

## MASTER

**Demand-driven development extended in the organizational structure  
an application for housing corporation Mitros Project Development concerning private housing**

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**Demand-driven development extended in the organizational structure.**

An application for housing corporation Mitros Project Development concerning private housing

**H.A. Schotsman**

**Construction Management and Engineering**

**2012**

**Demand-driven development extended in the organizational structure.**

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July 26<sup>st</sup> 2012

## PREFACE

This is the final report of my Master which I have conducted in completion of the master Construction Management and Engineering at the University of Technology Eindhoven. The research is executed at housing corporation Mitros, department project development in Utrecht regarding 'Demand-driven development extended in the organizational structure - an application for housing corporation Mitros, Project Development concerning private housing.'

The master CME of the department Construction Management and Urban Development aims at decision-making processes and business concepts for development and management of complex processes within the context of urban area development. Modeling technical and organizational systems is highly valued. Within this context I wanted to extend my knowledge about organizations and their structure regarding the changing market conditions. Demand-driven development is therefore seen as direction of solution in order to decrease the sales risk of project developments. The 1<sup>st</sup> of February I started my research in order to determine what organizational structure supports the principle of demand-driven development.

I would not have been able to conduct this research without the help and guidance of various people. I would like to thank my supervisors of the University: Mr. prof. dr. ir. W.F. Schaefer and Mr. dr. ir. E.G.J. Blokhuis for their expert knowledge and specific guidance. Their positive criticism helped me to write my thesis. I also would like to thank my supervisors of Mitros: Mr. ir. B. van Ree and Mr. ir. P. Bertrams for the time and effort they invested in guiding me through the research process. Besides the supervisors I would like to thank the experts that I have interviewed for their cooperation and give special thanks to the colleagues of Mitros for their interest, time and effort they displayed in me and my research.

Finally I would like to thank my family and friends for their constant flow of support and welcome distraction.

I hope you enjoy reading my Master's thesis,

Henk Schotsman  
Eindhoven, July 2012

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## SUMMARY

This graduation research named 'demand-driven development extended in the organizational structure' has led to a new organizational design of the department Project Development of housing corporation Mitros. However, the overall results are applicable to the corporation sector in general in respect to private housing developments.

According to the conclusions of the Investment Monitor Housing Corporations in 2011, approximately 35 per cent of all developed and realized dwellings are vacant in the two years after completion. This indicates that the sales risk has increased and liquidity pressure has elevated. It also confirms the search for the right match between supply and demand. In combination with the household forecasts and extension needs of the housing market there should come a better understanding of the target group. It seems that corporations do not know how they must adapt their organization in order to thereafter realize the right product for the right buyer. It is assumed that the organization should be more customer focused. The research question is formulated as: 'what type of organization supports the implementation of demand-driven development for housing corporations?' The corresponding objective is to determine the role of the housing corporation in 2025 and outline a new investment policy for Mitros Project Development describing their desired organization aimed at demand-driven development to lower the sales risk.

In order to analyze the current organization and design the desired organizational structure, the research method Structured Analysis and Design Technique (SADT) is been used. This method gives an overview of the process activities but does not measure the organizational performance and behavior. Therefore, the SADT model is translated into the more dynamic System Dynamics (SD) model to measure the performance of both organizations in terms of development time and organizational costs.

The current organizational structure of the department Project Development is characterized as a functional structure which is based on an undifferentiated market, long product development and common standards. However, the current housing market asks for unique products and short product developments. The market oriented organization structure anticipates on these characteristics. This research shows that the long product development is indicated by an average development time of more than 69 months. The immense gap between finding the target group in the beginning of the project development and the start of sales after more than 33 months, should be closed by the new designed and proposed market oriented structure. By bringing the "finding" and "retaining" of the customer closer to each other, the sales risk will be lowered. Therefore, it is important to find the target group at the beginning of the project development and retain them soon after. Actively approaching the current tenants as target group by the new implemented marketing and sales staff will influence the success rate of the development.

This research showed that nearly 7% of the mutation percentage moves from a Mitros rental dwelling to a private dwelling and thereby represents a great target group. Furthermore the housing corporation should take the role of director by offering exclusivity to the target group, construction company and municipality. When Mitros makes full use of the housing concepts that construction companies already provide, it will ensure flexibility and certainty for the buyers. The direct link with an architect and tendering is removed in the new organizational structure which results in greater efficiency in terms of development time and organizational costs. The development time is reduced with 58% and the organizational costs are over 50% less compared to the functional organization structure.





## 1. RESEARCH LAYOUT

This chapter encloses the research layout of the Master's thesis. The first paragraph *1.1 Context* describes the context, background and motives of the research followed by the research approach on the second paragraph. Paragraph *1.2 Research approach* includes the problem, research questions, hypothesis and research objective. The research model and framework will be explained and illustrated in *1.3 Research model* that represents the overall layout of this thesis allocated into five parts.

### 1.1 CONTEXT

Housing corporations are legal foundations or associations offering affordable dwellings possessing 32 per cent of all dwellings in the Netherlands. That is comparable to about 2.4 million dwellings accommodating at least 90 per cent of their target group in social housing (CFV, 2010). According to De Boer (2011) this upper limit is equal to 42 per cent of all households eligible for social housing owned by a corporation. The further increasing number of households according to the forecasts of the CBS (van Duin & Stoeldraijer, 2011) from 7.4 million in 2010 to 8.5 million in 2045 is of major influence on future private dwelling developments and social housing.

Until recently we assumed that private dwelling developments were purchased by the market but it is however, not longer an option anymore in order to 'develop to develop.' The differentiation of the demand for private dwellings has increased dramatically and we will therefore have to think about for whom we develop because otherwise dwellings will not be sold. Demand-driven development is within this context an appropriate term that will be further used in this research.

Furthermore, it is no longer sufficient to the traditional forms of management (speaking about technology, finance and rental) to respond to the increased differentiation in the demand for housing. The course of action, techniques and procedures for housing corporations has been shaped in what is called the strategic housing stock within the framework of social objectives and financial continuity (Smeets J. , 1997). For example, the corporation portfolio knows a broad range of target groups and product groups within a geographically defined area which makes the formulation of interesting product-market combinations possible (Janssen, 2008). Interesting PMC's but moreover without State support for the construction and selling of private dwellings by housing corporations<sup>1</sup>. In this way we could support the theorem that the risk involved in private dwelling developments is for the account of housing corporations.

It appears that housing corporations are faced with all kinds of threats and/ or opportunities from the near environment. Connor (1990) states that there are three reasons to nominate the need to designate an organization to change. One of these reasons is when a company is faced with opportunities or threats. Redesign the Project development department of housing corporations should respond to the current changes stagnating urban renewal.

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1 - According to the letter of Minister Dekker to the Second Chamber on December the 12<sup>th</sup>, 2005.

## 1.2 RESEARCH APPROACH

### PROBLEM

In the period between 2010 and 2020 approximately 500,000 dwellings should be added to the existing housing stock in order to cope the growing number of households (ABF Research, 2010). The conclusion of the recently published housing market-explorations in order of the Ministry of VROM (please see appendix 1.1 for the Socrates/ Primos model) concluded that there is a large task in the expansion of contents and in the expansion of rental dwellings. Figure 1.1 shows the expansion need in the period 2010 till 2020.

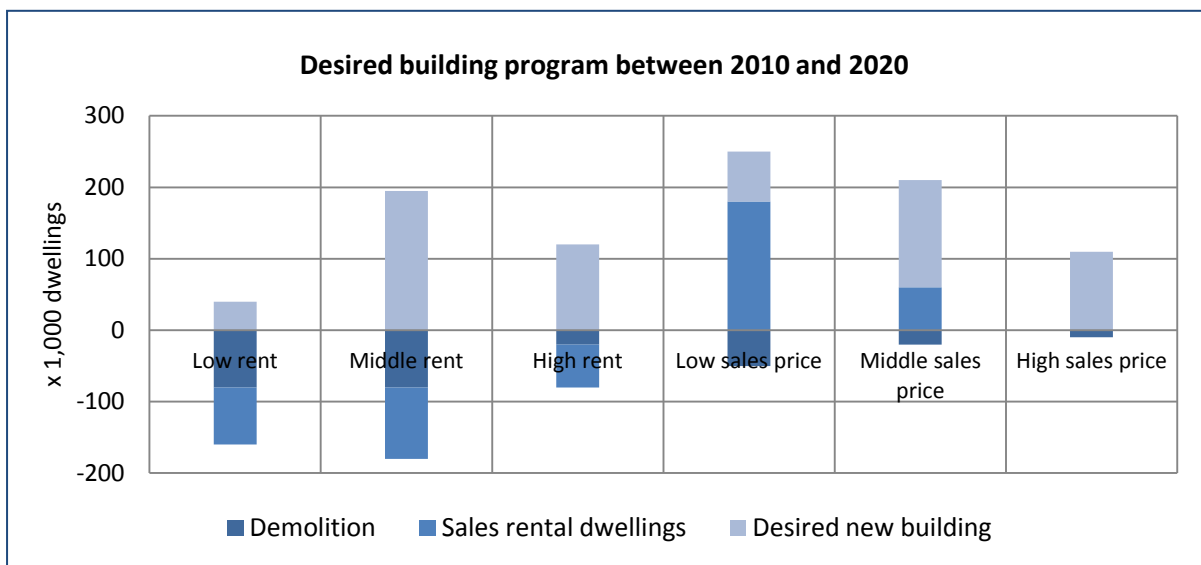


Figure 1.1 Expansion need in the period 2010 - 2020 (source: Socrates rating VROM, 2010)

The mission and goals of housing corporations should be based on a solid analysis of the dwellings market and social and political environment as reflected in the Integrated Real Estate and Housing Control Corporations (the so called “*Integrale Vastgoedsturing Woningcorporaties*”). However, according to the conclusions of the Investment Monitor Housing Corporations it seems that approximately 35 per cent of all developed and realized dwellings were vacant in the two years after completion<sup>2</sup> (Stec Groep BV, 2011). Housing corporations develop even more private dwellings than the amount of demand. This indicates that the sales risk has increased and liquidity pressure has elevated. It also confirms the search for the right match between supply and demand. In combination with the household forecasts and extension needs of the housing market there should come a better understanding of the target group.

It could be stated that the housing market is locked meaning that there are no dwellings purchased anymore and the target group changes rapidly. The national trend that has been recognized is characterized by strong aging population, longer life and more and smaller households. Moreover, this trend varies widely by region. In the Province of Utrecht there is no strong recognition of age declining or shrinking. Upon this way we could focus on the assignment for housing corporation Mitros in Utrecht. They possess among others 28,000 social dwellings and with their department Project Development they continue working on the development of private dwellings to match their products with the right target group. This demand-driven development differs per project development what makes it even more

<sup>2</sup> - The reference date is September 2010.

difficult to supply the market in their demands and right housing needs. According to the Province Forecast 2030 (ABF Research 2010, Province Utrecht 2008), the region of Utrecht expects an annually average of plus 4,700 residents in the period of 2011-2030 and a total growth of 89,800 residents. This forecast is pleasant for Mitros Project Development to take their current activities under the microscope and make their activities and policy matching with the demand. Organizational change and development activities should make demand-driven development possible but at this stage we have no idea how this looks like. The definition of the problem can be translated into the following challenge:

**Research problem:** “Corporations do not know how they must adapt their organization in order to thereafter realize the right product for the right buyer.”

The problem definition could be translated into the main research question. In order to answer the main research question, three sub research questions have been defined. These sub-questions are related to the problem definition and contain 12 questions that will be answered in the next chapters of this Master's thesis. A logical structure is maintained when formulating the sub-questions.

**Main research question:** “What type of organization supports the implementation of demand-driven development for housing corporations?”

In what way and how will the housing market develop until 2025?

- What is the current state of the housing market?
- In what way will the population develop in the next 13 year?
- How does the current housing market composes with the future population composition (scenarios for the future housing market)?
- Which target groups are distinguished in the population and what type of housing is suitable for this target group?

What is demand-driven development?

- What drives housing corporations to develop?
- What are the characteristics of this new type developing?
- Which business organization fits best for this type of developing?
- How do you manage such an organization?

Which organizational structure performs best under demand-driven development circumstances?

- What organizational structures can be distinguished?
- Which quality standards meet this organization?
- How will you fulfill your tasks and activities as an organization?
- What are the realistic changes look like?

## OBJECTIVE

The objective of this research is based on both scientific- and social relevance in the field of organization science and construction management. Therefore, the objective is defined as: “Determine the role of the housing corporation in 2025 and outline a new investment policy for Mitros Project Development describing their desired organization aimed at demand-

driven development to lower the sales risk.” Paragraph 1.3 *Research model* discusses the research framework and the corresponding chapters starting after this chapter 1 *Research Layout*.

### 1.3 RESEARCH MODEL

Figure 1.2 shows a visualization of the research model that consists out of five parts. Each part is represented in this Master's thesis from literature study till recommendations. This paragraph explains the structure and framework of the research according to the figure below.

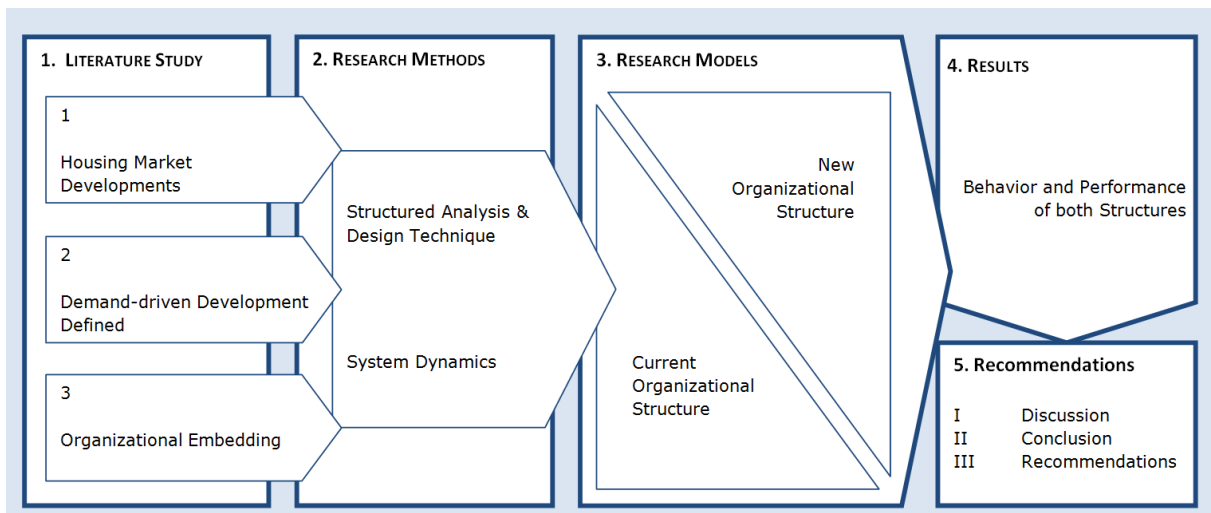


Figure 1.2 Research model shows the steps that will be taken during the study (source: author)

#### Literature Study

- The first step is to map the housing market developments in the Netherlands and more specific of Utrecht according to the application for Mitros Project Development;
- The second step in the literature study is to define the definition of demand-driven development as it forms the starting point for the new organizational structure;
- The last step of the literature study is to enclose the organizational theories in order to define the current organizational structure and interpret the desired structure according to the characteristics of demand-driven development and the housing market developments.

#### Research Methods

- The use of two scientific research methods combined in one research gives this research model an interesting point of view. Structured Analysis & Design Technique (SADT) will be used to model the logical organizational system and design the desired organizational structure. SADT assumes that processes are linear but the translation of the SADT models into System Dynamics (SD) ensures that the process becomes dynamic and measurable in words of behavior and performance.

#### Research Models

- According to the literature study and research methods the models will be constructed. In order to design the desired organizational structure the current

structure will be modeled. Both SADT and SD will be used in this part making use of several ways of data collection.

#### Results

- Because SADT cannot measure the behavior of the organizational structures under research objective and research questions propositions SD will measure the behavior and performance in words of development time and organizational costs.

#### Recommendations

- In the last part of this Master's thesis the discussion, conclusion and recommendations will be made. Based on the new proposed organizational structure, findings and results of the models the recommendations will be proposed.

#### Data collection

The literature study makes use of several interviews and meetings besides scientific books, journals and reports this thesis refers to (chapter *10 References*). Furthermore, appendix 1.2 shows which experts are interviewed. Using internal datasets, interviews and documentation from Mitros Project Development this study could display the current organizational structure as it is. Controlling meetings and surveys are conducted to validate the structure. Each chapter will themselves explain the data collection in more detail.



# I LITERATURE STUDY

## 2. HOUSING MARKET DEVELOPMENTS

This first paragraph 2.1 *Current state of the housing market* will answer the first research question concerning the housing market developments. It is important to analyze the current situation in the housing market before answering the second sub-question: in what way will the population develop until 2025? Combining both the current state of the housing market and future developments will result in scenario development. The way the current housing market does compose with the future population is an interesting viewpoint conducted in paragraph 2.3 *Current market versus population*. After compiling the results of these three sub-questions target groups will be distinguished and the type of housing according to these groups can be enclosed.

### 2.1 CURRENT STATE OF THE HOUSING MARKET

Presuming that the answer on how the current housing market is stated does not lead to anything between 'bad' and 'good' a distinction is made in type of ownership (private dwelling or rent), construction year and the number of rooms. First in general and second more specific for Utrecht according to the application for housing corporation Mitros Project Development. The System Dwelling Supply ("*Systeem woning Voorraad or SysWoV*") of the Ministry of Internal Affairs and Kingdom Relations gives insight in the existing stock composition in the Netherlands based on the postal code and is available online ([SysWov, 1985-2012](#)). The model is consistent with the Central Bureau of Statistics (CBS) and data concerning social landlords (housing corporations) in the context of the Social Rental Sector Management Decree (BBSH).

#### CONSTRUCTION YEAR

According to the figures of construction years it seems that the largest stock of dwellings are added in the period 1971- 1980 (1,2 mln) next to the period of 1960-1970 (1,14 mln) and 1981-1990 (1,09 mln). The observation that is made in response to this data is that the largest stock of dwellings has an age between 22 and 52 years old. Assuming an exploitation period is 40 years, the current state of these dwellings is eligible for demolition/ new construct or major renovation. A total number of 2,22 million (<1905-1959) + 3,44 million (1960-1990) = 5,66 million dwellings are considered as important focus for future developments. The next paragraph discusses the type of ownership of these dwellings.

Within the province of Utrecht, the most dwellings are constructed in the period 1971-1990 namely 166,000 dwellings; 1971-1980 (84,000) and 1981-1990 (82,000). That is 32.5% of all dwellings developed till 2011. Compared in percentages to the Netherlands, Utrecht build less dwellings in the period 1945-1959 (Utrecht 8.8% - NL 10.4%) but more dwellings in the period  $\geq 2001$  (Utrecht 11.1 % - NL 9.7%). It can be said that the average age<sup>3</sup> of a dwelling in Utrecht is 43.7 years or in other words, demolition/ new construct or renovation needs priority.

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3 - Please see appendix 2.1 for a detailed calculation for the approximation of construction year and number of dwellings.



### TYPE OF OWNERSHIP

The large dwelling stock in the Netherlands is divided into private dwellings and rent (SysWoV, 2012). Looking at the gradient of the ratio between rent and private dwellings a shift in the majority of rent is made towards private dwellings in 1997 (please see figure 2.1 Ownership dwellings on the next page); each of the type of ownership has approximately 3,1 million dwellings in that year. At present times the total number of rental dwellings in the Netherlands is 2,9 million against 4,3 million for the buyer's market. This market contains a substantial majority (48%). The market for private dwellings has become attractive and may have a causal relationship with the development of dwellings for the buyer's market by housing corporations. Paragraph 3.1 *Drivers* will provide more depth with respect to the development-reasons for the buyer's market.

The province of Utrecht showed in their facts and figures in below figure 2.1 an earlier switch in respect to the Netherlands (appendix 2.2 shows detailed figures). A majority for the buyer's market has originated in 1994, three years earlier than average. In the year 2011 the distribution is as follows: 38.6% rent and 61.4% sale. This means that it is harder for housing corporations (like Mitros) to sell their developed dwellings because of saturation on the one side but on the other side there is more demand as this research showed in paragraph 1.1. Please see figure 1.1 Expansion need in paragraph 1.2 *Research Approach*.

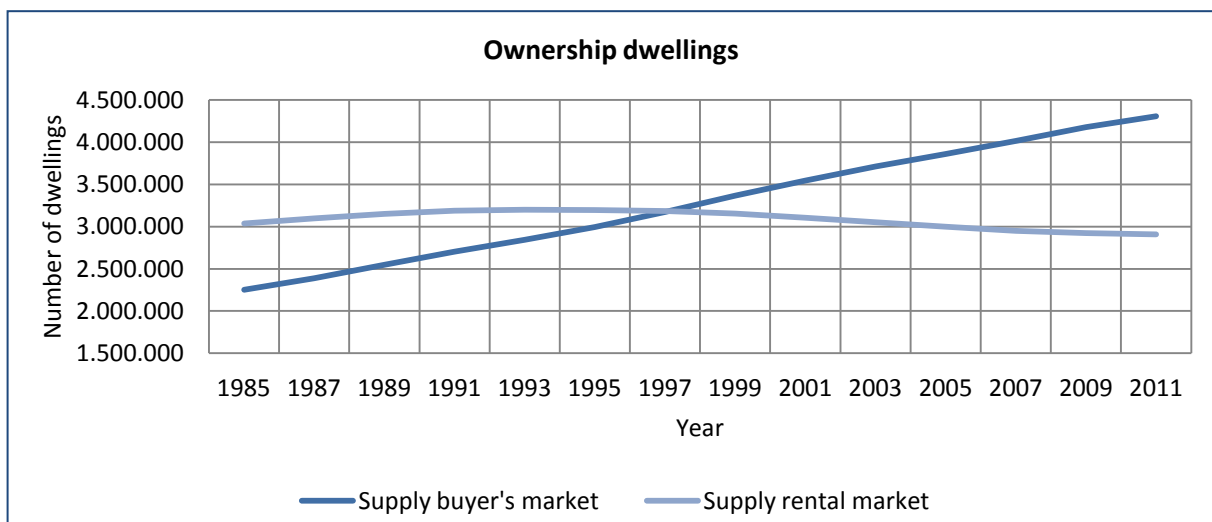


Figure 2.1 Number of dwellings according to their ownership (source: ABF Research SysWoV 2012)

### DWELLING SIZE

It is interesting to see that when the majority in type of ownership moves from rent to private dwellings in 1997, the dwelling size in number of rooms, changes along. In 1997, dwellings with a total number of  $\geq 5$  rooms exceed the total dwelling with 4 room dwellings. In the same year, dwellings with 3 rooms decreases (0.9%) and dwellings with  $\leq 2$  rooms increases (0.8%) as a reaction to the privatization of the housing corporations. At present times, the majority of Dutch dwellings have  $\geq 4$  rooms; 32% has 4 rooms and even 39% has  $\geq 5$  rooms. At this moment the majority of dwellings in Utrecht (rent and private dwellings) have  $\geq 4$  rooms (32.6% 4 rooms + 39.7%  $\geq 5$  rooms = 72.3%). This represents the average size of the Netherlands.

