0	0%	
North/Nwest	0	0%	4	20%	4	N/A	
Inner	1	7%	0	0%	-1	-100%	
Total	14		20		6	43%	
% of Total	7%		6%				
$100,000 to $149,000							
Southwest	35	32%	47	26%	12	34%	
Mill Woods	21	19%	17	9%	-4	-19%	
West	9	8%	32	18%	23	256%	New subdivision opened
North/Nwest	31	29%	60	33%	29	94%	Largest net increase
Inner	12	11%	25	14%	13	108%	Where is this product?
Total	108		181		73	68%	Substantial increase
% of Total	55%		47%				
$50,000 to $99,000							
Southwest	1	32%	9	26%	8	800%	
Mill Woods	24	19%	74	9%	50	208%	Substantial increase
West	20	8%	37	18%	17	85%	Moderate increase
North/Nwest	18	29%	46	33%	28	156%	Substantial increase
Inner	13	11%	15	14%	2	15%	
Total	76		181		105	138%	**Hottest Price Point**
% of Total	38%		47%				

2. Product Summary Report

A product summary report segments the permit data into better defined price points. Table 2.2 illustrates price points (broken into $20,000 ranges) cross tabulated with style of

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home, first floor size, gross livable area, number of bathrooms, and fireplaces. The report

is broad enough to allow generalizations into preferences. These generalizations can be

comprehensively studied at a later date. For example, Table 2.2 illustrates the

predominance of split level homes in the low price points, and two storey homes in the

higher price points. This insight is illustrated graphically in Figure 2.1. Graphs of cross

tabulated data provide insight that might otherwise be overlooked in tables of data.

Table 2.2
Product Summary Report

Attributes	PRICE POINTS															
	$50K-$59K	%	$60K-$79K	%	$80K-$99K	%	$100K-$119K	%	$120K-$139K	%	$140K-$159K	%	$160K	%	Total	%
Permits																
Total	16	5%	73	22%	71	21%	108	32%	35	10%	20	6%	11	3%	334	100%
STYLE																
Split Level	10	63%	54	74%	19	27%	8	7%	0	0%	0	0%	0	0%	91	27%
One Storey	4	25%	13	18%	15	21%	19	18%	3	9%	0	0%	0	0%	54	16%
Two Storey	2	13%	6	8%	37	52%	81	75%	32	91%	20	100%	11	100%	189	57%
First Floor Size (sf)																
Up to 999	7	44%	4	5%	13	18%	4	4%	0	0%	0	0%	0	0%	28	8%
1000-1099	7	44%	10	14%	15	21%	12	11%	0	0%	0	0%	0	0%	44	13%
1100-1199	2	13%	31	42%	5	7%	31	29%	0	0%	0	0%	0	0%	69	21%
1200-1299	0	0%	17	23%	9	13%	28	26%	8	23%	1	5%	0	0%	63	19%
1300-1399	0	0%	10	14%	12	17%	10	9%	15	43%	4	20%	0	0%	51	15%
1400+		0%	1	1%	17	24%	23	21%	12	34%	15	75%	11	100%	79	24%
Gross Livable Area (sf)																
Up to 999	6	38%	2	3%	0	0%	0	0%	0	0%	0	0%	0	0%	8	2%
1000-1199	10	63%	41	56%	4	6%	0	0%	0	0%	0	0%	0	0%	55	16%
1200-1399	0	0%	29	40%	20	28%	5	5%	0	0%	0	0%	0	0%	54	16%
1400-1599	0	0%	0	0%	8	11%	0	0%	0	0%	0	0%	0	0%	8	2%
1600-1799	0	0%	0	0%	19	27%	10	9%	0	0%	0	0%	0	0%	29	9%
1800-1999	0	0%	1	1%	18	25%	43	40%	3	9%	0	0%	0	0%	65	19%
1900-2199	0	0%	0	0%	2	3%	41	38%	1	3%	0	0%	0	0%	44	13%
2200-2399	0	0%	0	0%	0	0%	8	7%	18	51%	2	10%	0	0%	28	8%
2400-2599	0	0%	0	0%	0	0%	1	1%	12	34%	3	15%	0	0%	16	5%
2600-2799	0	0%	0	0%	0	0%	0	0%	1	3%	8	40%	0	0%	9	3%
2800-2999	0	0%	0	0%	0	0%	0	0%	0	0%	5	25%	2	18%	7	2%
3000+	0	0%	0	0%	0	0%	0	0%	0	0%	2	10%	9	82%	11	3%
Number of Bathrooms																
1	7	44%	3	4%	1	1%	0	0%	0	0%	0	0%	0	0%	11	3%
1.5	1	6%	8	11%	4	6%	0	0%	0	0%	0	0%	0	0%	13	4%
2	8	50%	25	34%	16	23%	18	17%	3	9%	0	0%	0	0%	70	21%
2.5	0	0%	10	14%	25	35%	53	49%	13	37%	5	25%	2	18%	108	32%
3	0	0%	26	36%	24	34%	35	32%	19	54%	8	40%	3	27%	115	34%
3+	0	0%	1	1%	1	1%	2	2%	0	0%	7	35%	6	55%	17	5%
Fireplace																
No	13	81%	11	15%	3	4%	6	6%	0	0%	0	0%	0	0%	33	10%
Yes	4	25%	62	85%	68	96%	102	94%	35	100%	20	100%	11	100%	302	90%

Figure 2.1
Graph of Price Point and Styles
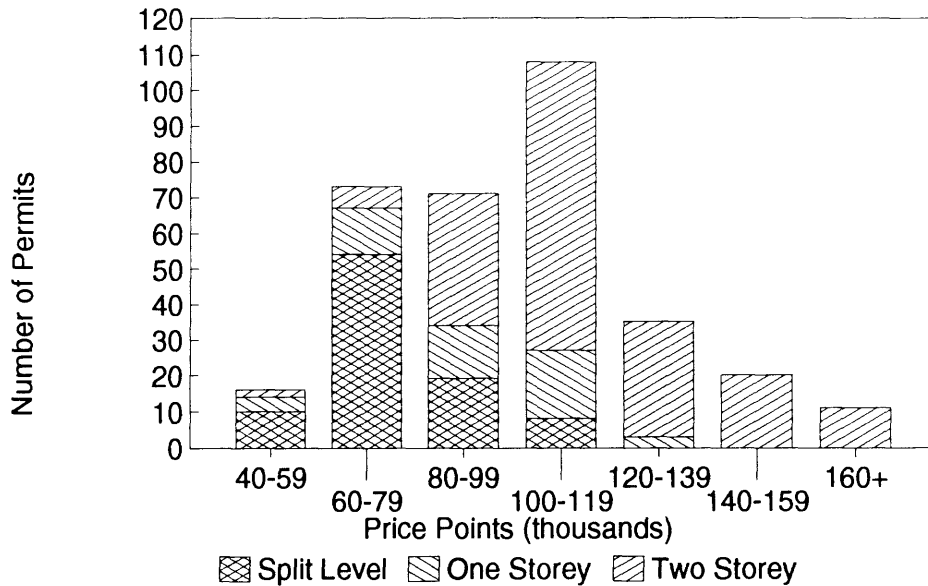
3. Top 20 Permitters Report

A third report that provides highly useful information is a top permitters report. Figure

2.2 provides a graphical view of the 20 leading builders (builders who received the largest

number of permits). The top two builders received 18% of the total permits, while the top

five builders received 32% of the total.

4. Subdivision/Project Report

The next report generated should be an in-depth report of where the permits are going.

Figure 2.3 illustrates the location of the permits (subdivision) cross tabulated with number

of permits. Subdivision 1 (Burnewood) and 12 (Riverbend) stand out as the number one

and two locations.

5. Top Five Builders Report

Now that we are at the point where we know who the leading builders are (by permits), a

Figure 2.2
The Top 20 Builders (By Permits Received) - May, 1992

Legend:
2 = Abbey Lane	16 = Landmark	21 = Melcor	28 = Sammy's
3 = Bir̶holtz	17 = Lehndorff	23 = Park Royal	31 = Sterling
6 = Challenger	18 = Lincolnberg	24 = Pineview	34 = Western Living
9 = Encore	19 = Mach. & Mitchell	25 = Qualico	35 = Champagne
13 = Jayman	20 = Malibu	27 = Reid-Built	36 = Parkwood
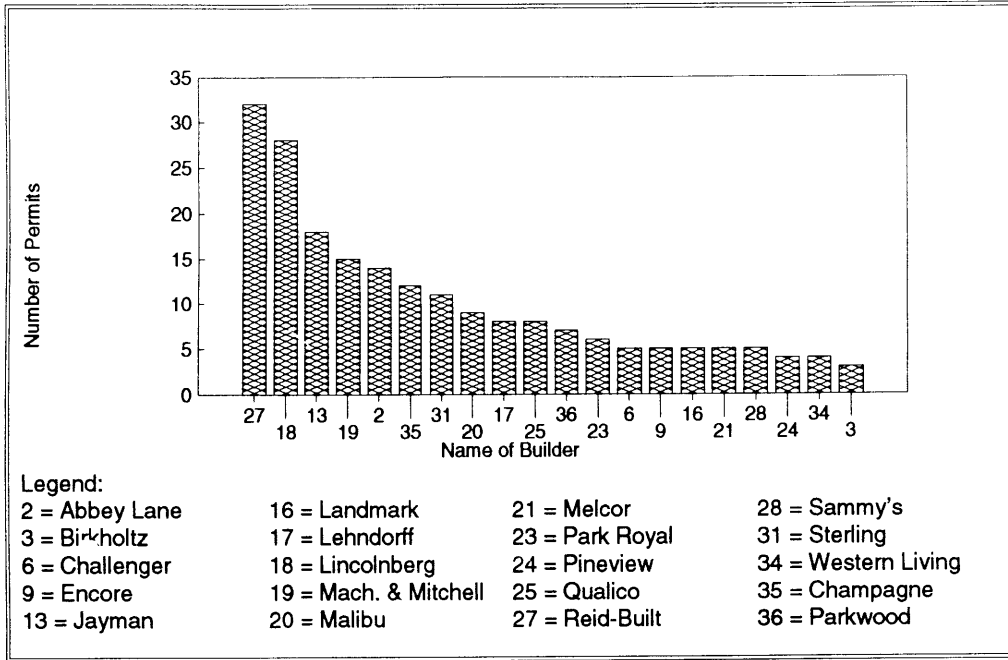
Figure 2.3
Subdivision/Project Report

LEGEND
0 = Other	5 = Lewis Farms	10 = Pilot Sound
1 = Burnewood	6 = Jasper Place	11 = Primrose
2 = Castle Downs II	7 = The Meadows	12 = Riverbend
3 = Lake District	8 = Millhurst	13 = Twin Brooks
4 = Lessard	9 = Palisades	14 = Wildwood
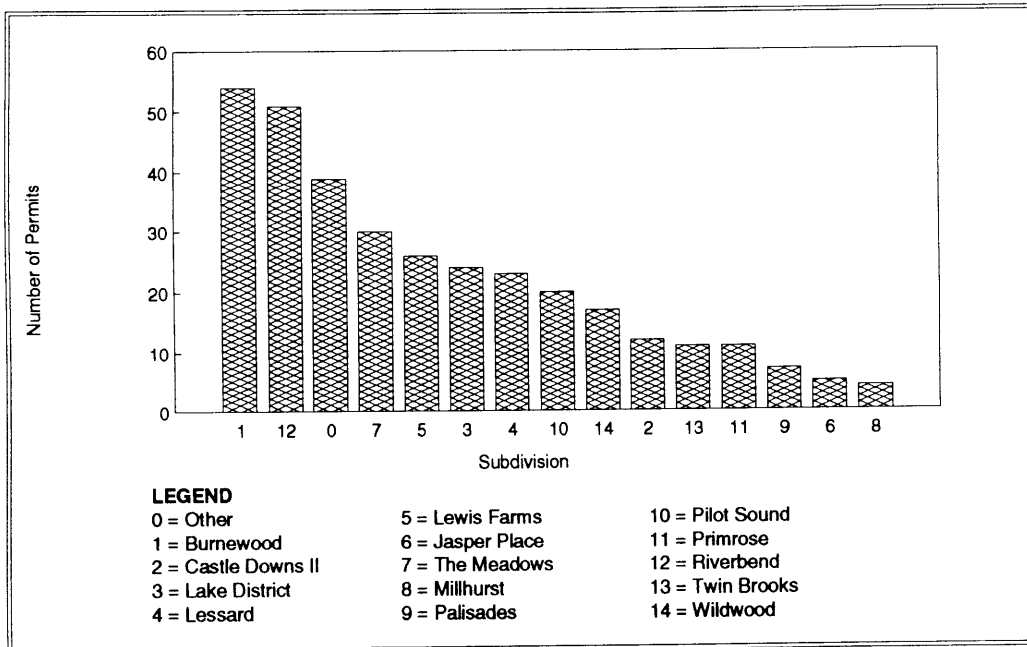
more in-depth look at the builders is an appropriate next step. Table 2.3 cross tabulates the top five builders with basic home attributes and location. This is our first real look into home buyer preferences. <u>There is something about these builders' marketing mix</u> <u>(product, place, promotion and price) that appeals to the home buyer more than other</u> <u>builders' marketing mix.</u>

Table 2.3
Top Five Builders Report (by Permits) - May 1992

Attributes	Name of Builder					
	Reid-Built	Lincolnberg	Jayman	M & M	AC Wstmn	Total
Permits						
Total	32	28	18	15	14	107
Price Points						
50-59K	2	5	0	0	0	7
60-79K	10	12	0	11	0	33
80-99K	14	1	8	2	4	29
100-119K	5	6	9	2	10	32
120-139K	1	2	0	0	0	3
140-159K	0	2	1	0	0	3
160K+	0	0	0	0	0	0
Style						
Split Level	11	13	0	9	0	33
One Storey	9	3	2	3	0	17
Two Storey	12	12	16	3	14	57
Subdivision						
Other	3	0	0	0	0	3
Burnewood	9	8	2	1	0	20
Castle Downs II	0	0	0	0	0	0
Lake District	2	0	0	3	0	5
Lessard	1	1	0	0	5	7
Lewis Farms	4	5	2	5	0	16
Jasper Place	0	0	0	0	0	0
The Meadows	0	1	7	0	0	8
Millhurst	0	0	0	0	0	0
Palisades	0	1	0	0	0	1
Pilot Sound	1	1	7	0	0	9
Primrose	7	0	0	0	0	7
Riverbend	0	3	0	0	9	12
Twin Brooks	1	4	0	1	0	6
Wildwood	4	4	0	5	0	13

6. Leading Subdivisions/Projects Report

Next, the top five subdivisions receive an in-depth analysis. (See Table 2.4). This report provides the home builder with information about the types of homes that are going into each location. This provides us with insight into what home buyers prefer within each of

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these geographic areas. It also tells us the segments (price points) builders are targeting within each location.

Table 2.4
Leading Subdivisions/Projects Report

Attributes	Subdivision					
	Burnewood	Riverbend	Meadows	Lewis	Lake Dist	Total
Permits						
Total	54	51	30	26	24	185
Price Points						
50-59K	9	0	0	0	4	13
60-79K	19	0	3	12	9	43
80-99K	13	6	11	7	4	41
100-119K	9	19	14	6	6	54
120-139K	2	15	1	0	0	18
140-159K	1	7	0	1	0	9
160K+	1	4	1	0	0	6
Style						
Split Level	23	1	6	11	12	53
One Storey	9	7	6	2	7	31
Two Storey	22	43	18	13	5	101

7. Analysis of the Nature of the Market

An analysis of the nature of the market reveals whether the market values price per square foot, or finish value. To prepare the analysis, average permit value per square foot is plotted on the y-axis, and square footage on the x-axis. The plot line, reveals the nature of the market. If the line is steep, the market values price per square foot; if it is shallow, it is a finish-value market.[14] Figure 2.4 illustrates results from an analysis. Generally speaking, the buyers of smaller homes value price per square foot, whereas the middle market tends to be a finish value market. The implications of this analysis are that builders focusing on lower price points should offer homes that have the most square footage for the money and less frills and costly finishes. Builders concentrating on the middle market should focus more on finish value.

Once the permit survey has provided the home builder with general insights into the homes

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[14] "The Price is Right," *Builder* (December, 1989): p. 105.

coming on stream, and identified the top builders and locations, the home builder should focus his research on a micro level analysis of the leading builders and locations. This topic is discussed in the third section of this chapter.

Figure 2.4
The Nature of the Market
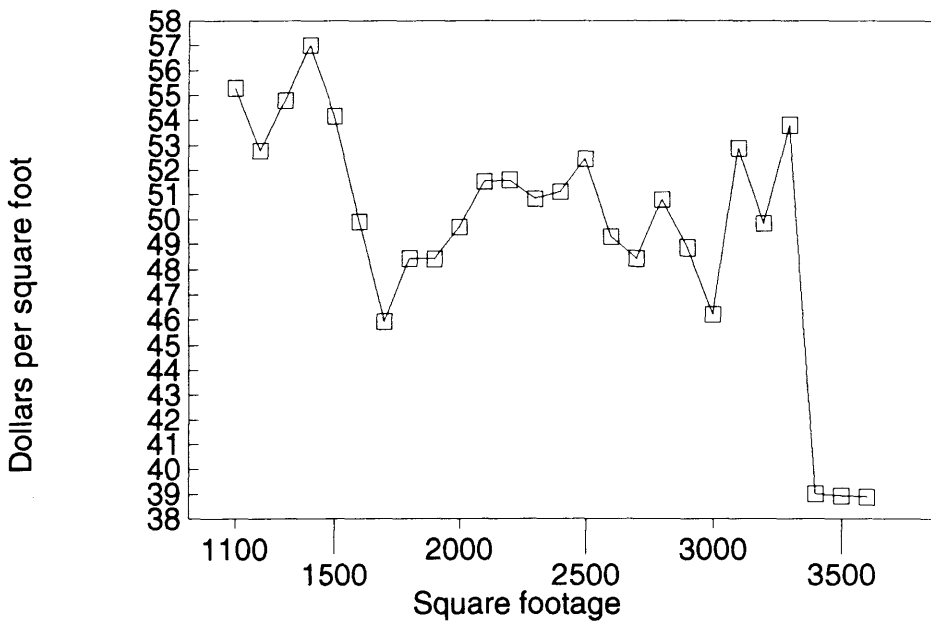
II. Sales Reports

Sales reports should be used to verify the information from the permit reports and to draw additional conclusions vis-a-vis the leading builders and their homes. Sales reports should also be prepared on a systematic basis---most of the builders interviewed prepared comprehensive quarterly sales reports. Sales data can be obtained from the local land registry or, in most major markets, market research firms issue quarterly reports on sales.

The preceding analysis of permit data should also be performed on actual sales data. However, the analysis should not stop there. The following are additional methods of analysis that are more appropriately applied to actual sales data.

A. Market Share Report

Table 2.5 illustrates a market share report. This report of the top 20 builders combines market share information with absorption (sales pace) information.

Table 2.5
Market Share Report

Rank	Builder	Number Of Projects	Total Sales 1st Qtr	Average Sales Pace 1st Qtr	Units Remaining To Sell	Market Share
1	A	10	91	3.03	375	7.1%
2	D	18	57	4.75	435	4.45%
3	Z	13	47	5.22	101	3.67%
4	V	4	46	1.53	560	3.59%
5	Q	3	41	3.42	89	3.20%
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
20	B	5	15	1	57	1.17%

B. Leaders Report

The leaders report presents an analysis of the leading builders of product within price point segments. (See Table 2.6). It provides useful information regarding the sales performance of the current leaders in sales (via absorption) during the current and past quarters, as well as information on the size of development. Solid projects are those that consistently have the highest absorption rates.

C. Increase/Decrease Report

This report lists all the projects that have achieved a price increase/decrease during the past quarter. It provides useful data in that a price increase signals either an increase in the builder's cost, or a realization by the builder that he can earn higher profits by charging

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a higher price. If the increase is due to the latter reason, the homes are probably highly demanded. The reasons for this situation should be closely studied. The results may provide valuable clues into home buyer preferences. (See Table 2.7).

