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Challenges in Improving Customer Focus in Small-Sized House-building Companies in Brazil

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Abstract: Some important changes in the business environment in several countries are forcing house-building companies to change their competitive strategies. This paper discusses a set of customer servicing practices, which have been adopted by small-sized house-building companies in Brazil that have been involved in quality management improvement programs, emphasizing customer satisfaction measurement. Such practices are referred to a model of the customer servicing process that integrates the main customer-interaction functions from product inception to building operation. Based on multiple case studies and also on a literature review, the main difficulties faced by this sector in terms of improving customer satisfaction are discussed and some improvement opportunities are pointed out.

Keywords: Customer, Satisfaction, Servicing, Post-occupancy evaluation, Value generation, Measurement

INTRODUCTION

Since the eighties, the level of competition has increased dramatically in most industrial and retail sectors, forcing many companies to change their strategies and use new working practices, such as flexible but efficient production systems, inventory and cycle time reduction, collaborative rather than conflictive relationship between organisations, empowerment of the work force, and focus on customer requirements.

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Despite its importance in social and economic development, the house-building industry has been relatively slow to adopt new operations management ideas. New housing remains an essentially mass-produced product, manufactured using craft skills (Barlow, 1998; Hooper and Nicol, 2000). Competition is primarily based on price with little emphasis on innovation to improve or achieve differentiation of products and services (Roy and Cochrane, 1999). In the USA, there has been a gradual increase in the home building cycle time achieved by large house-building companies in the last two decades (Bashford et al., 2003). The British house-building industry has been criticized for not providing desirable products and for its low quality standards (Ball, 1997; Barlow, 1998). In Brazil, the low performance of the house-building sector

has caused much concern by the Federal Government, particularly for the high incidence of building pathologies in social housing Programa Brasileiro de Qualidade e Produtividade no Habitat (Brazillian Program for Improving Quality and Productivity in Housing, PBQP-H, 2003).

There are several causes of the conservative attitude of the house-building sector, some of them related to its specificities, such as spatial fixity, complexity of housing as a product and impact of government policies. As housing markets tend to be very volatile, even in developed countries, house-builders usually have a drive to achieve short-term financial results (Ball, 1997). Inelasticity of land supply has an effect on competitive behavior: the most critical business decisions are those related to land acquisition, and the dominant business driver is land and house price inflation (Roy and Cochrane, 1999). Moreover, local authority planning and design guidelines are often rigid, and mortgage lenders are generally highly conservative with regards to innovative designs (Barlow and Ozaki, 2000).

However, in recent years some important changes had happened in the house-building sector, mostly due to growing competition and increasing demand for quality by consumers. In the UK, for instance, the deregulation of financial institutions, the reduction of role of the state in housing provision, and the fact that the customers are becoming more demanding on the quality of products and services have forced house-building companies to change gradually their strategies towards becoming more customer focused (Barlow and Ozaki, 2000; Roy and Cochrane, 1999). In Hong Kong, the housing market has gone through a major structural change since 1998, making house-building developers to be more concerned with producing value-adding units (Shen and Dong, 2000). In Japan, large house-building companies have changed substantially the delivery of new housing by adopting component-based approaches used in some manufacturing industries (Gann, 1996). In the USA, there have been some initiatives that aim to increase the role of manufactured housing, such as the Partnership for Advancing Technology in Housing (PATH)[1] and the Manufactured Housing Research Alliance (MHRA)[2].

In Brazil, the construction industry has also been going through some important changes since the late eighties, such as the shortage of financing for housing, decreasing rate of population growth and increasing awareness of consumer rights. Consequently, there has been an unprecedented rise in competition among firms, especially in the housing market, forcing many of them to improve

[1] http://www.pathnet.org

[2] http://www.research-alliance.org/pages/home.htm

their production process and become more focused on customer requirements. Besides, the Federal Government and the construction industry jointly established in 1998 a nation-wide quality and productivity improvement program, named Brazilian Program for Quality and Productivity in the House-building Industry (PBQP-H)[3]. One of the aims of this Program is to encourage companies to improve their performance by developing and implementing quality management systems. Based on agreements between federal, state or local government and construction industry associations, most public contracts or loans for housing developments now require the construction companies to have achieved a certain level of implementation of quality management systems.

This initiative has many similarities to the QUALIBAT[4] evaluation system, developed in France, in the sense that it is not simply a compulsory certification scheme imposed by the government, but it works as a gradual development program in which the companies have to adhere to an agreed schedule. Although the impact of PBQP-H in the performance of the Brazilian house-building industry has not been systematically evaluated yet, it has been successful in terms of creating a strong movement for improving quality and productivity in the construction sector. So far, more than 2,500 construction companies have been involved in the four-step certification scheme.

Therefore, the house-building industry is facing new challenges in several different countries that may force the companies to change their competitive strategies. In general, there is a demand for the companies to become more customer focused, in order to increase customer satisfaction and become more competitive. This requires several changes on the way these companies traditionally deal with customers, including product customization, provision of additional services, customer satisfaction measurement and improvement of post-occupancy customer care (Barlow and Ozaki, 2000).