## INTERIM CONCLUSION

The tracked changes in the year 1997 are a response to the elimination of the 'last object subsidy' (the Decree Housing Subsidies 1995) (CPB, 2006), which meant that housing corporations needed to finance unprofitable developments by itself. After the "bruteringsoperatie" and the elimination of the Decree Housing Subsidies, housing corporations are characterized as hybrid organizations meaning that they are a private organization with social responsibility. The next paragraph 2.3 *Population developments till 2025* encloses the population development for the next 13 years and subsequently the current housing stock and developments in population will be fit in order to answer the question: does the current stock comply for future scenarios?

## 2.2 POPULATION DEVELOPMENTS TILL 2025

### HOUSEHOLDS

Another issue that plays a significant role related to the ownership, construction year and size of dwellings is the number of households we know in the Netherlands. Reason to address the households is because of their relationship with the population and age developments. Housing corporations focuses on the primarily group but also households that cannot be considered belonging to the focus group are often part of the market for housing corporations. One reason is that a part of the group of customers with higher incomes occupies social housing and second, because they also develop private dwellings. Households with housing needs in the market will consider the supply and then make their choice (Heida, 2000) in (Van Os, 2007). According to Kromhout in (Zijlstra, 2011) a large part of the current stock does not meet the qualitative demands that households need. This is part of the research problem.

The CBS stated that the number of households has shown a significant growth in the past half century (please see appendix 2.3 for the graph). In 1960 we counted 3.2 million households in the Netherlands and in 2010 we noticed a more than doubled number of a total of 7.4 million households (van Duin & Stoeldraijer, 2011). The CBS prognoses a further increase to 8,5 million households in 2045 and in subsequent years the number of households is expected to slightly decrease – to 8,4 million in 2060. The number of single households will increase and more persons households will stabilize in the year 2025; the time horizon for this study. This forecast is of major influence on future developments of social housing and in particular for corporation Mitros Project Development (figure 2.2). A comparison shows however not that much discrepancy with the national forecast.

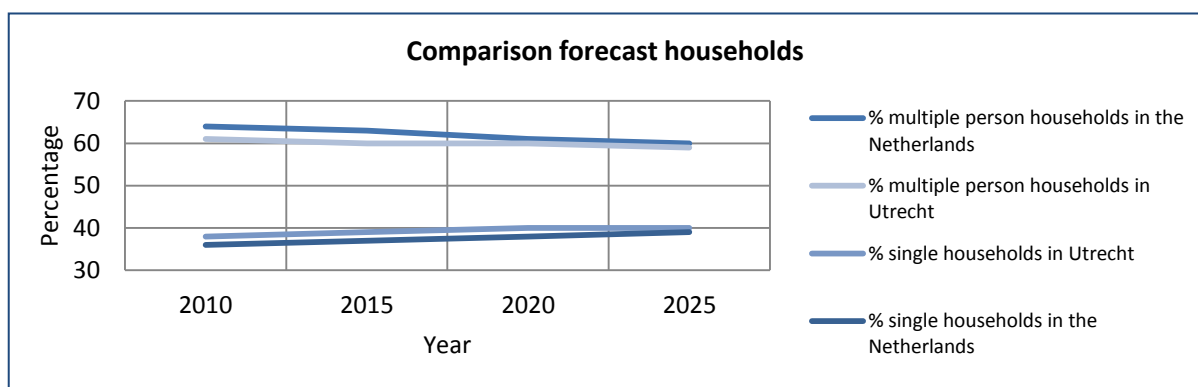


Figure 2.2 Comparison of the households forecast between the Netherlands and Utrecht (source: CBS - van Duin & Stoeldraijer, 2011)

**POPULATION**

The population in the Netherlands is forecasted by the Primos-model (quantitative market developments in the housing market). This forecast predicts a decline in the labor force (age range between 30-64 year/ when the first baby boomers turn 65 years), and an increase of people with an age of 65+ (please see figure 2.3 below). Since more people lived alone in the past half century, the total number of households rose much faster in comparison to the population and this finding is projected to remain so in the coming decades. However, the growth gradually decreases as the number of deaths will rise by an aging population that is expected to cause a very gradual shrinkage of the population (van Duin & Garsen, 2011).

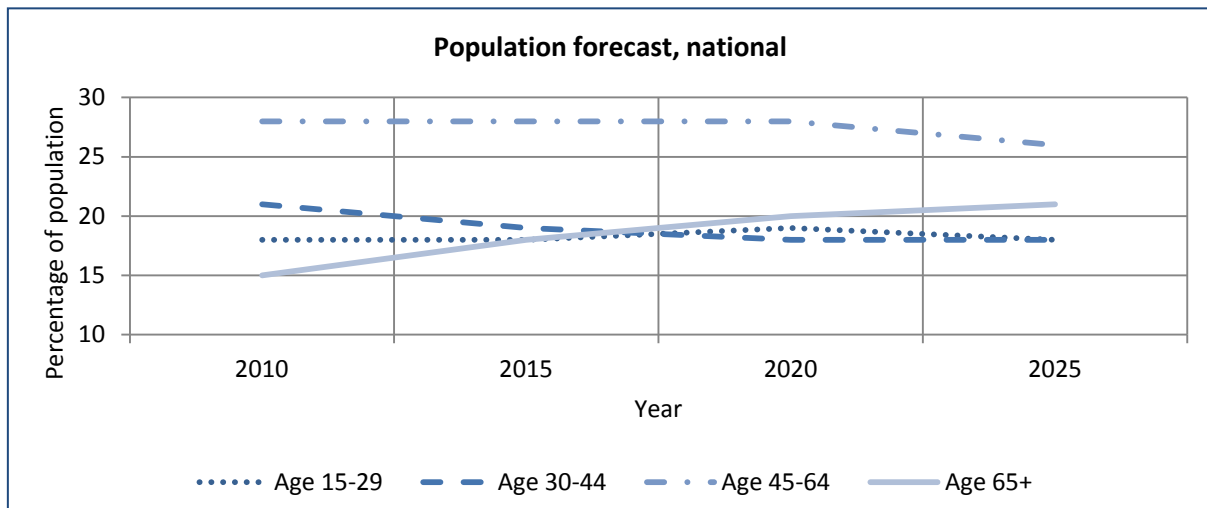


Figure 2.3 Population forecast of the Netherlands till 2025 (source: Primos Prognosis, 2011)

In comparison to the national population forecast, Utrecht is in the year 2025 characterized by a labor force the same size as national (44%). Moreover, Utrecht as a large city in the “Randstad” will deal with an increasing ageing problem. The percentage of this group elderly is forecasted to be as large as the group of 30-44 year olds (19%) and 45-64 year olds (20%) (figure 2.4). The interesting thing to see is the growth that this group experiences; 6% increase over 15 year (!) This asks for attentiveness according to the direction of demand-driven development regarding potential target groups.

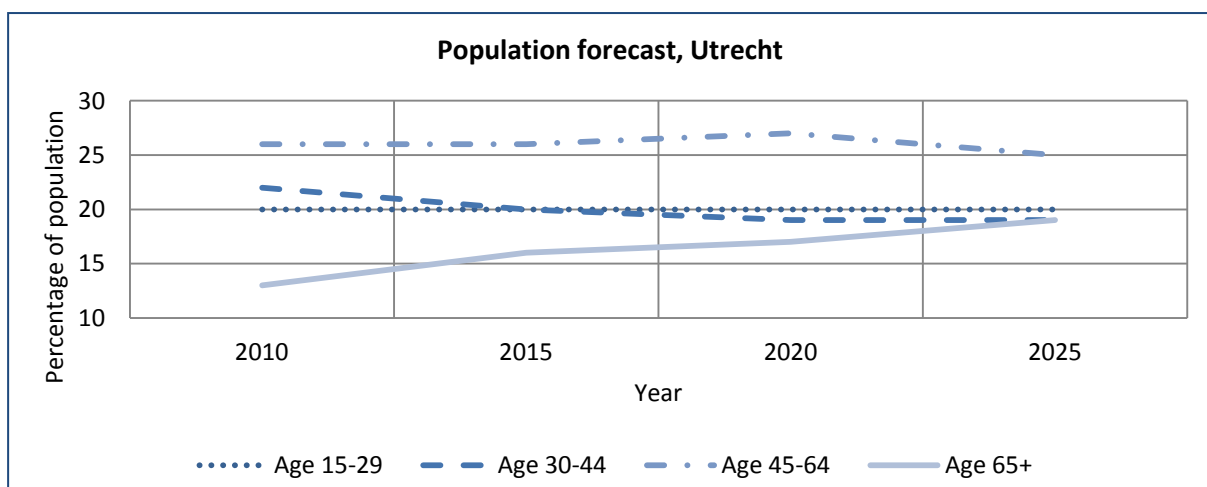


Figure 2.4 Population forecast of Utrecht till 2025 (source: Primos Prognosis, 2011)

### 2.3 CURRENT HOUSING MARKET VERSUS FUTURE POPULATION

The previous paragraphs partially answered the sub-question: in what way will the population develop till 2025? Figure 2.5 visualizes that these demographical developments are part of the external environment wherein the housing market is located. Van Os (2007) states that dominant, long term developments are the aging and redemption, the dilution of households and the increase of immigrant households. As a result of the continuing family dilution, the number of households still increases (please see appendix 2.3 Households forecasts), while the number of inhabits decreases. Such developments are of great influence for the qualitative- and quantitative demands. The time period is a long term period but at the same time they are familiar with a shorter wave in respect to the life time of dwellings (Van Os, 2007).



Figure 2.5 The demographical developments challenge the housing market ensures a market challenge (source: author)

The importance of economic developments in respect to the stagnating housing market has become increasingly important these times. The economy affects the costs of constructing and managing, on the costs of mortgage and other loans, but also on the financial capacity of households and government (Van Os, 2007). Scenario development could be enclosed to make statements about the relation between the current state of the stock and future population. The combination economic and political factors in respect to the scenarios provide interesting points of view. The current housing market has issues (Displayed in table 2.1) that need to be addressed in words of economic/political factors, state of the stock and population/ household.

Stock	Economic/ politic factors	Population/households
The current stock needs attention in words of average age: 22-52 years	Political uncertainty about the deduction of the mortgage interest	Increasing single households
A dominant buyer's market over the rental market	The borrowing capacity (mortgage) is lower than before the economic crisis	Population of 65 years and older increases
Over 70% of the dwellings contains ≥4 rooms	Unrealistic asking price and 20% under value	Labor force stabilizes
	Residents have trouble selling their dwelling and therefore buying (effect)	Birth rates are low
	Risk to get unemployed has gained	

Table 2.1 Issues of the housing market addressed in three columns (source: edited by author according to this chapter)

The current housing stock does not match the future Dutch population in 2025. The logical match is combining the single households in dwellings with 2 or 3 rooms and dwelling with 4 or 5 rooms for more person households. The observation that has been made in this study is that the number of single households increases but also the number of dwellings with 4 and 5 rooms increases (70% market share) instead of more dwellings with 2 or 3 rooms (8%). This mismatch forms a challenge for nearby and future developments. The target groups are situated on the demand side of the PMC. Segmentation of the supply side is of great importance to make a statement about the suitability of the demand for the diversity of dwelling preferences; without saying anything on object level (ABF Research concerning living environments). Besides, lifestyles give more insight in the further definition of the target groups and the type of housing. Defining target groups and lifestyles will be discussed in the next paragraph *Target groups and related type of housing*.

Hence, Van der Schaar (2006) names some important adjustments that housing corporations could apply that this study will address as the “triple C adjustments” – complement, correct and compensate:

- Complement the market: providing supply for certain segments that would otherwise not be adequately controlled;
- Correcting the market by improving the quality: in a free market the demand does not always satisfy the socially desired specifications, such as a minimum living quality;
- Compensating the market: controlling the rental prices by adding affordable products for low/middle income households because of the minimum possibilities in the private sector.

#### TARGET GROUPS AND RELATED TYPE OF HOUSING

It is necessary to define the group of customers in order to reach the correct PMC (Mitros, 2002). Especially the single households with an age of 65 year and older with a low or medium income (national as well as regional) are becoming an increasingly important target group. The number of households increases with an average of 3,400 households per year (Utrecht, 2011) and represents the greater part single households (45.6 % is an increasingly group of 65+) (van Duin & Stoeldraijer, 2011). Despite the slight decrease in percentage of the labor force this group remains an important target group in the Province of Utrecht. Concrete, this could be translated into a focus on single households with income up to €28,500 (primarily target group). Looking at the buyer's market and desired differentiation on city- and regional level, the secondary target group (incomes between €28,500 and €33,000) will also be a part of the focus group. Creating differentiation within living environments is an important exit point for housing corporations (Mitros, 2010).

The translation of customer groups to object level is difficult to achieve (based upon various interviews, please see appendix 1.2 for an overview). It is a complex issue that is not easily translated into a concrete answer and thus to type of housing for a specific customer group. Figure 2.6 on the next page visualizes the ‘choices’ that need to be made in order to find the best match between target group and housing. It should be obvious that any choice eliminates other options however; the complexity is reflected in a preference for more choices. For example, a family with children could be interested in dwellings from the '20 but can also consider a modern newly build dwelling. This results in a choice tree but because of

external factors such as financial and political uncertainty, supply and demand related to the search area, it is hard to say anything about preference choices for customer groups in common. Van Os (2007) states again that how granular the classification by type, size and price, the more products you must differentiate from each other against the living environment. For the year 2025 the customer group in the province of Utrecht will be seniors 65+ with a low to middle income and young families with both low and high incomes.

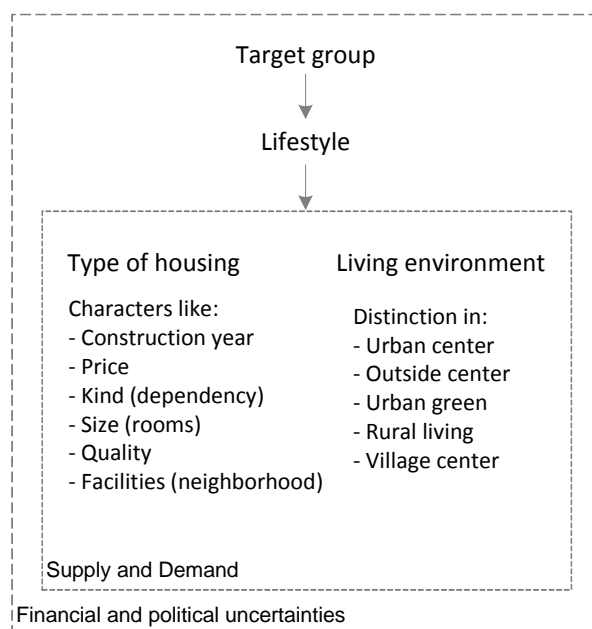


Figure 2.6 Defining the target groups that match certain type of housing in a specific environment is impossible to make (source: author)

Looking back from the year 2002, the number of households in respect to the number of dwellings equalizes so that there is a consistently high percentage dwelling shortage (table 2.2 below) (Utrecht, 2011). The dwelling shortage in the province of Utrecht fluctuates between 6.6% (2002) and 7.8% (2007). In the year 2025 the dwelling shortage will be 5.7% or in absolute numbers: 33,910 dwellings. Surprisingly enough the demand for dwellings for the group of starters and upcoming young families (age range 15-29 demands over 8,000 dwellings) and not young families (age range 45-64) demands over 10,000 dwellings. The demand for senior dwelling numbers is equal to the number of young families (30-44), more than 7,500.

	Forecast			
Utrecht	2010	2015	2030	2025
Households #	544.095	571.673	644.687	620.349
Dwelling supply #	506.189	539.439	609.939	586.439
Dwelling shortage #	37.906	32.234	34.748	<b>33.910</b>
Shortage dwelling supply %	7,5%	6,0%	5,7%	5,8%
<b>Classification by population</b>				
Age -14	19%	18%	unknown	17%
Age 15-29	20%	20%	unknown	20%

Age 30-44	22%	20%	<i>unknown</i>	19%
Age 45-64	26%	26%	<i>unknown</i>	25%
Age 65+	13%	16%	<i>unknown</i>	19%

Table 2.2 Number of dwelling shortage in Utrecht divided by age in 2025 (source: combined numbers by author, Primos and Socrates)

## 2.4 CONCLUDING

The current housing market and the future population are compared to one another to give an answer to the question whether or not the current housing stock meets the future population in 2025. The population and household projections for the year 2025 forecasts stabilization in the labor force but an increase in the number of seniors 65+ and single households. The supply in current housing stock does not meet these future requirements. Though, a dwelling shortage of nearly 6% is predicted in the year 2025 for Utrecht. External factors such as political- and financial uncertainty in the sector provide a growing market challenge to meet the demand with current and new supply. Because of the complexity and coherence between target group, lifestyle, dwelling characteristics and living environment it is not possible to match target group with specific dwelling characteristics. According to Van der Schaar (2006), these market challenges could be approached in three different ways. Compensating the market by adding affordable products on the buyer's market for low and middle income households is considered to be the most effective way. Therefore this study takes only project developments for private dwellings into account and how the organization of Mitros Project Development should act in a demand-driven way.

# I LITERATURE STUDY

## 3. DEMAND-DRIVEN DEVELOPMENT DEFINED

The social housing sector in the Netherlands has undergone a remarkable shift from a government-driven sector towards a much more market-oriented sector in which the customer demand has a central position (Nieboer & Gruis, 2004). Besides the shift to a more customer based orientation the fundamentals of why housing corporations develop is an interesting question that paragraph 3.1 *Drivers* will discuss. Paragraph 3.2 *Characters of DDD* will outline the characters, challenges and benefits of this new type of developing. The basis for this chapter is formed by an analysis of multiple scientific sources and interviews combined with discretion concluding in paragraph 3.3 *Concluding*.

### 3.1 DRIVERS

Almost half of all housing corporations that are actively involved with private dwelling real estate developments have to deal with high vacancy rates after completion. The question that rises is what housing corporations drives to develop? Research by economic advice- and research bureau Stec Group (2011) showed that nearly 35 per cent of all developed dwellings were vacant in the past two years. A mismatch between supply and demand including economical uncertainty has led to this stagnated demand in the housing market (Rabobank, 2010). The biggest risk accompanied with project developments is the sales risk involved. Housing corporations are using instruments like extra market efforts, smart phasing and discount arrangements in order to increase sale and therefore lower the sales risk (FGH Bank, 2011). From a more sustainable point of view, housing corporations have financially been sustained by the government because of deteriorating public health with the objective to supply qualitative good and affordable housing for people with low income – starting at the end of the nineteenth century. In other words we could state that housing corporations feel responsible for the quality of life in surrounding city neighborhoods. Moreover in cooperation with local municipalities allocating responsibilities. Therefore housing corporations develop also dwellings in areas that socially request for a better variety and a more balanced composition of dwellings thinking of rental/private and different housing type mixtures. Stec Group (2011) has concluded three main reasons for continuing developing dwellings for the buyer's market after survey amongst 112 housing corporations, knowing:

- Realizing more variety in the neighborhood;
- Giving lower incomes the opportunity to buy;
- Make a profit out of these developments.

The majority of the housing corporations made a loss on developments but stated to continue their developments despite their losses. An interesting statement likely constituted of scenarios saying that the housing market will show an upward trend on the short term after positive movements in the economy climate. Because people would like to life in a well constructed, affordable dwelling on the right location there will be a large question of demand at that time (Rabobank, 2010). Furthermore, Rabobank (2010) states that on the long term a lower structural construction period will be seen. Adding quality in the housing market is necessary to make it attractive again. A possible direction for the solution is a more customer oriented approach or in other words, demand-driven development.



### 3.2 CHARACTERISTICS OF DDD

In order to describe the characteristics of demand-driven development, the current problems in the housing market will be further outlined to respond to these challenges. The Netherlands are namely dealing with a desolate situation on the housing market and with an average of twenty five available dwellings per buyer (Mons, 2011), it seems to get harder and harder to reduce sales risk for both private and hybrid organizations. As an effect it has become a major challenge to deposit the developments in the market. The independent commission of social economic experts (CSED) within the social economical board (SER) describes the issues in words of 1) dwellings shortfall, 2) strong increased housing prices, 3) a gap between the rental- and buyers market and 4) long waiting lists for social rent (SER, 2010). These issues brought the hybrid sector back into political spotlight (Boelhouwer, 2007) what emphasizes that housing involves major social tasks, whereby the efforts and social assets of the housing corporations are indispensable.

