

HOUSING TENANCY, DATA MANAGEMENT AND QUALITY CONTROL

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ABSTRACT. This paper deals with housing tenancy, data management and quality control. The proposed method is focused on quality characteristics of housing estates in view of rentability risks. It entails a cycle of registration, analysis and implementation of measures. The starting point is the behaviour of the housing consumer in a market-oriented context. The model is framed within theories of strategic management and marketing. Systematic registration and evaluation of consumer behaviour, by means of a set of relevant process and product indicators, can yield relevant information in the four phases of the rental process: orientation, intake, dwelling and exit. This information concerns the way in which the dwelling (characterized by product indicators) fits the needs of the consumer. The systematic analysis of the process and product indicators during the phases of the rental process makes a 'strength-weakness analysis' of housing estates possible. The indicators can be presented in aggregated form by way of a 'rentability index'. The 'strength-weakness analysis' steers the intervention in the quality characteristics of housing estates. The possibilities for readjustment, however, are different. The quality control system is not only an early warning system, but also has several other functions: evaluation, planning and communication. The method described here lays a solid foundation for a decision-support system in the area of housing tenancy.

1. Introduction

At present, few issues attract as much attention among housing managers as the quality of the housing stock. In the background, a number of developments on the housing market have given quality a high priority. The shift from a supply to a demand market in various segments and regions is especially pertinent. Due to these signs of saturation, more attention is being paid to stock management. When intervention in the housing stock takes place, the role of the market becomes more important. It involves the competitive position of dwellings and the extent to which they contribute to the preferred differentiation in type of housing and in price. The conditions in which management is taking place on the local level have been altered sharply as a result of deregulation and decentralization.

For a long time, the discussion about housing stock quality was concerned with the decline of housing estates as a consequence of problems in the post-war housing stock operated by non-profit landlords. The Prak and Priemus (1986) model of decline describes a relation between social, physical and financial decline. The interdependence between these clusters of factors leads to a spiral of further decay. Methods are also being developed within this model's framework to signalize decay. Spiral movements in the model have been recorded by means of indicators (Spaans and Hoenderdos 1989). This approach has some limitations, however. It only registers the weak points in housing estates, while strong points remain underexposed.

Our approach is not concerned with decline but with quality, specifically the appreciation of housing estates, in a negative as well as in a positive sense. Quality characteristics of housing estates and quality preferences of the dwelling client are central. Moreover, this client-oriented

approach is embedded in a discussion of market-directed housing management (Smeets et al. 1989; Boekhorst and Smeets 1990).

2. From Product to Client

Under the influence of changing relations on the housing market and the government's policy of deregulation and deconcentration the environment in which housing managers operate is subject to radical change. This has far-reaching consequences for the organizations that are engaged in the management of housing. Housing managers are becoming increasingly aware that their product-oriented approach is no longer sufficient (Smeets et al. 1989).

With this product-oriented way of thinking and acting, the manager sets his goals and indicates appropriate working processes. The organization is structured along those lines (see Elffers and Vulperhorst 1991). To a large extent the product approach seeks to achieve internal goals and is thus an inside-out approach. The reason why managers insufficiently anticipate unexpected and/or undesirable developments can largely be attributed to this approach. In order to reduce environmental dependency (for instance by utilizing emerging opportunities and/or avoiding risk), a flexible future-directed (external) and innovative way of thinking and acting is required. The inside-out approach ought to be replaced by a more externally oriented, outside-in approach.

In his book *Images of Organisation*, Morgan (1986) makes a distinction between 'egocentrism' and 'the self-reflective evolution'. An 'egocentric organization' tries to preserve its own identity in a threatening outer world. It becomes preoccupied with its own importance and underestimates the meaning of the wider context. The expression 'self-reflective evolution' suggests that changes in an organization reflect an evolution of the own identity in relation with the environment. Morgan argues for more self-reflection and less self-centredness. The main characteristic of an externally oriented organization is that it puts the consumer (the market) at the centre. In the marketing literature, this interpretation is called the 'consumer-directed' mentality or marketing concept. With this interpretation, the manager will be able to enlarge his capacity to offer (prospective) tenants his services effectively and efficiently. Looking for a client-oriented form of organization is a fundamental and self-reflecting process: what can I do for the client?