However, certain features of housing markets make it difficult to directly transfer lessons on customer focus from other industries (Barlow and Ozaki, 2000). This problem tends to be more serious in small-sized companies because they usually lack resources and training for managing customer satisfaction in a systematic and consistent way. Unlike some developed countries, such as the USA, Japan and the UK, where large house-builders have been increasing their market share (Barlow, 1998; Roy and Cochrane, 1999; Taylor and Björnsson, 2002), local small-

[3] Programa Brasileiro de Qualidade e Produtividade no Habitat (PBQP-H). http://www.pbqp-h.go.br

[4] http://www.qualibat.com

sized companies supply the majority of new housing in Brazil.

This paper discusses a set of customer servicing practices which have been adopted by small-sized house-building companies in Brazil that have been involved in quality management improvement programs, emphasizing customer satisfaction measurement. Such practices are referred to a model of the customer servicing process that integrates the main customer-interaction functions from product inception to building operation. Based on data from 10 construction companies from the South of Brazil and also on a literature review, the main difficulties faced by this sector in terms of improving customer satisfaction are discussed and some improvement opportunities are pointed out.

IMPROVING CUSTOMER SATISFACTION

There are many different definitions and theoretical models of customer satisfaction (Evrard, 1993). However, most authors agree that satisfaction is the result of an evaluation process in which the customers compare the performance of a product or service with their expectations (Kotler and Armstrong, 1999). Mowen (1995) highlights that there are three main elements that are common to most definitions: (1) it is a psychological state; (2) it is an emotional response after a consumption experience; and (3) it is relative to the previous experience of the customer.

Griffin et al. (1995) point out the difference between perceived quality and customer satisfaction. From one hand, perceived quality refers only to customers' most current reactions. It can be inferred with or without use or experience, and generally it does not include price. Customer satisfaction, on the other hand which can be evaluated only through experience, is cumulative in nature, and is a function of value received and thus explicitly includes cost. Some traditional measures used for product appraisal generally gather customer reactions just to the latest experience and to specific performance related aspects of experience, rather than cumulative reactions, and thus might be categorized more as measures of perceived quality than satisfaction.

The first necessary step for improving customer satisfaction is to define who the customers are. In most processes there are usually more than one group of customers. Once the customers are known, it is necessary to identify their expectations. This is not an easy process since buyers are moved by a complex set of deep and subtle emotions (Evrard, 1993). Their behavior depends on deeply held values and attitudes, concerned with their view of the world (Kotler and Armstrong, 1999). Usually, the expectations that are easy to identify correspond to the

product minimal requirements, which often are not the ones that give customers a compelling reason to buy (Crosby, 1995).

Improving customer satisfaction usually requires a change in the attitude of people at different managerial levels. In order to start a customer satisfaction improvement program, certain conditions and operating practices and procedures must exist in the firm (Griffin et al., 1995):

a. Highly visible top management leadership that often reinforce the importance of customer satisfaction for the company.

b. The whole company should embrace the importance of customer satisfaction, rather than only top management.

c. Employees must accept that most processes impact customer satisfaction and not only the downstream ones.

d. The company must be concerned with improving employee satisfaction, since an unhappy or rudely treated employee is unlikely to deliver customer satisfaction.

Companies usually start implementing customer satisfaction improvement programs by managing downstream customer-interaction functions, such as sales, delivery and maintenance. Once the firm gains experience in these activities, the focus slowly shifts upstream into areas less visible to the clients (Griffin et al., 1995).

There is considerable evidence that improved customer satisfaction leads to superior profitability because of its effects on customer loyalty and the positive reputation of the organization (Parasuraman et al., 1991; Rust and Zahorik, 1993). Therefore, by improving customer satisfaction, companies are able to build long-term relationships with their customers. This helps to reduce the cost of sales because marketing can be targeted more effectively, fees for intermediaries are lower and there is less emphasis on price-based competition (Barlow and Ozaki, 2000). However, changes in customer servicing policies have to remain in effect during a period of years to have an impact on operating results (Griffin et al., 1995).

MEASURING CUSTOMER SATISFACTION

Customer satisfaction measurement plays a key role in customer servicing. It can be used in a wide variety of ways, such as: (a) to determine customer expectations, (b) to measure the company performance in satisfying customer expectations, (c) to benchmark the company's

performance relative to the competition, (d) to explain customer satisfaction based on the company's perceived performance in key areas of customer interaction, and (e) to establish priorities in terms of performance areas for quality improvement and additional resource allocation (Crosby, 1995).

In some companies, measuring customer satisfaction simply means talking to customers during the normal course of doing business and attempting to assess whether or not they are pleased with the company. Although this form of direct communication with customers is an important source of customer insight, other approaches for bringing the voice of the customer into the organization may be less biased, more thorough and more systematic (Crosby, 1995).

There are several techniques that can be used for catching the perception of the customer of products and services. Some of the most important ones are presented bellow (Crosby, 1995):

a. Survey: it is the most used technique and known for the wide range of uses to which it can be applied. These range from identifying product or service strengths and weaknesses to tracking the results of organizational changes on customer perceptions.

b. Critical incident technique: it is normally used for investigating the most important customer requirements before a survey is carried out. Customers are asked individually or in-group to describe in a story-like fashion situations that have affected their satisfaction either positively or negatively (Hayes, 1997).

c. Co-joint measurement: it consists of asking customers to make trade off decisions among different levels of product or service attributes. From a customer's rank ordered preferences for the alternatives, it is possible to deduce the implicit utility weight for each attribute.

d. Complaint analysis: all customer complaints are recorded, analyzed and acted upon.