At this moment we have to deal with a housing need in multiple forms that can be traced back to mismatch demand-supply and the provided expansion need in the buyer's market of approximately 340,000 dwellings till 2020 (ABF Research, 2010). Until now it seems that housing corporations have provided the wrong PMC. Housing management strategies are created for the development of the portfolio and linked to investment strategies. The management of housing is therefore one of the most important components when it comes down at the way housing corporations will develop their PMC: splitting demand into small homogeneous groups provides clear target alignment and in the current market it could track expanding demand segments (Smeets J. , 2010).

The assumption according to paradigm changes by Smeets (2010) addressed to the management and guidance of housing corporations moves from 'production' to 'customer value'. This is endorsed by Overmeeren (2009) who states that the strategic housing management shifted from 'task driven' towards 'demand-driven' and 'area-based'. Distinguish focus levels knowing individual customers or the level of groups of customers in an area is important for segmentation and therefore defining the right product. Van der Laan (2002) indicates that several management models driven by demand are in fact only refinements of driven supply. In this context Smeets (2010) makes a distinction between control *of* the demand and control *by* the demand<sup>4</sup>. For defining the characteristics of demand-driven development this research will be based on control *of* the demand in which creating customer value is a demand driven value and not a demand controlled value. The main reason is to keep the guidance within the management professionals (not entirely relinquish), making the supply more customer friendly and the primary organizational process should be matched and adjust to demand-driven developments. Therefore demand-driven development is as a synonym for customer-driven development (Overmeeren & Zijlstra, 2009) which aims to improve choice and control of individual households (customer groups) and is concerned with the individual interest.

The most important qualities of the housing corporations lie in their professionalism and organizing capacities. It is of great importance that demand-driven development matches specific demand and is supported by the organizational behavior which develops the market supply. It is a challenge for housing corporations to get all the parties involved at the right

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4 - Report of the Scientifically Board for Government policy (WRR) 'Proving good service' 2004

moments and at the right levels as Overmeeren (2009) states and Mitros confirms in several interviews (appendix 1.2 shows which experts are interviewed). This nearby future challenge asks for a clear distinction between the approach housing corporations have to choose for different policy areas.

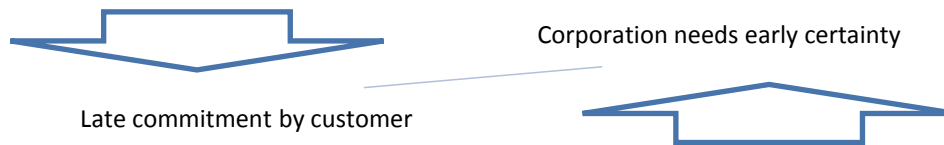


Figure 3.1 Gray area between the customer and the housing corporations concerning developments and associated risk (source: author)

This distinction should be based on an analysis of the different interests that are at stake. Housing corporations should be clear about which interest is paramount and how this interest relates to other interests (does it conflict, what is the effect?). This asks for clear identification and involvement of stakeholders and for a good stakeholder analysis (Overmeeren & Zijlstra, 2009).

Ultimate goal is to have satisfied customers (buyers). In order to realize this goal Mitros Project Development has to understand the market and its demands. The largest tension area between these two players can be illustrated in figure 3.1 above. The project developer would like to have an early certainty from the customer to cover his finance and related risks. At the same time the customer will not commit to the project because of the long product development. Therefore, the customer will keep its eyes open and choose the project that meets his demands as good as possible. The production time of the project developments is therefore of great importance at all times. Demand-driven development is about propose a dwelling to a customer that satisfies all his needs so that he will buy the project at an early development stage. Housing corporations should therefore know what the customer satisfies in terms of:

- Location;
  - Inner city, suburban, ...
  - Services;
  - Public transport;
  - ...
- Type of dwelling;
  - Single family home;
  - Ground-floor or upstairs apartment;
  - ...
- Floor plan;
  - Flexibility
- Costs;
- Date of completion.

Based on the current trend of developments and in particular the problems that occurred with the sales of developed dwellings (by interviews and earlier cited literature), the characteristics of demand-driven development have been defined in table 3.1 on the next page.

<b>Customers</b>	
<b>Benefits</b>	<b>Challenges</b>
Customer wishes reflected in developments (increased choice and diversity).	Price uncertainty.
Maximal control (earlier in sight by the housing corporation).	Planning uncertainty.
<b>Housing corporation</b>	
<b>Benefits</b>	<b>Challenges</b>
Customer earlier in sight, at the table.	Internal organization has to match policy making.
Matching with the right product market combination.	Clear customer segmentation per development.
By limited demand provide a greater certainty to the housing corporation.	High percentage of presale in order to have financial safety.

Table 3.1 Characteristics of DDD divided in customers and housing corporations into benefits and challenges (source: author)

In addition to split the customer, housing corporation and their benefits and challenges dealing with demand-driven development, the overall characteristics of demand-driven development can be defined as:

- External focus in order to increase social efficiency;
- Customer centered and demand-driven;
- Flexible management and organization based on demand;
- Wide range of task specialization with direct communication (horizontal interaction).

### 3.3 CONCLUDING

This chapter gives insight and more feeling in respect to the definition of demand-driven development. Literature and interviews helped to explore the motives that drive housing corporations to develop as well as the characteristics of this new type of developing. Demand-driven development is seen as a possible solution towards a better match between demand and supply in the housing market. The motives that drive housing corporations to develop private dwellings are realizing more variety in the neighborhood, giving lower incomes the opportunity to buy and/or make a profit out of these developments.

Because of the desolate situation on the housing market it is necessary for housing corporations to innovate: focus on control of the demand makes the developments demand-driven. This new type of developing contains characteristics as an external focus, flexible management and a horizontal interaction. In essence it could be assumed that demand-driven development is custom made developing that leads to a minimum sales risk. Developing for the anonymous market is just not suitable anymore in words of risk and as a result the organization structure should renew. Bottom line is that the developer should provide flexibility for the customer in order to make the dwelling custom made leading to early commitment prior to price- and planning certainty.

# I LITERATURE STUDY

## 4. ORGANIZATIONAL EMBEDDING

In the previous chapters this study explored the population forecast and the existing building stock in order to give a realistic scenario for the market challenge for 2025. This challenge should be in conjunction with the reasons why housing corporations develop in the first place and secondly what developing for the demand (market challenge) is about. Before researching the best performing organization according to demand-driven development circumstances through measuring performance, it is necessary to enclose the organizational embedding with a theoretic chapter. Besides content and insight into the available financial resources, it is necessary to give guidance to the market challenge and therefore on the demand by a robust organizational form and anchoring. Organizational fit and management will be introduced in paragraph 4.1 *Business organization further defined* and explored dealing with defining the product-market domains (paragraph 4.2 *Business strategy*) and constructing mechanisms (paragraph 4.3 *Structure* and paragraph 4.4 *Process*) to pursue the different organizational typologies.

### 4.1 BUSINESS ORGANIZATION FURTHER DEFINED

The so called star model is used by many companies as an organization design framework (visualized in figure 4.1). The design policies for this model fall into five categories consisting of *strategy* for determining direction, *structure* determining the location of decision making *power*, *process* have to do with the flow of information, *rewards* influence the motivation of people and addressing organizational goals and the fifth is made up of policies relating to *people* influencing and defining the employees' mind sets and skills (Galbraith, 2002). The business organization in this research is enclosed and restricted till strategy, structure and process because of the overall systems theory that will be used as main thought (Keuning D. , 1973); (Thierry, 1965), and because of the large influence affecting performance in an organization according to the star model. Before exploring these three important elements the complexity of the current business organization for housing corporations will be introduced by the business life cycle on the next page.

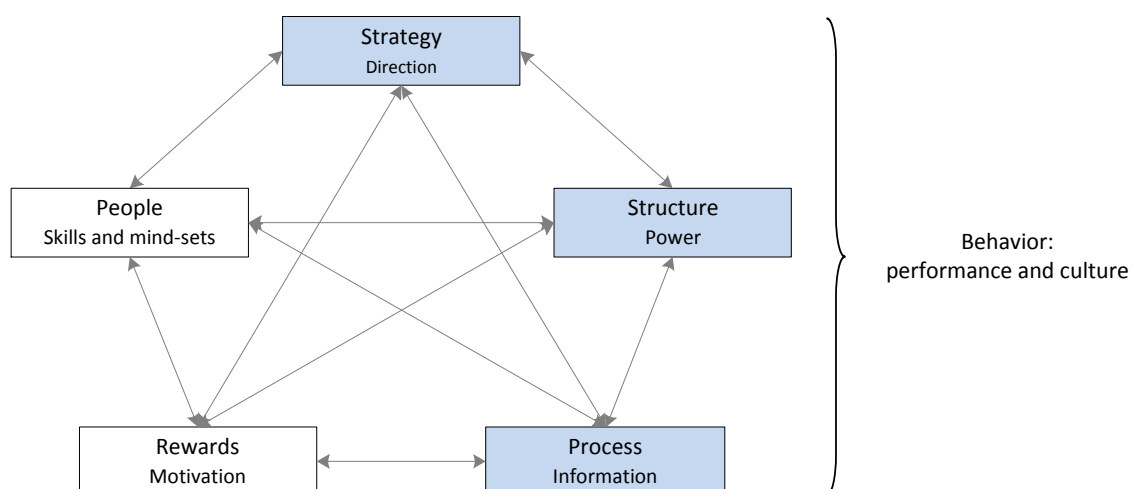


Figure 4.1 Star model as design framework for organizations (source: Galbraith, 2002)

## BUSINESS LIFE CYCLE

The made observation is that the housing corporations can be assigned to the so called 'wilderness cluster' (please see figure 4.2 below). The organization has lost its way and became out of touch after being established for a long time (Ahmed, 2002). These types of businesses will have to review its relationship with its customers and suppliers. It has to check whether or not it has the right client and to search for potential allies and opportunities. It has to establish a new purpose for the business and a new set of performance measures to be identified to fit this purpose. Strategic sloppiness is generally exposed by this industry maturity, however. Maturity may force companies to confront often for the first time, the need to choose among the three generic strategies by Porter (1980). It becomes a matter of survival. The housing corporations need to renew and innovate in order to avoid decline according to the business life cycle.

Emery (1965) states that the main problem for studying organizational change is that the environmental context wherein organizations exist are themselves changing, at an increasing rate, and towards increasing complexity. For most organizations the dynamic process of adjusting to environmental change and uncertainty (changing market and customer demand) is enormously complex including numerous decisions and behaviors at several organization levels (Miles & Snow, 1978). The corporation sector has grown through an organization structure of a department wise body in the primarily functions towards a complete departmental structure (Keuning & Wolters, 2007). The adaptive cycle is essential, proponents of the strategic-choice perspective argue that organizational behavior is only partially predestinated by environmental conditions and that the choices which top managers make are the critical factors of organizational structure and process (Miles & Snow, 1978).

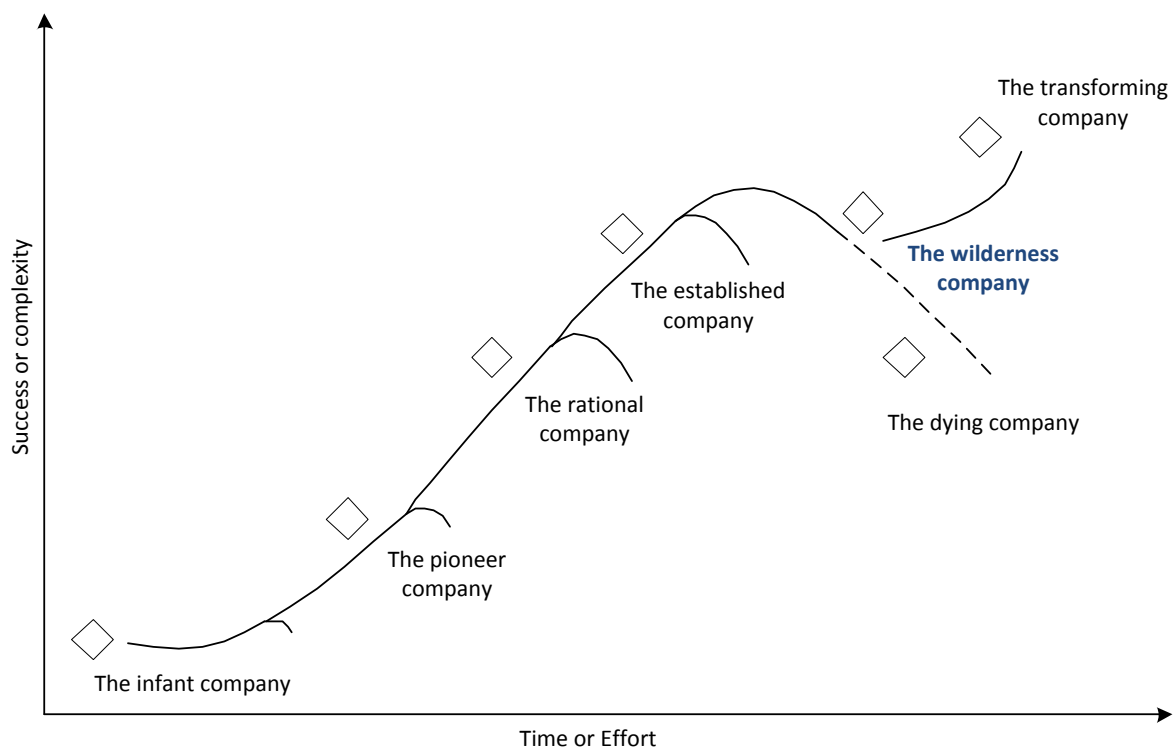


Figure 4.2 Business life cycle clusters, virtual integrated performance measurement business organization (source: Ahmed, 2002)

## 4.2 BUSINESS STRATEGY

It is important to understand the conception of business organization and to define this notion prior for the research framework. Because this study discusses a new way of developing it could be assumed that innovation is the correct designation. According to Gruis & Bortel (2007) innovation contains the whole strategic repositioning of a company. Interesting subject is the difference in approaches among the business organization and typologies of corporations like corporate styles by Gruis (2005); (2007), the positioning by KWH, the type of corporation by SEV and perspectives and motives by KPMG in (Gruis & Bortel, 2007). These typologies are mostly deducted from Miles (1978) interpreting in their literature research that there are essentially four strategic types of organizations that have unique strategies to adapt to their environment, and then indicated how this might influence the organization's technology and its structure. Each type has its own unique strategic typology. A small outline of the meaning of these typologies is stated below:

- The defender determines and maintains an environment for which a stable form of organization is appropriate. Stability is achieved by the defenders definition of and solution towards its entrepreneurial problem defined in terms of solution to this entrepreneurial problem is marked by management's acceptance of a particular product-market domain. This acceptance becomes evident when management decides to commit resources to achieve objectives relative to the domain. External and internal commitment to the entrepreneurial solution is sought through the development and projection of an organizational 'image' which defines both the organization's market and its orientation toward it for example a focus on size, efficiency or innovation.
- Prospectors respond to their environment in a way that is almost the opposite of the defender. The prospector determines an environment that is more dynamic than those of other types of organizations within the same industry.
- A combination of the defender and the prospector composes the third strategic type, the analyzer. This unique combination represents a viable alternative to these other alternatives. A real analyzer is an organization that attempts to minimize risk while maximizing the opportunity for profit. Analyzer combines the strengths of both the prospector and the defender.
- The reactor shows a pattern of adjustment to its environment that is both inconsistent and unstable; this type lacks a set of response mechanisms which it can consistently put into effect when faced with a changing environment. The reactor is considered as a form of strategic failure in that contradictions exist among its strategy, structure and process.

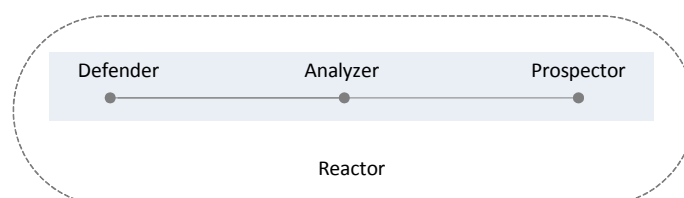


Figure 4.2 Strategy typology by Miles, 1978 (source: derived from Livvarcin (2007))

Looking at the issues that housing corporations are facing at the moment, the changing environment suits with a reactor strategy typology. Above figure 4.2 shows a visualization of

the strategic typology for organizations by Miles (1978), adopted from Livvarcin (2007)<sup>5</sup>. For most organizations, the dynamic process of adjusting to environmental change and uncertainty; of maintaining an effective alignment with the environment while managing internal mutual dependence, is enormously complex including many decision and behaviors at several organization levels. Though, the complexity of the adjustment process can be penetrated: by searching for patterns in the behavior of organizations, one can describe and even predict the process of organizational adaptation.

Miles (1978) stated that their model can be used by managers and students of management to analyze an organization as an integrated and dynamic whole, a model that takes into account the interrelationships among strategy, structure and process. The two major elements therefore are 1) a general model of the process of adaptation which specifies the major decisions needed by the organization to maintain an effective alignment with its environment (this research encloses the method Structural Analysis and Design Technique, chapter 5 *Research methods* further introduces this method) and 2) an organizational typology which portrays different patterns of adaptive behavior used by organizations within a given industry of other grouping (current chapter 4 *Organizational embedding* about strategy, structure and process within housing corporations).

The strategy typologies of Miles (1978) can be differed to the popular strategy typologies from Porter (1980). In the typology of Miles (1978) they appear to form a classification of firms (Defender, Analyzer, Prospector, Reactor) while Porter (1980) focuses on three generic strategies (Overall cost leadership, Differentiation and Focus as classification of strategies). Comparing competitive advantage with competitive scope leads to these three divisions of strategy typologies (please see table 4.1 on the next page):

- The first generic strategy by Porter (1980) is cost leadership. This strategy requires aggressive construction of efficient-scale facilities, vigorous pursuit of cost reductions from experience, tight cost and overhead control, avoidance of marginal customer accounts and cost minimization in areas like R&D, service, sales force, advertising and so on. A great deal of managerial attention to cost control is necessary to achieve these aims;
- The strategy of differentiating the product or service offering of the firm, creating something that is perceived industry wide as being unique. In context of this study, the approach of differentiating can take forms like network, technology, brand image or customer service;
- The third generic strategy is focusing on a particular buyer group, segment or geographic market or other focus. Differentiation and overall cost leadership are aimed at achieving their objectives industry wide and the focus strategy is distinctive serving a particular target very well.

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5 - Appendix 4.1 lists the characteristics of the four typologies in relation to both the entrepreneurial-, engineering- and administrative problem (Miles & Snow, 1978).

		Strategic Advantage	
		Uniqueness perceived by customer	Low cost position
Strategic Target	Broad	Differentiation	Overall cost leadership
	Narrow	Focus	

Table 4.1 Three generic strategies by Porter (1980)

Porter states that we tend to think of requirements for organizational change as resulting from major shifts in strategy and from evolution in the size and diversification of a company. The necessary fit between organizational structure and a firm's strategy holds equally true in industry maturity, and the transition to maturity can be one of the critical points in the development of an organizational structure and systems. Particularly in the area of control and motivational systems, there are some subtle adjustments that must take place.

On the strategic level, more attention to costs, customer service and true marketing may be required. These shifts in competitive focus obviously require changes in organizational structure and systems to support them. Systems designed to highlight and control different areas of the business are necessary. Tighter budgeting, stricter control, and new performance based incentive systems may well be required in the mature business (please see figure 4.2 Business life cycle, p. 28), all more formal than those used previously<sup>6</sup>.

Shifts in structure may emanate from outside an industry or from within. They can boost the industry's profit potential or reduce it. They may be caused by changes in technology, changes in customer needs, or other events (Porter, 2008). Strategic positions can be based on these customers' needs, accessibility, or the variety of a company's products or services (Porter, 1996). The current housing market and in particular housing corporations should therefore reposition their strategy based upon the changing customers' need as well as customers' accessibility. Strategic positioning sets the trade-off rules that define how individual activities will be configured and integrated. Seeing strategy in terms of activity systems only makes it clearer why organizational structure, systems and processes need to be strategy-specific.

### 4.3 STRUCTURE

Miller (1986) sees a central gap in the literature that the rich context of strategies has never been related to structure. He stated that it may be that strategies of differentiation through innovation would not be easy to implement within a bureaucratic or mechanistic structure (Burns and Stalker, 1961) in (Miller, 1986). However, Galbraith (2002) does provide a match

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<sup>6</sup> - The organizational transition required to cope with industry maturity may also involve a different structure and different focal points for the key managerial systems, as a result of the changes in the competitive environment brought on by maturity. If these two transitions have to occur simultaneously in a company, it raises a serious challenge (Porter, 1980).



between strategy and structure stating that once the strategy is established, the structure of the organization sets the framework for the other organization design decisions.

Basically we know corporations as a mechanistic organizational model (complete departmental structure) characterized by a permanent, rigid and stable structure aimed at efficient and routinely realizing objectives in a steady environment. These objectives are hardly subject to change but at this point they are changing. Characteristics of the current organizations structure according to Burns and Stalker (1961) in (Keuning & Wolters, 2007) are known as:

- Internal differentiation and existence of task specialization;
- Jurisdiction, responsibilities and procedures are very precisely defined;
- Hierarchical structure in control and correctives, responsibilities and communication;
- Tendency to vertical interaction.

An organization structure is essentially conceived as a complicated system leading to agreements and should not be confused with an organization chart (Keuning & Wolters, 2007). Therefore it is required to outline the terms of system, process and structure. The definitions of these terms are according to Keuning (1973) and Thierry (1965) as follow:

- (...) *a system* represents a whole as an organized set of interrelated components (...);
- (...) *a process* consists of all changes in the time of matter, energy or information within a system (...);
- (...) *the structure of a system* is the relationship of the components at a given time (...).