Table 2.6
Leaders Report

Price Points	Builder	Project	Average Base Price	Sales Pace This Qtr	Sales Pace Past 12 mth	4th Qtr Sales 1991	3rd Qtr Sales 1991	2nd Qtr Sales 1991	1st Qtr Sales 1991	4th Qtr Sales 1990	Units Plnd	Units Left
$80-$99,000	Majestic	Southwind	$94,500	5.33	4.83	16	9	14	19	4	107	31
$100-$119,000	D Gunn	Oakwood	$116,600	3.33	2.5	10	4	10	6	3	112	43
$120-$139,000	Dunvegan	Creekside	$127,600	2.67	1.58	8	2	3	6	3	98	62
$140-$159,000	Hill Bros	Mountview	$144,300	2.67	1.42	8	2	2	5	2	47	18
$160-$179,000	Koury	Highlands	$169,900	2.33	1.42	7	4	4	2	0	83	42
$180-$199,000	Pourbaix	Fairfield	$188,500	1.67	3.5	5	5	20	12	5	376	310

Table 2.7
Increase/Decrease Report

Builder	Project	Model	Base Price	New Price	Change Inc/Dec	Percent Change
Hill Brothers	Mountview	Alpine	New Model	$145,000	N/A	N/A
	Canyon	Chinook	$243,900	$223,900	($20,000)	-8.9%
Dunvegan	Creekside	Monarch	$163,600	$165,950	$2,350	1.4%
Koury Homes	Highlands	Carmen	$215,000	$220,000	$5,000	2.3%
Pourbaix Const.	Fairfield	Kelly	$141,900	$143,900	$2,000	1.4%

The above three reports deal with manipulations of sales data and help to provide insight into home buyer preferences. The greater the depth of the data (i.e., lot size, product attributes, et cetera), the greater the depth of analysis that can take place.

III. Micro Level Analysis of Leading Builders

Once the leading builders are identified, a micro-level analysis is performed on their homes. That is, the home builder must directly gather data from the top builders' models, and analyze these data for information leading to insight into home buyer preferences. This process involves two steps. The first step is to gather data, and the second step is the analysis of the data.

A. Gather the Data

The best method for gathering data on leading builders' models is to utilize a competitive evaluation form. (See Appendix II for a few sample forms). Competitive evaluation forms allow the builder to obtain information on locations, design, pricing, options, merchandising, financing---anything that can point a finger to home buyer preferences. These forms should be filled out in detail---half completed forms do not provide the comprehensive data that is necessary to understand home buyer preferences.

To highlight the strengths of the leading builders, use the competitive evaluation form to gather additional data on a couple of models from the opposite end of the scale---models from the least successful builders. Often, the contrast allows greater insight into what is preferred and what is not.

Besides collecting information needed to complete the form, salespeople should be probed for other useful information relating to home buyer preferences. For example: What are the most asked for options? What is the buyer profile? What is the best selling floor plan and why?

B. Analysis of Data

Once the data has been gathered, a detailed analysis of the forms should follow. The

builder must be inquisitive and continually search for the reasons why the leading builders are successful---what is it about their product that provides them with a competitive advantage? Which market is the builder targeting? Why are his homes preferred by home buyers in this segment?

Analysis should progress from the broad to the narrow---start off with broad observations and progress to the specific attributes of the homes. Segment the homes into price points and try to obtain generalities among the homes within the price points.

Finally, all information should be written down in a logical framework. For example:

> Observation: Home buyers within the $80,000 to $100,000 price point prefer the greatest amount of square footage possible over vaulted ceilings (i.e., willing to trade-off vaulted ceilings for square footage). Reasoning: All leading builders provide relatively large homes. Not a single leading builder provides vaulted ceilings. Conversely, the less successful builders all provide a smaller amount of square footage and vaulted ceilings.

C. The Adjusted Comparable Technique

The adjusted comparable technique borrows procedures from residential appraisal. In a residential appraisal, "sales of comparable properties are analyzed so an appraiser can make a judgement about how property differences affect price."[15] In a similar fashion, the adjusted comparable technique analyzes top-selling comparable properties. The process begins with the researcher utilizing a "special" competitive evaluation form to gather data on his own model (the base model) and the leading model. (See Appendix III for an example of this form). The significant differences between the two models are noted, and the leading model's price is adjusted according to the "worth" the researcher feels home buyers attach to these differences. For example, if the leading model has a

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[15] American Institute of Real Estate Appraisers. *Appraising Residential Properties*, (National Association of Realtors, 1988): p.334.

"Jacuzzi" bathtub, and the base has a regular bathtub, the researcher would adjust the price of the leading model downward. The amount of the downward adjustment reflects the researchers opinion of the worth that home buyers attach to this attribute. This process continues for all of the home's attributes (including lot and area attributes) until all the differences are accounted for.

The two prices are then divided by the gross livable area of the homes, and are plotted on a graph with square footage ranges on the x-axis, and price per square foot on the y-axis. (See Figure 2.5).

Figure 2.5
Graph of Adjusted Comparables
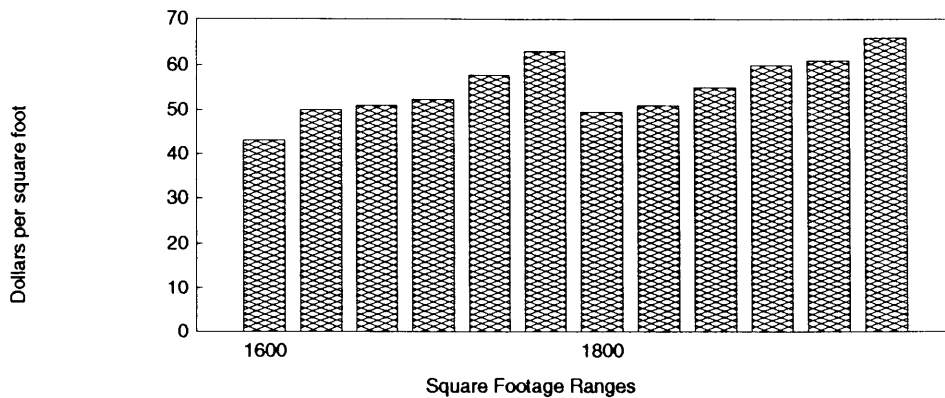
The homes that offer the greatest adjusted per-square-foot value are located near the bottom of the chart, whereas the homes that offer the least adjusted value will be near the top of the chart. For example, Home A in size range 1600-1799 square feet offers a greater value to home buyers than Home Z in the same range.

If the adjusted values are properly created, the leading builders will have homes near the bottom of the chart and the less successful builders will be near the top. For example, if Home A is the best seller in that square footage range, and Home Z is the worst, then the

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builder conducting the "appraisal" has a good grasp of home buyer preferences and home buyer willingness-to-pay. If this is not the case, the builder has not adjusted the value of the competitor's model in the same framework that home buyers use. This leads to a search for the perceived value numbers that home buyers use when evaluating amongst alternatives, or into other elements of the competitor's marketing mix.

IV. Historical Tracing of Resale Units

Tracing the prices or characteristics of comparables over time is a useful method of gaining insight into home buyer preferences. Consider the case of a home builder who requires more information on the acceptance of small lot detached and attached housing.[16]

First, information was gathered on sales price, density, and level of amenities for units sold in the market area during the previous two years. Only units that sold within developments that were essentially completed were selected, thus avoiding price increases necessitated by increased development costs.

Second, sales prices were categorized by density, site amenities, date of sale (by quarter) and total price. An examination of the median change in price per quarter showed an inverse relationship between density and the rate of price increase. (See Figure 2.6). That is, the greater the density of development, the lower the rate of price increase. The average increase in high density developments (townhouses) over the two years totalled 7%, moderate density developments (double attached houses) saw a 10% increase, and

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[16] This example is adapted from Patricia, P. Rosenzweig. "Research and the Sensitive Housing Market," *Readings in Market Research for Real Estate*, James D. Vernor, ed. (National Association of Realtors, 1985): p.113.
[17] Ibid., p. 113.
[18] See Appendix IV for outline of recommended market research process.

lower density developments (detached houses on zero lot lines) had price increases of

12%.

Figure 2.6
Rate of Price Change

Density (Units per Acre)

Rate of Price Change
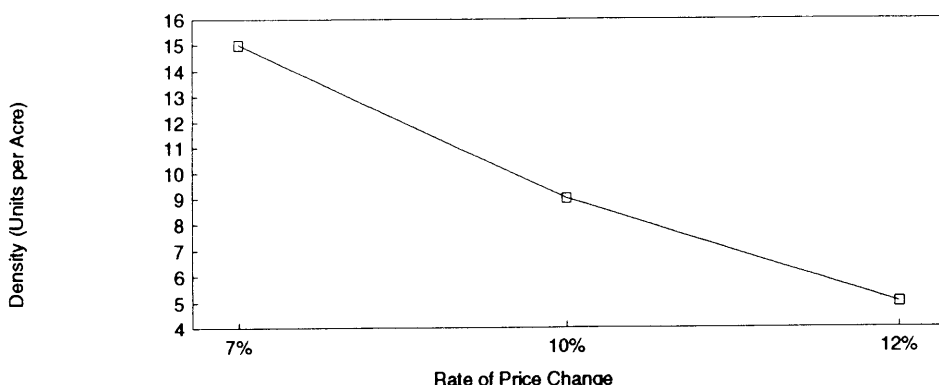
Furthermore, the average absolute price was also progressively higher, thus the rate of

increase was not distorted by a lower basis on the lower density units. Higher density

homes increased by $2,200, moderate density by $3,700, and lower density homes

increased by $5,400. (See Figure 2.7). The logic is that since lower density homes

increased in value more that higher density homes, lower density homes were more in

demand than higher density homes. That is, home buyers were willing to trade-off price

for lower density. Thus, home buyers preferred lower density to higher density, and were

willing to pay for it.

Figure 2.7
Absolute Price Change

Density (Units per Acre)

Absolute Price Change

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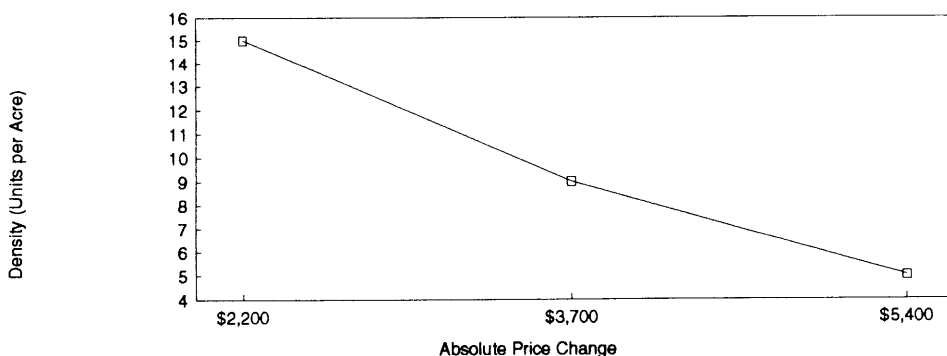
V. Analysis of Phased Developments

Systematically comparing the changes made to sequential stages in a phased development can also provide insight into home buyer preferences. This technique is based on the theory that the builder of the phased development has the experience to know the market best, and will make changes in his development to reflect the wants and needs of the market.[17] If the price changes have been at or below the rate of inflation, look for what the builder has eliminated, made smaller, or substituted in the newer phase. Conversely, if prices have significantly increased, look for what the builder has changed or added. This analysis can provide clues into the preferences of the market for the particular type of product.

This technique can also be used to analyze the changes a builder makes to his models. This is particularly insightful when a builder makes changes to a very successful model. It is important to analyze models within the same development rather than models in different developments. Different developments may be targeted to a different market with different preferences, thus the reasoning for the changes is distorted.

VI. Conclusion

Competitive monitoring allows the home builder to infer home buyer preferences by studying supply. This most basic of all market research techniques should be comprehensively performed on a systematic basis to yield the highest quality information. Moreover, competitive monitoring, combined with market research techniques that uncover true home buyer preferences, provides a home builder with a method of uncovering gaps in the market.

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[17] Ibid., p. 113.
[18] See Appendix IV for outline of recommended market research process.

CHAPTER THREE

SURVEYS

All of the home builders we spoke to for this study used one form of surveys or another to uncover valuable insights into home buyer preferences. Some of the survey programs were highly sophisticated and structured, involving several types of surveys; while others were very visceral, relying only on the builder's experience and some nominal feedback from salespeople. What follows is a brief description of the types of surveys builders are using to research home buyer preferences, including their application, means of administration, and implications for the research effort.[18]

I. Types of Surveys

A. Prospect Profile Cards

A prospect profile card should be completed for everyone who goes through the builder's models. (See Appendix V for examples of cards). The purpose of these cards is not to determine detailed home buyer preference profiles, but to establish a demographic data base of your prospects. The demographic data from these cards can be cross tabulated by age, price point or style of home being sought, where the prospect is coming from, or income. From this data the builder begins to know his shoppers. He also develops a sampling frame which he can turn to for more in-depth surveys, such as rejector surveys and competitive surveys. These can be administered via the telephone, mail, or with personal interviews.

B. Exit Interviews

The purpose of exit interviews is to expand the shopper data base beyond demographic

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[18] See Appendix IV for outline of recommended market research process.

information. The builder can use this opportunity to begin to learn more about his shoppers' preferences. At this point a builder can choose to use a quantitative or qualitative approach: A trained person approaches the shoppers to uncover preferences using a short structured questionnaire ("Did you prefer the European kitchen in Model A or the traditional kitchen in Model B?") or a more unstructured approach with open-ended questions ("Could you please tell me what features you like most and least about Model A?").

C. Interviews of Salespeople

All but one builder surveyed for this research interviewed their salespeople, as well as those of their competitors, to supplement the raw data being generated from other surveys and intuition. The purpose is to augment the exploratory research into home buyer preferences. While the analysis of the data is more often visceral than statistical, these interviews should be undertaken as systematically[19] as any scientific research. These interviews will begin to broaden the builder's understanding of shoppers' preferences by showing him, among other things, what features are most affecting their decisions to buy.[20] Of course, any information received should not be the basis for any final design or programming decisions. Several builders remarked that "the only thing a salesperson hears are what buyers don't like, not creative ideas, and the only thing he remembers is his last rejection."

D. Shopper Surveys

Builders augment the demographic data in profile cards and the relatively cursory information of exit interviews by surveying their shoppers at greater depth in focus groups, mail surveys, or telephone interviews. Most shoppers look at the homes offered

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[19]Once a week or once a month.
[20]Gerry Donohue. "Doing Your Homework," *Builder* (July 1992): pp. 45-50.

by several builders so they have a cognitive inventory of available home features. This can be tapped in a preference survey as most of the shoppers have already begun to make mental trade-off decisions between various features. A focus group of shoppers of the competition would be useful to a new builder with no product out of the ground. The most effective results would come from "Type A" shoppers, i.e., those who intend or need to buy within the next few months, have financing in hand.

E. Rejector Surveys

Through the systematic follow-up of each prospect profile card and a monthly search of deeds of sale at the county courthouse the builder can assemble list of buyers who looked at his homes but bought from competitors. These buyers can be surveyed by phone, mail, or personal interviews to find out what other builders they looked at, the price range of their home, and what features were especially appealing to them that were not offered. This information is invaluable and provides great insight into home buyer preferences.

F. Home Buyer Surveys

A builder should be interested in the preferences of all recent home buyers, including buyers of his homes, other builders' new homes, and previously owned homes. The purpose of surveying buyers as a separate entity from shoppers is to determine preferences based on actions as opposed to intentions. Home buyers have actually <u>made</u> trade off decisions regarding home features and locational amenities; shoppers have only <u>thought</u> about these decisions . The builder can define the market of home buyers and their preferences from the data in these surveys.

G. Post-Purchase Surveys

Builders perform home buyer surveys at closing and/or some time after the sale, after the buyer has moved in. Post-purchase buyer preference surveys are especially reliable when

they are administered one to three months after closing. This is for three reasons: 1) by then buyers are settled in and have time to spend on a questionnaire; 2) they have had time to live with their preferences, to become familiar with their home and neighborhood, so are better able to evaluate their preference decisions; 3) buyers are less concerned than at the time of sale with defending their decisions, so are more realistic in their appraisals, and 4) their choices are still fresh in their minds.

Some builders, however, choose to survey their home buyers by asking them to fill out questionnaires at closing or while waiting to apply for a mortgage. Buyers are eager to please and mentally prepared to fill out forms on these occasions, so builders find a very high response rate with this approach. Questionnaires at closing are particularly well suited to finding out which competitors' homes buyers looked at and why they did not choose one of them. Information used by a buyer to make the decision not to buy a competitor's home is quickly forgotten so it is important to obtain this data early.

Surveying One's Own Buyers vs. the Competition's. Aside from the details of when to interview home buyers is the issue of which buyers to survey. Surveying one's own buyers has the advantage of giving the builder the opportunity to gather more detailed data on home buyer preferences, as well as valuable feedback on service, advertising, and merchandising. A builder should develop a relationship with his buyers. He can use this as a basis for motivating his buyers to complete detailed questionnaires after the purchase. Another option is to make the post purchase survey mandatory for all of a builder's buyers by incorporating it into the sales agreement. A builder cannot rely on relationships or contractual obligations with buyers of other builders' homes or resales. Therefore, it is much less likely that he will be able to get the emotional or time commitment necessary to do a detailed survey with these populations.

Home buyer questionnaires can be administered by the phone or computer, through the mail, or during personal interviews or focus groups. Each is effective; the choice will depend on the nature of the builder's decision problem. For example, if a builder wants to determine which of thirty features to include in his kitchens, but is having trouble getting buyers to verbalize their preferences, he could choose the personal interview method where he could do a conjoint analysis with all the paperwork, visual aids, and lap top computer on hand. The personal interview could be designed to be part of a "service visit."

H. Realtors

Realtors, like salespeople, are a useful source of information on home buyer preferences because they are on the front line with the buyers. They also see what the competition is offering in home features and can report on the traffic and absorption rates of other builders' homes. If there is a substantial difference between you and the competition, ask them why.

The builder is not interested in getting statistically significant data from the Realtors so focus groups are a good way of surveying them. They enable the builder to get insights from several sources at once. It also does not hurt to cultivate a relationship with brokers by asking their opinions and offering them dinner.

I. Delphi Studies

"Delphi studies might be defined as super-star focus groups. The idea is to grill the leaders of a field individually on their predictions, then bring them together to debate the viability of each of those predictions."[21] In this case, a builder would survey architects,

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21Beverly Trupp. "Key Leaders See a New Housing Industry Emerging," *Professional Builder & Remodeler* (November 1, 1991): pp. 20.

developers, sub-contractors, interior designers, Realtors, mortgage lenders, sociologists, et cetera, to examine home buyer preferences as seen from each profession's perspective. Architects and interior designers have a good sense for what buyers are asking for in homes, based on what they are being asked to build. Through professional publications and networks they may have information on new features available elsewhere in the country and acceptable to this market, but not yet capitalized on locally. Sub-contractors, Realtors, and mortgage lenders are good sources of information on what the competition is offering and what buyers are asking for. Finally, sociologists are useful for their perspective on lifestyle trends and their implications for home design.

A similar tool is referred to in market research literature as experience surveys. These are even less structured (and less expensive) than focus groups. They, like Delphi studies, are qualitative research and are part of a builder's early exploratory research, when he is trying to develop hypotheses about home buyer preferences. They simply involve speaking with persons in professions related to home building about their opinions, based on their experience.

II. Conclusion

Whatever a home builder's degree of technical ability and level of resources, he can utilize surveys to better understand his market's preferences. Every home builder interviewed for this study used at least two of the survey types listed above. Some purchased local surveys, including analyses as thick as a Manhattan telephone directory, from professional market research firms. Some of these builders understood all the implications of the results while others did not. Several builders did their own surveys and analysis. With one exception, the most successful builders were the ones who performed (or purchased) surveys systematically and used the data faithfully to make market driven housing design

decisions.

Chapter Four will discuss how focus groups are used as survey instruments by builders. Chapter Five will then detail how yet another research tool, questionnaires, can be designed to match specific decision problems faced by home builders. The nature of the decision problem will determine the type of survey and, thereby, the type of questionnaire used. The better the fit between the questionnaire design and the decision problem, the better the results of the survey and the more likely that the survey will successfully address the builder's dilemma.

CHAPTER FOUR

FOCUS GROUPS

Focus group analysis is a qualitative market research technique that has been used effectively by builders for some time. Focus groups are small sessions gathered for the purpose of generating new ideas and gaining insights through discussion of a particular issue or issues. They are particularly effective for helping builders form their hypotheses regarding home buyer preferences and competitive advantage, for pre-testing questionnaires, or to get consumers' impressions about new or competing product features. In this chapter we will discuss the general concepts applicable to focus groups and then illustrate how they are applied by two builders.