A client-oriented strategy needs an organizational structure that clearly anticipates market instabilities. A solution might be a division into market segments, where client groups are identified for whom differentiated products and services are being developed, with freedom of choice for the client, and where each division is responsible for the satisfaction of the housing needs of a specific client group. Implementation of the marketing concept is vital to the survival of an enterprise. The marketing concept should be regarded as an instrument rather than a goal in itself. At the same time, it is a way of thinking that needs to be part of the corporate culture, which should be open to the marketing concept. When this is the case, the organization can be structured in such a way that its various departments are able to act in a market-oriented fashion.

3. Strategic Management and Quality Control

In the future, housing managers should be able to familiarize themselves with a more market-oriented way of thinking and acting. An aid to this end is strategic planning. Strategic planning means a systematic preparation of an answer to the question whether the organization will offer certain products to a specified public in a given market area and by which means and organizational services it will carry out all these tasks. The most important elements of this method are the formulation of objectives, the identification of target groups, the identification of

product/market combinations, internal strength/weakness analysis, inventory of opportunities and threats and strategic choices (Sweringa 1989).

Strategic management includes the activities the manager expects to undertake in the long term in response to changes in his surroundings. On the basis of an inventory of the present situation, a vision of the future of the various sectors of the housing stock is necessary. The changing role of information supply should be pointed out. In view of the speed with which developments appear, a need for a systematic procedure arises whereby these trends and incidents can be quickly identified. Only then can an organization react in time. Information will become an increasingly important production factor, alongside factors such as finance, personnel and housing (Nauta and Smeets 1989). One of the activities concerned is the measurement of the quality of the housing services, i.e. the degree to which the housing services fulfil the client's needs (Suurmond and Fokkema 1989). After all, dwelling characteristics do not only concern the product, that is, a bundle of housing services. They also imply a coherent package of management services rendered during the tenancy process. In regard to quality control, several aspects can be distinguished (Figure 1; see also Born et al. 1991).

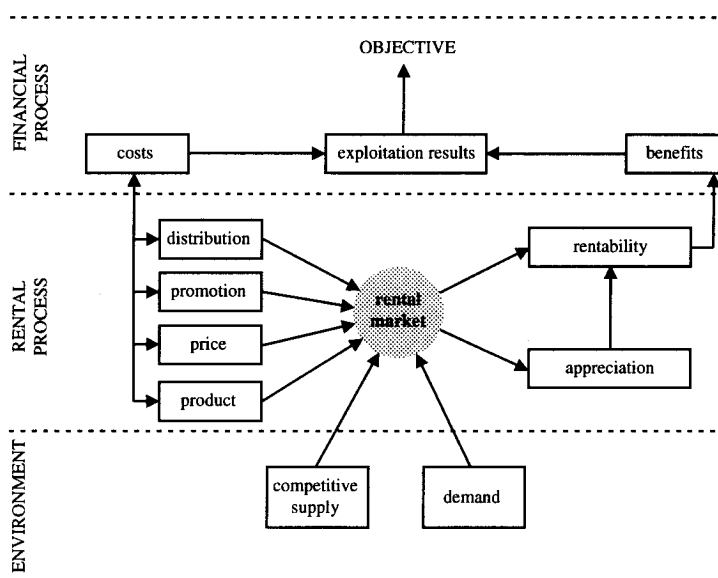


Figure 1. The effort, its results and the environmental factors
Source: Boekhorst and Smeets (1990)

The *input* efforts are distinguished as product, price, distribution and promotion; these are also called the marketing mix. The product is the dwelling and the bundle of housing services it offers. The price consists of the rental price and additional service costs for the amenities supplied with the dwelling. The distribution concerns the channels through which the product will be put onto the market (centrally, decentralized, or by third parties). The promotion, finally, is related to the way in which the product will become well-known (information, advertising, word-of-mouth publicity).