For this thesis the organization will be seen as a system as a set of interrelated objects that is more than the sum of its parts. In general, system theory does not define the content of objects. They can be people, things, and ideas like for example employees, machines, software modules or capital. Similarities of an organization with living organisms are excluded and system analysis has therefore been a proved and useful method for organizational analysis. This study and approach is based upon systems theory which suggests the idea of a functioning body with interlinking parts (subsystems) that has a purpose or common goal, and performs some tasks. The wider system has an overall goal. The subsystems have contributing goals, and the system itself always interact with an external environment (context layer) (Clegg and Dunkerley, 1980) in (Fincham & Rhodes, 2005). The concept of structure is usually understood to imply a configuration of activities that is characteristically enduring and persistent; the dominant feature of organizational structure is its patterned regularity. Some have sought to describe structure as a formal configuration of roles and procedures, the prescribed framework of the organization. Others have described structure as the patterned regularities and processes of interaction (Ranson, Hinings, & Greenwood, 1980). Proven organizational theory by Mintzberg (1980), stated that it is useful to delineate the basic parts of organizations (please see figure 4.3 on the next page) and the basic mechanisms to understand structure. The five basic parts in any organization structure are:

- The operating core includes all those employees who themselves produce the basic products and services of the organization, or directly support their production;
- The strategic apex consists of the top general managers of the organization, and their personal staff;

- The middle line comprises those managers who sit in a direct line of formal authority between the people of the strategic apex and of the operating core;
- The technostructure consists of those analysts, out of the formal line structure, who apply analytic techniques to the design and maintenance of the structure and to the adaptation of the organization to its environment;
- The support staff includes those groups that provide indirect support to the rest of the organization.

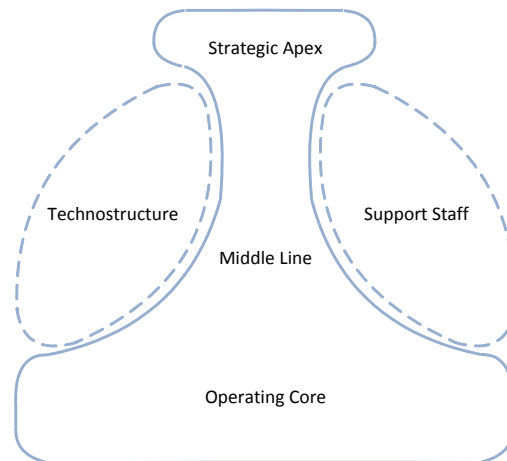


Figure 4.3 Five basic elements of the organization structure (source: Mintzberg, (1979))

The five basic elements include structure according to five basic mechanisms of coordination, design parameters and contingency factors<sup>7</sup>. These configurations are disclosed and illustrated in appendix 4.2 to keep this section conveniently.

The dimensions of structure can be defined as policy areas or according to Galbraith (2002) in specialization, shape, distribution of power and departmentalization. The last, departmentalization is the basis for forming departments at each level of the structure. The standard dimensions on which departments are formed are functions, products, work flow processes, markets and geography.

The current department structure for project developments is most similar to the functional structure (see table 4.2 below) because of the long product development and the undifferentiated market. However, this undifferentiated market seems to move toward more important market segments and multiple products. How this structure will look like will be explored further on in this study.

Functional structure	Product structure
Small-size, single-product line	Product focus
Undifferentiated market	Multiple products for separate customers
Scale of expertise within the function	Short product development and life cycle
Long product development and life cycles	Minimum efficient scale for functions or outsourcing

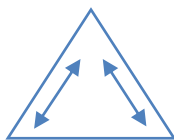
7 - Contingency theory is based on the idea of differentiated responses to diverse environments and integration of action across environments (Lawrence & Lorsch, 1969) in (Maula, 2006).

Common standards	
Market structure	Geographical structure
Important market segments	Low value-to-transport cost ratio
Product or service unique to segment	Service delivery on site
Buyer strength	Closeness to customer for delivery or support
Customer knowledge advantage	Perception of the organization as local
Rapid customer service and product cycles	Geographical market segments needed
Minimum efficient scale in functions or outsourcing	
Process structure	
This structure is seen as an alternative to the functional structure	
Potential for new processes and radical change to processes	
Reduced working capital	
Need for reducing process cycle times	

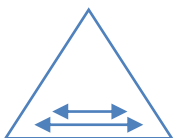
Table 4.2 Departmentalization of organizational structures (source: Galbraith, 2002)

#### 4.4 PROCESS

In fast changing business environment, structure is becoming less important, while processes reward and people are becoming more important (Galbraith, 2002). This seems in contradict with the framework in this chapter 4 *Organizational embedding* (focus on strategy, structure and process). It is however important for the research methodologies Structured Analysis and Design Technique (SADT) and System Dynamics (SD) to understand the multiple forms of strategy, structure and associated processes. If structure is seen as the anatomy of the organization, processes are its physiology or functioning. Two main processes will be distinguished:



Vertical processes allocate the scarce resources of funds and talent. Vertical processes are usually business planning and budgeting processes. The needs of different departments are centrally collected and priorities are decided for the budgeting and allocation of the resources to capital, research and development, training and so on.



Horizontal or lateral processes are designed around the work flow. These management processes are becoming the primary vehicle for managing in today's organizations. Lateral processes can be carried out in a range of ways, from voluntary contacts between members to complex and formally supervised teams.

Key processes (hierarchic process scheme) within housing corporations are threefold, knowing primarily processes, supporting processes and directing processes (appendix 4.3 shows a more detailed figure than [figure 4.4](#) below). The department of project development could be allocated to the primarily process of housing corporations. Beneath figure shows the research framework for this study knowing the department of project development how they are organized at this moment. It is interesting to sketch the processes within this department and therefore this study will be limited to the development process of Mitros Project Development.

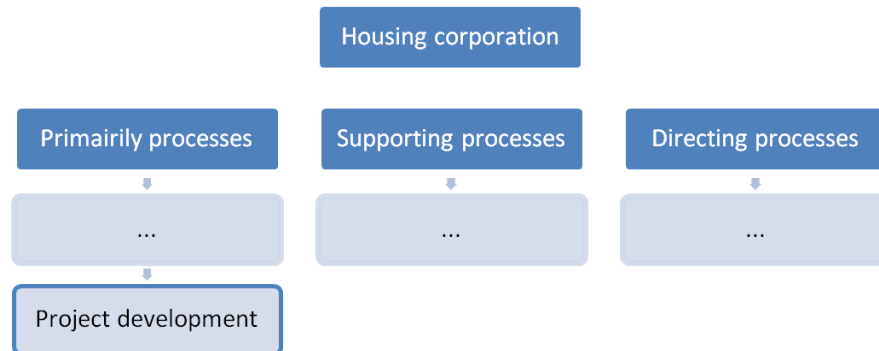


Figure 4.4 Hierarchic process scheme of housing corporations (source: derived from the Sensus-processmanagement method)

Processes are chains of activities. These activities are logically organized and focused on achieving results (output) for example a customer or client. The five basic elements that are included are known as the 'process structure'. These consist out of results, activities, people, resources and control information (Hardjono & Bakker, 2011). [Figure 4.5](#) on the next page shows the process structure that derives its existence to its output, the results for the customer or client. For this study the overall output could be stated as good housing for the customer (buyer). Thereby, the main focus should be on the process flow (procedures) of this development process. The course of the process should be clear, needs a beginning and end and an identifiable set of critical activities.

The organization structure and its process structure are separated in the vertical and horizontal organizing. It is important to design both the structure and at the same time its matching processes. Shifting from a functional structure to a more market oriented structure will become visible in the new designed process structure (Nieuwenhuis, 2003 - 2010). In short, the organization structure is the 'rake', hierarchy is right, static, management layers, getting the job done, within departmental wall versus the process structure of process flows, the process is right, dynamic, flat organization, obtaining result, multidisciplinary team.

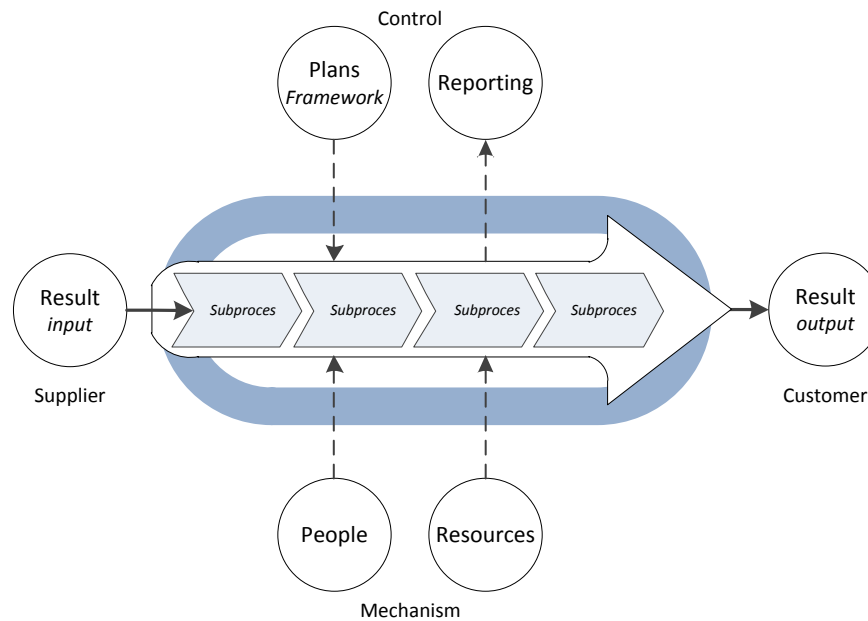


Figure 4.5 Five basic elements of a process, the process structure (source: Hardjono, 2011)

The development process of the project department of Mitros has nine steps to be taken from the idea till the evaluation. Under each step the objective within that step is briefly disclosed:

1. Start note;
  - Response and global solution development guidelines;
2. Vision and feasibility;
  - Realistic scenarios for feasibility tests;
3. Program of Requirements/ Plan identification;
  - Concrete elaboration of chosen scenario;
4. Plan Development, Preliminary design;
  - Translate Program of Requirements into preliminary design;
5. Plan Development, Final design;
  - Preliminary design translating into final design;
6. Preparation realization;
  - Translate final design into intent to realization;
7. Price and contracting;
  - Tendering and contracting executive parties;
8. Realization Completion;
  - Realizing and delivering the project result;
9. Evaluation;
  - Evaluating the project.

#### 4.5 STRUCTURE AND PROCESS FOR FURTHER RESEARCH

A more market oriented organization structure is assumed the preferred structure in the situation in which demand-driven development is the direction of solution. First of all, this structure should be designed before pronouncements could be made how it looks like or how the performance is in words of organizational costs, development time, information, quality and communication. Therefore, the current situation will be analyzed by the research

method SADT. The chute in the organigraph in below figure 4.6 will be leading and guiding principle and refers to the development process as described in the previous paragraph.

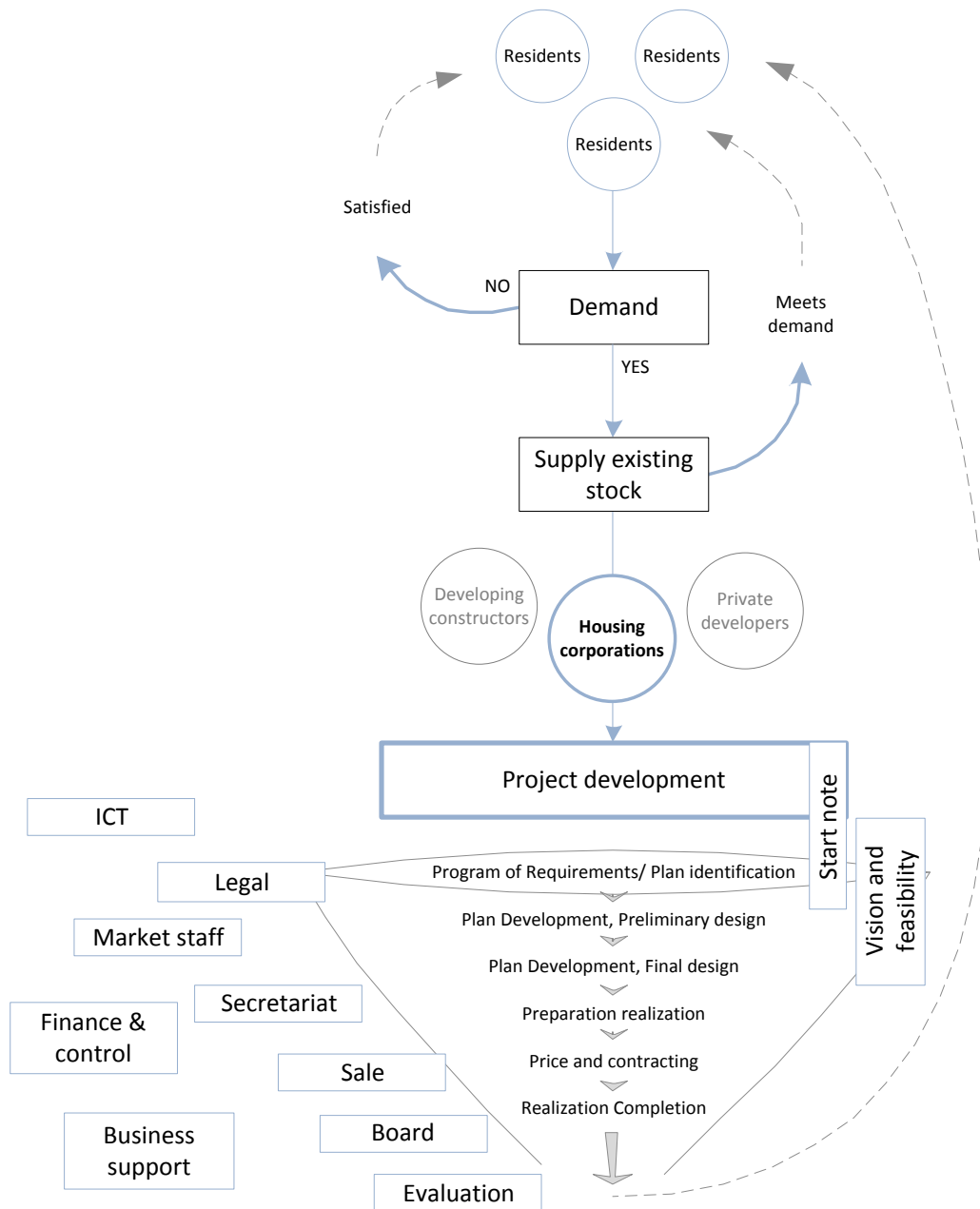


Figure 4.6 Organigraph according to Mintzberg (1999) how organizations really work (designed by author)

#### 4.6 CONCLUDING

This theoretic chapter enclosed parameters for the designing of organizations. According to the business life cycle for organizations it seems that housing corporations are well passed the cluster of established companies. At this moment they can be positioned in the wilderness cluster meaning that they need to renew and innovate before they lose success. Innovation by reconsidering the organizational strategy, structure and its corresponding processes are supported and assessed in this research.

The theory of Galbraith (2002) or the so called star model has been used because of the comprehensive rack for both designing and analyzing organizations. Strategy, structure and

processes are manageable and can be controlled. Therefore these three aspects are the most important in this study. People and rewards are less controllable and therefore be disregarded. Though, all together they create a certain behavior and contribute to the culture and performance of the organization.

Looking at the strategy of organizations this study focused on two popular strategies of Miles (1978) and Porter (1980). Porter has a more common designation in which his strategy typologies are derived from the typology of Miles. In the typology of Miles they appear to form a classification of firms; Defender, Analyzer, Prospector and Reactor, while Porter focuses on three generic strategies; Overall cost leadership, Differentiation and Focus as classification of strategies. The different structures that connect with the strategy topologies are mapped according to the five basic elements of the organization of Mintzberg. The dimensions of structure can be defined as policy areas in which departmentalization is the most important policy area forming departments at each level of the structure. Making these policies provide insight it seems that with the principles from the previous chapter 3 *Demand-driven development defined*, a more market oriented structure is best suited in words of innovate to survive. After analyzing the intern process of the department project development at housing corporation Mitros, the current organization structure appears to be functional and has a long product development, knows common standards and deals with an undifferentiated market.

Moreover, the current development process should be more analyzed to subsequently fit the functional structure to a more market oriented organization structure. This will be done according to the principle of Structured Analysis after which the organization will be designed to a market oriented structure and its underlying processes. These two models will be serving as a basis for further implementation in System Dynamics measuring their performance in development time and organizational costs.

## II RESEARCH METHODS

### 5. RESEARCH METHODS INTRODUCED

This study makes use of two research methods that ensures an interesting viewpoint concerning the research approach (see figure 5.1 below). Structured Analysis and Design Technique (SADT) is the analysis application that will be used to study and subsequently to model the current organization of MPO. Next, according to the literature study (part I), this model will be adapted and transformed to a more customer and market oriented structure in order to compare the organizational structures and the processes of both models. Hereby, the rigid design part of SADT will be taken over by the System Dynamics (SD) approach to understand the behavior of the complex existing organization on the one hand and on the other hand the new designed market oriented structure. Both SADT and SD will be introduced and explained in this chapter.

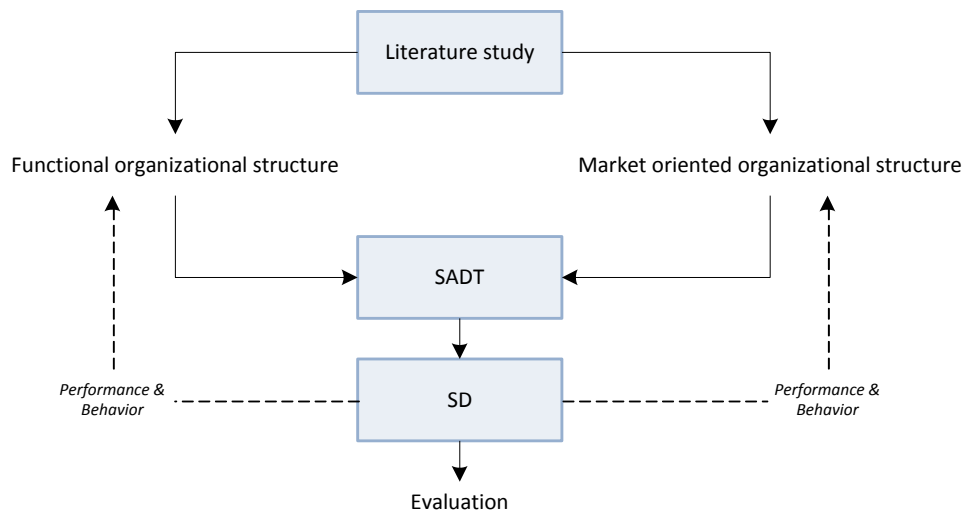


Figure 5.1 Both organizational structures will be analyzed in SADT and the SD part will simulate their behavior (source: author)

#### 5.1 STRUCTURED ANALYSIS AND DESIGN TECHNIQUE

Structured Analysis and Design Technique is an engineering methodology for describing systems as a hierarchy of functions. It is a diagrammatic notation designed specifically to help describing and understanding systems and its processes and procedures. This study considers the project development department as a system in order to understand the operation of this department.

##### PURPOSE

First of all it should be noticed that SADT could be divided into two components: structured analysis as defined by DeMarco (1979) and structured design as defined by Yourdon and Constantine (1979). This study is limited to SA based on the Structured Analysis and Design Technique component. However, at this point it is already important to mention the moment and point where SADT and SD will overlap each other. The next paragraph 5.2 *System dynamics* will provide clear insight in the purpose of SADT and the link with SD in this study.



In short, there are four steps to be taken within the component of Structured Analysis in SADT for this business application at Mitros Project Development. Figure 5.2 on the next page visualizes these steps with the purpose to prepare a recommendation for management's approval and providing documentation for structured design. The provided documentation for structured design is established from the literature study, multiple internal- and external interviews and surveys to verify the interviews responses. Besides, Structured Analysis is simultaneously a framework for the new design that will be designed in terms of boxes, processes and data flows (please see appendix 5.1 for the data flow diagram content).

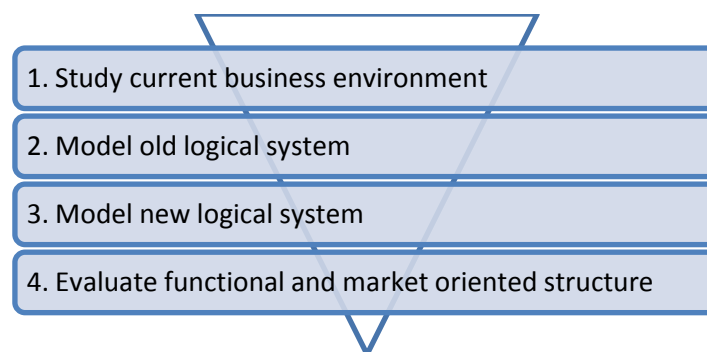


Figure 5.2 This study focus on the above four steps for Structured Analysis (source: (Davis & Yen, 1998))

### 1. STUDY CURRENT BUSINESS ENVIRONMENT

The main idea of the first step is to examine the existing organization system. Therefore a market analysis has to be carried out in order to obtain a better understanding of the current business environment. The first part of this thesis discussed the demand and demand-driven development as a possible solution direction. Structure charts and incorporated data flow diagrams will be used to model the current business environment. Overall this step provides the system boundary and data to/from the boxes in the structure charts which resulted out of the surveys and expert interviews. To manage complexity, data flow diagrams are made in layers in which this step takes care of the so called *context layer*.

Managing complexity requires a structured analysis and data flow diagrams in layers. The uppermost layer is a context diagram showing the system boundary and the data flow in this system. The next layer is a level zero that shows primitive processes, data stores and data flows and their relation to the components (boxes) in the structure chart. The next layer is a level 1 through level 'n' decomposing one of the processes from a level zero diagram. If a level one diagram is overly complex it can be further decomposed to a level 2-n and so on. Each lower layer traces back to its higher layer (Levitt, 2008).