I. Application of Focus Groups

At the earliest stage of problem definition the builder has identified only a vague sense or gut feeling about a certain issue. In pursuing that feeling, he will best be served by a research tool that allows a great deal of flexibility as he maneuvers for a less ambiguous decision problem. Consequently the best research design at this point is the more flexible exploratory method as opposed to the more restrictive descriptive and causal designs. Focus groups are the research tool of choice when flexibility is an issue and especially "when group dynamics are considered to be an important factor."[22]

Often a builder's decision problem is based solely on intuition, observation, or early non-quantifiable exploratory research, such as experience surveys. For example, a builder might suspect that home buyers experience more utility in certain product features and

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[22] G. Hayden Green. "Strategic Management Practices of Real Estate Developers in Volatile Economic Climate," *The Journal of Real Estate Research*, Vol. 3, No. 3, p. 65.

amenities than they do in others. He may wish to pursue this intuition but feels it is unwise to commit the resources necessary for extensive descriptive or causal research until he is better able to define his decision problem. A focus group would help the builder determine the most appropriate features to include in a future questionnaire.

Focus groups are also a useful tool for pretesting other research methods. Often builders have progressed beyond an intuition to the point of having designed a questionnaire. The decision problem for the builder at this point is whether or not to use this questionnaire. The builder will want to know whether this particular questionnaire will get him the data he will need to make the best product design decisions. The focus group's response to the questionnaire will indicate whether the questionnaire is understandable or biased. These determinations are important to make before the builder spends money on a product that would otherwise generate useless information.

II. Implementation of Focus Groups

A hypothetical home builder, Robert Gunn Homes (RGH), wishes to introduce some new features into some homes he is planning to build. He thinks, from having spoken with his salespeople and from some inconclusive data from earlier surveys of his recent home buyers, that these features will be desirable to new home buyers. He wants to test them before he commits to building them so he decides to sponsor some focus groups. (See Appendix VI for focus group guidelines). Focus groups will allow him to test these features using samples, floor plans, and photographs in conjunction with questionnaires designed to measure participants' preference levels for the various features. The unstructured nature of the focus groups will also enable him to explore the reasoning behind the preferences and, perhaps, generate new ideas.

He begins by hiring a moderator to run the group sessions and help in the analysis. He looks for someone with training and experience, as focus groups are very much an art. The moderator will be especially useful if he is familiar with the home building industry. Such a moderator is better able to relate to the research goals and objectives of the builder/sponsor and will steer the sessions accordingly. His familiarity with the issues and realities of the business will also serve to give his analysis greater depth. The moderator should be like a good parent---endearing and receptive yet strong enough to set limits so that the session does not deteriorate into chaos. The moderator should be able, through the strength of their character, to get all group members personally and intensely involved because "[t]he most important response in focus groups is the spontaneous and emotional one. Once the respondent thinks, censors, and rationalizes, it is no longer insightful."[23]

RGH chooses to use recent buyers of his homes because they have actually had to make similar decisions in their own purchase so their comments will be the most realistic. They are easy to identify and contact and, as he has worked to develop a relationship with them, he feels they would be willing to assist in the research. The particular buyers he wants to target purchased homes in the $120,000 to $150,000 range because this is the price point of the planned homes whose features he is testing.

Since focus groups are qualitative and not quantitative research, RGH does not need to worry about establishing a statistically valid sample size of participants. Given the relatively high cost of focus groups ($1000 to $5000 depending on if the builder or a professional runs them) and their small size, builders have historically used mail or telephone surveys to assemble statistically significant data. Such descriptive research tools produce more precisely quantifiable results. Focus groups are most useful for solving

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[23] G. Hayden Green. "Qualitative Research in Real Estate Development," *The Journal of Real Estate Development*, Vol. 3, No., 4 (Spring 1988): p. 13.

tasks where judgement is not involved, such as generating ideas and hypotheses.

Researchers recommend using at least two focus groups of eight to twelve persons. The number of sessions are limited by RGH's budget and the number of respondents he can gather. Another guide will be "whether the later groups are generating additional insight."[24]

The data collection method RGH uses in its focus groups is like that of most of the home builders interviewed for this study: a combination of observation and questionnaire. Many moderators carry a prepared list of unstructured questions into the sessions, but such lists are rarely followed precisely since unexpected ideas often surface during focus groups. The flexibility of the focus group allows the monitor to redirect the questions to "draw out more about these new ideas."[25]

III. Analysis

"One of the greatest mistakes made in focus group analysis is trying to explain qualitative research in quantitative form."[26] Builders should always remember that focus groups are not quantitative research. Whatever opinions are expressed by the participants about RGH's planned features, these are not necessarily proof that the features should be included. One builder we spoke to used focus groups but "discounted [the analysis] to what it's worth. I might get validation and questions, but I'll be damned if I use that to paint a purple wall." Another very successful builder said that they sometimes made a decision based on the results of one focus group, but at other times even twenty focus groups would not be enough to convince them.

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[24] Gilbert A. Churchill, Jr. *Marketing Research: Methodological Foundations*, 5th ed., Chicago: The Dryden Press, 1991, p. 70.
[25] G. Hayden Green, 1988, p. 13.
[26] Ibid., p. 16.

Another mistake that builders must avoid when using focus groups is having preconceived ideas about what the results will be. This way they end up listening only for what they want to hear and miss valuable information.

Researchers agree that one of the most valuable assets of focus groups is the ability of the moderator not just to hear what is being said, but also to see how it is being said. Such subtleties are important to the analysis, but can be overlooked if a video record of the session is not kept. Researchers agree that a video record of each focus group session is necessary. At issue is "being able to re-experience the session at a later date by having a record of not only what was said but the body language and expressions when it was said."[27]

After working with the moderator to review the data and the video tapes, RGH discovers that most of his features were well received. There were even some suggestions for improvements to some of the features. A few features were not acceptable to the group, but RGH and the moderator think that may be due to the composition of the group: plans are made to test these features on a group drawn from a higher price point.

For the features that were liked by the group, RGH decides to design a descriptive questionnaire to be used with in-depth personal interviews. This will supplement the data from the focus groups. Now that he has used the focus group, RGH has a better sense of what to include for review in those questionnaires and avoids including useless questions.

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[27]Ibid., p. 16.
[28]See Vladimir Bajic. "Housing Market Segmentation and Demand for Housing Attributes: Some Empirical Findings," in *AREUEA Journal*, Vol. 13, No. 1 (1985): pp. 58-75. Mr. Bajic argues that the prices buyers are willing to pay for housing attributes will differ significantly across different market segments.

IV. <u>Conclusion</u>

Focus groups are qualitative research tools, used by builders to test new features, compare their product to those of competitors, and to generate ideas. They are not meant to be quantitative research. Most of the builders we spoke with used focus groups to greater or lesser extents. Those builders who used them the least were those who said they were useless because they did not supply statistically significant results. Those who used them quite a bit, (one builder had used twenty-four in the last two years), were the builders whose expectations were more realistic; they did not confuse their function with that of more quantitative methods.

C H A P T E R   F I V E

QUESTIONNAIRES

This chapter explores how questionnaires are used by home builders to research home

buyer preferences. It addresses the general concepts of home buyer preference

questionnaire design, use, and administration. Specifically, it reviews how builders have

customized questionnaires to match the nature of the builder's decision problem, the type

of survey necessary to address that problem (a survey of shoppers, home buyers, et

cetera), and the means for administering the survey (personal interviews/focus groups,

mail surveys, and telephone interviews). Some of the questionnaires reviewed for this

research were highly technical and sophisticated while one of the most effective was

elegant in its simplicity.

I. Purpose

The purpose of questionnaires is to collect primary data, namely demographic and

behavioral data.

A. Demographics

The demographic data -- age, occupation, stage in family cycle, household income, cost of

current home -- are useful to the builder because he can use this to cross-classify the data

and to delineate his market segments. For example, a builder performing a large mail

survey of all recent home buyers, needs to categorize their preferences in some way so as

to make the data more meaningful. Using "cost of current home" data the builder could

divide all responses into categories such as $120,000-$150,000 homes, $150,000-

$180,000 homes, et cetera, and thus delineate respondents' preferences by price point.

This way he knows the different buyer preferences relevant to the price points at which he

intends to build.[28] Similarly, the builder could cross-classify the preference data by

education level, age, occupation, stage in family cycle, or any of the other useful

demographic categories. How he wishes to categorize or cross-tabulate his market guides

the type of demographic information the builder asks for.

Simple non-threatening demographic questions are useful when placed at the opening of

the questionnaire to help warm the respondent up to the task. (See Figure 5.1).

Figure 5.1
Non-Threatening Demographic Questions

* __Age:__		* __Marital Status:__	
Under 25	[ ]	Married	[ ]
25 to 44	[ ]	Single	[ ]
45 to 54	[ ]	Divorced	[ ]
55 to 64	[ ]	Widowed	[ ]
65 or older	[ ]		

Questions of a more sensitive nature are placed at the end of the questionnaire. (See

Figure 5.2).

B. Behavioral Indicators

The behavioral data sought by the builder reflect home buyer preferences. Several of the

behavioral indicators referred to in market research literature and used by home builders to

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[28]See Vladimir Bajic. "Housing Market Segmentation and Demand for Housing Attributes: Some
Empirical Findings," in *AREUEA Journal*, Vol. 13, No. 1 (1985): pp. 58-75. Mr. Bajic argues that the
prices buyers are willing to pay for housing attributes will differ significantly across different market
segments.

Figure 5.2
Demographic Questions at End of Questionnaire

* What is the total annual income for your household?
  Please check just one.

    [ ] $20,000 or less   [ ] $60,001 to $70,000
  [ ] $20,001 to $30,000   [ ] $70,001 to $80,000
  [ ] $30,001 to $40,000   [ ] $80,001 to $90,000
  [ ] $40,001 to $50,000   [ ] $90,001 to $100,000
  [ ] $50,001 to $60,000   [ ] $100,000 +

* What is the price range of your home? Choose one.

    [ ] $60,000 to $80,000
  [ ] $80,001 to $100,000
  [ ] $100,001 to $120,000
  [ ] $120,001 to $150,000
  [ ] $150,001 to $180,000
  [ ] $180,001 to $210,000
  [ ] $210,000 +

determine home buyer preferences include: psychographics, intentions, and attitudes.[29] Researchers study the above indicators because it is believed that they are the predictors of behavior. The reasoning is that if a builder understands home buyers' behavioral profiles, he has the advantage of knowing what home features and amenities will attract them.

a. Attitudes

Attitude is "an individual's preference, inclination, view or feeling toward some

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[29]Churchill, 306-314.

phenomenon."[30] Most of the questionnaires reviewed for this thesis surveyed attitudes in the form of preferences. Examples of questions designed to measure preferences are shown in Figure 5.3.

Figure 5.3
Sample Preference Question

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*  Which of the following materials or finishes would you
   prefer for your kitchen cabinets?  Place a 1 by your first
   choice and a 2 by your second.

   _____ Cherry
   _____ Oak
   _____ Pine
   _____ Plastic Laminate
```

The importance of studying attitudes is that, "[w]hen an individual likes a product he will be more inclined to buy it than when he doesn't like it; when he likes one brand [builder] more than another, he will tend to buy the preferred brand."[31] Consequently, the builder with the keenest understanding of home buyer attitudes/preferences and the ability to build homes accordingly will have a competitive advantage.

b. Psychographics

Psychographic analysis is the study of people's individual psychological motivations. These are sometimes referred to in the literature as people's actions, interests, and opinions (AIO). Psychographic analysis allows a builder to move beyond just knowing

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[30]Ibid., p. 309.

[31]Fred L. Schreier. *Modern Marketing Research: A Behavioral Science Approach*, Belmont, CA: Wadsworth, 1963, p. 273 in Gilbert A. Churchill, Jr., *Marketing Research: Methodological Foundations*, 5th ed., Chicago: The Dryden Press,1991.

that his niche is empty nesters to where he can identify several psychographic categories of empty nesters, such as Achievers and Belongers.[32] Using the psychographic data, he can then identify the home buyer preferences associated with each category and sub-niche. For example, Phoenix-based builder Del Webb Corporation has determined that Achievers "...like classic facades, lots of amenities, roomy floor plans (averaging 2,100 square feet) with space for collections for and antiques, and big closets for large wardrobes."[33]

A typical questionnaire for a psychographic survey of home buyer preferences includes a section on buyers' attitudes/preferences toward certain prescribed home features . (See Figure 5.4).[34]

Figure 5.4
Buyer Attitude Questions

	Not Important	Somewhat Important	Very Important	Extremely Important
* A kitchen should be:				
a. a place for company to gather...........[ ]	[ ]	[ ]	[ ]	[ ]
b. built with large pantry......................[ ]	[ ]	[ ]	[ ]	[ ]
c. especially large..............................[ ]	[ ]	[ ]	[ ]	[ ]

	Not Important	Somewhat Important	Very Important	Extremely Important
* A master bath should be:				
a. a good place to spend time and relax...........[ ]	[ ]	[ ]	[ ]	[ ]
b. a good place to relax and get away from it all...........[ ]	[ ]	[ ]	[ ]	[ ]
c. built with two sinks				
d. easy access to all I need to get ready (closets, linen, etc.)...........[ ]	[ ]	[ ]	[ ]	[ ]
e. a place with lots of natural light...........[ ]	[ ]	[ ]	[ ]	[ ]

Another section of the psychographic questionnaire focuses on the respondent's activities,

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[32]"Fine-Tuning Your Niche," *Builder* (July 1989): pp. 87-91.
[33]Ibid., p. 90.
[34]Questions used in this section are from a psychographic questionnaire created by Brooke Warrick for American Lives Inc., San Francisco, CA.

interests, and opinions. (See Figure 5.5).

Figure 5.5
Buyer Psychological Motivations (AIO)

* How important to your life is:	Not Important	Somewhat Important	Very Important	Extremely Important
a. a sense that life deals you a certain hand you must accept	[ ]	[ ]	[ ]	[ ]
b. being well paid for your achievements	[ ]	[ ]	[ ]	[ ]
c. developing more self awareness	[ ]	[ ]	[ ]	[ ]
d. helping other people	[ ]	[ ]	[ ]	[ ]
e. living in harmony with the earth	[ ]	[ ]	[ ]	[ ]
f. keeping things simple so you car keep them straight in your mind	[ ]	[ ]	[ ]	[ ]

Builders sometimes use AIO data instead of demographic data to segment their markets: these are correlated to the buyer's preferences/purchasing behavior as gaged elsewhere in the questionnaire. The idea is to identify certain segments of the market that have similar AIO survey results and are thus likely to have similar lifestyle profiles and preferences. Knowing the profile and preferences, the home builder can then make design and marketing decisions that will best target those particular potential customers.

c. Intentions

Researchers study intentions as predictors of future behavior. The most common example of a survey of intentions is the shopper survey. Unfortunately, as many builders know, what a person says they want in a home and what they actually buy are often very different. One developer/builder with whom we spoke had surveyed shoppers of his development to determine their preferences. The results suggested a strong desire for homes on larger (20,000 square foot) lots. He proceeded to build several of these, but

was only able to sell one or two over the next year. Home shoppers wanted the larger lot, but, as it turned out, were not willing to pay the extra amount for it when faced with the actual decision.

The reliability problem with making programming and design decisions based on shoppers' stated intentions was the reason given by several home builders for preferring to survey home buyers, who have actually made preference decisions. Recent home buyers (those who have bought in the last six months), are especially useful since their trade-off decisions are fresh in their minds. They have also lived in their home and neighborhood long enough to know what they would change in their home and what they like and dislike about the area.

II. <u>Decision Problem and Research Design</u>

Questionnaires are most often employed when the home builder has already defined the decision problem for himself and is now ready to proceed with descriptive or causal research. He no longer asks, "What do I need to do in order to sell more homes?" The question has become, "What are the features I will need to program into my new homes in order to make them more attractive than the competition's to home buyers?" and "Where among those preferences is the most perceived value relative to my costs?"

The nature of the problem the builder is trying to answer through his market research will determine the design of the questionnaire. For example, if he is looking for new ideas through a Delphi study, he would use a more unstructured questionnaire. In a survey of home buyers at closing the builder would use a more structured questionnaire with questions targeted towards the features of their home.

III. Types of Questionnaires

A. Structured Questionnaires

The vast majority of home builders surveyed for this study used structured questionnaires for effectively gathering primary data on preferences (attitudes) and demographics. In a structured questionnaire, the same questions are asked in the same order for all respondents. The majority of questions on a structured questionnaire are multiple choice questions, therefore the possible answers to most or all questions are also the same and are limited in number.

Structured questionnaires have several advantages. They are easy to administer because of their simple design. They are also favored because they are relatively easy to tabulate and analyze: the builder or analyst does not have to worry about how to code[35] and tabulate[36] fifty different answers to each question.

The disadvantage of structured questionnaires is that they do not allow the respondents to use their own thoughts in responses. Nor can interviewers explore the sources of respondents' attitudes.

B. Unstructured Questionnaires

Unstructured questionnaires are mainly used to study peoples' motivations and are not used as often as structured questionnaires for detailed preference surveys. Such questionnaires are identified by open-ended questions.[37]

Unstructured questionnaires are mainly used by builders conducting exploratory research.

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[35]To break responses into categories and then assign numbers to those categories in order to facilitate the tabulation of the data.

[36]To count the number of responses within each of the categories already determined by coding.

[37]Note that an open-ended question can be used in a structured questionnaire and *vice versa*.

They are well suited to exit interviews, surveys of salespeople, and focus groups, where the builder is still trying to determine the possible alternative answers to the questions he wishes to study. Each participant can give a personal response to each question, prompting further unplanned questions.

IV. Types of Questions

A. Open-Ended Questions

Open-ended questions uncover home buyer preferences by allowing the respondent to reply in his own words instead of having to choose an answer from a list of prescribed alternatives. This makes open-ended questions helpful to a builder who is not yet able to present the respondent with a reliable list of answers, or who wants to see if there are any features whose importance he has overlooked (i.e., established builder looking for new features which have, as yet, not been offered to buyers). For example, a new builder with little experience and no product to use for comparison will want to develop ideas about what he needs to build in a competitive product. He could begin by surveying buyers of other builders' product. An established builder may take a pro-active approach and look for new features for which buyers express a desire but have not as yet been offered. In this way he finds a gap in the market which will give him a competitive advantage if he can fill it. The types of survey undertaken by each builder will be different, e.g., rejector surveys, surveys of buyers of builder's own product, but the open-ended questions that must be included are indicated in Figure 5.6.

This method uncovers preferences which the builder may not have already included in his mental list to study and allows him to probe some of those answers. It also assures him that the answers are the most important to the respondent since they are his own and not prompted by a given list.

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Figure 5.6
Necessary Open-Ended Questions

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* From which builder did you purchase your current home?

* Why did you buy from this company?

* Why did you purchase your particular model?

* What three features of your home would you never give up?

* Is there anything missing from this house, lot, or area that you, in the future would insist on?

* What would you improve if you had the opportunity?

B. Close-Ended or Fixed Alternative Questions

The simplest multiple choice design is where only two appropriate responses are possible. (See Figure 5.7).

Figure 5.7
Simple Multiple Choice Question

---

* a. Are you a first time buyer?
     [ ]   Yes
     [ ]   No

* b. If no, how many homes have you previously owned? _____

There is often the possibility that the respondent will not know the answer to the question

or will have no opinion about the subject. Therefore, it is advisable to consider adding a

third alternative, as in Figure 5.8.

Figure 5.8
Three Alternative Multiple Choice Question

```
*   When shopping for homes did you visit an "XYZ" home?
        [ ]     Yes
        [ ]     No
        [ ]     Don't remember
```

Another form of multiple choice question provides the respondent with a longer list of

fixed alternatives. (See Figure 5.9). These are useful to the builder who is certain he has

Figure 5.9
Expanded Multiple Choice Question

```
*   Which of the following was the most important factor
    in you decision to buy your current home?