The *output* or outcome of the investor's efforts can be expressed in terms of appreciation, rentability and exploitation results. Appreciation refers to how the product meets the user's expectations. In a general sense, a high appreciation will lead to a good rentability. The rentability determines the estate's benefits. The efforts with regard to product, price, promotion and

distribution together determine the estate's costs. Benefits and costs together form the exploitation result. This way, a good rentability does not necessarily lead to a positive exploitation result.

The *fit* of activities to the preferred results takes place during the tenancy process. This process has three phases: (i) the orientation and offer phase in which the (potential) occupant is orientating himself. He looks around, collects information and facts, makes a comparison and so on. Finally the occupant will express his preference in favour of one or more estates. The tenant's specific interest will lead to a direct reaction by the latter: an offer; (ii) the occupation phase: after the tenant has made his choice, the dwelling will be occupied for an indefinite period, and (iii) the exit phase when the tenant has decided to orient himself on the housing market again with the aim to find another dwelling.

The *environment* which has the following aspects. First of all, to housing managers, (potential) tenants are regarded as an internal environment. Here they form a number of primary and secondary target groups. Of course, competing housing suppliers are also relevant. In addition, a number of external environmental factors might influence an estate's rentability and exploitation results. The estate's manager has no influence on these. For instance, the interest rate could directly affect the price of a house without changing its quality. Also the consumer's confidence in the economy may strongly influence decisions with regard to a housing situation, as well as the (regularly changing) public housing policy of the city council and the central government.

In the framework of strategic management, a system of quality control can be considered as an instrument. It can be considered as a systematic procedure with regard to registration, signalization, assessment and strategy determination. With this procedure, the appreciation and rentability of individual estates can be controlled and information may become available for the benefit of quality policy and supply stock and, in the long run, new construction programming for the housing estate. Such systems do have different functions (Dochy 1990). First, they have an early warning function, which concerns locating and identifying the strong as well as the weak points (measuring) and the developments therein (monitoring). Then, they have an evaluation function which involves visualizing to what extent the chosen objectives have actually been reached and in what regard intensified intervention is preferred. Moreover, they have a planning function, which is aimed at stimulating the rationality of the method and the management. The methodology allows a more targeted effort of the managing instruments. Finally, they have a dialogue function which is directed at the promotion of communication between the various parties concerned. Such systems could help objectify the information exchange and thus offer a basis for dialogue between parties with different interests.

4. Method of Approach

In the system proposed here, a difference is made between product and process data. Process data give insight into the question whether or not the housing services fit the dwelling consumer's preferences. They indicate the efforts in the sphere of promotion and distribution (see Section 4.1.). Product data give insight into the question why this fitting turns out successfully or not. These critical success factors also offer guidelines for an adjustment of the quality policy (a given product at a given price).

4.1. PROCESS DATA AND THE 'RENTABILITY INDEX'

In a market-oriented approach the consumer's decision process can be taken as a basis for the evaluation system. In the offer, occupation and exit phases, important quantitative information can be collected. The information is already available to the organization (Figure 2). In the

orientation and offer phases, amount and kind of interest can be measured, as can the degrees of acceptance and refusal. The duration of occupation of new houses is also relevant. In the occupation phase, duration of tenancy and kind of occupation behaviour can be measured. Indicators such as occupation duration, structural vacancy, paying behaviour, complaints and requests for comfort improvement can be registered and converted into signals. In the exit phase, matters such as mutation rate and friction vacancy are of importance.