### 2. MODEL OLD LOGICAL SYSTEM

The objective of the second step is to construct a logical model that captures the essence of the current environment (organizational processes) by eliminating so called operational and physical details. This model shows primitive processes, data stores and data flows and their relation to the boxes in the structure chart of the context layer. These data flow models are therefore called the zero level.

### 3. MODEL NEW LOGICAL SYSTEM

Based on the old, existing system model; the functional organization structure, a new improved logical model will be created. This improved system will be designed from a more market oriented perspective which has as main input the information and knowledge from the literature study and interviews. Therefore it is important to change (design) the existing environment into a new, customer and market oriented system. New user requirements are added, excessive requirements are eliminated and consolidated, and existing data requirements are updated. Complex processes are simplified and/or more thoroughly documented.

### 4. EVALUATE BOTH STRUCTURES

At this moment there is insight in both the current as well as the new designed, desired system which meets the demand on the housing market. In order to evaluate these two systems, the behavior will be measured related to time and operation costs and therefore on quality. The SADT method will provide the systems boundary and framework for System Dynamics to measure their behavior.

### DIAGRAMS

For clear understanding, [figure 5.3](#) below shows the notation that supports the following explanatory text: a SADT diagram consists of boxes and arrows in which the boxes represent entities and activities that offers a variety of arrows relating to these boxes. The boxes are interconnected through arrows that form a diagram. The primitives of SADT consist out of things and happenings, respectively objects, data, nouns, information (passive) and operations, activities, processing, events (active). This could be translated into data boxes and activity boxes ([Mylopoulos, 2004](#)). Microsoft Office Visio IDEF0 Diagram Template will be used as software in order to model the decisions, actions and activities of the organization. IDEF0 is derived from SADT and has the basic concepts of Structured Analysis. [Figure 5.4](#) shows the relation of the context and underlying levels within one activity.

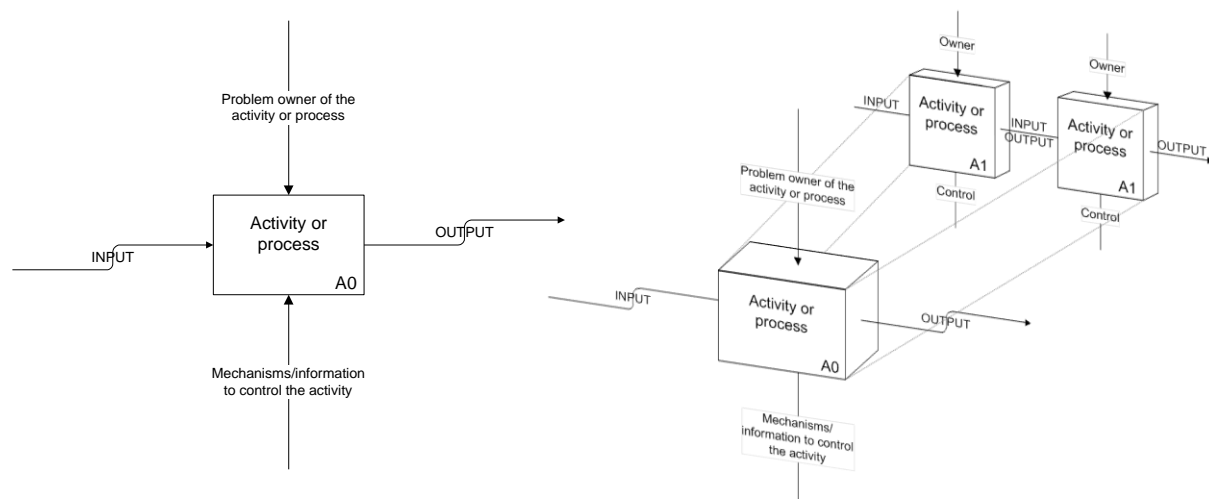


Figure 5.3 Typical SADT notation diagram boxes and arrows – left figure (source: J. Mylopoulos, 2004)

Figure 5.4 An activity displayed in context, A0 and A1 layer; the parent-child relationship of IDEF0 – right figure (source: Nieuwenhuis, 2010)

The types of process box that will be used in this research:

For *activities*:

- *Inputs* are data that are consumed by the activity (process);
- *Outputs* are produced by the activity;
- *Controls* influence the execution of an activity but are not consumed (owners);

The diagrams represent a set of activities/ processes. These processes have been selected based on the research framework. Previous theoretical chapter 4 *Organizational embedding* includes the processes of the department of project development. The link between theory and practice (MPO) has a primarily focus on processes of this department. The nine steps that are also presented in the organigraph will be used for the Structured Analysis. The primary strength is that the method of SADT has proven effective in detailing the system activities for function modeling providing a systematic view for readers ([Knowledge Based Systems, 2006](#)).

## 5.2 SYSTEM DYNAMICS

The founder of System Dynamics Mr. J. Forrester believes that System Dynamics enables an understanding of why systems work the way they do in order to prepare organizations for the future ([Forrester, 1994](#)). In addition, it is very important to mention that introducing System Dynamics in short does no justice to the systems thinking and modeling for a complex world. Because a complex world it is, hence it is constantly changing as this study discusses within the changing housing market. System dynamics is a powerful (computational) method to gain useful insight into situations of dynamic complexity and policy resistance ([Sterman, 2000](#)).

### STOCK AND FLOW DIAGRAMMING

To better understand the system structures causing the patterns of behavior within organizations, a notation for representing system structures is called Causal Loop Diagrams (CLD) and Stock and Flow Diagrams (SFD). This shows the relationship among the elements within the organization and especially focuses on feedback, defined as the transmission and return of information ([Kirkwood, 1998](#)). Within the analysis and the presentation of cause-and-effect chains (mainly derived from SADT), SFD shows how components influence (in) directly other components through other elements in the loop. This study will contain only the SFD notation because the CLD is included in the SFD. Thereby, the SADT diagrams represent the causal relationships except for the feedback structure.

Positive and negative feedback structures enclose interacting feedback loops that represent a set of activities. The behavior in terms of operation costs will be measured and the interrelated information and communication makes the whole behavior measurable in terms of quality: development time versus organizational costs. The performance of both the functional structure as well as the market oriented structure will be evaluated after modeling these structures in a SFD. [Figure 5.5](#) on the next page shows an understandable stock and flow diagram of the amount of yet to be performed work for a fictitious situation. Dealing with multiple workflows is reflected in follow-on phases that start immediately after the first phase is complete and run until they are fully completed themselves. In this way projects and organizations with multiple tasks (workloads) can be simulated in designated scenario's (minima, maxima and average development time) reflected by operational costs.

The software that is chosen for this research is called Vensim and is mainly used for simulating dynamic feedback models that integrate both business and technical elements in order to solve management problems.

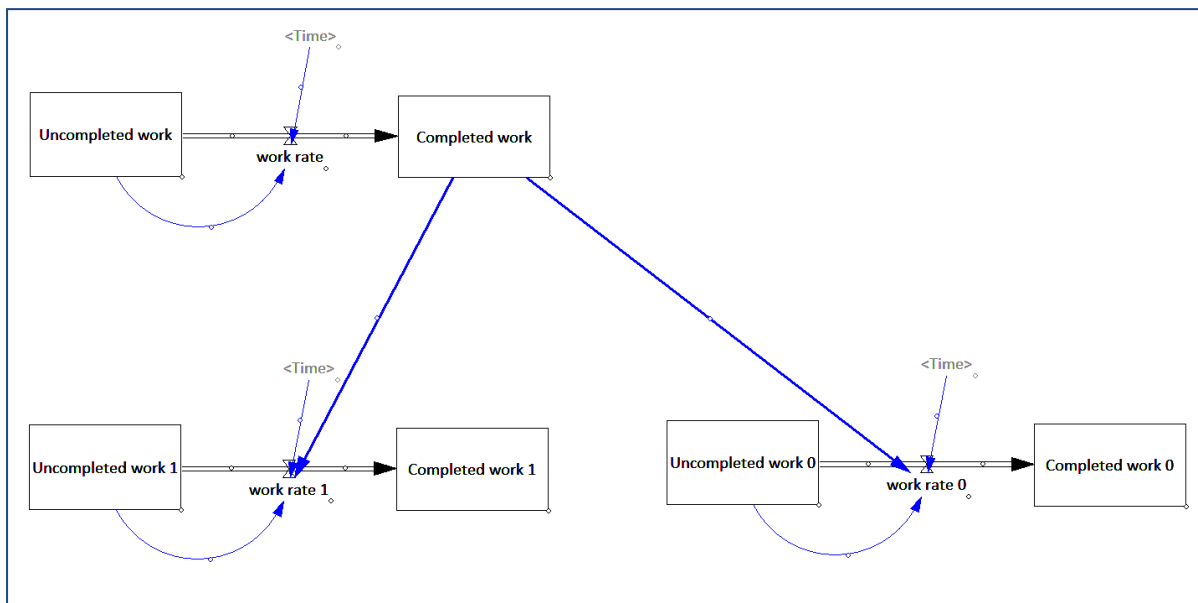


Figure 5.5 Print screen of the workspace of software program Vensim: several tasks linked together (source: author)

### QUANTITATIVE ANALYSIS

This study takes the SADT model as a framework for the SD modeling. A specific focus on feedback using SFD, which is similar to a CLD though, provides a more understandable representation. By explicit identification of stocks (change over time) and flows (responsible for change in stocks), the obtained insight explicitly depicts the manner of how processes change (Kirkwood, 1998). The SFD shows relationships among variables which have the potential to change over time and shows more details about the process structure than the CLD. Therefore, the business development process within housing corporation Mitros Project Development is intended to access. Because of the not existing feedback loops within SADT the SD approach makes it more dynamic and realistic for decision making processes.

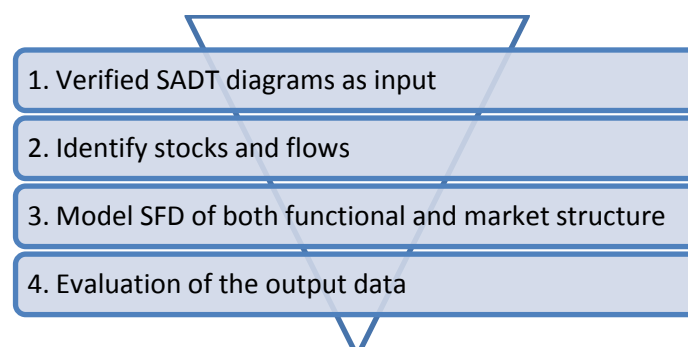


Figure 5.6 Process of how the quantitative System Dynamics SFD will be modeled (source: Sterman, 2000)

Above figure 5.6 shows the steps of System Dynamics that will be maintained. The delays within these decision making processes are highly important when it comes down to time and efficiency. How to handle uncertainties within the business process is essential whereby

this study focuses on investigating these changes between the current functional structure and a more market oriented structure on both qualitative as well as quantitative manner. This part focuses on quantitative analysis which means that the outcome can be expressed in numbers (for this study development time and organizational costs) and that the research is verbal, judgmental and opinion forming. Within System Dynamics and in particular the Stock and Flow diagram, it is necessary to specify the values of the variables and thereby the stock and flows of the functional and market structured project development process. After modeling the SADT diagrams it is a necessity to validate the control of the activity (problem owner of the activity) and the units of input and output. This will be of great importance for further input in the SFD and the underlying equations but especially for the observing factuality. A structured information gathering and data collection will be used in terms of structured questionnaires and submitting SADT diagrams which verify the units of in- and output using existing data of project developments that have been completed in the past.

### 5.3 TRANSLATION OF SADT INTO SD

The biggest difference between SADT and SD is the linearity of SADT against the dynamic representation of SD. The flexibility of the latter makes SADT useful for designing simulation models. Hommel (1989) proposes rules for transforming an SADT-model to a SD-model (Hommel & McGowan, 1989). The boundaries of a System Dynamics model are flows and therefore correspond to activities. Since the boundaries of an SADT data model are also activities, the contexts can be matched:

- SADT data boxes become stocks;
- Inputs to boxes are flow rates into the stock.

SADT Activity Model translated into a System Dynamics model called compound flows. Figure 5.7 on this and the associated part on next page shows the translation of SADT into SD.

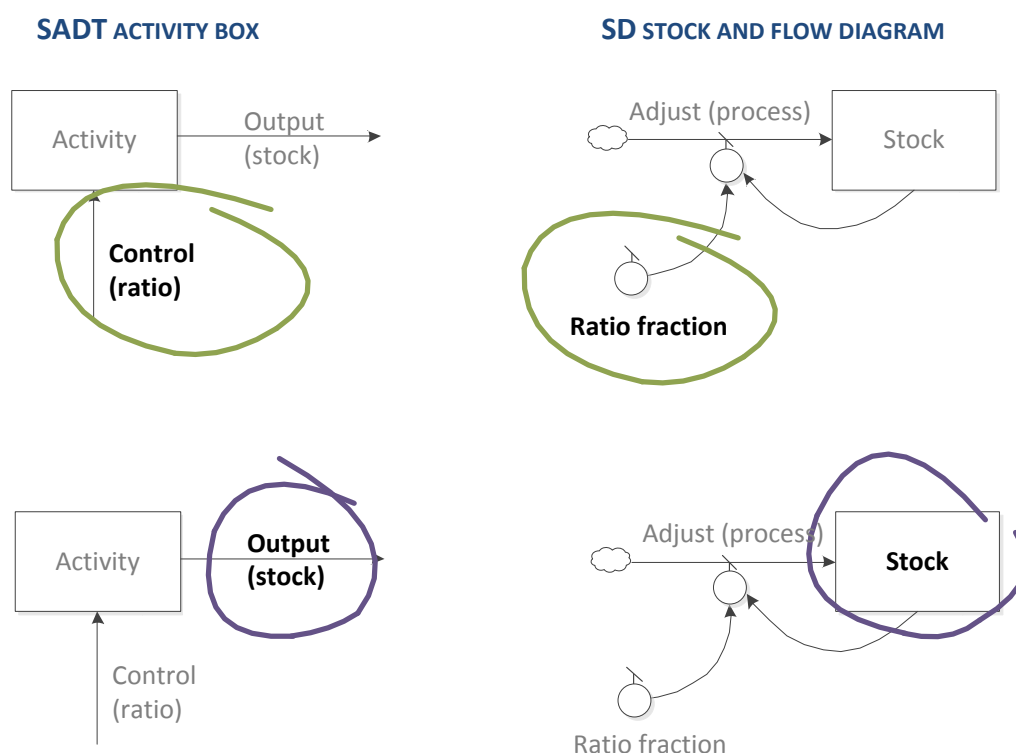




Figure 5.7 SADT activity boxes (l) are translated to stock and flow diagrams (r) of SD (source: Hommel & McGowan, 1989)

#### 5.4 CONCLUDING

In this chapter the research methods are introduced, described and explained regarding their contribution to the entrepreneurial approach for demand-driven development. In short, the Structured Analysis and Design Technique (SADT) will be used to model the current development process of Mitros Project Development characterized by a functional structure which will be verified through structured data validation. Besides, the new desired market oriented structure will be designed in SADT based on existing data, literature, expert interview and problems that occurred in the functional structure. All together, this forms the input for the quantitative System Dynamic approach using Stock and Flow diagrams to measure both development time and organizational costs result in the overall quality of the current and desired development organizational process and -structure.



### III RESEARCH MODELS

#### 6. FUNCTIONAL ORGANIZATION STRUCTURE

As a result of the literature study and the further defined research approach with Structured Analysis (SA) translated into System Dynamics (SD), the functional organization structure of Mitros Project Development will be analyzed and verified. This chapter will include an explanation based on the SA model and data collection concerning the representation of the reality. Next, the linear model of SA translated into the dynamic environment and computational model of SD will be varied based on different scenarios from the data collection.

##### 6.1 SADT MODEL

The processes within the department of Mitros Project Development consists out of nine project phases (please refer to paragraph 4.4 Process) which are concluded by phase documents containing all project information concerning the development. After each phase the board decides on a go or no-go regarding the next phase that is based on multiple feasibility aspects (time, investment, agreements). This workflow management as displayed as a data flow diagram in figure 6.1 below represents a common project development for private dwellings and is the fundament for further research which is emphasized by the light blue area.

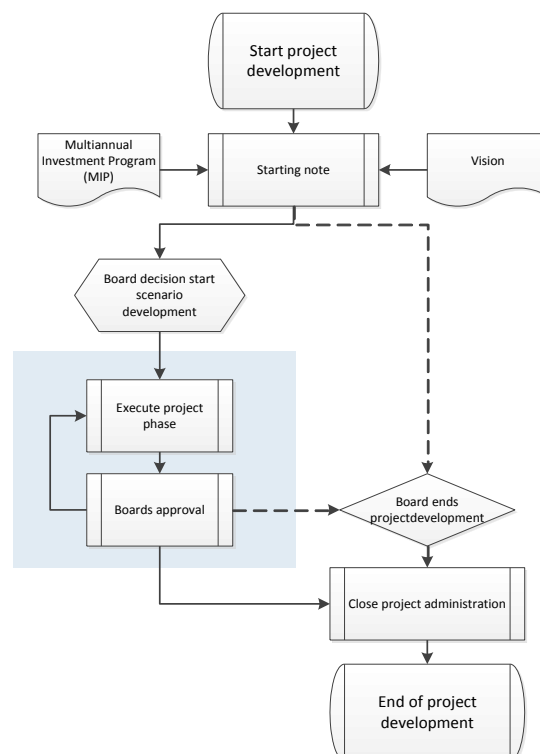


Figure 6.1 The data flow diagram represent an overview of workflows concerning project developments (source: Mitros investment policy)

The context layer of the SADT model contains the activity 'Project development' which has as input 'development opportunities' and as output 'new constructed dwellings for sale'. Figure 6.2 on the next page shows the A1 layer of this activity divided into four sub activities. The sub activities of the A1 layer development process are represented in the table under



the figure and appendix 6.1 contains a total overview of the SADT model and its layers. Because these activities are state of the art, minimum explanation is required.

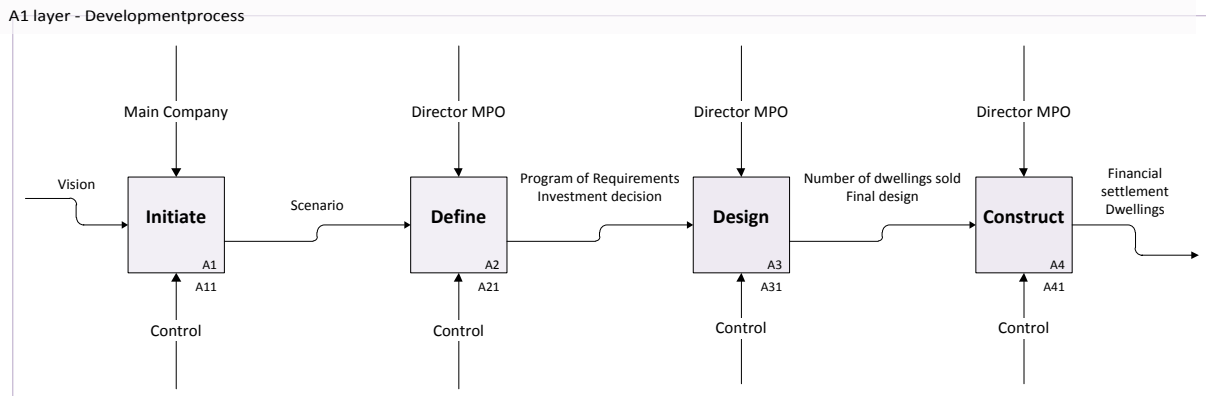


Figure 6.2 SADT A1 layer of the functional organization structure. Appendix 6.1 contains a total overview (source: derived from Mitros)

Activity A1 layer	Sub activity	Main output
Initiate	1. Establish starting note	Project assignment to Mitros Project development Assumptions and preconditions Project risks and -planning Initiative decision
	2. Scenario development	Financial feasibility Exploitation-, valuation- and efficiency determination Global housing program Insight in target group Preferred scenario of housing program
Define	Explore relocate occupants	Social plan
	3. Elaborating vision in program	Program of requirements Required investment Proposal type of procurement Investment decision
Design	3. Elaborating urban plan	Governmental urban program of requirements
	4. Making preliminary design	Preliminary design Project planning Price per dwelling
	5. Making final design	Final design Sales brochures Building plan
Construct	Start sales	Specific target group Freehold price estimate Number of dwellings sold
	6. Preparation realization	Planning permission Preparation providing contract to contractor Plan of approach concerning schedule, specification and risks)
	7. Price making and contracting	Contractor procures Realization planning

	8. Realization	Dwellings for sale
	Sales	Transfer to buyers
	9. Aftercare and evaluation	Financially settled
		Evaluation

Table 6.1 An overview of the SADT model in table derived from appendix 6.1 (source: derived from Mitros)

## 6.2 DATA COLLECTION

Because of the dynamics within each project it is important to verify the units of the input, output, control mechanisms and process owner per phase to form a solid and reliable overview in the SA modeling. Besides expert interviews (please see appendix 1.2 for an overview) with development managers, portfolio developers and project managers within the department of Project development, a structured online survey has been conducted. An overview of the reactions has been attached in appendix 6.2 and processed in the SA model. Returning issue within the current functional organization structure and its underlying processes seems the commitment of the buyer. Due to the current market situation the buyers have a strong position on the market which is followed by financial insecurity for the developer as the main side effect. Closing the current gap between defining the target group and the start of sales should lead to a better match between predefined buyers and related housing program. This main side effect can be partially blamed on the functional organization structure. During scenario development and defining the housing program the developer seems to know their potential buyers (table 6.2 on the left). However, the sale starts just after completion of the final design (table 6.3 on the right).