        [ ]     Size
        [ ]     Price
        [ ]     Quality
        [ ]     Builder's reputation
        [ ]     Location
```

listed all of the possible alternatives and that he has done so without confusing or

overwhelming the respondent with too many choices, thus losing their interest. These questions are also used when the builder is quite sure that there are no other alternative answers than the ones he has listed. Any omission forces the respondent to make a choice that is not truly representative of his preference. For example, if a builder uses a question like the sample above in Figure 5.9, he misses the transferee segment of the market, who bought because of availability, or that segment of the market looking for value relative to size ("Cost per square foot") and not just a good price.

A very useful fixed alternative question uses a scale to gauge the respondents' answers. (See Figure 5.10). Using this format in a home buyer preference questionnaire gives the builder an almost immediate feel for buyers' preferences; the tabulation is so simple that the preferences are obvious after some simple addition of the response columns. This format is recommended for builders of all sizes: it is simple and elegant. It is especially useful for the new builder who does not have enough experience to know which amenities are demanded in his market. It is useful for the small or medium builder who may not be able to hire the technical expertise to design and analyze a very technical questionnaire. All builders can use it to test new features[38] and discover others that the competition has overlooked or misused and thus give themselves a competitive advantage. We interviewed one home builder who had successfully used scaled preference questionnaires to survey all home buyers in his market and now has a 67 percent market share in one of the fifteen largest cities in the United States.

The questionnaire can be designed to list as many home features and community amenities[39] as the builder wishes. When the questionnaires are returned they are coded

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[38]The debated 7"/11" interior stair is an example of a feature that could be tested using a scaled question.
[39]For a discussion of how the quality of local schools affects the price of housing see G. Donald Jud, "A Further Note on Schools and Housing Values," in *AREUEA Journal*, Vol. 13, No. 4 (1985) pp. 452-463. As an extension the builder should survey other public amenities for which home buyers will express

Figure 5.10
Scaled Question

```
* To what degree were each of the following features a factor in your decision
  to buy your current home? (CHECK ONE BOX FOR EACH FEATURE)
                                       Not        Somewhat      Very      Essential to
                                    Important     Important   Important   the Purchase
  a.  security system.................[  ]..........[  ]..........[  ]..........[  ].......
  b.  fireplace........................[  ]..........[  ]..........[  ]..........[  ]......
  c.  rear deck.......................[  ]..........[  ]..........[  ]..........[  ]......
  d.  breakfast nook.................[  ]..........[  ]..........[  ]..........[  ]......
  e.  butler's pantry.................[  ]..........[  ]..........[  ]..........[  ]......
  f.  master suite upstairs..........[  ]..........[  ]..........[  ]..........[  ]......
  g.  master suite on main floor.....[  ]..........[  ]..........[  ]..........[  ]......
  h.  2 bathrooms....................[  ]..........[  ]..........[  ]..........[  ]......
  i.  3 bathrooms....................[  ]..........[  ]..........[  ]..........[  ]......
  j.  formal living room..............[  ]..........[  ]..........[  ]..........[  ]......
  k.  local park.......................[  ]..........[  ]..........[  ]..........[  ]......
  l.  neighborhood pool.............[  ]..........[  ]..........[  ]..........[  ]......
  m.  reading scores of local schools..[ ]..........[  ]..........[  ]..........[  ]......
```

by price points[40] or psychographic categories established elsewhere in the questionnaire,

and tabulated. The results of a survey with 229 respondents might appear as follows.

Figure 5.11
Tabulation of Scaled Questions

```
* The results in the $100,000 to $120,000 price range are:

                                    Not        Somewhat      Very      Essential to
                                 Important     Important   Important   the Purchase
  a.  security system...............[  2  ]........[ 15 ]........[ 95 ]........[ 117 ]......
  b.  fireplace.......................[ 126 ]........[ 73 ]........[ 32 ]........[ 15 ]......
```

Immediately the builder can see that security systems are something he should investigate

putting into his $100,000 to $120,000 homes, while fireplaces are an item he can omit in

this market. His next step is to design a willingness-to-pay questionnaire, using fixed

alternative questions, that asks respondents what they are willing to pay for those items

---

preferences and perceived values.
[40]Preferences will differ between price points and psychographic profiles.

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Figure 5.12
Willingness-to-Pay Question

```
* What is a home security system worth to you?