Griffin et al. (1995) pointed out that best practice firms have been using multiple instruments to collect different kinds of customer satisfaction data. They have been capturing overall trends with periodic surveys and transaction specific information at the end of face-to-face interactions, and acquire qualitative impressions through informal discussions with customers. Each of the existing techniques has strong and weak points, having a different role to play in helping management to understand the customer (Crosby, 1995).

Therefore, customer satisfaction measurement should not be viewed simply as an isolated research activity or project. It must be integrated into a systematic and continuous process of customer servicing. Customer satisfaction data only makes sense if it is fed back into the building process.

IMPROVING CUSTOMER FOCUS IN HOUSE-BUILDING

There are certain features in the house-building market that makes it difficult to apply straight away principles and techniques for managing customer satisfaction developed for other industries:

a. Buildings are very complex products: the number of attributes that are perceived by customers is very large and a growing variability exists in their requirements (Bordeau, 1994).

b. The product life cycle is relatively long, limiting the speed of feedback and learning.

c. There is often a considerable length of time between customer-house-builder interactions since individuals do not transact in the housing market frequently (Barlow and Ozaki, 2000).

d. The level of demand is strongly dependent on the levels of income and employment among the population, and on the availability of financing.

e. House-building projects usually cause many changes in the immediate surroundings.

f. Brand loyalty is restricted by the fixed location of the product (Roy and Cochrane, 1999).

Customer satisfaction levels are determined not only by the quality and price of the product, but also by the quality of customer service (Barlow and Ozaki, 2000). In the house-building sector, customer satisfaction depends on the facilities that are provided, considering the complex relationship between the users and their immediate environment, as well as on the services that are provided to customers before and after the transaction.

Barlow and Ozaki (2000) suggest two main focuses for research on customer focus in house-building. The first one is the achievement of good service provision and maintenance of brand loyalty, and the second is to increase the level of customization by configuring the product as late as possible in the production process.

Not much has been reported on service provision in the house-building industry in the literature. According to Barlow and Ozaki (2000) in the UK, customer service has

generally been seen in terms of rectifying defects. Most house-builders have tended to emphasize the speed of response to complaints rather than the achievement of zero defects (Barlow, 1998). This indicates a focus on the management of downstream customer-interaction functions, which is considered by Griffin et al. (1995) as an early stage in customer satisfaction improvement programs.

Although the effort spent in after-sales rectification of newly built homes seems to be considerable, there is no evidence of the use of process control techniques commonly employed in the manufacturing industry to improve product quality (Roy and Cochrane, 1999; Barlow and Ozaki, 2000). Therefore, there is a need to improve customer satisfaction by increasing product reliability and durability. Several strategies have been suggested for that, including the development of internal total quality management (TQM) improvement programs (Torbica and Stroh, 1999); warranty and insurance schemes, e.g. NHBC[5] in the UK; third party certification schemes, e.g. QUALIBAT in France and PBQP-H in Brazil; and the use of prefabricated building systems (Roy and Cochrane, 1999).

Product customization in house-building has been successfully used in some countries, such as Japan (Gann, 1996) and the USA (Bashford et al., 2003). It requires some slack to be built into the production process, usually in the form of excess capacity (Barlow and Ozaki, 2000).

The feasibility of customization in house-building depends largely on the type of product that is provided – for instance, it is much easier to customize detached houses than high-rise building apartments – and also on the configuration of the supply chain. Childerhouse et al. (2000) proposes a classification of house-building supply chain strategies, based on the position of the decoupling point: (a) make to stock, (b) fit out to order, (c) shell and fit to order, and (d) design to order. For instance, in the UK, options (a) and (b) have been often adopted by some large house-builders. They usually build to stock (Roy and Cochrane, 1999), some of them offering only a limited range of fixtures and fittings, while others avoid customization by offering a large portfolio of housing types (Barlow and Ozaki, 2000; Hooper and Nicol, 2000). By contrast, house-builders in the USA have reluctance to begin construction of any home until a sales contract with a buyer has been signed (Bashford et al., 2003).

One aspect of customization that has been of some interest to house-builders is the possibility of adding value through the inclusion of tailor-made services as part of the housing product itself, such as sales of additional goods and services (e.g. garden landscaping, insurance),

[5] http://www.nhb.co.uk

provision of maintenance services and future adaptations of homes (Barlow and Ozaki, 2000).

RESEARCH METHOD

This research work was based on multi-case studies, involving data from 10 different small-sized house-building companies from the State of Rio Grande do Sul in the South of Brazil. This research strategy was adopted because this study intended to provide insights on "how" the house-building sector can improve customer servicing and "why" this is difficult for small-sized companies. The paper does not intend to provide any kind of statistical generalization on the practices adopted by this sector in Brazil.