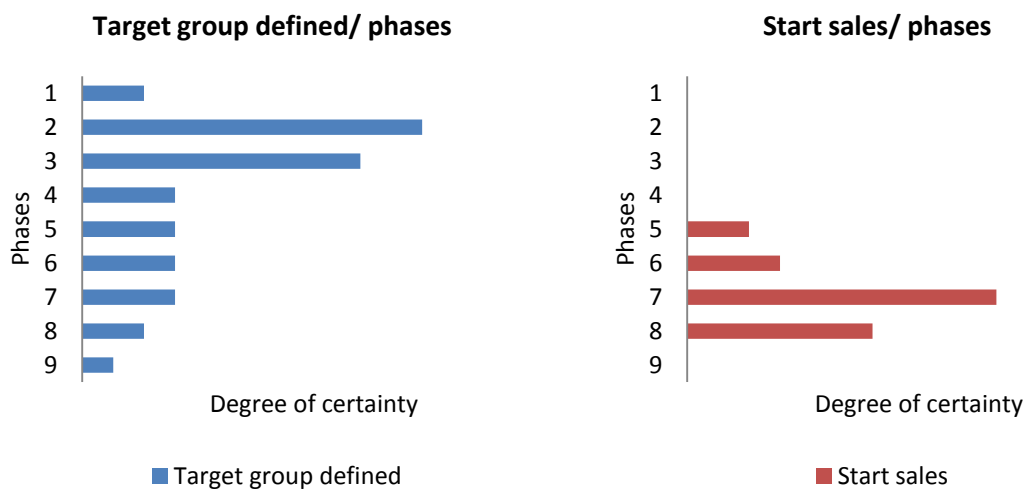


Table 6.2 The target group is defined in the second phase (source: online survey Mitros Project Development n=16)

Table 6.3 Start sales after the preparation of the realization (source: online survey Mitros Project Development n=16)

In the meantime market conditions can change or even the commitment of the buyer could drain when the project development takes too long. This is an important intermediate result that has to be taken into account during the design process of the new market oriented structure. Table 6.4 on the next page shows the difference between the target group defined and start sales.

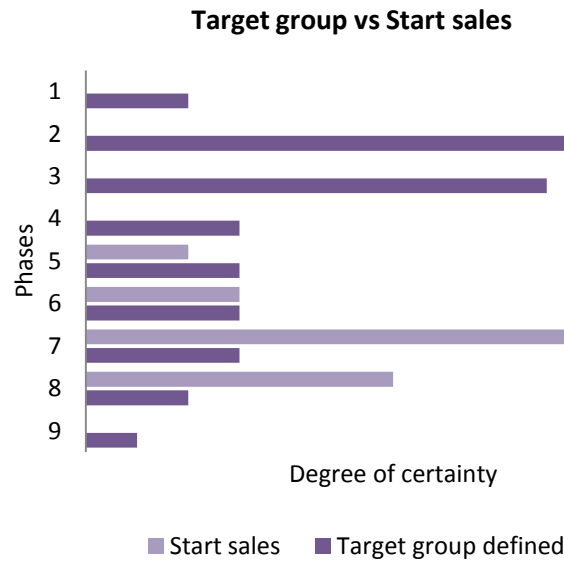


Table 6.4 Target group versus start sales shows a large gap (source: online survey Mitros Project Development n=16)

It is important to know how large the development time gap between defining the target group and the start of sales is because this gap has direct influence on the presale percentages and consequently the sales risk and related financial feasibility. During the data collection progress reports and decision moments per phase from January 2008 till May 2012 have been studied. Selection criteria have been private dwelling developments and the duration of already completed phases. In this matter 12 project developments have been studied concerning their development time. Figure 6.3 below shows a stock chart with minimum, mean and maximum development times per phase. In addition, critical success and failure factors have been collected from the involved development managers (appendix 2.1 shows an overview). This information put together gives insight in the total development time per phase of the current functional organizational structure.

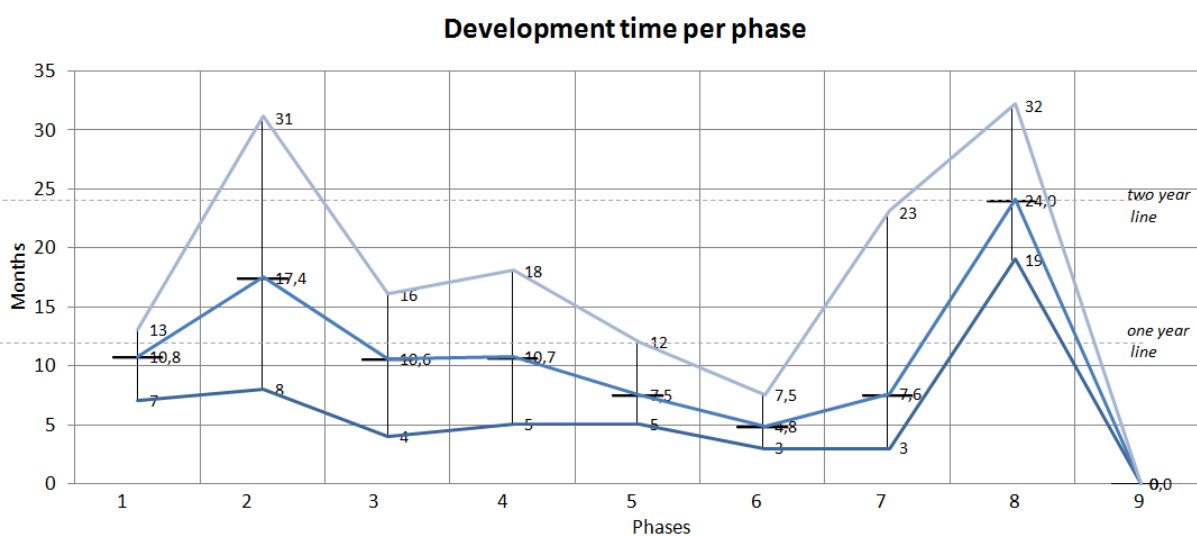


Figure 6.3 Development time per phase measured over 12 projects from 2008 till May 2012 plotting minima, maxima and mean. Please see also appendix 6.3 for the numbers in a detailed table (source: Progress reports Mitros Project Development)

There are not as much success- as failure factors. The most important success factors are (1) independently developing projects, (2) attract subsidy to speed the construction process, (3) the formation of a building team during the preliminary design (though this will result in a longer preparation time), (4) developments only for the private market, (5) no modifications to existing infrastructure and (6) an experienced project team. On the other hand, the failure factors are (1) reviewing the investment decision after the third phase, (2) project acquisition, (3) floor plan changes, (4) decrease of the interest rate, (5) size of a project (too large), (6) Land Use procedure, (7) financial feasibility, (8) changing of staff, (9) disagreement with the municipality and (10) an additional side effect is possible delay regarding development time by rising construction costs resulting in an unbalanced budget.

The average gap between target group defined and start sales is about 33.6 months (phase three Program of requirements 10.6 months + phase four preliminary design 10.7 months + phase five final design 7.5 months + phase six preparation realization 4.8 months = 33.6 months) meaning that the target group could change. Examples are family expansion, other project developments that interest them, possible new jobs and matching lifestyle. The long product development, designing and rendering is influencing the customers' wishes in a negative way. Figure 6.4 shows the development phases and the average development time from figure 6.3 combined with the notable information from the survey (table 6.2, 6.3, 6.4) about target group defined and start sales. In this way it is clearly visible that these important issues are significantly separated. However, this characterizes the long product development, undifferentiated market, scale of expertise within the function and common standards of the functional organization structure.

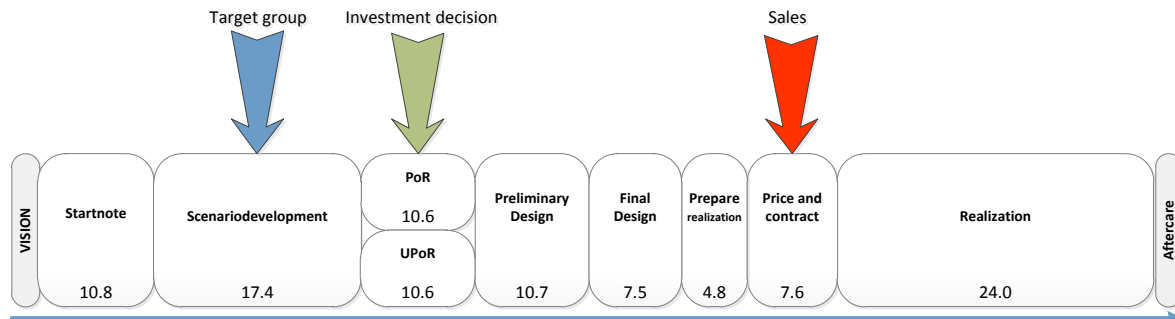


Figure 6.4 Functional organization structure average development time in months (source: combination of data by author)

### 6.3 SD MODEL

Making the linear SADT model more dynamic it is translated into the SD model. This paragraph will provide explanation how the SD model is constructed. The provided information is related to figure 6.5 below and the full model is added in appendix 6.4. Main goal constructing the system dynamics model is to run scenario's that pick values between minimum and maximum operation costs. The various phases are having different operation costs not depending on the development time. Therefore, the cost ratio is variable between minimum and maximum values using the equation:

$$\text{Cost ratio (1)} = \text{RANDOM NORMAL}(\langle, \rangle, \mu, \sigma, \text{'SCENARIO BUTTON'})$$

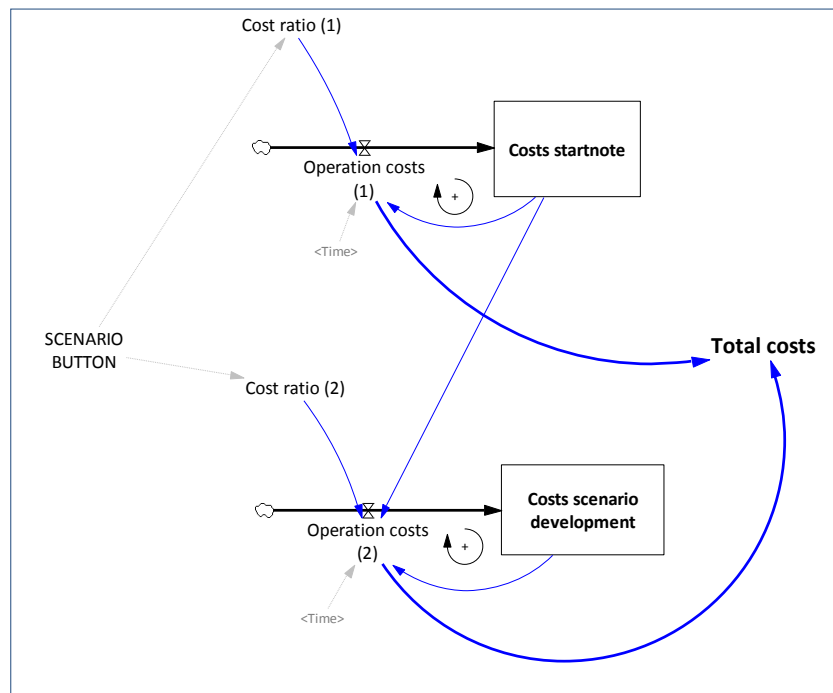


Figure 6.5 System dynamics model of the functional organization structure (source: author)

The minimum and maximum value are determined by the operation costs made at the same developments that are used to measure the development time and therefore have the same selection criteria: developments concerning private dwellings and only taken into account the development time of completed phase documents. The standard deviation  $\sigma$  is determined by  $\frac{1}{4}$  of the total interval (maximum value minus minimum value). The costs per phase are represented as stocks (costs “phase name”) and only begin after the stock before has reached a 100% completion. The variable total costs is the sum of each operational cost. Running scenarios by the scenario button ensures that each simulation is different than the simulation before. Choosing different values with the random normal function of the cost ratio's. The figure below only shows the first two phases with regard to the total size of the model. It should be noticed that the development time is expressed in the same numbers as the phases and not in real time values as showed in figure 6.4 on the previous page.

Simulating this model gives insight in the total costs per project development. Part IV discusses the results and recommendations of both the functional and market oriented organization structure including the SADT model and SD simulation results.

### III RESEARCH MODELS

#### 7. MARKET ORIENTED ORGANIZATION STRUCTURE

The main goal of proposing a market oriented organization structure is lowering the sales risk by creating competitiveness, strengthen the commercial orientation and at the same time come closer to the core business of the housing corporation. This results in a decrease of the development time by retaining the target group to the construction company in an early stage. In addition, this chapter contains recommendations towards project development departments of housing corporations throughout the Netherlands based on the functional organization structure and the corresponding characteristics.

##### 7.1 DATA COLLECTION

###### IMPLEMENTING OWN MARKETING & SALES STAFF

The multiannual investment plan (MIP) pre-describes the significant movements on the housing market and how the housing corporation should act during the years in terms of investments and project developments. Therefore, a vision regarding several plots is being created including private dwellings listed in the MIP. In order to find out what kind of dwellings the corporation should construct an external research bureau investigates the possible target group during the second development phase scenario development. Variables as age, household size, income, related type of lifestyle and other preferences as dwelling characteristics are combined in an advice which is presented to the housing corporation. This process takes about eight weeks and is the leading principle for the subsequent development. In order to control these activities internally (project development department), one or two new vacancies on “marketing” should be opened which results in better interaction between project developers and managers, improved coordination and an intensified dialogue and discussion. A faster and more efficient process will be the result of an optimization of the match between target group and type of development (housing characteristics). The marketing staff will be working closely to the sales staff and should focus on publicity, promotion, brochures and enthusing possible buyers for the project. One way of seducing possible buyers to get involved in the project is to let them have a say in the project and cooperatively design their house. This is part of the the retaining and directing strategy for the market oriented structure. Paragraph 7.2 *SADT model - Finding, retaining and directing* will pursue on this strategy. Figure 7.1 shows the large number of relocated inhabitants in Utrecht which enables the opportunities for the marketing staff.

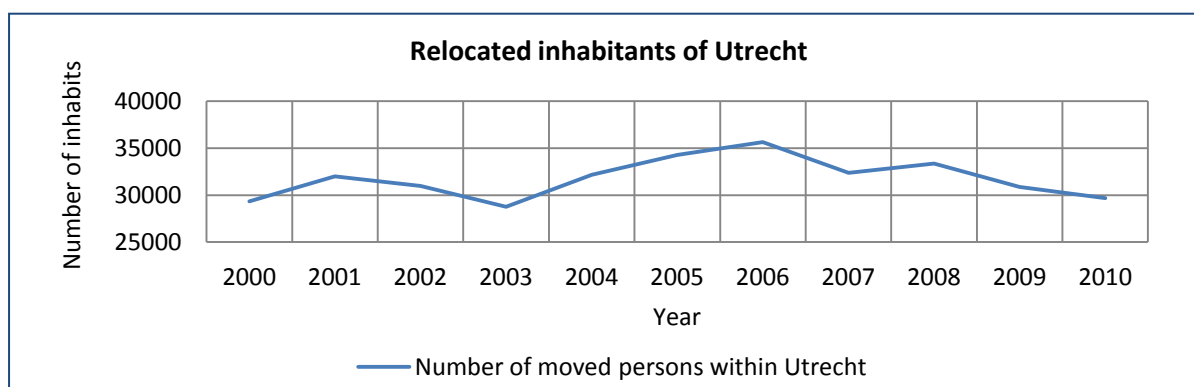


Figure 7.1 Relocated inhabitants within Utrecht from 2000 till 2010 (source: CBS Statline, 2012)

### CURRENT TENANTS AS TARGET GROUP

It seems harder and harder to find the right target group under the current market conditions. Especially when the three main drivers are 1) creating dwellings for lower incomes, 2) realizing more variety in the neighborhood and 3) retaining a development profit (refer to paragraph 3.1 *Drivers*). A possibility that is not yet considered is making the current tenants part of the target group. With 27,830 tenants<sup>8</sup> and people moving within Utrecht borders the mutation rate is normally around 5% (CFV, 2010); (CFV, 2011). The mutation rate of Mitros is measured over the last two years 2010 and 2011 and is derived from internal Mitros documents. Over 2010 the mutation rate was 6.3% and in 2011 the mutation rate was 5.6%. This means that over the year 2010 a total number of 1,777 dwellings were vacated by tenants and over 2011 a total number of 1,547 dwellings. These numbers exclude the number of demolished dwellings.

Total dwellings vacated in 2010 regarding Utrecht and Nieuwegein:	1,981
Total demolished dwellings in 2010:	204
Mutation rate = $((1,981-204)*100\%)/28,048=$	6.3%
Total dwellings vacated in 2011 regarding Utrecht and Nieuwegein:	2,429
Total demolished dwellings in 2011:	882
Mutation rate = $((2,429-882)*100\%)/27,830=$	5,6%

The total numbers of tenants that moved out in 2010 and 2011 are representing the total number of households. These tenants are asked to fill in a so called exit survey asking them for reasons why they move out. The data collection regarding these exit surveys have been collected from internal Mitros documents over the last three year (2009 till 2011). Because not every relocated tenant participated in the exit survey it is necessary to make the tenants who filled in the survey represent the total relocated tenants. The numbers of respondents over these years are:

Year	2009	2010	2011
Respondents	407	295	145
Total dwellings vacated (relocated tenants)	unknown	1,777	1,547
Group representing the total relocated tenants	unknown	17%	9%

The respondents have been asked the following questions:

1. Age:
  - a) < 35 years
  - b) 35 – 55 years
  - c) 55 > years
2. Reasons for moving:
  - a) Obtain an existing dwelling:
    - i. Rent:
      1. Family home
      2. Flat
      3. Ground floor

---

<sup>8</sup> - According to the CFV Perspective Analysis 2011 doc. No. L2058 (source: <http://www.cfv.nl/corporaties/corporatie/mitros>) The total number of tenants in the year 2010 were: 28,048 according to CFV Perspective Analysis 2011 doc. No. L2058 (source: <http://www.cfv.nl/corporaties/corporatie/mitros>)

4. Apartment
5. Elderly dwelling;
- ii. Private dwelling:
  1. Family home
  2. Flat
  3. Ground floor
  4. Apartment
  5. Elderly dwelling;
- b) Obtain a new constructed dwelling (new estate):
  - i. Rent:
    1. Family home
    2. Flat
    3. Ground floor
    4. Apartment
    5. Elderly dwelling;
  - ii. Private dwelling:
    1. Family home
    2. Flat
    3. Ground floor
    4. Apartment
    5. Elderly dwelling;

The most interesting numbers for this research are answers 1 (age classification) and the combination 2 b ii. Gathering the number of responses concerning obtain a new constructed dwelling divided over the number of private dwellings gives Mitros Project Development a clear view of how large the target group under current tenants is. For example: 41% of the moved tenants bought a dwelling in the year 2011. From that 41% only 19% bought a private dwelling. That means that 7.9% of the total relocated tenants moved to a project development developed by other developers than Mitros Project Development. In numbers we speak about 110 in 2010 and 122 in 2011. This is the new target group for Mitros Project Development. [Table 7.1](#) below shows the exact numbers of households that are relocated each year from a Mitros rental dwelling to a private dwelling that they bought. The average mutation percentage over the relocated tenants is 6.8%.

Number of tenants relocated to private dwellings, new estate						
Year	% private dwelling	% new estate	% private dwelling, new estate	Number over area		
				# Utrecht	# Nieuwegein	# Total Mitros
2009	42%	15%	<b>6.3%</b>	unknown	unknown	<b>unknown</b>
2010	51%	12%	<b>6.2%</b>	89	21	<b>110</b>
2011	41%	19%	<b>7.9%</b>	95	27	<b>122</b>

*Table 7.1* Number of tenants relocated to new constructed private dwellings as new target group (source: Combined exit surveys Mitros 2009 – 2011 and vacated dwellings 2010 – 2011 edited by author).

The knowledge about the total size of households that bought a new built private dwelling is not enough for defining the target group. Besides preferences regarding project location, type of neighborhood and vision it is important to know what type of dwelling they have relocated to and buyer characteristics like age. [Table 7.2](#) on the next page shows that half of



the households relocated to a family home and the majority of these households are younger than 35 years (average of 73%). This means that the project development department – taking the average project size of 70 dwellings for starters and young households into account - has had 60 potential buyers in 2010 and 50 potential buyers in 2011. This results in a challenge for the marketing and sales staff that has been added for the new market oriented organization structure. Approach the current tenants and convince them of the advantages they have when they will buy a new dwelling. Possible incentives are rent-free term during construction period and full recovery of relocation expenses. Another benefit is the fact that since a substantial part of the target group is derived from the current tenants of Mitros, there is a smaller demand for additional (currently unknown) buyers out the market.

Target group under current tenants								
Year	Classified by dwelling type					Classified by age		
	Family home	Flat	Ground floor	Apartment	Elderly Dwelling	<35	35-55	55>
2009	<b>48%</b>	25%	7%	8%	12%	<b>75%</b>	22%	4%
2010	<b>60</b>	26	9	4	11	<b>70%</b>	24%	6%
2011	<b>50</b>	38	9	13	12	<b>74%</b>	19%	7%

Table 7.2 The number of people that moved into different type of dwellings are displayed in this table related to their age classification (source: Combined exit surveys Mitros 2009 – 2011 and vacated dwellings 2010 – 2011 edited by author).

## 7.2 SADT MODEL

### FINDING, RETAINING AND DIRECTING

Since Mitros Project Development now has their target group earlier within sight, it is important to offer them the opportunity to buy the dwelling that suits them most. Therefore, flexibility in floor plans and freedom of design should be offered. Instead of searching for an architect, demand-driven development encloses an intense relationship with the construction company. Using the current network and relationship with construction companies in combination with a possible construction order offers them exclusivity. The SADT model at the next page shows the first of the three context steps in the market oriented organization structure in A1 layer: finding the right target group and finding a suitable construction company. A total overview can be consulted in appendix 7.1. The relatively large construction companies have housing concepts that lead to a shorter time to market and they have experienced and therefore efficient teams. In addition, most housing concepts have maximum flexibility when it comes down at floor plan layout, type of façades, size of the dwelling and expansion possibilities. These options are the extended version of the former tile-color alternatives offered by the construction company.