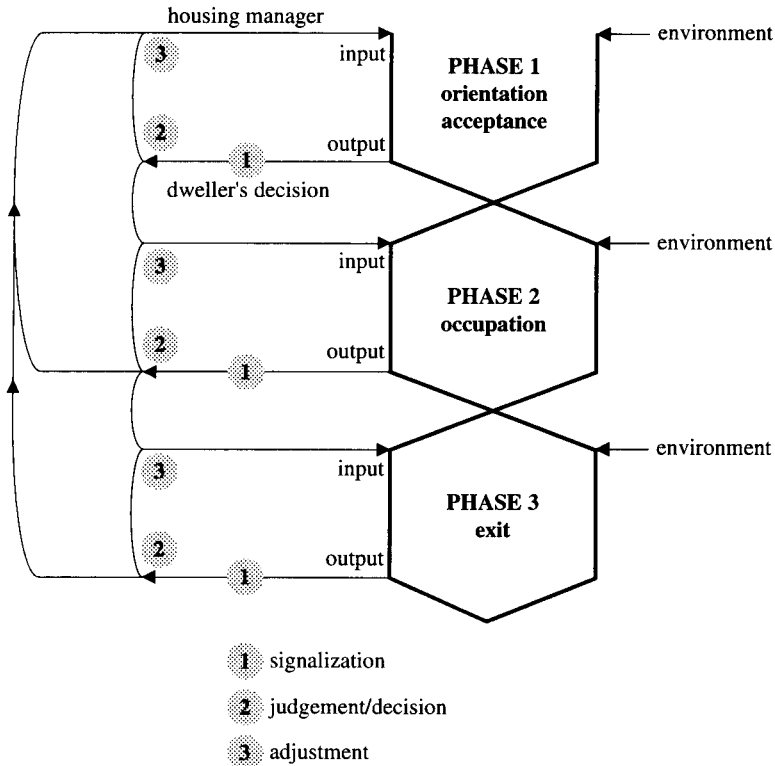


Figure 2. The phases in the rental process
Source: Boekhorst and Smeets (1990)

The tenancy process can be interpreted as a measurement path. In each phase, measuring points exist, making it possible to trace data in regard to the rentability. Data-collecting is taking place in an object-oriented fashion; one does record data per 'administrative' estate. At large high-rise estates, the task may be split up in storeys as well. A condition for reliable information, however, is a careful measurement procedure. Also important is that these data are collected over several years. As we know, important signals can be extracted from trends more than from the comparison of estates at one given time. To get good insight into the meaning of the indicators, it is recommended to develop an aggregated quality index (De Kaper and Knaapen 1991). Such an index, where indicators from the diverse phases are compounded into one index, can function as an early warning system.

For a Dutch housing association in Amersfoort, Nauta (1991) composed a so-called rentability index on the basis of an indicator from each phase of the rental process (offer, vacancy and mutation rate). In this index, it is supposed that the offer rate is the most important one; it tells

most about the difference between the offered and the preferred quality (weighting factor 2). Moreover, the vacancy rate gets more importance than the mutation rate. After all, in case of a high mutation rate, the vacancy level remains low, and the estate is thus well rentable. So the vacancy rate gets a weighting factor of 1.5. At the same time a number of standards are set: the offer rate = 250%; the mutation rate = 10%, and the vacancy rate = 2%. These standard figures correspond with the means of the rates found in the city of Amersfoort.

The rentability index (*RI*) is calculated as follows:

$$RI = \frac{M + 1.5V + 2O}{4.5} \times 100 \quad (1)$$

where,

M = mutation rate / 10;

V = vacancy rate / 2;

O = offer rate / 250.

If the index is 100, then it is said that there is a normal situation. The higher the *RI*, the worse the rentability and the greater the efforts to be made. The index can be calculated at three levels: per estate, per dwelling type and per neighbourhood. Table 1 shows a calculation on the dwelling level. The influence of the several indicators is different in various types.

The relatively high rentability index on single-family houses is a result of the offer rate's heavy weight. The offer rate on single-family dwellings is considerably higher than on multi-family houses. The very high rentability index on rooms, studio houses and the like is a result of the high mutation rate. In the background of this refusal behaviour lies the difference between 'starters' and 'movers'. A great number of the latter consist of 'preference movers' with a comparatively favourable negotiation position in the distribution process of housing accommodation. On the basis of this preliminary review we could go into greater detail on a number of estates. Such an index would be able to function as an 'early warning system'.