The main criteria for choosing these companies were their willingness to participate in the project and the fact that they had been involved in quality improvement programs for more than two years. All companies can be considered to be small-sized in the Brazilian market (less than 100 employees[6]). Typically those companies launched one to three projects annually and the number of dwellings delivered per year was typically less than 200. Most of the construction work was sub-contracted.

In Brazil, a construction project in this market sector usually starts when a business opportunity is found, the company buys a piece of land and then hire externals designers to conceive and develop the design. In general, the sales of dwellings or commercial spaces start after the design is relatively advanced, usually close to the beginning of the production stage. This supply chain strategy can be defined as "fit out to order" (Childerhouse et al. 2000) – it means that the customer has a limited opportunity to change some of the product attributes, usually the ones related to finishing stages.

Two sets of case studies were carried out. In the first set, data were collected from seven companies[7] that had been mostly involved in the development and construction of middle and higher-middle class high-rise apartment buildings. Four of them were devising quality management systems that eventually obtained ISO9001 certification. Those case studies were developed as part of a research project on the management of the product development process in house-building projects, jointly carried out by the Federal University of Rio Grande do Sul (UFRGS) and the

[6] The number of employees in the main criteria adopted by the Brazilian Goverment for classifying companies according to size. In the construction industry, a company is considered to be small if it has less than 100 employees.

[7] In Brazil most house-building companies that are in charge of both the project development and construction.

Federal University of Santa Maria (UFSM) between 1996 and 1999. This stage of the study was divided into four main activities:

1. A model of the customer servicing process was proposed, based on the literature review and also on interviews with company directors. The aim of this model was to provide a framework to analyze the customer servicing functions within the product development process. It is an abstraction of the processes that were identified in the house-building sector, considering some best practices found in the companies involved in the case studies.
2. Structured interviews were carried out with the company directors of the companies. The aim of the interviews was to investigate the customer satisfaction strategies currently adopted by those companies, as well as the difficulties faced by them in improving customer focus.
3. A set of tools for customer satisfaction measurement suitable for small-sized house-building companies was devised. These were tested in real house-building projects.
4. In four of the companies, formal procedures were developed for some of the customer servicing activities and included in the company quality management system. Teams formed by researchers and company's staff devised these procedures.

The second set of case studies was carried out between 2001 and 2004 in four different companies – only one of them was also involved in the first set. All companies had some kind of PBQP-H quality management certification, and were also involved in the development and construction of low-cost house-building projects. Structured interviews were carried out with the company directors of those companies and also with the designers. Based on these four case studies, some customer servicing procedures were further improved and the proposed model was refined.

PROPOSED MODEL

Figure 1 presents the proposed model. It suggests that the focus on the customer must initiate long before the stages of design and production. The first step of the process is the proper definition of the customer profile when the competitive strategy is defined or changed at the company level. Once the customer profile is clearly defined, the company should proceed to the identification of customers' needs and requirements in broad terms.

When the company starts a specific house-building project, a more precise definition of the potential customers is necessary. Then, a relatively detailed description of the customer needs must be produced. Based on that, a design brief is prepared and a feasibility study is carried out. Further information on customer needs and requirements is also necessary for the design stage.

Market research can be used to identify the profile and preferences of potential customers both at the company and at the project level. However, this type of survey is relatively expensive because of the need to hire specialists for designing the survey, and people for data collection and processing.

This difficulty has been recently overcome by the Brazilian building industry through the development of regional market studies financed or promoted by associations of enterprises, often in partnership with universities. Data collection is usually carried out in real-estate fairs or in large shopping malls. The reports produced by such surveys usually present an overview of the house-building demand that is very useful for supporting the definition of customer profiles during the strategic planning process. However, at the project level, it is important for the companies to have direct access to the database since information on specific market niches is usually needed for product development.

As shown in Figure 1, there are three customer-servicing activities that are usually performed at both the design and production stages:

a. Product exhibition: the product is presented to potential buyers at the sales office, which is usually located on site. At this stage, it is possible to get systematic feedback from the market at a relatively low cost.

b. Negotiation of payment conditions: in Brazil, many house-building projects are financed directly by the developing company, requiring some negotiation between the developer and the buyer. This activity is also critical in terms of customer satisfaction, since future litigation problems can be avoided if the agreement conditions are made very clear for both parties.

c. Product adaptation: due to the growing demand for design flexibility from customers in Brazil, many companies offer the possibility of adapting the dwellings to the personal needs of each buyer. The degree to which design changes are allowed varies from company to company. However, in some Brazilian market niches, product customization is mandatory if the company wants to stay in business. This activity is also an opportunity for understanding

customer preferences in terms of design, which could be considered in future projects.

d. Physical delivery of the units: at the end of the production process, the units are delivered to customers. The company must be very careful in terms of avoiding any trouble for them (such as building defects) at this stage since this is usually a very important moment in their lives. Any trouble at this stage tends to create much dissatisfaction. Some building companies in Brazil deliver the product to an internal client before physically delivering to the customers, in order to carry out a thorough checking for defects.

e. Legal delivery: this is when the company delivers all legal documents related to ownership and approval by local authorities.

At the building operation stage, there are two main customer-servicing activities: maintenance and technical support, and post-occupancy evaluation. Both of them provide information that can be used for making corrections in the project being evaluated or for providing guidelines for future projects.