The invited construction companies will be asked to present their plan of approach based on the intended location and corresponding vision of the housing corporation. In this case the construction companies will become panels that are assessed by the project development department on criteria like construction time, building sum, flexibility and proposed approach. After the panels presented their housing concepts, the selected construction company will be invited to meet the target group (housing panel) in an interactive discussion session. During this acquaintance the goal is to get to know each other. The housing panel

has obtained a presentation and visualization of the - to be constructed – project which will result in an indication of the number of interested people for the project. Furthermore, the construction panel will have a go/no go meeting with the housing corporation after this meeting in which the chance of success will be discussed.

The next paragraph will further discuss the governmental relations and procedures concerning the progress and acceleration of the new market oriented organization structure before starting with the search for housing panels and construction panels.

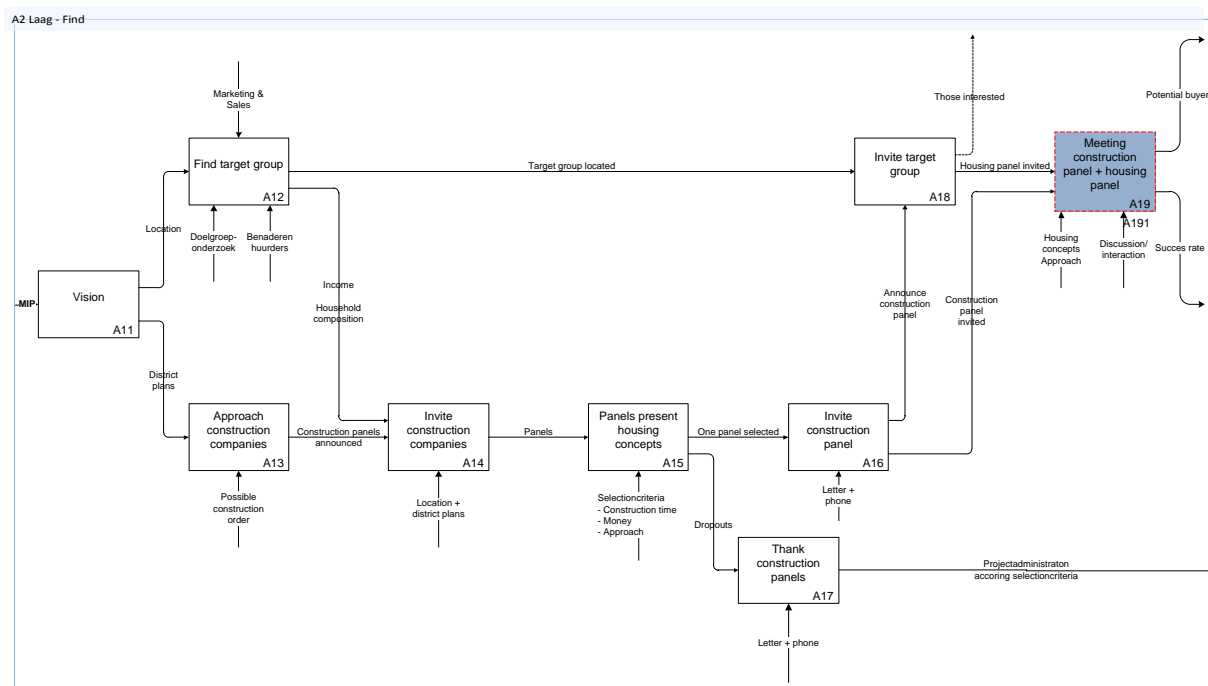


Figure 7.2 Market oriented organization structure A2 layer Find Activity A11 – A19 (source: author)

## MUNICIPALITY

Before Mitros Project Development should start finding the right building panel it should become aware of the governmental powers that could influence the project development in a positive way. The interest of the municipality is maintaining and creating a dynamic and balanced living environment. The interest of Mitros is consistent with those interests with characteristics like realizing more variety in the neighborhood and giving lower incomes the opportunity to buy, especially with the current tenants as target group. Therefore it is important to make arrangements about both the vision of Mitros and the vision of the municipality concerning the plot to be developed in words of building volume, principles and procedures. Both parties are having the same interests in the development that should lead to a positive cooperation. Of course, governmental procedures will not all be completed but the in order to pursue both interest flexibility is required. Optional the municipality could join the activity A15 of above figure were the construction companies are asked to present their plan. Selection criteria will be taken into account and the municipality could have a word in the final selection of the panels.

### SELECT CONSTRUCTION PANEL

The functional organization structure assumes a tender after the final design of the architect and the associated specifications. Upon this way the long product development does justice to its name because the average development time from making the preliminary design to price and contracting takes over 2.5 years (30.6 months). The market oriented structure responds to the highly developed and mature construction companies. Most of them have well designed and flexible housing concepts making architects obsolete. The well maintained relationship with multiple construction companies gives Mitros Project Development exclusivity by having a possible construction order for them. Approach the construction companies (activity A13) with the district plans and vision regarding the neighborhood and type of dwelling they would like to develop (please see page 56 table 7.2 Target group under current tenants and the output activity A12 on the previous page) they will asked to present their housing concepts based on the plot to be developed (activity A15). Meanwhile the companies have become construction panels trying to make them bind to the project development increasing their commitment.

### GO/ NO GO MOMENT

Activity A19 (please see figure 7.2 on the previous page) shows the meeting activity with the construction panel and the housing panel. Throughout discussions and interaction according to the presentation of the housing concept and the aimed approach, the success rate for the construction panel will be discussed together with Mitros Project Development (output success rate is input for the go/ no go meeting, figure 7.3). Upon this way the construction panel will have more responsibility and commitment towards the project development and its potential buyers.

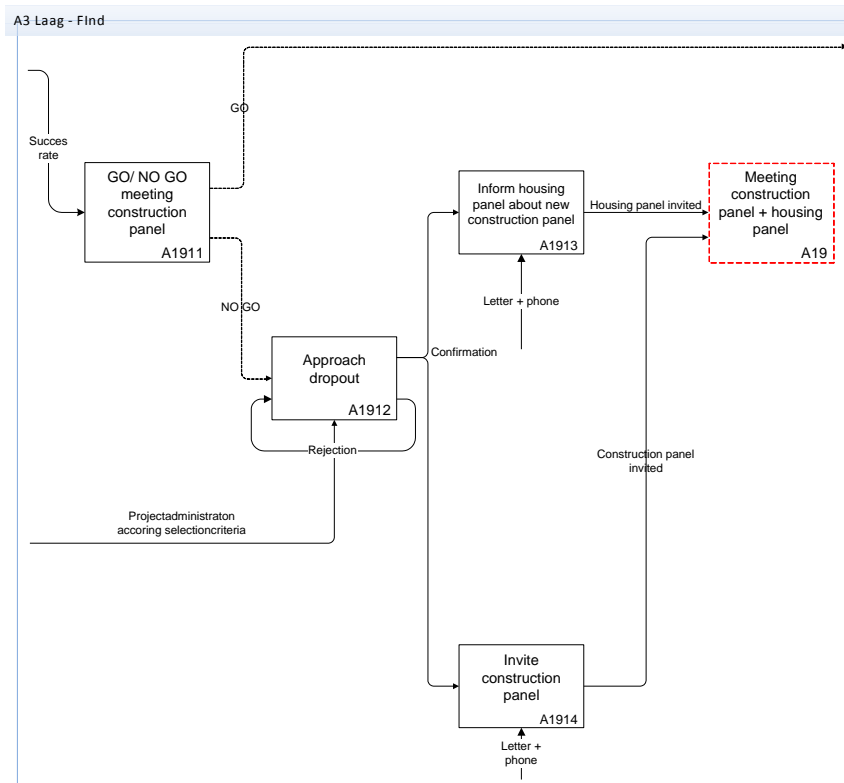


Figure 7.3 Market oriented organization structure A2 layer Retain go/ no go moment Activity A1911 – A1914 (source: author)

When activity A1911 has a no go moment as output, the construction companies that were not selected will be approached. The construction company that scored second during the presentations of the panels (activity A15 on the previous page) will be invited to meet the housing panel. At the same time, the housing panel will be informed about the new construction panel and likewise, the activity A19 will be repeated hopefully leading to a go moment in the next meeting with Mitros Project Development and the construction panel. As you probably noticed the red bordered activity is the same activity as the above A2 layer (figure 7.2) and will be repeated until the activity A1911 will have a go as output leading to the next part of this market oriented structure and will ensure a higher success concerning the customer demand.

After the go moment the construction panel will be asked to become construction partner of Mitros Project Development. Upon this way the construction company will become part of the project to be developed. In order to realize this commitment Mitros Project Development will sell development rights to the construction panel to become partner. Activity A21 shows this step in figure 7.4. Selling development rights will retain the construction company to commit to the project and its buyers. This includes contractual and legal agreements concerning the dwellings that will not be sold. Possible solution will be 80% pre sold before start constructing and the other 20% bought by Mitros Project Development that will sell the dwellings in the market by the new Marketing and Sales staff.

The potential buyers from meeting with the housing panel and construction panel will be invited to join the first design meeting with the construction partner and housing panel (activity A23). Because the marketing and promotion of the plot to be developed will continue there are several entry moments for those interested in designing and buyer their private dwelling. During the first design meeting the housing panel will be informed about the option contract that will be offered to them. This option contract will retain the buyers that have been interested, have meet the construction partner and have had their first design meeting that allows them to design their own house according to the flexibility that the housing concepts of the construction partner offers. This option agreement makes the housing panel just as the construction company, housing partner. In this way the buyers feel even more part of the development. Before this option will be signed (activity A25), the preferred scenario of the total housing program forms the output and the preliminary design forms the input to define the district plan (activity A24). This process ensures an overall picture of the project development and at the same time is input for the second design meeting where the construction partner will present the preliminary district plan to the housing partners. Meanwhile the Urban Program of Requirements (activity A26) will be elaborated in association with the municipality.

Activity A25 has as important output: housing partner and the modifications for making the district plan to a final design. The final design and the matching dwelling prices will be the input for an information meeting with the housing partners and construction partner to inform them about the final dwelling price. The following activity concerns the sales of the dwellings. These will be offered to the partners and the remaining dwellings will be sold by the Marketing and Sales staff to other interested. The risk that these dwellings will not be sold is for Mitros Project Development. The aim is therefore selling 80% before start constructing. This goal should be within reach taken into account the current tenants as

target group, the Marketing staff convincing others to buy and project scale reduction. That means smaller project developments of maximum 70 dwellings (based upon interviews and average project size). The final design, urban program of requirements and presales percentage will flow to the last part of this new market oriented organization structure.

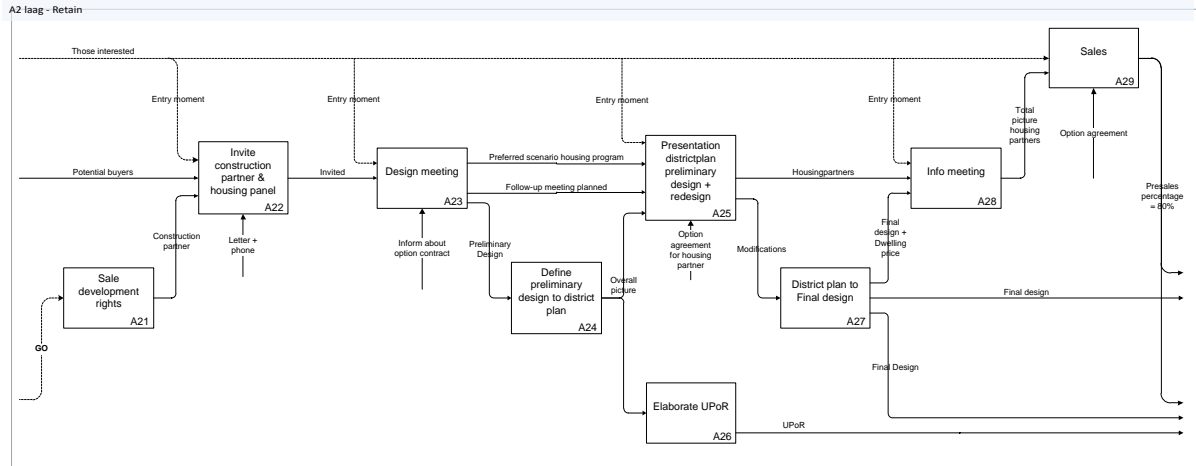


Figure 7.4 Market oriented organization structure A2 layer Retain Activity A21 – A29 (source: author)

The last four activities of the new designed organization structure involve the price and contracting between construction partner and Mitros Project Development including formal agreements and procedures based on the final design. The output of this activity is that the dwellings and plots are sold. Planning permission is also input from activity A32 Prepare realization in order to start the construction period. After the realization process the real estate will maintain aftercare that is contractually determined. Please see figure 7.5 below.

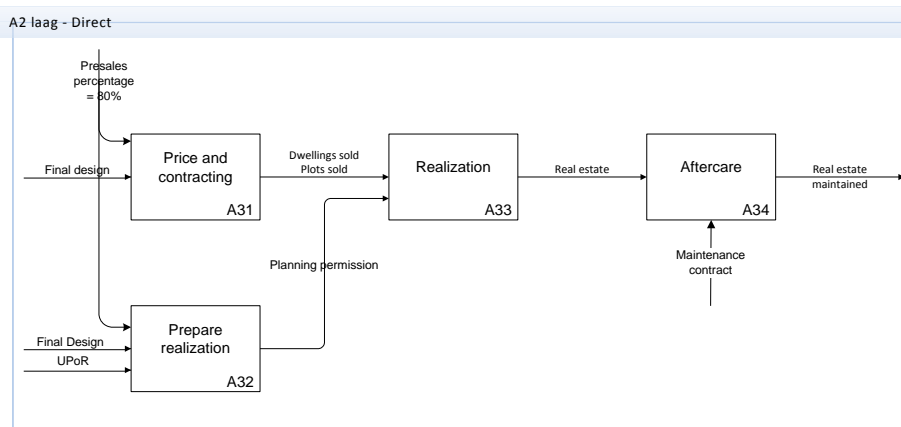


Figure 7.5 Market oriented organization structure A2 layer Direct Activity A31 – A34 (source: author)

The SADT model ensures more insight in the development time of the new proposed market oriented structure. Moreover it is visible upon which moments the target group is found, the sales start and the investment decision is taken. One of the resources to design the new model and therefore reach the research objective to lower the sales risk, is to bring these three moments closer to each other. Figure 7.6 on the next page shows the development time of the new proposed organization structure based upon interviews and the SADT model and three arrows that represent important moments in the process. Besides the difference

with the previous organization structure (refer to figure 6.1 on page 51) in development time is the sequence of the most important moments. The previous structure had the sequence of finding the 'target group', make the 'investment decision' and after these two moments they started 'sales'. However, in order to justify the investment decision it should be clear how the sales are going. The market oriented organization structure holds this sequence as you can see in the figure below.

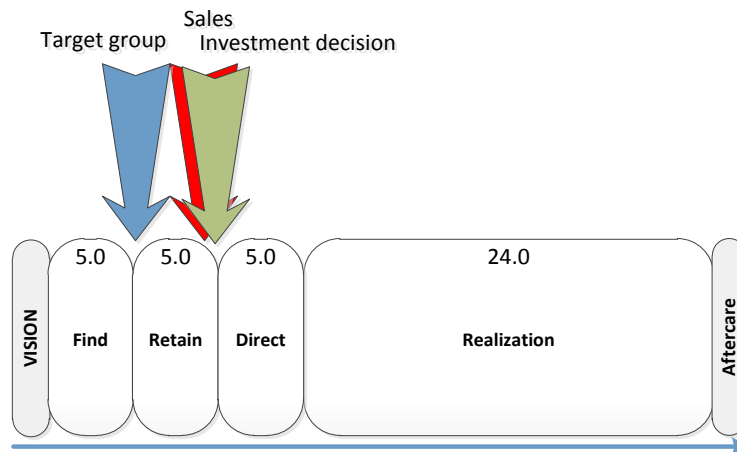


Figure 7.6 Market oriented organization structure average development time in months and important moments concerning the investment and project development (source: interpreted data by author based on the functional structure and the new proposed SADT model)

### 7.3 SD MODEL

The system dynamics model of the market oriented organization structure has the same structure as the system dynamics model of the functional organization structure. The model is therefore attached in appendix 7.2 and will be explained in this paragraph. The model contains three stock and flow diagrams named finding, retaining and directing in regard to the SADT model described in the previous paragraphs. Please notice that the system dynamic model is based upon the organizational costs per phase. The three phases and its corresponding activities according to the SADT models have been compared to each other and subsequently some of the activities of the functional organization structure are therefore eliminated. The list on the middle of this page shows how the activities of the phases correspond on context level in order to find out what data should be used within the system dynamics model of the market oriented structure. The corresponding activities of the new organization structure do not contain the organizational costs of the preliminary design and neither of the preparation realization and the project management of the realization. These phases are displayed as strikethrough. The three activities that are not implemented in the organization structure and their organizational costs are not included in the calculation of the system dynamics model. The preliminary design is omitted because of the housing concept that the construction partner handles. This housing concept makes sure that the final design can be made with the flexibility and wishes of the customer. The preparation of the realization and the realization itself will also be taken over by the construction partner and are therefore not operational costs for Mitros Project Development. In the functional organization structure the project development costs were included for Mitros Project Development. Activities and output as preparation contract provision, project plan, planning, risk analysis and contract documents for building

specifications will be made by the construction partner. These activities and output are close to the core business of the construction partner and therefore high standards will be guaranteed.

Startnote	+	Scenariodevelopment	=	Finding
Program of Requirements	+	<del>Preliminary Design</del>	+	Final Design = Retaining
<del>Preparation of Realization</del>	+	Price and contracting	+	<del>Realization</del> = Directing

The table in appendix 7.3 shows the detailed calculation in fictive numbers of the retaining part. To calculate the lowest operational costs per month for the market oriented organization structure, the lowest operational costs of phase three (Program of Requirements) is divided by the highest development time of phase three plus the lowest operational costs of phase five (Final Design) divided by the highest development time of phase five. That is:

$$\text{Minimum operational costs Retaining} = (< \text{operational costs PoR} / > \text{development time PoR}) \\ + (< \text{operational costs FD} / > \text{development time FD})$$

The next chapter will explain and describe the results of this research corresponding to the current functional organization structure and the desired market oriented organization structure. The findings of both SADT models and the real data output of the SD models will be stated and justified. These results will lead to the conclusion and recommendations towards Mitros Project Development as how they should act in the near future concerning project developments for private dwellings.

## IV 8. RESULTS

This chapter discusses the results of this Master's thesis regarding demand-driven development extended in the organization structure. The research concerns an application for housing corporation Mitros department Project Development and focuses on lowering the sales risks of private dwelling developments. The main goal of this thesis is that the organization structure and its processes should be structured otherwise in order to respond to the changing market.

The literature study has namely shown that there have been many housing market developments over the last years. For this reason the current state of the housing market has made a shift in type of ownership towards private dwellings and single households are uniformly growing. Demographical developments and a dwelling shortage in Utrecht increased the market challenge substantially. This challenge could be entered in an effective way by compensating the market through adding affordable products on the buyer's market for low and middle income households. Developing private dwellings in a demand-driven way is therefore considered to be a possible solution in this research. Characteristics of demand-driven development have been studied and analyzed before the current business strategy of housing corporations has been mapped. The current functional organization structure has a single-product line and operates in an undifferentiated market. In combination with long product development and common standards these characteristics make sure that the sales risk remains irresponsibly high. The current market asks for a more market oriented organization structure assuming rapid product cycles, customer knowledge advantage, product unique to segment, minimum outsourcing and important market segments. These have been taken into account during the design of the new organization structure. However, it is not possible to design a new organization structure and its processes before the current structure and corresponding activities have been studied as well.

Using the research method Structured Analysis and Design Technique (SADT) it was possible to study the functional organization structure of Mitros Project Development. By conducting multiple interviews and a survey several activities within the functional structure that did not match the characteristics of demand-driven development and the desired market oriented organization structure became visible and tangible. The list below shows the results after the structured analysis of the functional organization structure and forms the framework for the design of the market oriented organization structure:

1. Currently, finding the target group is done by an external agency bureau and not by Project Development themselves. In this way unnecessary failure is at risk since the target group maybe incorrect at time of start sales. Hiring an own marketing staff creates specialization and better coordination with the private dwelling consultants;
2. A self conducted survey under the Project Development department shows a large gap between knowing the target group (during second phase scenario development) and start sales (during price and contracting). Twelve project developments have been studied concerning their development time and it seems that the average gap is about 33.6 months. This contributes to the long product development and the high



sales risk. Figure 8.1 on the next page shows the minimum, average and maximum development time over twelve projects from 2008 till May 2012. Most important success factors are 1) developments only for the private market, 2) attracting subsidy to speed up the construction process and 3) developing the project independently and not together with other parties. The most important failure factors are 1) reviewing the investment decision after the third phase, 2) the project size in number of dwellings is too large, 3) financial feasibility and 4) possible delay regarding development time by rising construction costs resulting in an unbalanced budget.