        [ ]     $200 to $700
        [ ]     $701 to $1200
        [ ]     $1201 to $1700
        [ ]     $1701 to $2200
```

that were judged "Very Important" and "Essential to the Purchase." (See Figure 5.12).

If the home buyer is willing to pay more for the security system than it costs the builder to

install, the builder should consider including it in his $100,000 to $120,000 homes.

The advantages of the scaled question are obvious. It is easy to lay out: the question of

preference, or importance in this case, need only be asked once, instructions need only be

given once, and descriptors are aligned at the top of columns once while numerous

features and amenities are listed in the margin. The ease of listing so many features means

that the questionnaire is less likely to omit possible choices and the clarity of the layout

means that the respondent will not lose track of what he is supposed to be answering.

Finally, as in all close-ended questions, coding and tabulation are very easy.

Often a home buyer cannot verbalize the reasons why he bought his home or he cannot

distinguish preferences among the many features that influenced his decision. Fixed

alternative questions, in the form of trade-off questions, are useful in these situations.

Figure 5.13 is an example of trade-off questions that could be used in conjunction with

visual aids (samples, photographs, or drawings) in a focus group.

Figure 5.13
Trade-Off Questions

* You have $2,500 to spend on the following master bathroom features.
  You may spend all or just a portion of your money.

CLOSETS
1. One his-and-her walk-in closet in bedroom................................($200)
2. One his-and-her walk-in closet in bathroom...............................($400)
3. Two his-and-her walk-in closets in bathroom..............................($700)
4. Two walk-in closets, one cedar lined, in bathroom.....................($1,200)

BATHROOM FLOORING
1. Vinyl...(no charge)
2. Ceramic tile...($500)
3. Hardwood...($300)
4. Carpet..($500)

BATHTUB
1. Raised single unit rectangular tub with shower...........................(no charge)
2. Raised tub with separate shower..($850)
3. Sunken oversized tub with separate shower, and Jacuzzi............($1,500)

FIXTURES
1. Chrome...(no charge)
2. Chrome with porcelain handles...($300)
3. Antiqued brass..($350)
4. Gold tone...($650)

MISCELLANEOUS
1. Separate toilet area...($1,200)
2. Built in vanity with lighted mirror...($850)
3. Bidet...($600)
4. Etched (versus clear) glass shower...($350)
5. Linen closet..($100)
6. Ceiling fan..($400)
7. Skylight..($700)
8. Fireplace..($1,200)
9. Waterfall tub fixture..($150)

* Now, you only have $1,500. Which of the above features would you choose?

The builder can follow up these choice questions with additional, reworded ones on the

same features. (See Figure 5.14). Using this approach, the builder can double check the

respondent's answers for consistency.

Figure 5.14
Back-Up Preference Questions

---

* Which flooring would you prefer in your master bath? Choose ONE.

       [ ]   Vinyl
       [ ]   Hardwood
       [ ]   Ceramic Tile
       [ ]   Carpet

* Which plumbing fixtures would you prefer in your master bath? Choose ONE.

       [ ]   Chrome
       [ ]   Chrome with porcelain handles
       [ ]   Antiqued brass
       [ ]   Gold tone

Additional open-ended questions can be used in conjunction with the fixed alternative

questions shown above as long as they are introduced prior to the sections revealing

feature prices. (See Figure 5.15). The answers to these questions are compared to the

Figure 5.15
Perceived Value Question

---

* If a vinyl bathroom floor, such as this one, cost $150,

   how much would ceramic tile be worth?......................$_____
   how much would hardwood be worth?.........................$_____
   how much would carpet be worth?.............................$_____

---

answers in the succeeding sections. They give the builder a sense of relative perceived

value, and hence preference, for each of the same features sampled in the questionnaire.

Without having to specifically list his preferences the respondent reveals his preferences through his decisions. Another example of fixed alternative questions used to determine home buyer preferences through conjoint analysis is discussed at length in Chapter Six.

V. Administration of Questionnaires

The method of administering questionnaires always depends on the nature of the problem at hand, the type of survey called for, and the resources available to the builder, i.e., staff, time, money, and expertise. Several of the builders we surveyed used combinations of methods. What follows is a summary of the three methods for administering questionnaires: mail, phone, and personal interview. We will discuss the advantages and disadvantages of each method. The builder can then choose a method or methods based on this information and his particular circumstances.

A. Personal Interviews

In personal interviews the researcher and the respondent are involved in a direct face-to-face conversation. They have the lowest nonresponse rate of the three data gathering techniques and are the most flexible. This technique assures the builder that the respondent is the one that was targeted from the sample frame so there is no danger of distortion of results through inappropriate respondents. The interviewer maintains the highest degree of control and can clarify questions for a confused respondent.

The personal interview method is used by builders to survey shoppers, buyers, Realtors, and related professions (Delphi studies). They are especially useful when questions related to visual aids, such as floor plans, scale models, or photographs as is the case with the testing of a new design. This format is especially useful to the builder who does not want to make the financial commitment of building a product without knowing whether its

various features are attractive to buyers. The earlier example of a trade-off questionnaire is a good example of a what can be done in a personal interview or focus group. The additional value of personal interviews is that they allow for follow-up discussions that uncover valuable information as to why certain features are preferred and what features were not included in the design that perhaps should be.

Personal interviews are useful to the builder who is wondering why people are choosing a competitor's homes over his. Using a questionnaire geared towards disclosing what it was about a certain house and neighborhood that attracted the buyer, the builder can determine which features the competition has that he needs to consider for his own homes. Similarly, he can also discover which of his home features are unnecessary from the buyer's point of view.

Builders also use personal interviews as a means of pretesting questionnaires. Respondents are asked to complete the questionnaire and comment as they work through it at their own pace about any problems or ambiguities they find.

Open- and close-ended questions would be included so that the interviewer could probe the respondent's answers if needed. Questions such as, "Having looked at several builders' model homes, why did you choose to buy from this builder?" could be combined with questions such as, "If you could do it all over again would you buy this same house?"

The main disadvantages of personal interviews are their cost (they are the most expensive method), and the possibility of interviewer bias. Because of their cost, personal interviews are done over a narrow distribution. In-home personal interviews can suffer from a relatively slow turn around time because of the time spent traveling from house to house. If a builder wants to survey a larger population or quicken the process he must hire more

interviewers. Each new interviewer raises the possibility of interviewer-induced variation in responses because of differences in presentation to the respondents.

B. Telephone Interviews

Telephone interviews are timely, cost-effective, and reliable tools for builders researching home buyer preferences. The majority of questions are close-ended and deal with demographics and the respondent's preferences for builders, features, and amenities. They are applicable to many decision problems and are not only useful for solving home feature decisions but also for pretesting questionnaire design. They are useful for following up on prospect cards, and for brief rejector, buyer, and Realtor surveys.

Telephone interviews have many advantages. They are low cost and one of the quickest ways to collect home buyer preferences. Their low cost and timeliness allows the builder to survey a larger population than he could with personal surveys. Telephone surveys have relatively strong response rates, especially if the respondent is called in advance to arrange an "appointment." The cost and difficulty of "call backs" are less than with personal interviews, as well.

The disadvantages of telephone interviews are: 1) it is more difficult to establish a rapport over the telephone, 2) the questionnaire length is limited, 3) the interviewer has little opportunity to delve into personal reasoning for responses.

Given the strengths and weaknesses of telephone interviews they are best used for shorter questionnaires. Like personal interviews they can also be used to pretest other survey questions, especially questions written for longer self-administered mail questionnaires. The problem of establishing rapport can be addressed by a carefully worded introduction and a well trained staff of interviewers. Calling in advance to arrange the interview also

helps to establish rapport because it tells the respondent that the interviewer is considerate of their time.

Almost all of the builders we surveyed use telephone questionnaires as part of their home buyer preference market research. As with all other forms of home buyer surveys, some builders did their own telephone interviewing in-house while others subscribed to services that performed the questioning then coded and cross-tabulated the data.

C. Mail Interviews

Mail interviews are used by several of the builders we spoke with. They are the least expensive of the three interview methods and have the widest distribution possible. They allow the respondent to answer the questions at his own pace and thus give a better thought out response. In a mail interview the respondent can be assured of anonymity and is more likely to respond truthfully to sensitive or personal questions. Questionnaires administered through the mail can be longer than those used in telephone interviews. For example, the earlier sample scaled questionnaire is best administered through the mail.

The instructions for a mailed questionnaire should be especially clear since the respondent does not have an interviewer to turn to for assistance. Mailed questionnaires should include a stamped, self-addressed envelope and a cover letter that makes the respondent comfortable with the task and eager to perform it.

Several of the disadvantages of mailed questionnaires include the absence of an interviewer to help the respondent understand an ambiguous question, and the fact that responses cannot be probed with open-ended questions. There is also the possibility of sequence bias: the respondent can read through the questionnaire in advance and bias his answers based on what he has already seen.

An important disadvantage of mailed questionnaires is that the builder cannot be assured when or if the questionnaire will be returned. There are ways to mitigate this risk, however. One builder surveyed for this study found that by including one dollar his response rate jumped by 50 percent.

In conclusion, if a builder's priorities are timeliness and ease of coding, he should administer his questionnaire over the phone. If his priorities are cost and ease of coding, he should administer his questionnaire through the mail. Finally, if his priorities are a high response rate and the ability to probe the responses, he should administer his questionnaire via personal interviews.

VI. <u>Conclusion</u>

Questionnaires are effective tools for determining home buyer preferences. They can be designed and administered in any of several ways to address any decision problem a builder might have.

Unstructured questionnaires, consisting mainly of open-ended questions, are used by builders in the exploratory phase of research into preferences. They are useful for uncovering and testing new ideas and for developing hypotheses about preferences. They are best when administered as a personal interview where their open-ended questions can be explained and the responses explored by the interviewer. Builders use unstructured questionnaires for exit interviews and some of the focus group sessions with shoppers, home buyers, Realtors, et cetera.

Structured questionnaires, typified by close-ended questions, are used by builders who

have well-defined decision problems and have reached the descriptive or quantitative phase of their market research. These questionnaires, if short (20 minutes or less to administer), are wonderful for telephone interviews. If they are longer, builders administer them as mail surveys,

The nature of the builder's research problem defines the design of the questionnaire. The design affects how the builder administers the questionnaire. Things to consider when determining how to administer a questionnaire are: How many questions are in the questionnaire? Are the questions mostly open- or close-ended? Are visual aids going to be used? Ar˄ the questions self-explanatory or will the respondent need guidance? Will probing of the answers be necessary? Also to be considered are such things as the size of the budget, how soon answers are needed, and what response rate is wanted.

However a questionnaire is designed and administered, the key to its success is that it be part of a systematic survey. Results from a survey using a questionnaire but once provide only a static picture of a market whose nature is fluid. To base design and programming decisions on such a snapshot of preferences runs the risk of incorporating what appeared to be preferences, but were in fact aberrations. Building a data base through the systematic administration of questionnaires gives the builder a more reliable vision of home buyer preferences.

Builders use questionnaires to identify different segments within their market and the preferences specific to each of those segments. They can also use questionnaires to determine what buyers are willing to pay for those preferences. From this data they can make rational decisions about what features to include in their new homes and how to price those homes. The result is a competitive advantage resulting from this superior knowledge of the market's preferences and what they are worth.

CHAPTER SIX

CONJOINT ANALYSIS
AND PERCEPTUAL MAPPING

When developing new home plans, models, or subdivisions, home builders are faced with

an array of difficult problems all centered around the design of a product that will

simultaneously appeal to the home buyer and be profitable for the builder. That is, the

home builder must evaluate which home attributes the home buyer perceives to be the

most important. "Conjoint analysis is a research technique used to determine the

combinations of attributes a product or service must have in order to appeal to a specific

market or market segment."[41]

Conjoint analysis a very powerful research technique for the home builder because it aids

the decision making process in a myriad of ways including:

     - the design of new homes/subdivisions;

     - the repositioning of new homes/subdivisions;

     - predicting the impact of competitive moves; and

     - understanding price/performance relationships.

When confronted with the decision to purchase a new home, the home buyer must make

an overall judgement about the relative value of various attributes (a multiattribute

problem) in some manner utilizing a logical trade-off approach. Conjoint analysis utilizes

a mathematical procedure (usually, a form of least-squares regression) to sort out the

relative importance of a home's multidimensional attributes into separate and comparable

utility scales. Respondents' preferences are revealed from their behavior as reflected in

their judgements. Thus, by separating the overall judgement into components, the home

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[41]Sawtooth Software, *Sawtooth Software Demonstration Disk*, (Ketchum, Idaho: Sawtooth Software, 1991).

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builder is now armed with valuable information about the relative importance of various attributes of a home.[42]

One advantage of conjoint analysis is that home buyers are not directly asked questions relating to: (1) the attributes they find most important; and (2) how they are combining the attributes to form overall judgements---questions many respondents would find very difficult to answer.

This chapter is arranged into five sections. The first section discusses how a problem should be formulated so that it can be answered via conjoint analysis. The second reviews the six key decisions in conducting conjoint analysis. The third addresses the design of the sample and the collection of the data, and the fourth discusses how the data should be analyzed and the implications of this analysis for the home builder. These four sections are interwoven with a hypothetical example which will illustrate the process of conjoint analysis as applied to the home building industry and provide a base understanding for the reader. The fifth section presents a brief discussion on perceptual mapping. The process of perceptual mapping is highly similar to the process of conjoint analysis, but yields home buyer preference information useful for positioning strategies.

I. **Problem Formulation**

Suppose that our hypothetical home builder, Robert Gunn Homes (RGH), is considering developing a 20 acre infill parcel of land. He would like more information on how home buyers perceive, evaluate, and trade-off among various attributes of homes in order to make the most profitable programming decision(s).

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[42]Readers who are unfamiliar with conjoint analysis may want to read Paul E. Green, and Yoram Wind. "New way to measure consumers' judgments", *Harvard Business Review* (July-August 1975): pp. 107-117.

The first step in the process is for RGH to define the problem that he wishes to study. Conjoint analysis, as applied to the home building industry, requires that the problem be formulated with the goal being the determination of home buyers' preference levels for various home attributes.

RGH's first move is to conduct some exploratory research into the market, specifically focusing on the trade-offs implied by home buyer behavior. He talks to Realtors about what is selling in both the new and resale home market and why (i.e., what attributes are important for sales to occur), to architects and interior decorators about recent trends in design, and to planners about the demographic changes that are occurring in the market.

Armed with this information, RGH decides to study the trade-offs between three basic "attributes" of homes: (1) price point; (2) home size; and (3) lot size. Then, RGH formally defines his decision problem:

> In the market for new homes with price points of $100,000 to $160,000, and in the infill sites market area, what is the relative importance of home size, lot size, and price point, and how are these attributes traded-off against each other?

II. Design Data Collection Method and Forms

RGH must now make six key decisions to conduct conjoint analysis: (A) select the attributes; (B) determine the attribute levels; (C) determine the attribute combinations to be used; (D) select the form of presentation of stimuli and nature of judgements to be secured from subjects; (E) decide on whether and, if yes, how judgments will be aggregated; and (F) select the analysis technique.[43]

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[43]Gilbert A. Churchill, pp. 470-481.

A. Select Attributes

The first step in the process of designing the data collection is to select the attributes to use for constructing the stimuli.[44] These attributes will largely evolve from the decision problem. They should be both actionable and relatively important in the decision making process of the home buyer. Actionable attributes are those that the home builder can do something about. Attributes that are important to the home buyer are those that actively affect home buyer choice. These attributes must be determined through managerial insight, or some other form of exploratory research. It is very important to choose the attributes with care because the number of attributes typically used in conjoint analysis averages six or seven.[45] If the number of attributes exceeds this reasonable limit, the data collection process will get prohibitively complicated.[46]

RGH has largely defined the attributes he wishes to study in his decision problem: home size, lot size, and price point. These three attributes are something RGH can do something about when he programs the development, and they are important in the home buyer decision making process.

B. Determine Attribute Levels

After the attributes have been selected, the next step is to specify levels for each attribute. Here the builder is faced with somewhat of a dilemma. On one hand, the greater the number of levels that each attribute has, the greater the burden placed on the respondent. On the other hand, the ability to generate quality estimates of home buyer preferences requires that the number of stimuli be relatively large versus the number of preference

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[44]Stimuli are verbal or pictorial descriptions of a bundle of attributes which respondents make judgements about. (In this case, index cards with attributes written on them).

[45]Philippe Cattin and Dick R. Wittink. "Commercial Use of Conjoint Analysis: A Survey," *Journal of Marketing*, Vol 46 (Summer 1982): pp. 44-53.

[46]The final chapter in this section discusses a computerized conjoint analysis process called adaptive conjoint analysis. This form of conjoint analysis can deal with a greater number of attributes.

parameters that need to be estimated.[47]

The builder should study the levels of the attributes in the model and try to determine whether the model is linear, nonlinear in a systematic way, or very unsystematic in the relationship between attribute levels and preferences. For example, most home buyers would prefer the greatest amount of square footage in a home, suggesting a linear relationship between their utilities and the attribute levels. However, when confronted with a question on a home's exterior (e.g., brick, siding, stucco), respondents would respond in a nonlinear fashion. The point being that as the relationship between the attributes goes from linear to nonlinear to unsystematic, the model requires a greater number of stimuli to provide valid results.

Using attribute levels that are normally encountered by the home buyer will increase the respondent's believability in the task, and hence increase the validity of the preference data. However, attribute levels that are outside the range normally encountered by the home buyer will increase the statistical accuracy of the model.[48] Similarly, using attributes that are not correlated (such as combining large lot sizes and low price) decreases the respondent's believability of the options, but increases the statistical accuracy of the model. The general rule is to make the ranges for the various attributes somewhat larger than what is normally found, but not so large as to make the options unbelievable.[49]

Based on the above guidelines, RGH decides upon the levels of each attribute needed to gauge home buyer preferences. (See Table 6.1).

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[47]For a discussion on the number of stimuli to use, and the range of attribute variation and interattribute correlation, see Paul E. Green and V. Srinivasan, "Conjoint Analysis in Consumer Research," *Journal of Consumer Research*, Vol 5 (September 1978): p.109.
[48]Ibid., p. 109.
[49]Ibid., p. 109.

Table 6.1
Home's Attributes and Levels

Levels	Attributes		
	Price Point	Home Size	Lot Size
Level 1	$110,000	1,500 sq.ft.	5,600 sq.ft.
Level 2	$130,000	1,750 sq.ft.	5,200 sq.ft.
Level 3	$150,000	2,000 sq.ft.	4,800 sq.ft.
Level 4	N/A	N/A	4,400 sq.ft.

▓▓▓▓▓▓ Home 1,2,4

The three attributes being studied can all be labeled "motherhood" attributes. That is,

other attributes being equal, a home buyer will generally prefer the most of each attribute--

-in this example, the 2,000sq.ft. home, on a 5,600 sq.ft. lot, at a price point of $110,000.

Unfortunately, a home of this size on this size lot is not available at this price point.

Hence, the home buyer must trade-off some of one attribute to obtain more of another.

Conjoint analysis utilizes these trade offs to develop "utilities" for each level of each

attribute.[50]

C. Determine Attribute Combinations

The third major decision involves the selection of specific combinations of attributes to be

used. There are four major approaches used to collect respondent's judgements: (1) full-

profile; (2) pairwise or trade-off matrix; (3) paired comparison; and (4) combinations of

the preceding methods.[51]

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[50]A utility is a number that indicates how much we value something. If a home buyer has a utility of .75 for a white house, .5 for a blue house, and .25 for a green house, the home buyer values the white house more than the blue house or green house. We cannot say that he values the white house three times more than the green house, but we can say that he values the white house over the blue house by the same margin as he values the blue house over the green house.

[51]Adapted from Philippe Cattin and Dick R. Wittink, "Commercial Use of Conjoint Analysis: A Survey," *Journal of Marketing*, Vol 46 (Summer 1982): pp. 44-53, and Dick R. Wittink and Philippe Cattin, "Commercial Use of Conjoint Analysis: An Update," *Journal of Marketing*, Vol 53 (July 1989), pp. 91-96.

1. Full-Profile Approach

The full-profile approach utilizes the complete set of attributes in forming the stimuli. One method of utilizing the full-profile approach is to form all the possible combinations of the three home attributes---36 combinations in all (3 levels X 3 levels X 4 levels) and write each different combination on a separate 3" X 5" index card. (See Figure 6.1).

Figure 6.1
Sample Index Card

Home Price:	$130,000
Home Size:	1,500 square feet
Lot Size:	5,600 square feet

Respondents would then be asked to rank order the "bundle" of home attributes on the index cards from the least desirable (rank = 1) to the most desirable (rank = 36). To ease the burden on the respondents, and therefore increase the validity of the preference data, the respondents are first instructed to separate the cards into four categories labelled very desirable, somewhat desirable, somewhat undesirable, and very undesirable. After completing the above task, the respondents would then order the cards in each category from the least desirable to the most desirable.

If we were to add another attribute, say another four-level attribute, the total number of stimuli questions would be 3 X 3 X 4 X 4 = 144. This would clearly create confusion on the part of the respondent and illustrates the major problem with this form of design--- information overload. The researcher can ease the burden placed on the respondent by

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employing an orthogonal array[52] or "bridging" technique.[53]

The main argument in favor of the full-profile approach is that it gives a more realistic description of the stimuli. Furthermore, full-profile designs are capable of employing a rank order or rating scale (e.g., on a seven point scale from home most desired, to home least desired).

2. Trade-Off Procedure

The trade-off procedure (or pairwise procedure) treats two attributes (and all the levels of each attribute) at a time but considers all possible pairs. See Figure 6.2 for the matrices that would be used if we structured the example using the trade-off procedure.

Figure 6.2
Pairwise Procedure for Data Collection

		Price $110,000	Price $130,000	Price $150,000
Home Size	1,500 sq.ft.			
	1,750 sq.ft.			
	2,000 sq.ft.			

		Price $110,000	Price $130,000	Price $150,000
Lot Size	5,600 sq.ft.			
	5,200 sq.ft.			
	4,800 sq.ft.			
	4,400 sq.ft.			

		Home Size 1,500 sq.ft.	Home Size 1,750 sq.ft.	Home Size 2,000 sq.ft.
Lot Size	5,600 sq.ft.			
	5,200 sq.ft.			
	4,800 sq.ft.			
	4,400 sq.ft.			

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[52]See Sidney Addleman, "Orthogonal Main-Effect Plans for Asymmetrical Factorial Experiments," *Technometrics*, Vol 4 (February 1962): pp. 21-46, for a comprehensive discussion on orthogonal designs. For a nontechnical discussion of orthogonal designs, see Paul E. Green, "On the design of Experiments Involving Multiattribute Alternatives," *Journal of Consumer Research* (September 1974); p. 61.
[53]For an example of a bridging technique, see David S.P. Hopkins, Jean-Claude Larreche and William F. Massey, "Constrained Optimization of a University Administrator's Preference Function," *Management Science*, Vol 24, pp. 365-367.

The trade-off procedure has one main advantage over the full-profile approach---it is easier for respondents to make trade-off judgements than full profile judgments. Hence, this form of data collection lends itself to mail questionnaires. However, the disadvantages associated with its use has led to its decline in popularity, while the full-profile approach is gaining.[54]

3. Paired Comparison

The paired comparison approach presents two sample stimuli and asks respondents to indicate which stimulus they prefer and by how much (Figure 6.3). This approach is rapidly gaining in popularity for two main reasons. First, it allows the researcher to check how consistent respondents are in their judgements. Hence, responses with inconsistent judgements can be removed from the analysis, increasing the validity of the study.

Figure 6.3
Paired Comparison Approach

WHICH HOME DO YOU PREFER? Please circle a number from the scale below to indicate your preference.		
5,600 sq.ft. Lot 1,750 sq.ft. Home $130,000 Price	or	5,200 sq.ft. Lot 2,000 sq.ft. Home $130,000 Price
Strongly Prefer 1 2 3 Left	Don't Care 4 5 6 7	Strongly Prefer Right

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[54]Dick R. Wittink and Philippe Cattin, (1989): pp. 91-96.

Second, this approach lends itself to computer-based interviewing procedures. Computer based interviewing allows "Adaptive Conjoint Analysis" (ACA) to take place.

> [ACA] refers to the fact that the computer-administered interview is customized for each respondent. Data are analyzed as the interview progresses, and we choose questions likely to reveal the most about the respondent's values in the shortest time.[55]

ACA has two primary advantages:

> First, it lets the researcher design a computer-interactive interview and administer the interview to respondents. The interview can consider many attribute levels and retain only the most relevant for intensive questioning of a particular respondent. That questioning is done in an "intelligent" way: the respondent's utilities are continually re-estimated as the interview progresses, and each question is chosen to provide the greatest amount of incremental information, given what is already known about the respondent's values. The respondent's utilities are available upon completion of the interview.

> Second, ACA lets the researcher simulate respondent preferences for new or modified products. The researcher specifies an array of products by indicating each product's characteristics in terms of the attributes studied. The utilities of each respondent are used to estimate his relative strength of preference for each product. Results are cumulated over respondents to compute "shares of preference."[56]

Two empirical studies have compared the ACA method and the full-profile conjoint analysis. Both studies found that the full profile method to perform slightly better than the ACA method in terms of predicting holdout profiles.[57]

RGH has decided to use the full-profile approach for three reasons. First, the number of

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[55]Sawtooth Software, *ACA System*, (Evanston, IL): p. 2.
[56]Ibid., p. 2.
[57]Manoj Agarwal, "An Empirical Comparison of Traditional Conjoint and Adaptive Conjoint Analysis," *Working Paper No.88-140, School of Management, State University of New York at Binghampton*, and Carl T. Finkbeiner and Patricia J. Platz, "Computerized versus paper and pencil methods: A Comparison Study," paper presented at the Association for Consumer Research conference in Toronto (October, 1986).

attributes and levels studied will not place a burden on the respondent. Second, the full-profile analysis represents a "real-life" view of the trade-offs home buyers must make. Finally, RGH is a small builder, and cannot afford the purchase of the ACA program.

4. Select Form of Presentation of Stimuli and Nature of Judgements

The fourth key decision in the process is to determine how the stimuli will be presented to the respondents and, along a similar vein, the nature of the judgements to be secured from the respondents. The presentation of stimuli in the full-profile approach typically involves variations and combinations of three basic techniques: (1) Verbal descriptions; (2) paragraph descriptions; and (3) pictorial representations.[58]

Verbal descriptions usually involve presentation of the stimuli in list form, (like the index cards used in the example). Paragraph descriptions provide a realistic and complete description of the stimulus, but limits the total number of descriptions to a small number. Therefore, parameter estimates are likely to be inaccurate when estimated at the individual level.[59] Pictorial representations reduce the overload to the respondents, but are costly.[60] Generally speaking, the literature suggests that verbal descriptions and pictorial representation are the best approaches for presenting the stimuli.

There are two major methods of securing judgements from respondents---either the respondents are asked in terms of their overall preferences for attributes, or they are asked their intention to buy. These judgements can be measured either metrically (e.g., rating scales approximating interval-scale properties or ratio scales obtained through constant sum comparisons) or non-metrically (e.g., rank order or paired comparison).[61] The

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[58]Green and Srinivasan, (1978): p. 111.
[59]Ibid.
[60]Ibid.
[61]Warren S. Torgerson, *Theory and Methods of Scaling*, (New York: John Wiley and Sons, Inc., 1978).

metric methods are more popular due to the convenience afforded the respondents, and the ease of analysis.[62]

5. Decide on Aggregation of Judgements

Step 5 in the process is to decide if the individual responses will be aggregated, and if so, how? In practice, use of individual responses for determining product programming decisions is very difficult. A method that is becoming increasing popular is to form market segments, (defined by pscychographics, price point, et cetera), from groups of respondents. This technique allows the researcher to study the depth of the market segments, and a broader array of somewhat homogeneous home buyer preferences (more on segmenting the market later on in this chapter).

6. Select Analysis Technique

The final step in the execution of a conjoint analysis study is to determine the technique to analyze the data. Several computer programs are available to aid the researcher, and the choice depends to a large degree on the type of preference model used and the method that was used to input judgements.[63]

Simply put, the computer program searches for an initial solution consisting of scaled utility values, and modifies that solution through a series of iterations to improve the goodness-of-fit until it is no longer possible to improve the fit. The scale values for each level of each attribute are chosen (by the computer program) so that when they are added together the total utility of each combination will correspond to the original rank orders as closely as possible. The program will then report the goodness-of-fit, as well as the utility

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[62]Cattin and Wittink, (1982): pp. 48-49.
[63]For a discussion of the techniques available for analysis see Paul E. Green and V. Srinivasan, "Conjoint Analysis in Marketing: New Developments With Implications for Research and Practice," *Journal of Marketing* (October 1990): p. 8.

values assigned to each home attribute in the final iteration.

III. Design Sample and Collect Data

A major disadvantage of conjoint analysis is that the statistical deviation across the estimated parameters cannot be determined. Therefore, a statistical method for determining the number of responses necessary for obtaining sufficiently accurate and reliable data for the decision being made does not exist. The presence of this fact has several implications for the design of samples.

First, the population surveyed must be narrow in the sense that the population be as homogeneous as possible. Since the definition of the population grows out of the problem that the builder has formulated, the problem must also be narrow (i.e., home buyer preferences for a particular segment of the home buying market, not home buyer preferences for the entire market). A rule of thumb to remember is that the greater the variability in the population, the larger the sample size necessary to obtain valid results. Second, the researcher should ensure that the sample conducted is a random sample.

If the home builder wishes to survey a wider population, it is suggested that the stratified sampling technique be employed. Thus the population is broken down into mutually exclusive homogeneous segments, and a random sample is taken from within each segment.

Other than the suggestions above, the builder must limit the sample size to the point afforded by his budget. The smaller the budget, the more narrow the population that can be studied. Very generally speaking, the home builder would be wise to conduct an absolute minimum of 75-100 random surveys within one price point and geographically distinct area in order to generate valid information.

RGH chooses his population as those with the following characteristics: (1) heads of households; (2) purchased a new home within the last 3-9 months; (3) purchased a home within the price points being studied; and (4) purchased in the geographical area of the potential development site. Because of his limited budget, he decides to use a random sample of 100 households. The survey will involve personal interviews with home buyers to obtain the necessary data.

IV. Analyze and Interpret the Data

Suppose that the order in Table 6.2 represents the rank orders from one respondent. Note that the respondent's most desirable choice of home attributes (rank = 36) consists of the largest home (2,000 sq.ft.), on the largest lot (5,600 sq.ft.) at the lowest price point ($110,000). This is the expected result.

Table 6.2
Respondent's Rank Ordering

Price Point	$110,000			$130,000			$150,000		
Home Size	1,500 sq.ft.	1,750 sq.ft.	2,000 sq.ft.	1,500 sq.ft.	1,750 sq.ft.	2,000 sq.ft.	1,500 sq.ft.	1,750 sq.ft.	2,000 sq.ft.
Lot Size									
5,600 sq.ft.	17	30	36	15	26	34	6	24	28
5,200 sq.ft.	16	29	35	12	25	33	5	22	27
4,800 sq.ft.	9	21	32	10	20	31	3	8	23
4,400 sq.ft.	4	14	19	2	13	18	1	7	11

Note: 1 = Least Desirable; 36 = Most Desirable

The least desirable home chosen by the respondent (rank = 1) was the smallest home, on the smallest lot, at the highest price point. Again, this the expected result. If the respondent could not have his/her first choice (rank = 36), their second choice (rank = 35) is a home of 2,000 sq.ft., on a 5,200 sq.ft. lot, for the lowest price point. Thus the

respondent is willing to suffer, or trade-off a smaller lot against the other two attributes.

However, the respondent is not willing to trade-off too small a lot, as indicated by his/her third most desirable choice (rank = 34). In this case the respondent is willing to move up to the next price point ($130,000) in order to achieve the larger lot size of 5,600 sq.ft., rather than the smaller 4,800 sq.ft. lot. In effect, the respondent is willing to trade-off price for lot size.

A. Computation of Utilities

Computation of each home attribute's utility, which in turn determines how influential each of the attributes is in the respondent's evaluation, is carried out on a computer program.[64] The results of the conjoint analysis program are shown in Table 6.3, and the graphs of these utilities are shown in Figure 6.4.

Table 6.3
Home Buyer Utilities

Attribute	Level	Utility	Range
Price Point	$110,000	2.86	
	$130,000	2.41	
	$150,000	-5.27	8.13
Home Size	1,500 sq.ft.	-10.31	
	1,750 sq.ft.	1.55	
	2,000 sq.ft.	8.76	19.07
Lot Size	5,600 sq.ft.	5.19	
	5,200 sq.ft.	4.96	
	4,800 sq.ft.	-1.63	
	4,400 sq.ft.	-8.52	13.71

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[64]There are several "canned" programs available on the market that will compute the desired utilities. Some of these programs are MONANOVA, SAS, and LITMAP.

Figure 6.4
Graphs of Home Buyer Utilities
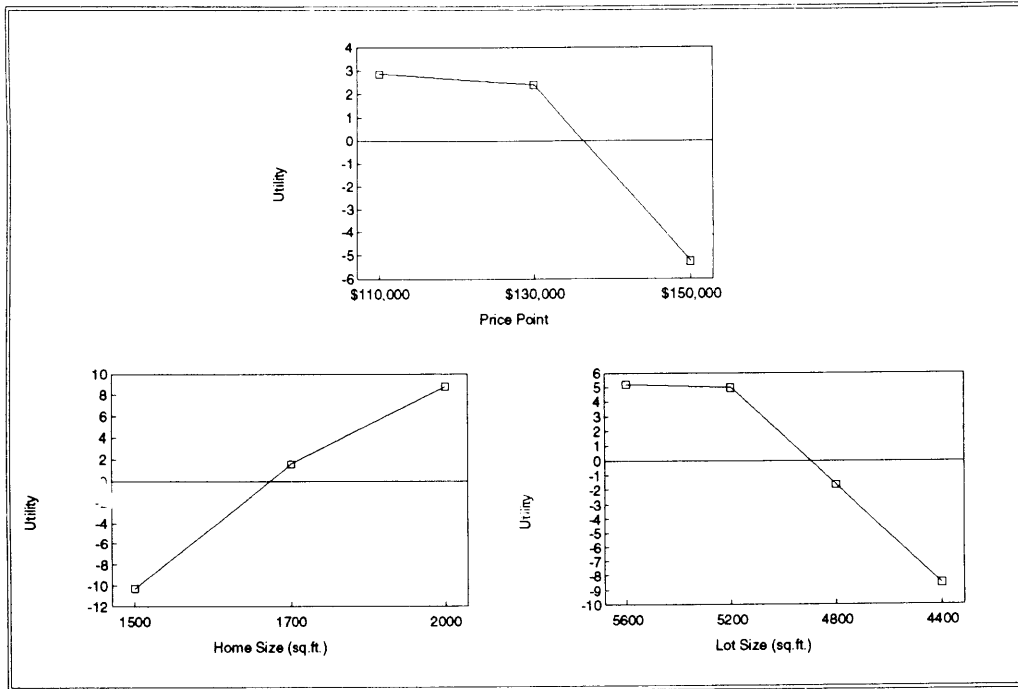
As can be observed in Table 6.3, conjoint analysis obtains a utility function for each level of each attribute. To find the utility for a given home, we would add the utilities for each of the three individual attributes in the home. For example, the total utility of a home of 1,750 sq.ft. ($Utility_{1750} = 1.55$), on a 5,200 sq.ft. lot ($Utility_{5200} = 4.96$), at price point $130,000 ($Utility_{130000} = 2.41$) is 8.88 (1.55 + 4.96 + 2.41). If we were to plot the utilities for all 36 homes, we would find that the utilities rank ordered from highest to lowest would correspond to the respondent's initial rank ordering of the homes.

B. Respondent Preferences

The utilities suggest several things about the respondent's preferences. First, the utilities indicate that the respondent's preferences for price, home size, and lot size are monotonic.

That is, other things being equal, the respondent prefers the least costly, largest home, on the largest lot, and his utility function for each of these attributes declines with increasing price, or decreasing size.

Second, the utilities can be used to determine the relative importance of each of the attributes. The greater the spread in utilities between the highest and lowest levels of an attribute, the greater the relative importance of each attribute. The spread in utilities suggests that home size is the most important attribute to the respondent, and price is the least important. However, the builder should be aware that the range of the levels depends upon the levels of attributes included in the design. Still, as a rough estimation of what attributes are most important, these calculations provide a useful by-product of the main analysis, regardless of the limitations.

Third, the utilities can be used to determine the sensitivity of the respondent to the various levels of an attribute. For example, the respondent's utility for either the $110,000 price point, or the $130,000 price point is virtually the same (2.86 v. 2.41), indicating that the respondent is not sensitive between these prices. This reveals that the respondent is most likely able to afford either of the homes. However, when the price point moves from $130,000 to $150,000 the utility of the home buyer becomes dramatically different (2.41 vs. -5.27). Thus, price is becoming an increasingly sensitive issue to the respondent. For the respondent to make the move to the higher price point, the utility obtained from increasing other attribute levels must compensate for this loss in utility.

It is also interesting to look at lot size, especially keeping it in the context of our previous discussion. Earlier on we stated that the respondent was willing to trade-off price for lot size instead of trading down from the 5,200 sq.ft. lot to the 4,800 sq.ft. lot. If the respondent were to trade down from the 5,200 sq.ft. lot to the 4,800 sq.ft. lot, he would

suffer a loss in utility of 6.59 (from 4.96 to -1.63). However, by trading-off price instead of lot size, the respondent only suffers a loss in utility of .45 (from 2.86 to 2.41). Hence, by concentrating on the utilities, the home builder can more precisely satisfy the needs of home buyers.

C. Programming Implications to RGH

The results of the conjoint analysis provide valuable information for input into RGH's decision making process.

1. Construct High Utility Homes

By studying the clustering of the utilities generated by the conjoint analysis (see Figure 6.5 & Table 6.4), RGH can avoid making programming decisions that create large negative utility changes to the home buyer. For example, referring to Table 6.4, RGH will recognize that by changing the home's attributes from a price point of $110,000, home size of 1,750 sq.ft., and a lot size of 5,200 sq.ft. (Observation 14, Rank of 29, Utility of 9.42) to a home with attributes of a price point of $110,000, home size of 1,750 sq.ft., and a smaller lot size of 4,800 sq.ft. (Observation 15, Rank 21, Utility 2.22), the home buyer's utility will fall dramatically by 7.2 points. Hence, RGH can recognize how this one programming change will lower the home buyer's utility, thus decreasing demand for the home, and slowing the sales pace.

2. Build the Most Profitable Home Within Each Cluster

Through analysis of the clusters of utilities, and making rough cost estimates for each home within the cluster, RGH can build the most profitable home within each cluster,without sacrificing the utility obtained by the home buyer. RGH's estimates for each of the 36 bundles of home attributes ("hypothetical" homes) are shown in Table 6.4.
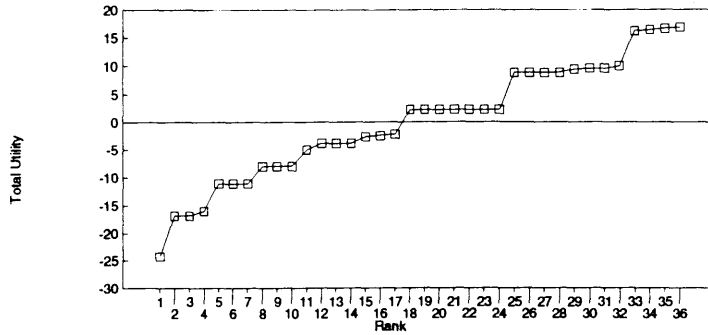
Figure 6.5
Observed Clusters of Utilities

Table 6.4
Utility Clusters and Profits

Ob	Prl	Hm Sz	Lot Sz	Rank	Utility	Price Point	Home Size	Total Cost Per Home	Lot Size	Total Cost Per Lot	Total Cost	Profit	Cl #
12	3	1	4	1	-24.2	$150,000	1500	$67,500	4400	$35,200	$102,700	$47,300	1
8	2	1	4	2	-16.8	$130,000	1500	$67,500	4400	$35,200	$102,700	$27,300	2
11	3	1	3	3	-16.8	$150,000	1500	$67,500	4800	$38,400	$105,900	$44,100	
4	1	1	4	4	-16.0	$110,000	1500	$67,500	4400	$35,200	$102,700	$7,300	
10	3	1	2	5	-11.1	$150,000	1500	$67,500	5200	$41,600	$109,100	$40,900	3
9	3	1	1	6	-11.1	$150,000	1500	$67,500	5600	$44,800	$112,300	$37,700	
24	3	2	4	7	-11.1	$150,000	1750	$78,750	4400	$35,200	$113,950	$36,050	
23	3	2	3	8	-8.02	$150,000	1750	$78,750	4800	$38,400	$117,150	$32,850	4
3	1	1	3	9	-8.02	$110,000	1500	$67,500	4800	$38,400	$105,900	$4,100	
7	2	1	3	10	-8.02	$130,000	1500	$67,500	4800	$38,400	$105,900	$24,100	
36	3	3	4	11	-5.06	$150,000	2000	$90,000	4400	$35,200	$125,200	$24,800	5
6	2	1	2	12	-3.88	$130,000	1500	$67,500	5200	$41,600	$109,100	$20,900	
20	2	2	4	13	-3.88	$130,000	1750	$78,750	4400	$35,200	$113,950	$16,050	
16	1	2	4	14	-3.88	$110,000	1750	$78,750	4400	$35,200	$113,950	($3,950)	
5	2	1	1	15	-2.72	$130,000	1500	$67,500	5600	$44,800	$112,300	$17,700	
2	1	1	2	16	-2.5	$110,000	1500	$67,500	5200	$41,600	$109,100	$900	
1	1	1	1	17	-2.28	$110,000	1500	$67,500	5600	$44,800	$112,300	($2,300)	
32	2	3	4	18	2.22	$130,000	2000	$90,000	4400	$35,200	$125,200	$4,800	6
28	1	3	4	19	2.22	$110,000	2000	$90,000	4400	$35,200	$125,200	($15,200)	
19	2	2	3	20	2.22	$130,000	1750	$78,750	4800	$38,400	$117,150	$12,850	
15	1	2	3	21	2.22	$110,000	1750	$78,750	4800	$38,400	$117,150	($7,150)	
22	3	2	2	22	2.22	$150,000	1750	$78,750	5200	$41,600	$120,350	$29,650	
35	3	3	3	23	2.22	$150,000	2000	$90,000	4800	$38,400	$128,400	$21,600	
21	3	2	1	24	2.22	$150,000	1750	$78,750	5600	$44,800	$123,550	$26,450	
18	2	2	2	25	8.84	$130,000	1750	$78,750	5200	$41,600	$120,350	$9,650	7
17	2	2	1	26	8.84	$130,000	1750	$78,750	5600	$44,800	$123,550	$6,450	
34	3	3	2	27	8.84	$150,000	2000	$90,000	5200	$41,600	$131,600	$18,400	
33	3	3	1	28	8.84	$150,000	2000	$90,000	5600	$44,800	$134,800	$15,200	
14	1	2	2	29	9.42	$110,000	1750	$78,750	5200	$41,600	$120,350	($10,350)	
13	1	2	1	30	9.61	$110,000	1750	$78,750	5600	$44,800	$123,550	($13,550)	
31	2	3	3	31	9.61	$130,000	2000	$90,000	4800	$38,400	$128,400	$1,600	
27	1	3	3	32	10.03	$110,000	2000	$90,000	4800	$38,400	$128,400	($18,400)	8
30	2	3	2	33	16.21	$130,000	2000	$90,000	5200	$41,600	$131,600	($1,600)	
29	2	3	1	34	16.43	$130,000	2000	$90,000	5600	$44,800	$134,800	($4,800)	
26	1	3	2	35	16.65	$110,000	2000	$90,000	5200	$41,600	$131,600	($21,600)	
25	1	3	1	36	16.88	$110,000	2000	$90,000	5600	$44,800	$134,800	($24,800)	

Extreme examples of profitability within a utility cluster

** Used as examples in text

Costs of $45.00 per square foot for home size, and $8.00 per square foot for finished lot size were used. Cluster 6 illustrates a dramatic example of how profitability can vary without any changes in the utility experienced by the home buyer. Profits to the RGH range from a high of $29,650 to a low of ($15,200)---a total spread of $44,850, yet the utility of the home buyer remains at 2.22!

3. Segment the Market

The aggregation of consumers into groups allows RGH to create homes that come closer to satisfying particular market segments. Their are two principal approaches to applied market segmentation:

> In *a priori* segmentation, the researcher first chooses some variable(s) of interest (e.g., buyer's age, gender, principal benefit sought, current brand) and then classifies buyers according to that designation. In post hoc or cluster-based segmentation, the researcher chooses a battery of interrelated variables (e.g., psychographic characteristics, preferences for various user benefits associated with the product category). Person-by-variable "scores" are then clustered into person groups whose average within-group similarity is high and whose between-group similarity is low.[65]

Because conjoint analysis measures preferences at the individual level, if preference heterogeneity is present, the researcher can find it. In an a priori approach using conjoint analysis, the researcher may segment home buyers in terms of their utilities for one or more home attributes (e.g., presences for one or more attributes, sensitivity to price). In a post hoc approach, the utilities are clustered to obtain home buyer segments having preference similarities across the full set of attributes.

Use of these segmentation techniques allows RGH to discover unsatisfied consumer needs in the market. For example, assume that home buyer segments are created via the post

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[65]Paul E. Green and Abba M. Krieger, "Segmenting Markets With Conjoint Analysis," *Journal of Marketing*, Vol 55 (October 1991): p. 21.

hoc approach. RGH simply compares what the preferred home attributes are for this segment with the homes that are currently available on the market. If there are no homes available that closely resemble the segment's preferences, then a definite opportunity exists. RGH can estimate the potential size/depth of the market by pulling the demographics of this market segment from the respondent data, and comparing these demographics to those of the entire market.

4. Market Simulations

A major role of conjoint analysis is in the design of strategic marketing simulations ("simulations" in this context, does not refer to Monte-Carlo probabilistic simulations). Market simulations allow market share predictions for selected product configurations. That is, market simulations predict purchase choice, providing "what if" scenario testing. Market simulations use as inputs: (1) the conjoint-generated respondent utilities; and (2) a specified "market of homes," each home in the market "profiled" in terms of its attributes. The simulation procedure predicts choice by "scoring" homes based on each respondent's utilities and how the homes are profiled. Choice is modeled for respondent's individually, then aggregated to get a market share figure for each home.[66]

This section formulates a model that utilizes the market share predictions from simulations together with hedonic cost and price equations to evaluate alternative programming strategies. This model identifies the bundle of attributes that maximizes profit for the builder, given the builder's production costs, the prices and designs of competing products, and home buyer preferences. The model is illustrated through an example using our hypothetical home builder, RGH.

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[66]The simulations are conducted on a user-friendly computer software with menu-driven features and opportunities for simulating a large number of different new product configurations in a single run of the simulator and for performing sensitivity analysis. This example was prepared on Sawtooth Software's ACA software package on an IBM 386/33 clone.

Suppose RGH conducts 75 Adaptive Conjoint Analysis interviews with buyers who purchased a home within: (1) the past 6 months; (2) the $100,000 to $159,999 price range; and (3) the general market area of his infill site. RGH's next step is to find a segmentation variable which will allow him to program highly desirable, profitable homes for a particular group of home buyers. RGH proceeds to cross tabulate the respondents' utilities via demographics and price point and observes the homogeneity of utilities within each cross-tabulated variable. Homogeneity is greatest when price point is used as the segmentation variable, hence it is chosen as the segmentation variable.

RGH's next step is to collect sales data to determine the three best selling homes within three price ranges in the market area. These three homes, together with a "what-if" fourth home, will serve as the "market of homes" for the simulation. He visits each of the three model homes and completes a competitive evaluation form on each model. A review of the salient information is shown in Table 6.5.

Table 6.5
Market Shares and Profiled Attributes of Leading Builders

Price Range											
$110,000 to $119,999				$120,000 to $139,999				$140,000 to $159,999			
Builder	Home Attrib	Market Share	Homes Built	Builder	Home Attrib	Market Share	Homes Built	Builder	Home Attrib	Market Share	Homes Built
B	1,1,3	27.4%	27	B	2,1,1	37.2%	56	B	3,2,2	18.5%	14
F	1,1,3	27.4%	27	G	2,1,2	36.8%	55	G	3,3,3	62.8%	47
V	1,1,2	45.2%	45	W	2,2,4	26.0%	39	W	3,2,1	18.7%	14
Total Homes Built			99	Total Homes Built			150	Total Homes Built			75

Home Attribute Legend
1,X,X = $100,000 to $119,999   X,1,X = 1,500 sq.ft. home size   X,X,1= 5,600 sq.ft. lot size
2,X,X = $120,000 to $139,999   X,2,X = 1,750 sq.ft. home size   X,X,2= 5,200 sq.ft. lot size
3,X,X = $140,000 to $159,999   X,3,X = 2,000 sq.ft. home size   X,X,3= 4,800 sq.ft. lot size
                                                                X,X,4= 4,800 sq.ft. lot size

Note: Market Share is calculated as follows:
                          Total Homes Built by Builder
                    Total Homes Built by Top Three Builders

RGH then performs three sets of simulations (one at each price range). The input data for a simulation set is comprised of: (1) respondent utilities from within a particular price range; and (2) a "market of four homes" comprised of the three best selling homes within a price range, plus a "what if" fourth home. This fourth home is RGH's potential product. These four homes are all "profiled" in terms of the attributes' price point, home size, and lot size.

During each simulation, the attributes of the fourth home are changed. For example, in the first simulation set at the $100,000 to $119,999 price range, the fourth home's attributes were changed three times---profiles 1,1,4; 1,1,3; and 1,1,2 (from Table 6.4 we know that there are only three homes that RGH can profitably build in this price range). The results from this simulation set, plus the results of the other two simulation sets are shown in Table 6.6.

The results generated by each simulation consist of a market share figure for each home in the simulation. For example, referring to Table 6.6, if RGH builds homes with attributes 2,1,1 ($130,000 price point, 1,500 sq.ft. home size, and 5,600 sq.ft. lot size) he will capture a 22.4% market share. His three competitors in the simulation, Builders B, G and W, will capture 22.4%, 30.5%, and 24.7% market shares, respectively.

To incorporate the market share results with a firm's hedonic cost function, and the industry's hedonic price function, a simple paradigm was developed:

$$Profit = Q*P(A) - Q*C(A)$$

Q is the number of homes produced and sold by a particular builder. It is determined by

Table 6.6
Results of Simulation

$100,000 to $119,999 Price Range					
Builder B	Builder F	Builder V	RGH-Hm	RGH	RGH Profit
22.9%	22.9%	27.1%	1,1,2	27.1%	$24,390
26.0%	26.0%	41.0%	1,1,4	7.0%	$51,100
20.1%	20.1%	39.6%	1.1.3	20.1%	**$82,410**

$120,000 to $139,999 Price Range					
Builder B	Builder G	Builder W	RGH-Hm	RGH	RGH Profit
35.6%	35.2%	23.9%	2,1,4	5.3%	$144,690
22.3%	22.0%	12.9%	2.3.4	42.8%	$205,440
35.8%	35.4%	14.4%	2,2,4	14.4%	$231,120
16.1%	18.5%	10.8%	2,2,1	54.6%	$352,170
22.4%	30.5%	24.7%	2,1,1	22.4%	$396,480
30.9%	22.0%	24.7%	2,1,2	22.2%	$463,980
18.8%	16.0%	10.9%	2,2,2	54.3%	$523,995
27.6%	27.3%	22.1%	2,1,3	23.1%	$556,710
18.5%	18.3%	10.7%	2,2,3	52.5%	$674,625
7.2%	7.1%	4.9%	2,2,3	80.8%	**$1,038,280**

$140,000 to $159,999 Price Range					
Builder B	Builder G	Builder W	RGH-Hm	RGH	RGH Profit
18.4%	61.8%	18.6%	3,1,4	1.1%	($97,970)
16.4%	64.1%	16.6%	3,2,4	2.8%	($49,060)
18.1%	60.7%	15.8%	3,1,1	5.4%	$53,580
19.7%	55.4%	19.9%	3,1,3	4.9%	$66,090
15.6%	60.8%	18.3%	3,1,2	5.3%	$66,770
18.5%	52.1%	18.7%	3,3,4	10.6%	$112,880
15.7%	61.2%	11.5%	3,2,1	11.5%	$154,175
11.4%	61.3%	15.9%	3,2,2	11.4%	$188,010
16.6%	54.3%	16.8%	3,2,3	12.3%	$254,055
13.2%	37.1%	11.5%	3,3,1	38.2%	$430,640
11.4%	37.3%	13.4%	3,3,2	37.9%	$547,360
16.9%	33.0%	17.1%	3,3,3	33.0%	**$562,800**

multiplying the builder's predicted market share (obtained from the simulation) by the total

number of homes built by the firms in the simulation's "market of homes." $P(A)$ is the

industry's "hedonic price function." It specifies the revenue per home (i.e., price) for

different homes based on each individual home's attributes (i.e., a willingness-to-pay

function). $C(A)$ is the individual firm's "hedonic cost function." It specifies the cost per

home for different homes based on each individual home's attributes (i.e., the firm's production function).

To determine Q for the fourth "what-if" home in each simulation, the market share of the fourth home (from the simulation) is multiplied by the total number of homes sold by the top three builders during the previous year. Thus, Q is the minimum predicted quantity of a specific home produced and sold, *ceteris paribus*, during the next year.[67] For example, since the three top builders in the $100,000 to $119,999 price range built 99 homes last year, we will assume that the top four will, at a minimum, sell 99 homes this year. Therefore, if RGH builds homes with attributes 2,2,1, in the $100,000 to $119,999 price range, he will sell 22 homes during the next year (Q=22.4% X 99 homes =22), Builder B will sell 22 homes, Builder G will sell 30 homes, and Builder W will sell 25 homes.

The next step in the process is to incorporate the market prediction figures with RGH's hedonic cost equation, and the industry hedonic price equation. Earlier in this chapter, RGH estimated his unit construction cost at $45 per square foot of housing, and $8.00 per square foot of finished lot. Hence, RGH's hedonic cost function is:

$$C(A) = (\$45.00*\text{home size}) + (\$8.00*\text{lot size})[68]$$

The industry's hedonic price function is created by performing a multiple regression using data on the prices and profiled attributes obtained from sales by the leading builder's during the past year (price is the dependent variable, and the profiled attributes are the independent variables). If regression allows a statistically significant explanation for the

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[67]This simulation assumes that the total number of homes produced and sold is the same as the previous year (i.e., employment growth is consistent, interest rates are stable and there are no new competitors, besides RGH, in the market).
[68]A very basic hedonic cost function is used to illustrate the process. Most hedonic cost functions incorporate both fixed costs and a wide variety of variable costs.

price of homes in the market in terms of the profiled attributes, it provides the best estimate of the industry's hedonic price function.

However, in this example, the regression performed did not explain a significant amount of the variation (i.e., a low R^2). Therefore, we are going to infer a price function based on the following logic: Market simulations allow respondents to trade off between attributes. By segmenting the market into the price ranges at which the respondents have purchased their home, and performing simulations using only data from within the price range (i.e., simulation sets), the market shares from the simulation result from a "hedonic-like" procedure. Hence, the "hedonic price function" for each simulation set is the mean price point in the simulation set. Therefore, the hedonic price function in the $100,000 to $119,999 price range is $110,000, or P(A) = $110,000.

When predicted market sales are combined with RGH's hedonic cost function and the three simple industry price functions (one for every price point), the following three formulas are obtained:

(1) $Profit_{110000} = (Q_{110000} * 110,000) - [Q_{110000} * (($45.00 * home size) + ($8.00 * lot size))]$

(2) $Profit_{130000} = (Q_{130000} * 130,000) - [Q_{130000} * (($45.00 * home size) + ($8.00 * lot size))]$

(3) $Profit_{150000} = (Q_{150000} * 150,000) - [Q_{150000} * (($45.00 * home size) + ($8.00 * lot size))]$

The final step in the process is to plug in the Q's (the predicted market sales), the home sizes and the lot sizes from each "what if" scenario. The results of these calculations are shown in the far right column in Table 6.6. Within the $100,000 to $119,999 price range, the most profitable home is the home with profiled attributes 1,1,2 (profit = $82,410).

Within the $120,000 to $139,999 price range, the most profitable home is the home with profiled attributes 2,2,3 (profit = $1,038,280), and in the $140,000 to $159,999 price range, home 3,3,3 generates the maximum profit of $712,800. If RGH's internal constraints allow him to pursue the construction of homes in all three price ranges, his maximum profit is $1,833,490.

The above example, although simplistic in nature, illustrates how market simulations using conjoint data permit the builder to test alternative programming scenarios. Simulations can be run with up to 30 competitive homes profiled on nine attributes, with nine levels per attribute. Simulations also allow the builder to predict the impact of competitive moves, and test repositioning strategies for existing homes or subdivisions. Furthermore, the results from simulations allow the builder to think through what is happening, and therefore gain further insight into his competition, and home buyer preferences.

V. Positioning Housing Development via Perceptual Mapping

In marketing terminology, a product's position relates to how the product (a bundle of attributes) is perceived by consumers relative to other products. The benefits of positioning, in pragmatic terms, is described below:

> ...for a business or organization to establish an appropriate, desirable position in the marketplace, it must describe to customers how the company's product differs from competing products. In so doing, the host firm or product is attempting to establish a competitive advantage that will appeal to a significant number of potential customers.[69]

One way that the home builder can understand the positioning of his product versus competitive products is through the study of perceptual maps.

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[69]Troy A. Festervand and James R. Lumpkin, "Positioning Retirement Housing Developments via Perceptual Mapping," *Real Estate Finance*, (Summer 1990): p. 79.

A. The Process of Perceptual Mapping

"Perceptual mapping techniques take consumer judgements of overall similarity of preference and literally find a picture in which objects that are judged to be similar psychologically [are] plot[ted] near each other in geometric space."[70] The process of gathering respondents' judgements through perceptual mapping is very similar to the process utilized in conjoint analysis. Hence, this section will only discuss how the data is analyzed through perceptual mapping, and how perceptual mapping can be to used to gain insight into home buyer preferences.

B. Analysis

The most common method for quantifying the position of a product is through the technique of Multidimensional Scaling. This computerized procedure converts ratings of similarities of the housing attributes to a geometric representation of the attributes' position relative to one another.[71] Hence, information on the similarities, differences, strengths, and weaknesses of the homes (each home representing a unique bundle of attributes) will be revealed to the researcher in the form of a perceptual map.

In a perceptual map, each home (a bundle of attributes) occupies a specific point. Homes that are perceived to be similar lie close to each other on the map, whereas those that are different lie far apart. The home attributes are represented as vectors emanating from the center of the map. The average ratings of homes can be presumed from their positions with respect to the attribute vectors.
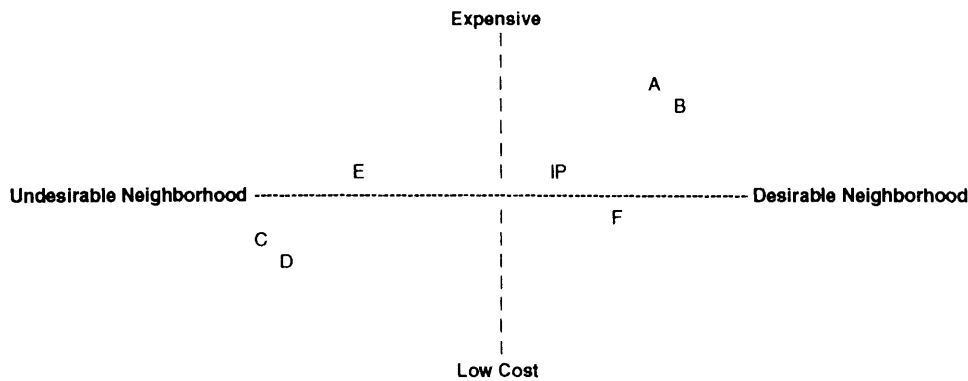
Figure 6.6 presents a sample perceptual map with just two attributes (desirability of neighborhood and price), and six homes (A,B,C,D,E,& F). Homes A and B are seen by

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[70]Paul E. Green and Yoram Wind, p.116.
[71]Festervand, p. 80.

the respondents as similar, each expensive and located in a highly desirable neighborhood. Homes C and D are also seen by the respondents as similar (low cost and in an undesirable neighborhood), but are dissimilar from homes A and B. Home E is a home that is probably not selling well. It is viewed by the respondents as being relatively

Figure 6.6
Sample Perceptual Map