Many companies in Brazil have increased their commitment to maintenance and technical support, mainly due to the growing demand for quality from the customers and pressure groups, following a trend that has been observed in other countries (Barlow and Ozaki, 2000). In fact, some large house-builders have created maintenance and technical support departments as part of their strategy to remain competitive. Also, some companies have devised fairly complex computer systems that keep track of all complaints.

Regarding post-occupancy evaluation, the most traditional approach has been to send questionnaires to customers. However, considering the fact that buildings are normally used for a relatively long time, some effects of the users' behavior can also be observed directly and documented. This can be done, for instance, by observing the way in which a building has been used or changed. Documenting interventions carried out by users, behavioral maps and analysis of building defects are among the techniques that can be used for collecting data.

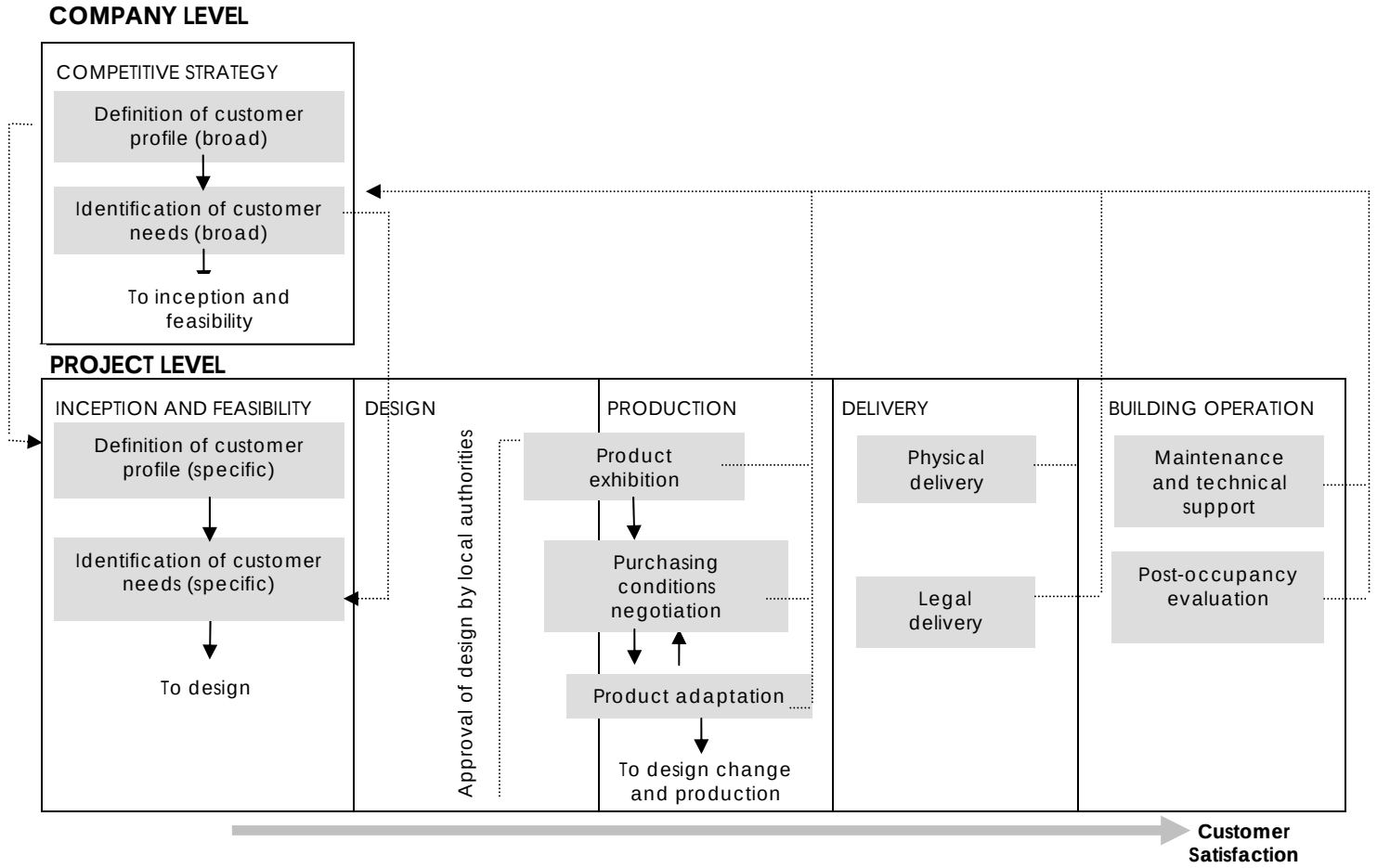

Figure 1. Proposed Model for the Customer Process in the House-building Industry

PRACTICES ADOPTED BY THE COMPANIES

Identification of Customer Profile

All companies had a well established market niche defined in terms of range of customer's income and region. This was not the result of a formal strategic planning process at the company level. In fact, all companies had emerging rather than deliberate strategies, being characterized as entrepreneurial companies, according to the classification of Mintzberg (1973). In such companies, most strategic decisions tend to be made by the owners, based on their aspirations, beliefs and desires.