4.2. PRODUCT DATA AND QUALITY PROFILES

Further analysis is possible if, for the various phases of the rental process, in addition to quantitative data, more qualitative data are collected by means of intake interviews, satisfaction studies and exit interviews. To explain the reviewed processes, Boekhorst and Smeets (1990) identify five important factors: dwelling, dwelling type, physical environment and location, social environment and image (Figure 3). The dwelling concerns the household's private area, with everything belonging to it, such as the dimensions, number of rooms, rent level, house type, the view from the house. The dwelling type concerns all aspects of the dwelling situation which a certain number of neighbours have in shared use, such as the building's entrance, the hall, the stairwell, elevators and walkways. In short, it concerns the semi-public part of the dwelling situation. The physical environment and the location concerns all physical aspects of the dwelling's situation in regard to the public part, such as the access roads, shops and other services, green space, parking facilities etc. The social environment concerns how occupants maintain contact with each other, with their environment and with the manager, to what extent they associate with each other, the degree of social coherence, etc. The area's image in the public opinion is the 'condensation' of all aspects that may influence the quality, leading to the qualification of 'bad neighbourhood', 'nice area' etc. This opinion could be based on one's own observation or experience, on others' opinions, reports in newspapers and so on. Because this concerns opinion, it does not necessarily need to be consistent with facts.

TABLE 1. *Rentability index by housing type (SCW, Amersfoort)*

Source: Nauta (1991)

Dwelling type	Number VHE	Mutation rate	Vacancy rate	Offer rate	RI 4th quarter	RI 3rd quarter
Walk-up housing with elevator	1354	11.2	0.3	216	68	74
Walk-up housing without elevator	585	15.9	0.3	255	86	80
Shared doorway housing	4046	14.2	0.4	232	80	82
One family housing	6310	5.4	0.2	314	71	72
Senior apartments	547	7.3	0.1	315	74	67
Senior groundfloor dwellings	321	5.9	0.1	355	78	85
Group housing (seniors)	16	12.5	0.1	100	47	18
Group housing	39	15.4	1.5	100	77	69
Rooms	290	34.8	1.2	112	118	124
Studio houses	61	26.2	2.9	100	124	113
All dwellings	13020	9.4	0.3	247	71	72

In various phases of the rental process, these quality factors and aspects will be registered (Figure 3). A systematic analysis of acceptance and refusal behaviour on the estate level might give insight into the role of various quality aspects at play in the various estates. The analysis in the occupation phase has to be directed to the relation between quality factors and matters such as duration of occupation, pattern of complaints and desired improvements differentiated according to target group. After refusal motives, especially exit motives are an important source of qualitative information. Finally, the results of such an analysis can be registered in an estate profile, an overall picture of an estate's strong and weak points. In addition, it is possible to aggregate the data from the target groups' point of view. In the long term, more insight into the appreciation by the various target groups can be obtained suggesting which factors are very important and which ones less important for the appreciation of a dwelling. The target groups might possibly be identified by age of the main occupant, composition of the household, or household income. If we take into account the factor of life-style, we can also differentiate between 'modern' or 'traditional' households and those of an 'urban' and 'suburban' life-style (VROM 1992).

On the basis of data from intake interviews and exit interviews, in the long term insight can be obtained on such questions as the following: What factors are target group-dependent and independent? What factors lead to acceptance or refusal of a dwelling among various target groups? What factors are important but do not lead to refusal? What weak characteristics are compensated by strong quality aspects? When this information is available, it may be used for product development directed specifically to certain target groups. The information, however, will have to be translated into 'standards' for housing programmes. The quality profile of our example estate (Figure 4) shows that 'dwelling' and 'price' form the weak points. The stronger points are 'social environment' and 'dwelling type'. With increased competition, however, 'dwelling' and 'price' might form a threat. Corrections to dwelling and/or rent would then be necessary (see Section 4.3.).

Before turning to the strategic choices in the framework of the strategic planning, an exploration of environmental factors is of importance. These factors can be subdivided into 'opportunities' to attain goals and 'threats' which might be a danger to existing or prospective measures of management. Several examples have been suggested (Sweringa 1989; Nauta 1991): development in the consumer's legal position as an individual and as a group (rent protection, consumers' organizations); developments on the demand side of the housing market (for instance

increase in small households); developments on the supply side of the housing market (competition behaviour); developments in the residential environment (changes in the supply of services, situations of inconvenience); developments in technology (increasing home automation and information networks); and macro developments. Environmental factors are developments which are hardly manageable. However, the manager can try to head them off.