```
                          Expensive
                              |
                              |
                              |              A
                              |                B
                              |
                              |
                   E          |    IP
Undesirable Neighborhood -----------------------------------------------  Desirable Neighborhood
                              |          F
            C                 |
              D               |
                              |
                              |
                              |
                           Low Cost
```

expensive, yet in an undesirable neighborhood. Conversely, Home F is probably selling well. It is viewed as being a low cost home in a highly desirable neighborhood. The information presented in the above map could also be presented in tabular form, but maps provide a quick and intuitive way to understand the results of the survey. Hence, the example provides a good illustration of how perceptual maps can provide home builders with meaningful insight into how their homes compare with competitor's homes.

The above example utilized only two attributes. Positioning studies utilizing perceptual mapping can utilize as many as 30 products and 50 attributes. Other useful ways of analyzing the results can occur through segmentation---either by demographics, usage, or responses. Furthermore, "ideal points" can be displayed on the map for individual responses or important market segments. Ideal point IP in Figure 6.6, refers to a profitable location on the map that homes could occupy.

C. Application to the Home Building Industry

Perceptual mapping and the associated methodology has been applied to consumer product research for years however, it's application to home building is still somewhat innovative.[72] Not a single one of the home builders interviewed made any mention of positioning research or perceptual mapping, and the data in the literature, although rich in its application to consumer products, was sparse in its application to home building. However, the studies that have been completed suggest that positioning research through perceptual mapping shows promise and can benefit the home builder by addressing questions relating to target markets and the marketing mix.[73] Positioning research can identify the market(s) best being served by existing homes/developments. Thus, perceptual mapping can establish the market's perceptions and/or misperceptions of existing homes/developments.

Furthermore, and more importantly, the results of positioning research identify market gaps. Perceptual mapping provides builders with the knowledge of the market's most preferred point on the map. Areas on the map which are highly preferred, but without product, are gaps in the market. Once the research has identified the attributes that make up this ideal point, homes/developments can be created to meet these preferences, and marketing strategies can be implemented to communicate the benefits of the homes/developments. It is important to remember that it not only matters what the actual attributes of a home are, but what home buyers perceive the attributes to be.

Home builders must take three steps to effectively position their products: (1) identify, through the process of perceptual mapping, a set of potential competitive advantages to exploit; (2) select, define, and refine the most appropriate (read: profitable) set of home

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[72]Ibid., p. 78.
[73]Ibid., p. 79.

attributes; and (3) effectively communicate the home's/development's position to the desired market.[74] In terms of competitive strategy, the position chosen must be distinct in that home buyers must not feel that another builder's home can be substituted. Second, the positioning strategy must focus on attributes that are important in the home buyer's decision making process. Finally, the position selected should facilitate the use of marketing tools working together in concert. For example, the price, image, option package, amenities, sales effort, and promotion should all be complimentary and aimed to create the desired, favorable perception of the home/development in the home buyer's mind.

Therefore, positioning research via perceptual maps provides insight into home buyer preferences, and helps suggest product strategies. However, despite the fact that perceptual maps result from rigorous mathematical analysis of the survey data, perceptual maps are principally qualitative rather than quantitative tools.[75] They are better for suggesting hypotheses and general strategies than they are for estimating more quantifiable profit maximizing results. However, if the home builder remembers this limitation, the use of perceptual maps for analyzing home buyer preferences can be a powerful tool for suggesting and refining programming decisions.

VI. Conclusion

This chapter presented a brief overview of the implementation and application of conjoint analysis and perceptual mapping. Furthermore, it developed and illustrated a model that uses conjoint-based simulation data together with hedonic cost and price equations to evaluate and test programming strategies. Yet, of all the leading home builders and

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[74]Ibid., p. 79.
[75]Sawtooth Software (1991)

consultants interviewed, only one consultant had ever used the technique of conjoint analysis, and not a single one had used perceptual mapping. The use of conjoint analysis and perceptual mapping, coupled with computerized interviewing, represents a strategic opportunity for builders who wish to gain a competitive advantage via utilizing information on home buyer preferences to create homes which are both highly desired and highly profitable.

CHAPTER SEVEN

MARKET RESEARCH PARADIGM

The likelihood that a smaller home building firm will develop into a larger, more profitable firm increases as the firm develops competencies and competitive advantages. In the first chapter of this thesis, we analyzed the structure of the home building industry, concluding that one of the few areas in which home builders can "cope" with the fragmented industry structure, and gain a competitive advantage, is by providing homes more in tune with home buyer preferences than their competitors. Furthermore, one of the basic premises of this thesis is that there is no home building organization of any size or nature that cannot substantially improve its use of information on home buyer preferences.

This conclusionary chapter: (1) summarizes the results from dozens of interviews with leading builders, consultants, and academics, as well as a thorough literature review into the basic tenets of market research into home buyer preferences; (2) presents pragmatic, highly insightful, and cost effective market research paradigms for gathering and analyzing information related to home buyer preferences for three levels of builders: small (under 50 homes/year); medium (approximately 50-250 homes/year); and large (over 250 homes/year); and (3) concludes with recommendations for future research.

I. Basic Tenets for All Levels of Builders

The biggest mistake is not to undertake any market research. Every single leading builder (save for one) that we interviewed had research programs that were designed to obtain valuable preference information that they used to make market driven decisions.

Do not commence research without a well-defined problem. It helps to formulate the

problem as "What decisions am I trying to make?" Then conduct market research to find the answer to make that decision.

Conduct Systematic Market Research. All builders should ensure that market research is conducted on a systematic basis. The information from systematic research provides quality information that can be relied upon for decision making. Furthermore, it allows insight into shifts in home buyer preferences. Infrequent, or unsystematic research can provide data that, when analyzed, leads to misinformed judgements.

Use appropriate and correct techniques to gather data. Garbage in, garbage out. Take the time to ask the questions and analyze the results in a proper fashion.

Integrate the results from the market research program into the organization. To make market driven decisions, the entire organization must believe (i.e,. have "religion") in making programming decisions that are market driven.

Focus market research on recent buyers of homes. Recent purchasers of homes are the population that can provide meaningful data. Recent purchasers have made the trade-off decisions; shoppers have not.

Surveys don't have to be complicated. Some of the most successful surveys were simple in their design, but yielded valuable information.

Spend the time to ask "Why?" Go beyond the results. Understand why home buyers prefer what they do.

Use sophisticated analysis techniques. Find out about the newest techniques for

analyzing information. The additional insight into home buyer preferences that these techniques provide confers an advantage to those who use them.

Segment the market by price point. The first segmentation variable should be price point. If a narrower segment is desired, use price point in conjunction with other variables (e.g., psychographics, stage in life cycle).

Look for methods to satisfy home buyer preferences. Some preferences among price points may be homogeneous, some not. Those attributes that are not universally desired should not be included in the base model. Allow home buyers to choose options to satisfy their heterogeneous preferences.

Formalize the results of the research. Document what has been learned so that it can be easily referenced in the future.

Utilize preference data to locate opportunities. Market research into home buyer preferences is a demand analysis. Competitive monitoring is a supply analysis. Superimpose the two and builders can locate needs that are not being satisfied. (See Figure 7.1).

Use market research as a proactive tool. Proper market research can prevent the home builder from making erroneous programming decisions.

Base Decisions on Market Research. Preconceived notions can be dangerous. Don't be a monkey see, monkey do builder. Ask a problem and solve it with market research. Be a smart builder and make decisions that are market based.

Figure 7.1
Gap Analysis