The company directors were unanimous in recognizing that they did not have enough information about their customers during the inception stage of house-building projects. They usually acquire a plot of land that seems to have a good market potential and then define what the product is going to be, based only on general sales trends.

Four of the companies had recently decided to plan strategically their projects, by firstly developing a product for a range of clearly identified customers and then looking for a land that is suitable for that product. It should be stressed that this strategy was adopted by three of them after the local house-building association carried out a market research.

Another problem faced by all companies was the fact that there was much competition in the market segment in which they operated. This was a major barrier for the growth of these companies.

Identification of Customer Needs

The managers had recently started to perceive the importance of market surveys. In fact, five of the companies had access to a market research that had recently been carried out in their region. However, the extensive data produced by that survey was only occasionally used for supporting design decisions.

Only one of the companies used alternative sources of information on customer needs, such as real-estate agents and informal interviews with previous customers, either on an individual or on a group basis. The argument presented by the other managers for not using other sources of information was the cost of both hiring marketing specialists, and spending their staff time with data collection and analysis.

Product Exhibition

In the Brazilian housing market, real-estate agents usually show the products to potential buyers. All managers agree that this practice usually creates problems in terms of not getting enough feedback from the market. Also, some of the companies were not pleased with the fact that some real-estate agents, too eager to sell a product, sometimes create unrealistic expectations among customers – this might have a very negative impact on customer satisfaction. For that reason, in four of the companies, the responsibility for presenting the product to potential buyers was shared between the company staff and real-estate agents.

One of the companies that delegated this task exclusively to real-estate agents provided them with a training course, in which they learned about the design and the operation of the building, and had complete instructions on the purchasing conditions. In fact, this procedure is highly recommended since some real-estate agents often complain that sometimes they are not able to do their jobs properly because building companies do not provide them with the necessary information about the projects.

By demand from one of the companies, a very simple questionnaire was devised by the research team to be applied during the visit of a potential buyer, in order to get formal feedback from them on the product and also on the work of the sales people.

Negotiation of Payment Conditions

The negotiation of purchasing conditions, such as price, number of installments and delivery clauses, is usually carried out by house-building company directors. This provides an outstanding opportunity for the company to learn about the customer profile (profession, purchasing power, lifestyle, etc.) and expectations on an individual basis. However, none of the companies systematically recorded this information for future use.

Product Adaptation

All companies offered limited customization to their customers, mostly related to the choice of fittings and finishing materials. Some of them also offered the possibility of changing internal partitions, provided the customer delivered an order before a pre-established deadline. Considering that all companies typically deliver high-rise building apartments, obviously it is not possible to make any design changes that affect the structure or the façades.

Several opportunities for improving product adaptation were identified. First, design changes were not systematically recorded for future use in the stages of inception and design of future projects. Often, some changes were decided informally on site and were not properly documented. Sometimes these are not even included in the building operation documents that were given to the owners when the apartments are delivered.

The managers also mentioned that there was scope for improving the way design changes were charged to different customers. They considered that their cost estimating systems were not effective in terms considering all disruptions caused by design changes in the production process.

Delivery of the Units

None of the companies handed over finished products to internal clients before the final delivery to the customer. Only two of them used checklists for final inspection, employed by the building site staff, and for product delivery, which was usually carried out by company directors.

Maintenance and Technical Support

Some of the companies had been facing a fairly large incidence of after sales complaints from customers, most of them related to the poor quality of the product. They were much concerned about that problem and some of the company directors had the expectation that the quality management system that was being developed would reduce substantially the number of product defects.

None of the companies had a specific department for dealing with customer complaints due to their reduced staff. The requests for technical support were directed to company staff involved in other tasks (site management, administration or sales). Although four of the companies registered customer claims, none of them analyzed and fed this information back into the product development and production processes. Also, none of the companies performed preventive maintenance in the buildings.

Post-occupancy Evaluation

Five companies had had some feedback from customers through post-occupancy evaluations carried out by academic researchers. However, only three of them mentioned that the data produced resulted had an impact in the following projects. Some of the companies simply displayed the results on boards when they were satisfactory and disregarded them if they were not. The main reason for the relatively low impact of post-occupancy evaluation information was the fact that it was not properly integrated in the product development process.

TOOLS DEVELOPED FOR CUSTOMER SATISFACTION MEASUREMENT

Questionnaire After Product Exhibition

When potential buyers visit the sales office, which is usually located at the main office of the company or in the building site, there is an opportunity to obtain information about their expectations. In relation to post-occupancy evaluation, this form of measurement has the advantage of involving non-buyers, i.e. people who might not like the product. Also, when compared to broad market surveys, it gets information usually from people who are apparently interested in buying a dwelling.

The questionnaire used in this kind of survey has to be very short due to the relatively short time that visitors spend at the sales office. It may explore different aspects of the project, including the willingness to provide information by the sales people, the adequacy and quality of the product, and the perception of the visitor in relation to the building site. This last item was proposed by a company that had been developing a site management improvement program and wanted to call the attention of the visitor for the quality of the production system.