THE DWELLING

ground floor/multi-storey
 number of rooms
 size living room
 size other rooms
 layout
 closed/open kitchen
 kitchen equipment
 sanitation/2nd toilet
 finishing
 garden orientation/size
 size and situation balcony
 privacy
 view
 insulation level
 rent
 service charges
 management
 storage
 separated shower/bath
 quietness
 own choice

THE HOUSE TYPE

house type
 - single-family house
 - multi-storey house
 quality of entrance
 - prestige
 - comfort
 - privacy
 kind of entrance
 - gallery
 - shared doorway
 recreation space
 elevator

THE PHYSICAL ENVIRONMENT

accessibility by public/private transport
 parking facilities
 distance to (central) facilities
 greenery
 suitability for children
 maintenance of the environment
 recreational possibilities
 layout
 quietness

THE SOCIAL ENVIRONMENT

educational level
 household composition
 demographic structure
 opinions about values and norms
 social control
 security
 vandalism
 public order
 local authority allocation
 suitability for children

IMAGE

the public opinion about:
 - neighbourhood and location
 - housing type and management
 - the dwellings
 - the manager
 - the social environment
 - layout of the neighbourhood
 - design of dwellings and buildings
 (identity, style, prestige, diversity)

Figure 3. Quality factors and aspects influencing the appreciation of a dwelling
 Source: Boekhorst and Smeets (1990)

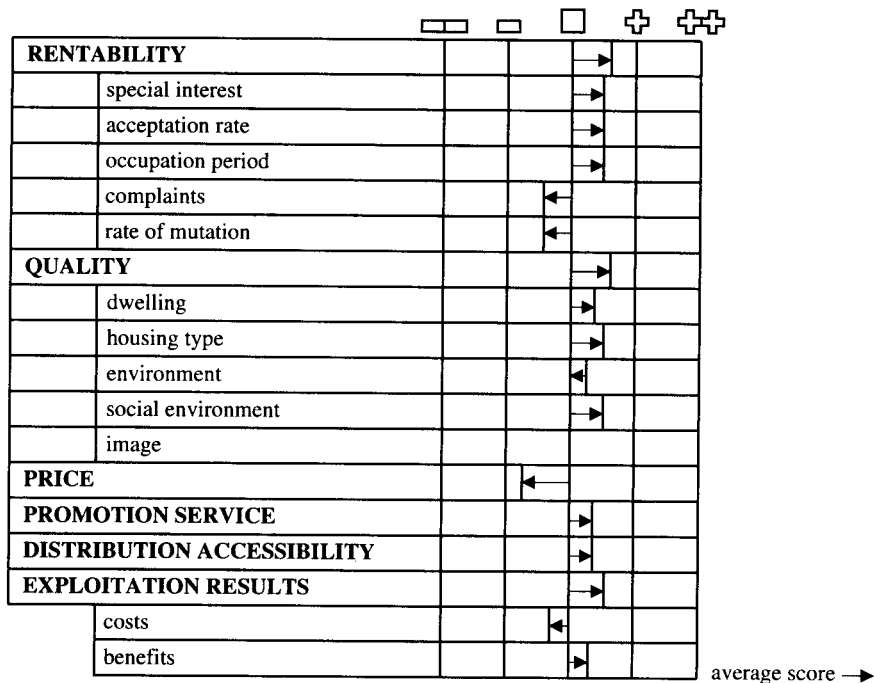


Figure 4. Quality profile of a housing estate (fictive example)

Source: Boekhorst and Smeets (1990)

4.3. DETERMINATION OF THE STRATEGY

On the basis of these analyses, a strategy can be formulated on an intervention planned. Such a strategy or planning intervention is based on identifying the state of affairs of a housing estate. The level of reference is the administrative complex toward which the system is directed. On the basis of the insights obtained, interventions can be determined in time (see Vijverberg 1989). What is necessary or preferred will be determined per project/estate in terms of the kind of strong and weak points, the opportunities and threats, and the possibilities to make adjustments.