```
┌──────────────────────────────────────────────────┐
│              DEMAND ANALYSIS                       │
│    Market Research into Homebuyer Preferences      │
│    ┌─────────────────────────────────┐            │
│    │                                 │            │
│    │                                 │            │
│    │                                 │            │
│    │                                 │            │
│    │                                 │            │
│    │                                 │            │
│    │                                 │            │
│    SUPPLY ANALYSIS                   │            │
│    Competitive Monitoring            │            │
└──────────────────────────────────────────────────┘
```

Gap between supply and demand---where
opportunities lie for home builders.
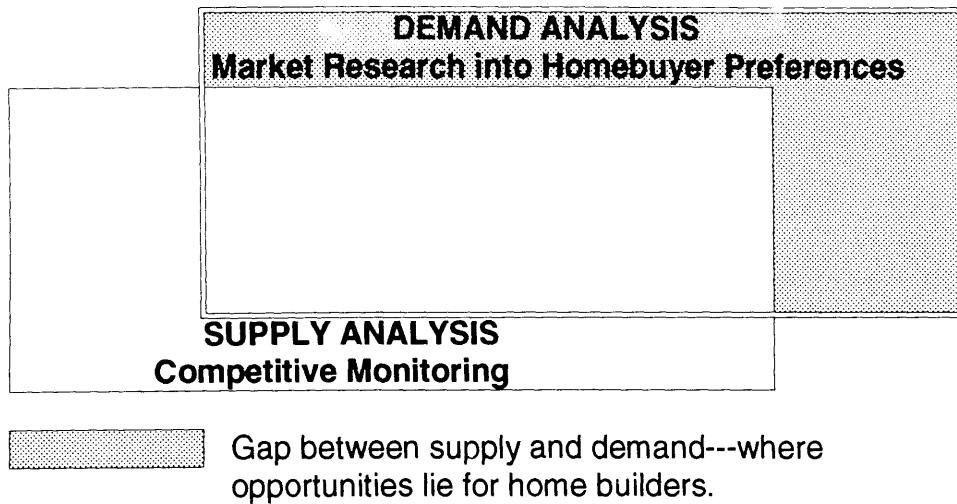
II. Market Research Paradigms

A.   Small builders

The small builder should commit to performing the basics of market research into home

buyer preferences. These research techniques should be used to the maximum of their

information generating capabilities. Basic techniques correctly implemented will generate

greater-value information than more sophisticated techniques that are poorly implemented.

The smaller builder will want to narrowly segment the market so that he can conduct

market research in a cost-effective and timely manner.

1.   Competitive Monitoring

*   Obtain permit, start, and closing information on a quarterly basis to find out who

the top builders are, and what they are planning to build. Cross tabulate this data

vis-a-vis price point to provide useful information. Compare and contrast this data

to information from previous quarters.

* Use competitive evaluation forms to comprehensively study the best-selling models of leading builders. Analyze this data using the adjustable comparable technique.

* Track the changes in the price of resales.

* Comprehensively study the changes that leading builders make to their models.

2. **Experience Surveys**

* Talk to land developers---most larger developers do a considerable amount of market research because of their larger investment and longer view.

* Gather opinions from all those who are involved in the home building process--- mortgage companies, the local planning office, merchandisers and interior designers, and architects.

* Talk to the leading realtors. Realtors can provide information on what they are selling and, perhaps, why they sold another builder's home instead of yours.

* Salespeople should be getting information from every prospect that comes through the door via a prospect card and carefully worded questions (exit interviews). Have the salespeople prepare a monthly report on what they have learned during the past month about what home buyers are demanding, and why.

3. **Rejector Surveys**

* Rejector surveys provide invaluable information about home buyer preferences. Performing these surveys can be as simple as knocking on a person's door who has

bought from a competitor, or as involved as mailing questionnaires to all rejectors.

*   Even builders without product can knock on doors of recent purchasers to find out where they looked and why they bought what they did.

4.   Shopper surveys

*   Utilize the information on registration cards to survey by mail or by telephone home shoppers who intend or need to buy within the next few months.

5.   Post-Purchase Surveys

*   Have purchasers of your own homes complete detailed questionnaires at closing and 3-6 months after their purchase. Administer these questionnaires personally, and talk to your buyers about what they like and dislike about their home. Spend time with them and show them that you value their input. This also helps create feelings of good will---which may help them recommend your home to other potential buyers.

*   Have home buyers complete a full-profile conjoint analysis on a few selected home attributes that you would like more information on. Get the market research department at the local college to have some students interpret the data.

6.   Surveys of Recent Home Purchasers

*   Target a specific price point in the market and mail questionnaires (questions relating to attributes "essential to the purchase") to a random sample of this population. This may only consist of 50-100 mailed questionnaire every quarter, but a systematic sample of a narrow target will allow great insight into the market---thus providing a competitive advantage.

B.   Medium-Sized Builders

The medium-sized builder will generally have a larger budget and, perhaps, a staff member who has part of his/her job responsibility as the market research function. Medium-sized builders should systematically use all the tools that the small builder uses, but should conduct research on a more frequent basis, and with increased sophistication.

1.   Competitive Monitoring
Same program as small builder.

2.   Experience Surveys
Same program as small builder.

3.   Rejector Surveys
Same program as small builder, plus:

*   Mailed questionnaires or telephone interviews should be conducted with <u>every single prospect</u> that fills out a registration card but does not buy from you.

*   Conduct a random sample of rejectors. Have the rejectors fill out a more detailed version of the rejector questionnaire. Furthermore, either conduct a full-profile conjoint analysis or a computerized adaptive conjoint analysis.

4.   Shopper Surveys
Same program as small builder.

5.   Post Purchase Interviews
Same program as small builder, plus:

*   Utilize a more sophisticated conjoint analysis.

6. **Surveys of Recent Home Purchasers**

   Same program as small builder, plus:

*   Conduct a larger mailed survey on a systematic basis using a random sample of all those who have purchased new homes in the market.

*   Mail questionnaire to certain segments of recent new and resale home buyers to obtain more detailed information into their preferences.

7. **Focus Groups**

*   Focus groups should be conducted to develop new ideas or when introducing new product to an area. Use conjoint analysis during the focus group to derive hard data on preferences.

*   Use focus groups of leading Realtors once or twice a year to accomplish two goals: (1) to introduce them to your product; and (2) to obtain information on their perceptions of demand (read: home buyer preferences).

C. **Large Builders**

Large builders should have at least one full-time staff member in every market area devoted solely to the market research function. This person is responsible both for implementing and operating systematic market research, as well as serving as an in-house consultant for specific issues.

1. **Competitive Monitoring**

   Same program as mid-size builder.

2. Experience Surveys

Same program as mid-size builder, plus:

* Network with other leading builders in other markets to get their views on home buyer preferences, trends, and other issues.

3. Rejector Surveys

Same program as mid-size builder.

4. Shopper Surveys

Same program as mid-size builder.

5. Post purchase interviews

Same program as mid-size builder, plus:

* Utilize a sophisticated conjoint analysis program, together with a questionnaire designed to provide information for a hedonic willingness-to-pay regression study. Run market simulations. Do positioning research with perceptual mapping.

6. Surveys of Recent Home Purchasers

Same program as mid-size builder, plus:

* Mail questionnaires to all purchasers of new and resale homes on a systematic basis.

7. Focus Groups

Same program as mid-size builder.

7.   Personal Interviews

*   Conduct personal interviews with a statistically significant random sample of the population to obtain the necessary information so that a hedonic willingness-to-pay regression equation can be formed. Utilize this information together with hedonic cost equations, and results from market simulations using conjoint analysis to determine the most profitable products to build.

III.   <u>RECCOMMENDATIONS FOR FUTURE STUDY</u>

This thesis has devised a pragmatic, cost-effective, and highly insightful methodology for gathering and analyzing information related to home buyer preferences. This methodology can be used to identify a builder's optimal product design and pricing strategy. The examples presented in the thesis were simple and straightforward. They were designed to illustrate the methodology and analysis. To further illustrate the information generating capabilities of a well designed and conducted market research program into home buyer preferences, the authors suggest that this thesis be used as a stepping stone for a future student(s) to perform an empirical study. A detailed empirical study will bring out the nuances and subtleties that our hypothetical examples could not. That is, every attempt was made to keep the examples real world however, there is no substitute for the real thing. More research is also needed on the application of computer-based interviewing, and the estimation of hedonic willingness-to-pay models.

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APPENDIX I

CUSTOM PERMIT REPORT

```
       PERMIT NO.:  92A02727                          Issued:     92/05/19
          Address:  18813 87A AVENUE NW
Legal:       Lot:  72   Block:  82    Plan:  9220755      Code:       7004
         Portion:                                         Units:      1
     Subdivision:  PRIMROSE                           Stories:      1
 Contractor Name:  REID-BUILT CUSTOM HOMES               Value:      $90,000
           Owner:  C/O REID-BUILT CUSTOM HOMES
           Yards:  Front: 6.1      Right: 1.4      Left: 2.0      Rear: 11.2
   Building Size:  63 X 38 X 47
        Lot Size:  IRREGULAR              Rooms: 10      Bathrooms: 2.5
       Fireplace:  ONE                 Basement: FULL
1st flr 1479   2nd flr N/A    Addn flr 1365     Att Gar  453  Det Gar N/A
Extras: BRICK 63
       Occupancy:  SINGLE DETACHED HOUSE W/ATT GAR,FRPL:CONSTRUCT NEW


       PERMIT NO.:  92A02773                          Issued:     92/05/19
          Address:  3627 31A STREET NW
Legal:       Lot:  51   Block:  38    Plan:  9022563      Code:       7006
         Portion:                                         Units:      1
     Subdivision:  THE MEADOWS                        Stories:      2
 Contractor Name:  ENCORE HOMES LTD                      Value:      $102,000
           Owner:  LEHNDORFF MEADOWS
           Yards:  Front: 6.10 M   Right: 1.50 M   Left: 2.17 M    Rear: 10.67M
   Building Size:  32' X 47' X 32'
        Lot Size:  IRREGULAR              Rooms: 8       Bathrooms: 2.5
       Fireplace:  ONE                 Basement: FULL
1st flr 1010   2nd flr 907    Addn flr UNDEV     Att Gar  506  Det Gar N/A
Extras: DECK 2X4 DECKING AND PILES
       Occupancy:  SINGLE DETACHED HOUSE W/ATT GAR,FRPL,DECK:CONSTRUCT NEW