Post-occupancy Evaluation: First Stage

The activity of post-occupancy evaluation was divided into two stages. The first stage was based only on the application of a questionnaire, from which a customer satisfaction index was obtained. This indicator aimed to broadly evaluate the project from the point of view of the customer, using a relatively simple procedure. Customers are asked to fill a two-page questionnaire, in which a score is given to each item and to the project as a whole. It is a tool simply for providing visibility on the project strong and weak points.

Part A – Service provided by the company

01. Friendliness
02. Meeting deadlines
03. Technical support and maintenance
04. Company image
05. Documents provided

Part B – Performance of the building as a whole

06. Adequacy of the communal areas
07. Location of the building
08. External appearance of the building
09. Performance of facades
10. Safety of the building (protection against crime)

Part C - Performance of the apartment

11. Adequacy of space to furniture and to the programmed activities:
    a. Living room
    b. Kitchen and laundry rooms
    c. Bedrooms
    d. Bathrooms
12. Natural conditions of comfort
    a. Winter internal temperature
    b. Summer internal temperature
    c. Lighting
    d. Acoustics
13. Electrical services
    a. Quality of the services
    b. Number and location of plugs and bulbs
14. Water services
    a. Quality of the services
    b. Quantity and location of services
15. Quality of finishing
    a. Ceramic tiles
    b. Floor finishing
    c. Bathroom appliances
    d. Locks
16. Quality of labour used
17. Quality of windows and doors

Figure 2. Topics Included in the Customer Satisfaction Questionnaire

Figure 2 briefly presents the topics included in the questionnaire, which are divided into three main groups: (1) customer service, (2) performance of the building as a whole, and (3) performance of each apartment. This questionnaire can be either sent by post or personally delivered to the customers. Due to its general content, it can be used to do benchmarking, by comparing the performance of different projects and companies in terms of customer satisfaction.

The application of this very simple questionnaire obviously does not provide enough information about the possible causes of customer dissatisfaction. For that reason, a second stage of post-occupancy evaluation was devised.

Post-occupancy Evaluation: Second Stage

The second stage of post-occupancy evaluation involves the application of a wide range of data collection procedures and techniques, such as direct observations of the building, photographing, analysis of design, behavioral maps, and also structured interviews with customers. In order to reduce the costs of data collection, a priority is given to those attributes that performed poorly in the first stage of post-occupancy evaluation. Once data is collected and processed, the results must be processed and analyzed and sent to the person or department responsible for the corresponding corrective action.

DEVELOPMENT OF PROCEDURES

The development and implementation of procedures addressed some of the problems that were identified in the interviews. They were also a source of reflection for this study and provided important insights on how to integrate the customer servicing process into the product development process. The most important procedures that were developed are summarized below:

a. Design briefing: a procedure was developed for making explicit all client requirements related to each specific project, including the number and approximate size of rooms for each unit, types of finishing of each room, scope and quality of building services, communal facilities to be provided, etc. A number of checklists were devised for organizing this information, aiming to disseminate this information to the product development team in a systematic way.

b. Product exhibition: this procedure aimed at instructing the sales person to properly show the products to potential buyers. It included a list of documents that

should be available for presentation and guidelines on how the visit should be conducted.

c. Product adaptation: this procedure defined the necessary steps for allowing the customer to demand a limited number of adaptations in the apartment, including the types of design changes that were allowed (for instance, internal partitions, ceramic tiles, paint color, etc.), and deadlines for the demand changes. It also established the conditions for estimating the cost of design changes and for implementing the changes in the final design documentation.

d. Product delivery: two procedures were developed. The first one was concerned with the physical delivery of the building, both for apartment owners and facility manager, including the technical documentation to be delivered. Before the building was delivered to the customers, the product was rendered to an internal customer from the company (e.g. a supervisor or a product development manager), in order to allow occasional mistakes to be corrected before it was finally delivered to the customer. The second procedure established the necessary steps for the legal delivery of the product, which includes handling all the documents related to the property ownership transfer as well as to the authorization for building operation by local authorities.

e. Post-occupancy evaluation: this procedure established guidelines for the application of the post-occupancy evaluation techniques presented above (stages 1 and 2), and also the necessary steps for feeding the information back into the product development process.

f. Technical support and maintenance: this was a relatively complex procedure, due to the relatively large number of tasks that need to be carried out by different people (e.g. main office staff, site manager, subcontractors, etc.). It established the necessary steps that should be carried out when defects are reported and also for feeding the information back into both the product development process. This service is typically provided for the first five years of building occupation.

The impact of those procedures on the level of customer satisfaction was not formally assessed. Most of them were incorporated in the quality management systems of the companies that decided to obtain certification. It seems that the efficiency in the implementation of these procedures could be increased substantially by using information and communication technologies. However, the use of such technologies by those companies was still very modest.

DISCUSSION

In general, the interviews with company directors indicated that there was a growing awareness of the need to improve customer focus. Their companies had been through some important changes, mostly due to growing competition in their market segments and to the increasing demand for quality by customers. The difficulties faced by them were relatively similar.