In regard to the possible solutions, the extent of adjustability is of importance (Boekhorst and Smeets 1990). The manipulation of certain aspects of the dwelling's quality, such as rendering management service, price, equipment, etc. is relatively easy for a manager. It is more difficult to adjust the dwelling sizes and the bearing structure. Often this is only possible in the long term (upon major renovation). With regard to the dwelling form, the difference between single-family and multi-family housing is important. The extent of prestige, comfort, safety and privacy are of great influence here. The adjustment of these aspects depends strongly on the type of dwelling.

As far as the physical environment is concerned, the estate's direct environment can be upgraded by means of maintenance and small interventions. The urban design of the development, on the other hand, is difficult to correct. For that, managers have to depend on the local authority's policy. With the help of correct data, one may be able to influence the policy of the local authority. The social environment is relatively difficult to adjust. The housing allocation policy forms the most important instrument of a stable social climate. The image is the most difficult to adjust, in the sense that it is adjustable in the long term only. As soon as an estate has

been stigmatized, it will be difficult to let the dwellings. Even when improvements have been made, they only influence the estate's image in the longer run.

The degree of adjustability also determines the gravity of the problem. If a very important characteristic is perceived very negatively and is difficult to correct, then there is a structural weak spot in the quality causing a continuing risk. If an important characteristic is appreciated neutrally and is adjustable, then there is a potentially strong characteristic that may turn structural as soon as it is necessary or advisable. To make a choice to tackle the problem at the source (eliminating the weak spot) or to choose another approach (weakening or avoiding the consequences by compensation with another plus factor) financial, organizational and human-oriented preconditions play a role. These include the deliberations on costs, the acceptance by the organization, and the consequences for individual persons.

5. Bottlenecks

One has to be conscious of the problems that may accompany the development of such systems. The quality, reliability, availability and accessibility of information may cause problems. Following Nijkamp (1984), Nieboer and Voogd (1990) distinguish several types of problems: outdated information, that is, the necessary information is not available in time; over-information, there is too much information to enable one to arrive at a structured decision; under-information, indicating there is too little information to be used in policy-making; incoherent information which reflects a lack of coordination between information related to the multiple policy sectors or levels, and misinformation, indicating a qualitative discrepancy between demand and supply information.

Some of these problems may be overcome by an adequate design of the information system. The distinction we made between process and product data works out to have a structuring effect. The process data have to be collected with a high frequency, for instance every three months. Because of this, the problem of outdated information can be prevented. The potential threat of over-information can be limited if we operate with the right indicators and if we determine the correct indexes. If we use data from different managers, we should employ a uniform definition of abstractions such as offer rate. Product data may be collected with a lower frequency (every one or two years). With this data type, other problems actually do occur. In the event of cooperation between managers, the collection of qualitative information must be standardized and structured. The checklist presented in Figure 3 may serve as a guideline (for example in exit interviews by various managers). It is also a great problem that data on the physical and social environment are insufficiently available (misinformation). Often information exchange between managers and local authorities is problematic. The harmonization of policy is necessary, for instance in the framework of an information plan for neighbourhood management.

6. Conclusion

The proposed system includes an integration of object-related process and product data. These data describe, through a combination of variables, to what extent the object (in this case the housing estate) is related to the demands of the dwelling consumer and the degree to which it provides points of departure for the managing measures that are permissible in the object's context. Process data indicate which tasks are to be accomplished in the sphere of promotion and distribution. Moreover, in each phase it is the manager's effort which brings about certain decisions on the part of the occupants. The interaction between both parties is registered, whereby an evaluation of the effort is possible and measures can be taken. The product data also

give pointers for adjustment of the quality policy with regard to product and price (the product characteristics - dwelling, dwelling type, physical and social environment, area's image - and the price that has to be paid).

In the future, the above-noted bottlenecks will have to be solved. In addition to the quality of the product data, their relevance and importance will have to be checked as well. The system could then, whether it is automatized/computerized or not, be used as a management information system. It also offers building blocks for a decision-support system in the field of housing management.

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