       PERMIT NO.:  92A02735                          Issued:     92/05/19
          Address:  19072 72A AVENUE NW
Legal:       Lot:  21   Block:  61    Plan:  9220078      Code:       7004
         Portion:                                         Units:      1
     Subdivision:  WILLOWDALE                         Stories:      SPLT
 Contractor Name:  REID-BUILT CUSTOM HOMES               Value:      $62,000
           Owner:  C/O REID-BUILT CUSTOM HOMES
           Yards:  Front: 6M       Right: 1.54      Left: 1.32      Rear: 7.51
   Building Size:  34 X 32 X 52'8
        Lot Size:  IRREGULAR              Rooms: 6       Bathrooms: 1
       Fireplace:  ONE                 Basement: FULL
1st flr 1109   2nd flr N/A    Addn flr 288      Att Gar  405  Det Gar N/A
Extras:
       Occupancy:  SINGLE DETACHED HOUSE W/ATT GAR,FRPL:CONSTRUCT NEW
```

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APPENDIX II

SAMPLE COMPETITIVE EVALUATION FORMS

FIGURE 2.5   Competitive Project Evaluation Form

A. GENERAL: DATE: _____
   1. Development name: _____
   2. Location: _____
   3. Total acres in development: _____
   4. Total master plan calls for: _____ single family residences.
                                   _____ multiple family units.
   5. Building company: _____
   6. Sales started _____ Approximate sales to date_____
   7. Number of homes completed _____; homes under construction _____ _____
   8. Approximate number of homes available for sale: completed_____
                                                      uncompleted_____

B. FINANCING: INTEREST: BUYER'S CLOSING COSTS
   9. Conventional 5%   _____   _____
      "   "   10%   _____   _____
      "   "   20%   _____   _____
      F.H.A.   _____ + ____ MMI. _____
      V.A.   _____   _____

C. HOUSE PROFILES: PLAN

10. Number of stories						
11. Number of bedrooms						
12. Number of baths						
13. Sales price						
14. Lot size (sq. ft.)						
15. Sales price ÷ home sq. ft.						
16. Architectural style						
17. Family room?						
18. Dining room?						
19. Garage (2 car or 3)						
20. Special rooms						
21. Bonus room (unfinished sq. ft.)						
22. Kitchen counter ☐ tile ☐ laminate						
23. Bath: wainscot ☐ tile ☐ laminate ☐ fiberglass ☐ none						
24. Bathtub ☐ Pressed steel ☐ iron ☐ fiberglass						
25. Appliances ☐ gas ☐ electric						
26. F.A.U. Heating (b.t.u. output)						
27. Heating ducts ☐ galvanized ☐ alum bestos						
28. Insulation ☐ ceilings ☐ walls						
29. Other features: a_____ b_____ c_____						

D. BASIC ITEMS

	INCLUDED	OPTIONAL	PRICE	DESCRIPTION
1. Carpets				
2. Fireplace				
3. Dishwasher				
4. Fencing				
5. Landscaping (front)				
6. Landscaping (rear)				
7.				
8.				

Source: Clark, *Marketing New Homes*, 1989.

FIGURE 2.6   Housing Project Analysis

Date: _____

BY: _____

1.0   DESCRIPTION OF THE PROJECT AND BACKGROUND DATA

Project name: _____

Developer(s): _____

Builder(s): _____

Office address: _____

_____

Phone(s): _____

Project location and directions: _____

_____

_____

_____

_____

Sales office or project phone: _____

Personnel on duty: _____

_____

Project size: _____

Housing units: _____

_____

_____

_____

2.0   PROJECT DEVELOPMENT AND SALES HISTORY

Acquisition & development history: _____

_____

_____

_____

Sales history:

Date sales commenced/anticipated: _____

Presales activity/scheduled: _____

Grand opening(s): _____

Total net sales to date: _____

Total net closings: _____

Pending unclosed sales: _____

Cancellation history: _____

Source: Clark, *Marketing New Homes*, 1989

FIGURE 2.6   Housing Project Analysis (continued)

Present sales status:

Past 3 months activity summary:

Net sales: _____ Number per plan type: _____

_____

_____

Number sales closed: _____ Occupied: _____

Cancellations: _____

Inventory status:

Total units released for sale to date: _____

Number per plan unsold: _____

_____

_____

3.0 EVALUATION OF LOCATION AND ACCESSIBILITY

Observations about the general region: _____

_____

_____

Observations about the adjacent neighborhoods: _____

_____

_____

Major access routes: _____

_____

Observations about accessibility:

Billboards and directional signage: _____

_____

_____

Flags or other visual elements: _____

_____

Possible improvements: _____

_____

_____

General advantages of location: _____

_____

_____

Issues to evaluate: _____

_____

_____

FIGURE 2.6   Housing Project Analysis (continued)

4.0   EVALUATION OF IDENTITY AND IMAGE FACTORS

General approach: _____

_____

_____

Entry area: _____

_____

_____

Theme name and use: _____

_____

_____

Landscaping: _____

_____

____ _____ _____ _____

Parking: _____

_____

Fencing or natural barriers:_____

_____

Construction and construction traffic:_____

_____

Neighborhood identifications:_____

_____

Theme signing—paths—amenities—etc.:_____

_____

_____

Other Image/Identity observations:_____

_____

_____

5.0   EVALUATION OF SALES FACILITIES & GENERAL SALES ENVIRONMENT

Description of facilities:_____

_____

_____

Access and approach:_____

_____

_____

Visual control of arriving traffic:_____

_____

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FIGURE 2.6   Housing Project Analysis (continued)

On-site marketing programs:

_____

_____

_____

Off-site marketing programs:

_____

_____

_____

Newspaper advertising (Identify publications used):

_____

_____

_____   _____

Electronic media (Identify stations/channels):

_____

_____

_____

Publicity & public relations:

_____

_____

_____

Direct mail campaigns:

_____

_____

_____

Competitive positioning (List major competition):

_____

_____

_____

_____

_____

Cooperative broker programs:

_____

_____

_____

Resident referral programs:

_____

_____

_____

FIGURE 2.6 Housing Project Analysis (continued)

Total size of sales office facilities:_____

_____

Evaluation of design and layout:_____

_____

Theme coordination:_____

_____

Observations re: decor & color scheme:_____

_____

_____

Sales personnel counselling areas:_____

_____

_____

Rate impact for following objectives: (Scale 1–10)

Credibility:_____   Urgency-tempo:_____
Quality/performance:_____   Prospect control:_____
Freshness:_____   Presentation:_____

6.0 EVALUATION OF PRESENTATION ELEMENTS, GRAPHICS, & DISPLAYS

General observations re: quality & value of exhibits:

_____

_____

_____

Location display(s):_____

_____

Builder(s)/developer(s) displays:_____

_____

Site map—table display(s):_____

_____

Floor plans:_____

_____

Elevations:_____

_____

Amenities:_____

_____

Lifestyle photos, etc:_____

_____

Product features—construction benefits:_____

_____

FIGURE 2.6   Housing Project Analysis (continued)

Options, selections, choices:_____

_____

Community activities—people—events:_____

_____

Property managements—association management:_____

_____

7.0   EVALUATION OF SALES LITERATURE, BROCHURES, HANDOUTS

General observations re: brochure(s):_____

_____

_____

_____

Floor plans:_____

_____

Prices—price sheets:_____

_____

Site plan:_____

_____

Competitive feature list(s):_____

_____

Environment—history—lifestyles:_____

_____

Options and alternate choices:_____

_____

DIRECT MAIL PIECES

Thank-you notes:_____

Informational items:_____

_____

_____

_____

Newsletters:_____

_____

RATE LITERATURE FOR FOLLOWING (Scale: 1–10)

Flexibility _____ Quality _____ Value _____

8.0   EVALUATION OF MODELS, SHOW HOMES, & INVENTORY OR SITES

MODEL HOMES

Number: _____ Plan types: _____

Sequence:_____

FIGURE 2.6 Housing Project Analysis (continued)

Relationships to available inventory:_____

_____

Landscaping:_____

Decorating:_____

General conditions:_____

Decorator Items:_____

Observations about decor & furnishings re:
    Profile of potential buyers:_____

_____

INVENTORY HOMES AND SITES

Number of completed unsold homes:_____

Tc al unsold (completed plus incomplete):_____

Mix of inventory for sale:_____

General condition of inventory homes:_____

_____

Target properties for current emphasis:_____

Phasing observations & inventory control:_____

_____

9.0 EVALUATION OF AMENITIES, RECREATION FACILITIES, COMMON AREAS
List of all amenities and recreational facilities:

_____
_____
_____
_____
_____

Observations re: use, condition, & value:

_____
_____
_____
_____
_____
_____

FIGURE 2.6   Housing Project Analysis (continued)

Marketing impact of presentation of amenities:

_____

_____

_____

_____

_____

10.0   PERSONNEL EVALUATION (one sheet per sales person)

Name:_____ Sex: _____

Status:_____

Days & hours assigned:_____

Home address: _____

_____ Phone: _____

Experience in real estate:_____

_____

Experience in new-home sales:_____

_____

Date associated with this company:_____

GENERAL OBSERVATIONS

Appearance:_____

Attitude:_____

Product knowledge:_____

Assertiveness:_____

Sociability:_____

Resourcefulness:_____

Desire to learn:_____

Time management:_____

Ability to communicate:_____

Emotional stability:_____

Other:_____

_____

_____

11.0   EVALUATION OF MARKETING STRATEGIES

Identification of profiled markets:

_____

_____

_____

_____

FIGURE 2.6   Housing Project Analysis (continued)

Industry contact programs:

_____

_____

_____

Literature placement programs:

_____

_____

_____

Equity assistance plans:

_____

_____

_____

Financing plans featured (Attach detailed sheets):

_____

_____

_____

Transferee and relocation programs:

_____

_____

_____

Speaker's bureau—audio/visual presentations off-site:

_____

_____

_____

Other marketing programs:

Testimonials:_____

Photo albums:_____

Special events:_____

12.0   OWNER'S ASSOCIATION MANAGEMENT (When Applicable)

Status of owner's association:

_____

_____

_____

Indoctrination programs:

_____

_____

_____

FIGURE 2.6   Housing Project Analysis (continued)

Current directors of the association:

_____

_____

_____

Operating committees:

_____

_____

_____

Property management team:

_____

_____

_____

Evaluation of resident involvement:

_____

_____

_____

13.0   EVALUATION OF AFTER-SALE SERVICE & CUSTOMER MOVE-IN PROGRAMS

Warranty programs & materials given to buyers:

_____

_____

_____

Pre-move-in procedures & involvement programs:

_____

_____

_____

Walk-through & move-in procedures:

_____

_____

_____

Sales follow-up & welcoming programs:

_____

_____

_____

Special events & activities for owners:

_____

_____

_____

FIGURE 2.6   Housing Project Analysis (concluded)

Surveys & measurements of resident satisfaction:

_____

_____

_____

_____

14.0   EVALUATION OF MAJOR QUESTIONS, OBJECTIONS & SALES OBSTACLES

Location:_____

_____

_____

Development team:_____

_____

Site plan:_____

_____

_____

Floor plans:_____

_____

_____

Construction:_____

_____

_____

Amenities:_____

_____

_____

Available inventory:_____

_____

_____

Options, choices:_____

_____

Financing:_____

_____

NOTE: If there are other categories, list on separate page.

15.0   SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS

_____

_____

_____

_____

(Use as much space and add pages as necessary)

FIGURE 2.8 Development Profile

GRAPH SYMBOL:

PROJECT NAME _____DATE:

DEVELOPER _____PHONE:

LOCATION _____

PRODUCT TYPE _____Lot Size/Density:

PLAN DESCRIPTION

PLAN NO. _____
PLAN PRICE _____
SOLD-OUT _____
SQ. FT. _____
PRICE SQ. FT. _____

NO. OF LEVELS _____
BEDROOMS _____
BATHS _____
GAP^GE _____

FORMAL DINING _____
FAMILY ROOM _____
BASEMENT _____

PLAN MIX

NO. PLOTTED _____
NO. UNSOLD _____

PRICE INCREASES

PAST _____ MONTHS _____

FEATURES

☐ Driveway	☐ Drapes	
☐ Roof	☐ Dishwasher	
☐ Fencing	☐ Double Oven	
☐ Landscaping	☐ Self-Cleaning Oven	
☐ Sprinklers	☐ Microwave	
☐ Balcony	☐ Trash Compactor	
☐ Patio	☐ Wet Bar	
☐ Carpets	☐ Air Conditioning	
☐ Fireplace	☐ Other	

FINANCING

☐ FHA
☐ VA
☐ CONVENTIONAL

DOWN   INT. RATE

SALES PROFILE

	Total	Current Phase
A. Sales Started	A.	A.
B. Total No. Lots in Project	B.	B.
C. Total No. Lots Offered for Sale	C.	C.
D. Total Completed & Unsold	D.	D.
E. Total Under Construction & Unsold	E.	E.
F. Total Pre-Construction & Unsold	F.	F.
G. Total Sold To Date	G.	G.
H. Weekly Sales Average	H.	H.
I. Total Remaining for Development	I.	I.

PAST   Months

Number of Sales

Weekly Sales Rate

FIGURE 2.8 Development Profile (concluded)

PROJECT NAME

GRAPH SYMBOL:

RECREATIONAL AMENITIES

ASSOCIATION FEE:

☐ SWIMMING POOL   ☐ CLUBHOUSE/REC. ROOM   ☐ TENNIS COURTS
☐ SAUNA   ☐ JACUZZI   ☐ OTHER

DESIGN ELEMENTS

KITCHEN
☐ Defined Nook
☐ Breakfast Bar
☐ Table Space
☐ Greenhouse Windows
☐ Tile Countertops
☐ Luminous Ceiling
ENTRY
☐ Double Doors
☐ Raised Area
☐ Tile or Parquet
STAIRCASES

MASTER BEDROOM
☐ Double Doors
☐ Retreat
☐ Walk-In Closet
MASTER BATH
☐ Compartmented
☐ Dressing Alcove
☐ Double Basin Vanities
☐ Separate Shower & Tub
☐ Deluxe Tub
☐ Ceramic Tile Surround
☐ Planter Area
☐ Luminous Ceiling
☐ Window

SECONDARY BATHS
☐ Double Vanities
☐ Compartmented
☐ Other
OTHER FEATURES
☐ Volume Ceilings
☐ Beamed Ceilings
☐ Sunken/Raised Rooms
☐ Conversation Pit
☐ Atrium
☐ Interior Utility Area
☐ Direct Garage Access
☐ Den
☐ Other

ELEVATIONS _____

BEST-SELLING FLOORPLAN _____

PRIME COMPETITION _____

LOT PREMIUMS _____

BUYER PROFILE _____

MARKETING/MERCHANDISING

☐ Sales Office
☐ Model Complex
☐ Model Decoration
☐ Advertising

COMMENTS:

Source: Courtesy of Fulton Research Group

APPENDIX III
ADJUSTED COMPARABLE FORM
(page 1/1)

ADJUSTED COMPARABLE FORM

Date visited _____ Name of Base Model

Prepared by _____ _____

Builder name _____ _____

Project _____ _____

Min lot size _____ _____

Range of lot sizes _____ _____

Total lots in job _____ _____

Date opened _____ _____

sold since open & pace _____ _____

of Models _____ _____

Best Model _____ _____

Price _____ _____

Size (sq.ft.) _____ _____

# of Bedrooms/Baths _____ _____

Full Basement _____ _____

Garage size _____ _____

Rooms not found in base _____ _____

Best mortgage program _____ _____

Broker co-op fee _____ _____

Reason for popularity _____ _____

_____ _____

Impression of looks _____ _____

_____ _____

Impression of marketing _____ _____

_____ _____

Changes since last vist _____ _____

_____ _____

Other Comments _____ _____

_____ _____

Adjusted Comparable Form
(page 2/3)

Competitor better than base

Attribute and Reason	Difference in home buyer perceived value

　　　　　　　　　　　　Subtotal A　　　_____

Base better than competitor

Attribute and Reason	Difference in home buyer perceived value

　　　　　　　　　　　　Subtotal B　　　_____

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Adjusted Comparable Form
(page 3/3)

ADJUSTED COMPARABLE FORM

Adjustments		_____
Subtotal A * (-1)	-	_____
Subtotal B	+	_____
If base is bigger than competitor: Competitor's $/sf * [1/2 (base sf - comp sf)] =	+	_____
If base is smaller than competitor: Competitor's $/sf * [(base sf - comp sf)] =	+	_____
Competitor's base price	+	_____
Adjusted price for base model:		_____
Adjusted price for base model/square foot		_____

APPENDIX IV

THE MARKET RESEARCH PROCESS[76]

I.   Formulate the Decision Problem
    A. The builder must know what it is he wants the research to address. It often helps if he frames the problem as "What decision is it that I am trying to make?"
    B. The builder should realize at this point whether he is looking for ideas or has already formulated hypotheses for which he is looking for validation.

II. Determine Research Design
    A. The nature of the research design will depend on the nature of the decision problem.
    B. Exploratory Research: Used early in research stage, when decision problem is only broadly defined. Non-quantifiable.
        1. Focus Groups (These may also be used later, in descriptive stage of research, when visual aids are used in conjunction with a questionnaire).
        2. Experience survey: Talk to as many people related to the building industry as possible about your research topic.
        3. Analysis of Selected Cases: Intensively study homes and operations of competitors. Especially useful when best and worst performers are studied for the sake of comparison.
        4. Literature Search: Search professional journals and related literature.
    C. Descriptive Research: Used once the builder has better defined his decision problem. At this point he knows the who, what, where, when, and why that he will be surveying. Descriptive research mainly involves the use of structured questionnaires because of their easy tabulation and quantifiable. nature.
    D. Causal Research. Used when builder has formed a causal hypothesis (e.g., "If I add these three features, I should be able to increase my market share.") Conjoint analysis is one form of causal research.

III. Design Data Collection Method and Forms
    A. Structured questionnaires: quantifiable, rigid
    B. Unstructured questionnaires: non-quantifiable, flexible
    C. Close-ended questions: easy to tabulate, easy to administer via mail or phone
    D. Open-ended questions: better suited to personal interviews where interviewer can delve into respondents' answers, useful for exploratory stage of research
    E. Telephone surveys: cheap, fast, not effective for longer questionnaires

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[76]Source: Gilbert A. Churchill, Jr., *Marketing Research: Methodological Foundations.* 5th ed. (Chicago: The Dryden Press, 1991): pp. 70-72.

F. Mail surveys: cheap, broader coverage than personal interviews, effective for longer, structured questionnaires

G. Personal interviews: low non-response rate, effective for unstructured questionnaires when builder is still articulating problem or establishing priorities for research

IV. Design Sample and Collect Data

A. Define the Sample Population: e.g., all individuals who have bought homes in the last month

B. Identify the Sampling Frame: the source from which the builder will find his sample, e.g., last month's recorded deeds of sale

C. Select a Sampling Procedure: Choose random, stratified or cluster sampling procedure

D. Determine the Sample Size: See statistics text for determining ideal sample size given the particular research design

E. Select Sample Elements: e.g., divide all home buyers into subsets, according to price point of home

F. Collect the Data from Designated Elements: collect data systematically in order to get the most accurate picture of home buyer preferences

V. Analyze and Interpret the Data

A. Use market research analysis as reactive tool to solve a problem

B. Use market research analysis to discover new opportunities

VISITOR REGISTRATION

THANK YOU for visiting us. Please help us better meet
your housing needs by completing this card.

SUBDIVISION _____

SALES REP _____

Name _____ Date _____

Address _____ _____ Home Phone _____

City & State _____ Zip _____Work Phone _____

1. Which of the following prompted you to visit us today? Check more than one, if applicable.
   ☐ Newspaper   ☐ Realtor   ☐ Friends or Relatives
   ☐ Radio   ☐ TV   ☐ Signs
   ☐ Magazines   ☐ Direct Mail/Flyer   ☐ RAYCO Homeowner

   ☐ Other _____

2. Have you visited any other Ray Ellison subdivisions? ☐ Yes ☐ No   Which ones? _____

   _____

3. Do you presently ☐ Own ☐ Rent
4. What is your current monthly payment?   ☐ under $400   ☐ 400-500   ☐ 500-600   ☐ Over 600

5. What is your reason for moving?   ☐ Relocation   ☐ Need More Space   ☐ Job Transfer   ☐ Other _____

6. When do you need your new home?   ☐ Immediately   ☐ 3-6 months   ☐ 6-12 months

7. How many living areas do you prefer?   ☐ One   ☐ Two   How many baths?   ☐ 1   ☐ 2   ☐ 3

   Children _____ Boys_____ Ages_____ Girls _____ Ages _____

APPENDIX VI
FOCUS GROUP GUIDELINES

- Use to generate new ideas, to test new features, to confirm basic market research, to firm up hypotheses.

- Use eight to twelve people. Invite twelve to fifteen people via the telephone, ten to twelve days in advance, in order to get the eight to twelve. Follow up with a reminder card.

- Do not mix people from different socio-economic backgrounds in one group.

- Relatives, neighbors and friends should not be included in same group.

- Avoid using someone who has often or recently participated in other focus groups.

- Sessions should last one-and-a-half to two hours, including a light meal.

- Sessions should occur during the week around 7:00 P.M.

- Choose a neutral, informal location.

- Designate someone to take notes during the session so the moderator can concentrate on what is being said.

- Use samples, floor plans, photographs or whatever visual aids are necessary to help participants.

- Reward participants with dinner or gift certificate (i.e. to local plant nursery)

- Send thank you letter.