Some of the main problems observed were related to the lack of strategic thinking at both the company and the project level. According to Barros Neto (2002), this is typical of the construction sector, especially among small-sized construction firms. This was a major reason for the poor definition of customers and their main requirements. Another problem that can be associated to the lack of strategic planning was the fact that none of the companies were very innovative in terms of developing new products or finding new market niches. This seems to be a research area in which further work is needed. There is no point in discussing customer focus in the house-building industry if no effort is made in terms of improving the capability of the companies for establishing effective competitive strategies. This demands an improvement in the qualification of managers and the introduction of practices that are new for most companies, such as monitoring their current and potential competitors.

There were also problems related to the management of internal processes. Some of the companies did not even properly use the information that they had available. There is a need for improving data processing and analysis, and also establishing information flows that are more effective. For instance, the availability of customer requirement information during the design stage was very poor, despite the data that were produced within the companies.

The formal procedures that were developed addressed some of these problems. However, a strong emphasis was given to customer servicing downstream functions, especially "product delivery", "post-occupancy evaluation" and "technical support and maintenance". This was mostly due to the fact that some of the companies had been facing many complaints from customers about the product quality. They established as a priority to deal with the complaints efficiently and courteously, based on the assumption that a problem could be turned into a positive experience for the customer (Roy and Cochrane, 1999).

However, although improving customer care is a major challenge for the house-building industry, in the future it is also necessary to focus on upstream processes that affect customer satisfaction directly, as suggested by Griffin et al. (1995). Much effort needs to be made on the

improvement of the reliability and durability of the house-building industry products, which depends strongly on the management of the design and production processes. The company directors had expectations that the development of ISO 9001 based quality management systems would help in this respect. Further work is necessary to investigate whether the effort carried out by a large number of Brazilian house-building companies to develop and implement quality management systems has had a positive impact on the quality of their products.

As far as product customization is concerned, the investigation indicated that it is possible to improve the customer focus by improving internal processes, for example, using data that already exists in the company properly, processing information more effectively and improving the quality of cost estimating. Some of the companies were also considering the use of technologies that can potentially increase the flexibility of output, such as light internal partitions and innovative structural systems, so that they could move the decoupling point upstream.

None of the companies at the time of the research study adopted the strategy of introducing product customization by providing additional post-sale services. However, recently one of the companies decided to create another business, by also offering professional facility management services. Curiously, this decision was encouraged by a strategic planning exercise carried out by an academic researcher.

It seems that there is an opportunity for house-building companies to become differentiated in the market by developing product customization capabilities. These can potentially become what Hamel and Prahalad (1990) named as core competences since the required mix of distinct capabilities are difficult to copy and are perceived by customers.

One of the main concerns of the company directors was the cost of some of the customer servicing activities, especially the ones that required marketing consultants and staff for data collection and processing. This indicates a demand for simple and cheap tools and procedures that are suitable for small-sized companies. It also points out for the need of initiatives involving group of companies and industry associations, so that, for instance, the costs of devising and carrying out a market research can be shared between different companies. One alternative for increasing the efficiency and reducing the cost of customer servicing process is the application of information and communication technologies, such us customer databases, internet and complaint monitoring systems.

CONCLUSION

This paper presented a general model for the customer servicing process for small-sized developing building companies involved in the construction of housing projects. The model contains a general plan of activities, which can be used as a starting point for companies involved in this market segment to devise their own customer servicing systems. It links a set of customer satisfaction measurement procedures and techniques, which can be used for capturing both overall trends with periodic and transaction-specific surveys, and qualitative impressions through face-to-face interactions.

This model provided a framework to analyze the customer servicing practices of small-sized house-building companies in Brazil. The main challenges for improving customer focus faced by 10 companies from this sector were discussed: lack of strategic thinking, need to improve the management of internal processes, poor performance of products in terms of reliability and durability, need to devise more effective ways to provide product customization, demand for affordable tools and procedures for customer servicing, and little use of information and communication technologies.

Further work must involve the adoption by the house-building industry of more advanced practices for improving customer focus, which have been observed in some best practices companies (Griffin et al., 1995), such as:

a. Customer satisfaction servicing should not involve only downstream customer interaction activities, but also gradually move upstream into areas less visible to customers, to processes that have a large impact on the degree of customer satisfaction, such as design and production.

b. It is necessary to increase the degree of involvement of the supply chain in the customer satisfaction process, both downstream (e.g. real-estate agents) and upstream (e.g. designers, material suppliers, and sub-contractors). This is expected to be a relatively slow process due to the large number of suppliers involved in the construction process and to the relatively small bargaining power that house-building companies have in relation to some material suppliers.

c. Interaction with customers can be further improved by decentralizing the servicing process. Even though marketing professionals are better trained to deal with customers, direct information exchange between the customer and employees have the advantage of eliminating problems related to misinterpretation and poor communication.

d. The industry should also invest in the improvement of human resource management practices. Maintaining long-term customer satisfaction focus requires personnel capable of dealing with customers and understanding their role in process improvement. This can be achieved by either training the workforce or by improving recruitment practices. It also requires a policy of improving the degree of satisfaction of internal customers, since unhappy employees are unlikely to deliver customer satisfaction. This kind of change tends to be more difficult when most of the workforce is subcontracted.

e. Finally, it is important to evaluate in the long run the impact of customer satisfaction strategies on the overall performance of the company. This is an important step to encourage the companies in the house-building industry to improve their performance in terms of customer satisfaction.

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