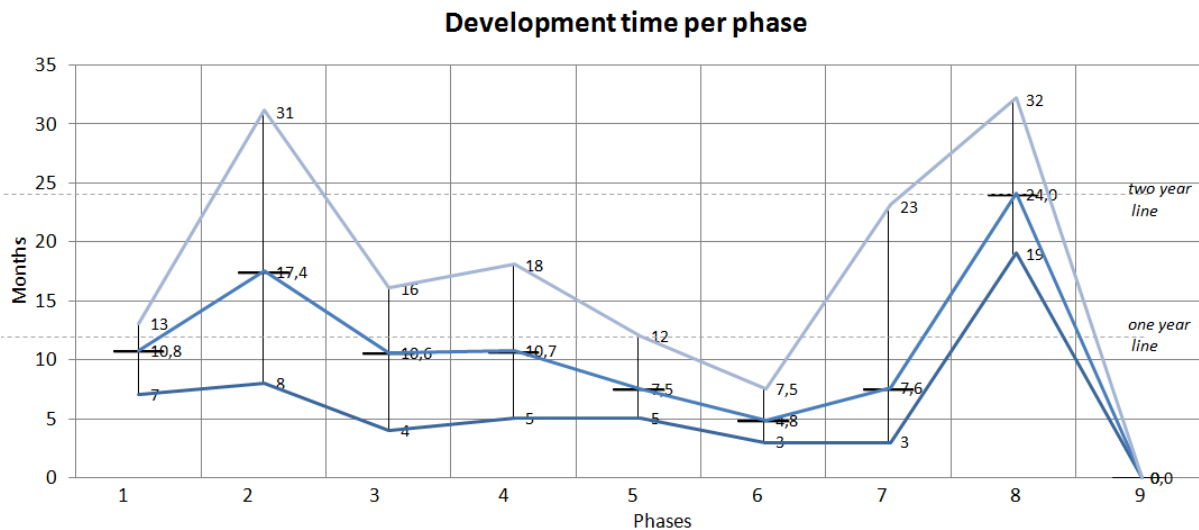


Figure 8.1 Development time per phase measured over 12 projects from 2008 till May 2012 plotting minima, maxima and mean. Please see also appendix 6.3 for the numbers in a detailed table (source: Progress reports Mitros Project Development)

3. The knowledge and skills of the construction companies are not being used and exploited because the new developed private dwellings are being designed by an architect. Well established construction companies have housing concepts that do not require architects and specifications to tender. The tender procedure thereby also contributes to the long product development. Main side effect is that meanwhile the target group will be loosed out of sight;
4. Within the functional organization structure the customer should be allocated in the market. With over 27,000 current tenants the target group should be within reach. However, these current tenants are not actively approached by Mitros Project Development. Research under exit surveys over the years 2009 (407 respondents), 2010 (295 respondents) and 2011 (145 respondents) showed that there many tenants relocate from a Mitros rental dwelling towards a private dwelling. In percentages we are speaking about 6.8% of the overall mutation percentage of 6.0% (measured over 2010 and 2011). In numbers this new target group is about 110 till 120 households each year. These households are classified to age and type of private dwelling that they revoke. Table 8.1 on the next page shows the new target group which is considered as important for the new market oriented organization structure.

Number of tenants relocated to private dwellings, new estate						
Year	% private dwelling	% new estate	% private dwelling, new estate	Number over area		
				# Utrecht	# Nieuwegein	# Total Mitros
2009	42%	15%	<b>6.3%</b>	unknown	unknown	<b>unknown</b>
2010	51%	12%	<b>6.2%</b>	89	21	<b>110</b>
2011	41%	19%	<b>7.9%</b>	95	27	<b>122</b>

Table 8.1 New target group (source: Combined exit surveys Mitros 2009 – 2011 and vacated dwellings 2010 – 2011).

The desired market oriented structure is based upon the list above and is proposed in an SADT model illustrated and disclosed in chapter 7.2 *SADT model* on page 56. This research proposes a new way of developing and does not include the steps to be taken in order to operate as a demand-driven developer. However, the organization can consider multiple recommendations to implement in their current organization. This point will be discussed in the next chapter 9 *Conclusions and Recommendations*. First, the results of the research model of System Dynamics will be evaluated.

It is interesting to notice that the predetermined organizational costs are higher in the development phases that do not take much development time (please see figure 8.2 below). The organizational costs in the beginning of the project development are relatively low but the development time is however long. This is partly explained by the not parallel development phases. Each phase could officially start only after the phase before is completed. The project development team is using an architect to make the preliminary and final design which includes the specifications where upon construction companies are contracted according to the lowest price principle. Based upon the current organization structure the System Dynamics model has been transformed into the market oriented organization structure of SADT. Figure 8.2 shows the organizational costs of the functional organization structure, divided over the nine development phases.

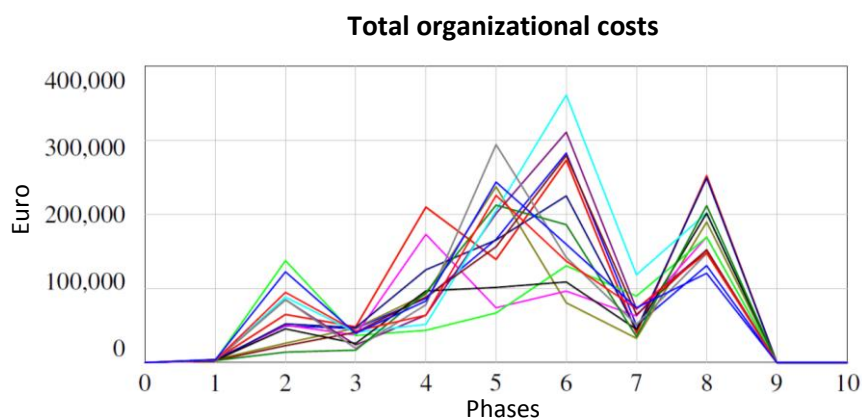


Figure 8.2 System Dynamic output graph where each colored line represents a scenario of the total organizational costs per fictive project development in the functional organization structure. The scenario mode chooses values between a minima and maxima range (please see chapter 6.3 SD model for further explanation and calculation). This graph contains 14 scenarios.

The development time of the new proposed organization structure is not based upon case studies of private project developers but on interviews and the SADT model taken into account the omitted processes and activities. Commercial project developers have an average development time of about 12 till 18 months. This development time suits the SADT model activities 'finding', 'retaining' and 'directing'. Finding the target group and select the construction panel will not take years but expect to take three to six months. The retaining part concerning the multiple interactive discussion and design meetings will take place on a short, regular basis and shall take about five months. The directing part before the construction period knowing elaborating urban program of requirements and price and contracting will take at least four months. With a construction period as long as within the functional structure the average development time is about 39 months.

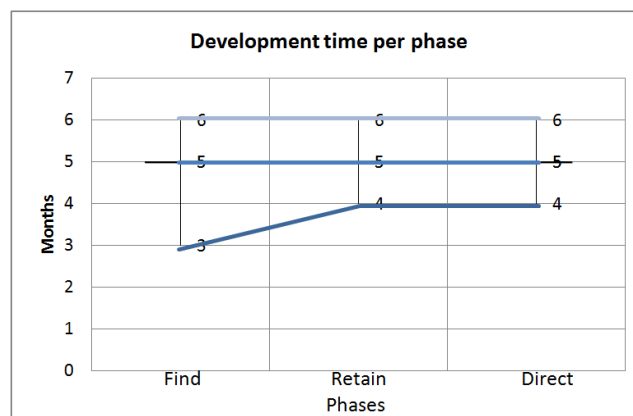


Figure 8.3 Development time per phase of the new proposed market oriented organization structure. The numbers are an indication based upon the new SADT model and interviews with.

Figure 8.4 below shows the market oriented structure and its organizational costs. It is clear to see that the new structure has a shorter development time and lower organizational costs. The new organizational structure will have a total development time of about 12 – 18 months based upon the SADT model and interviews. The average development time will be five months for each phase (Find, retain, direct) excluding the construction time. The construction time is kept the same as in the functional organization structure (24 months). These results will be taken into account for recommendations related to further research.

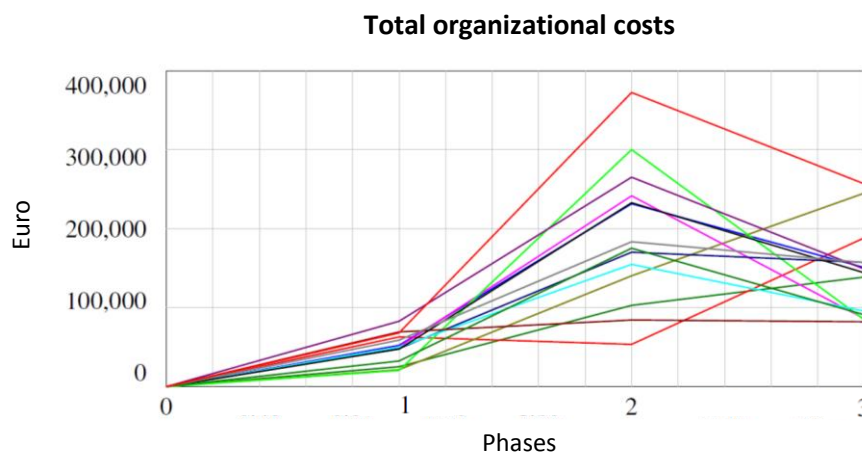


Figure 8.4 The new designed and proposed market oriented organization structure has less organizational costs and less phases. This system dynamic output graph shows 13 scenario's of possible project developments.

The organizational costs are compared to each other to say something about the difference between the two structures. The market oriented structure has 50.2% less organizational costs<sup>9</sup> compared to the functional organization structure. This is mainly because the development time is reduced with 58% in the new proposed market oriented organization structure. The average development time for the functional structure is 93.4 months and the average development time for the market oriented structure is 39 months. That is a difference of 4.5 years. Please notice that the new proposed structure assumes that governmental procedures will be successfully run through before inviting the construction panels. Eventhough, the project development itself will have less development time and activities which are easier to manage and organize.

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*9 - The calculation is based upon real costs but will not be discussed in detail with regard to the confidentiality.*

## IV 9. CONCLUSIONS AND RECOMMENDATIONS

### CONCLUSIONS

The main reason for writing this Master's thesis has to do with a widely known problem in the housing market. Because of the high supply and low demand in the housing market, project developments concerning private dwellings are facing high sales risk. In other words, new constructed dwellings are not being sold and the financial risks related to the development are often for the developer. This also applies for housing corporations who develop private dwellings. Because of the additional social drivers housing corporations have, it seemed very interesting to conduct this research at a housing corporation. This research was therefore conducted at housing corporation Mitros at the department of Project Development. The research problem stated: "Corporations do not know how they must adapt their organization in order to thereafter realize the right product for the right buyer."

This chapter will provide an answer to the main research question including its sub research questions that are answered in the first part of this research: Literature study. Besides, this chapter will give special recommendations to Mitros Project Development that can be traced back to the conducted research. The main research question is consistent with the research problem knowing "What type of organization supports the implementation of demand-driven development for housing corporations?" In this context demand-driven development is considered to be a possible direction of the solution. The research objective could be formulated as "Determine the role of the housing corporation in 2025 and outline a new investment policy for Mitros Project Development describing their desired organization aimed at demand-driven development to lower the sales risk."

The answer to the main research question is that the market oriented organization structure supports the implementation of demand-driven development best for the department of Project Development. This structure makes use of innovation in order to survive in the current wilderness cluster of the business life cycle of housing corporations. The market oriented structure is making full use of important market segments, product unique to this segment, buyer strength, customer knowledge advantage, rapid product cycles and minimum efficient scale in outsourcing. The housing corporations should make a shift from the current functional organizational structure to a more market oriented organizational structure. The functional structure has namely a long product development (average of 5.8 years from vision till start constructing) and the market oriented structure is more commercially oriented resulting in a development time of about 12 till 18 months. Besides, the market oriented organization structure that is designed for Mitros Project Development is closer to the core business of the organization: focusing on the current tenants. Offering the lower income households the possibility to buy a private dwelling is seen as one of the drivers for housing corporations to develop themselves. In this way the department of Project Development starts a circulation/ flow on the housing market which counteracts on skew housing.

Therefore, the main recommendation to Mitros Project Development is highly related to the answer of the main research question. Making use of the current tenants and approach them actively for project developments, will ensure that the core business of the housing

corporation is guaranteed since you develop private dwellings for households with a lower income. Furthermore, an important conclusion after conducting this research is that almost 7% of the mutation percentage is considered to be as the new target group which can be specified to age and preferred dwelling type. This 7% could be expressed in numbers of the mutation percentage. In the year 2010 110 tenants and in the year 2011 122 tenants have moved to a private dwelling. Focusing on these group results in less pressure for the new implemented marketing staff and existing sales staff of the market oriented structure because of the easier to approach target group instead of finding all new buyers in the market through advertising.

Looking at the associated organizational costs it can be concluded that the costs per project development are not in proportion with the development time. These figures are displayed according to the output of the system dynamics model (please see previous chapter 8 *Results* figure 8.2 and figure 8.3). This means that the development time is independent in respect to the organizational costs. The organizational costs are predetermined but most part of these costs will be incurred during the phases that do not take much time. In other words, the organization of the department Project Development does much work and receives relatively little money during the first phases of the project development. In addition they receive relative more money for little work in the last phases.

The new designed organizational structure believes that housing corporations should become a director between the target group, municipality and construction company providing exclusivity to these groups. Therefore it can be said that the new determined role of the housing corporation should be the one of director. This new role is supported by the new designed organization (please see appendix 7.1 for the design) and is intended to lower the sales risk. Taken these points into account it could be stated that the research objective is achieved. The overall conclusion is listed below:

- Make an organizational shift to a more market oriented structure and its associated processes and activities. The actions below support this market oriented structure that contribute to a lower sales risk having a directing role as housing corporation:
  - Current tenants as target group;
  - Own marketing and sales staff that actively approach the target group;
  - Make use of the construction companies' housing concepts and the related flexibility in floor plans and the dwelling price certainty;
  - Try to make agreements with the municipality and identify what procedures to follow before finding the housing panel and construction panel;
  - Sell development rights to the construction panel to bind the contractor to you as a developer and subsequently become your construction partner;
  - Let the housing panel become housing partner in terms of signing an option agreement to bind them to you as a developer.

## RECOMMENDATIONS

It is highly recommended to extend the data collection concerning the new target group under current tenants in terms of years that have been studied. The years 2009, 2010 and 2011 have been studied and are nevertheless the most important data because these years are after the large crisis of 2008 which mean that the outcome of the data collection and

interpretation are representative for the time we are in. Subsequently, hiring an own marketing & sales staff is of great added value for actively approaching the current tenants. This research only proposes a new organizational structure but does not list the activities in terms of steps on how to achieve this organization. The list of conclusions is consistent with the recommendations towards the department of Project Development.

Regarding the current tenants as new target group, this research would like to recommend further study regarding qualifying the characteristics of these tenants in relation with skew housing among all tenants of Mitros. This seems to have influence on their relocation behavior according to Van der Rijst (2012) who conducted research amongst the tenants of Mitros and two other housing corporations within Utrecht. Skew tenants highly appreciate their home and residential environment in significantly respect to non skewed tenants. This corresponds with the trend in the housing market that housing values and living experience of households have an increasingly important role in their relocation behavior. In Utrecht, 28% of all skew tenants have a relocation need, which means that 72% of the total skew tenants have no desire to move within two years. The number of respondents amongst Mitros tenants in the research of Van der Rijst (2012) were 468 and from this group 13% are skew tenants. A rough estimation states that amongst the 27,830<sup>10</sup> tenants, there are 3,617 skew tenants. The recommendation concerning this theme is to extend the respondents to all Mitros tenants classified by name and living address and in this way get insight in the new target group that can be approached by the marketing and sales staff within the new proposed market oriented organization structure.

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10 - Number of Mitros tenants in 2011

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**DEMAND-DRIVEN DEVELOPMENT EXTENDED IN THE ORGANIZATIONAL STRUCTURE.  
An application for housing corporation Mitros Project Development concerning  
private housing.**

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**ABSTRACT**

*This paper discusses a more market oriented organization structure for the department Project Development of housing corporation Mitros. The motivation for this research is the high percentage of vacant dwellings after completion and the related increased sales risk. Adjusting the organization to the market would lower the sales risk and matches the project with the target group. Addressing current tenants as target group, implementing an own marketing and sales staff and making full use of the housing concepts that construction companies already provide reduces the development time with 58% from 69 months till 33 months and decreases the organizational costs over 50%. In rapid succession of finding the customer, start sales and the investment decision, the success rate of the project development increases and therefore the sales risk will be significantly lowered.*

**Keywords:** organization structure, private housing, project development, SADT, housing corporation

**INTRODUCTION**

Until recently we assumed that private dwelling developments were purchased by the market but it is however, not longer an option anymore in order to 'develop to develop.' The differentiation of the demand for private dwellings has increased dramatically and we will therefore have to think about for whom we develop because otherwise dwellings will not be sold. The course of action, techniques and procedures for housing corporations has been shaped in what is called the strategic housing stock within the framework of social objectives and financial continuity (Smeets J., 1997). For example, the corporation portfolio knows a broad range of target groups and product groups within a geographically defined area which makes

the formulation of interesting product-market combinations possible (Janssen, 2008). Interesting PMC's but moreover without State support for the construction and selling of private dwellings by housing corporations. In this way we could support the theorem that the risk involved in private dwelling developments is for the account of housing corporations. Nowadays, corporations are facing all kinds of threats and/ or opportunities from the near environment. Connor (1990) states that there are three reasons to nominate the need to designate an organization to change. One of these reasons is when a company is faced with opportunities or threats. Redesign the Project development department of housing corporations should respond to the current changes stagnating urban renewal.

## RESEARCH LAYOUT

### Problem definition

The mission and goals of housing corporations should be based on a solid analysis of the dwellings market and social and political environment as reflected in the Integrated Real Estate and Housing Control Corporations (the so called "*Integrale Vastgoedsturing Woningcorporaties*"). However, according to the conclusions of the Investment Monitor Housing Corporations it seems that approximately 35 per cent of all developed and realized dwellings were vacant in the two years after completion (Stec Groep BV, 2011). Housing corporations develop even more private dwellings than the amount of demand. This indicates that the sales risk has increased and liquidity pressure has elevated. It also confirms the search for the right match between supply and demand. In combination with the household forecasts and extension needs of the housing market according to the recently published housing market-explorations (ABF Research, 2010) there should come a better understanding of the target group.

It could be stated that the housing market is locked meaning that there are no dwellings purchased anymore and the target group changes rapidly. The national trend that has been recognized is characterized by strong aging population, longer life and more and smaller households. Moreover, this trend varies widely by region. In the Province of Utrecht there is no strong recognition of age declining or shrinking. Upon this way we could focus on the assignment for housing corporation Mitros in Utrecht. They possess among others 28,000 social dwellings and with their department Project Development they continue working on the development of private dwellings to match their products with the right target group. This demand-driven development differs per project development making it even more difficult to supply the market in their demand and right housing needs. According to the Province Forecast 2030 the region of Utrecht expects an annually average of plus 4,700 residents in the period of 2011-2030 and a total growth of 89,800 residents. This forecast is pleasant for Mitros Project Development to take their current activities under the microscope and make their activities and policy matching with the demand. Organizational change and development activities should make demand-driven development possible but at this stage we have no idea how this looks like. The definition of the problem can be translated into the following challenge: "Corporations do not know how they must adapt their organization in order to thereafter realize the right product for the right buyer."

### **Research question**

What type of organization supports the implementation of demand-driven Development for housing corporations?

### **Research objective**

Determine the role of the housing corporation in 2025 and outline a new investment policy for Mitros Project Development describing their desired organization aimed at demand-driven development to lower the sales risk.

### **Research methods**

The use of two scientific research methods combined in one research gives this research an interesting point of view. Structured Analysis & Design Technique (SADT) will be used to model the logical organizational system and design the desired organizational structure. SADT assumes that processes are linear but the translation of the SADT models into System Dynamics (SD) ensures that the process becomes dynamic and measurable in words of behavior as in development time and performance as in organizational costs.

## **THEORETICAL FRAMEWORK**

### **Housing market developments**

The current housing market and the future population are compared to one another to give an answer to the question whether or not the current housing stock meets the future population in 2025. The population and household projections for the year 2025 forecasts stabilization in the labor force but an increase in the number of seniors 65+ and single households. The supply in current housing stock does not meet these future requirements. Though, a dwelling shortage of nearly 6% is predicted in the year 2025 for Utrecht. External factors such as political- and financial uncertainty in the sector provide a growing market challenge to meet the demand with current and new supply. Because of the complexity and coherence between target group, lifestyle, dwelling characteristics and living environment it is not possible to match target group with specific dwelling characteristics. According to Van der Schaar (2006) these market challenges could be approached in three different ways. Compensating the market by adding affordable products on the buyer's market for low and middle income households is considered to be the most effective way. Therefore this study takes only project developments for private dwellings into account and how the organization of Mitros Project Development should act in a demand-driven way.

### **Demand-driven development defined**

Literature and interviews helped to explore the motives that drive housing corporations to develop as well as the characteristics of this new type of developing. Demand-driven development is seen as a possible solution towards a better match between demand and supply in the housing market. The motives that drive housing corporations to develop private dwellings are realizing more variety in the neighborhood, giving lower incomes the opportunity to buy and/or make a profit out of these developments. Because of the desolate situation on the housing market it is necessary for housing corporations to innovate: focus on control of the



demand makes the developments demand-driven. This new type of developing contains characteristics as an external focus, flexible management and a horizontal interaction. In essence it could be assumed that demand-driven development is custom made developing that leads to a minimum sales risk. Developing for the anonymous market is just not suitable anymore in words of risk and as a result the organization structure should renew. Bottom line is that the developer should provide flexibility for the customer in order to make the dwelling custom made leading to early commitment prior to price- and planning certainty.

### **Organizational embedding**

Looking at the strategy of organizations this study focused on two popular strategies of Miles (1978) and Porter (1980). Porter has a more common designation in which his strategy typologies are derived from the typology of Miles. In the typology of Miles they appear to form a classification of firms; Defender, Analyzer, Prospector and Reactor, while Porter focuses on three generic strategies; Overall cost leadership, Differentiation and Focus as classification of strategies. The different structures that connect with the strategy topologies are mapped according to the five basic elements of the organization of Mintzberg (1979). The dimensions of structure can be defined as policy areas in which departmentalization is the most important policy area forming departments at each level of the structure. Making these policies provide insight it seems that with the principles from the definition of demand-driven development, a more market oriented structure is best suited in words of innovate to survive. After analyzing the intern process of the department project development at housing corporation Mitros, the current organization structure appears to be functional and has a long product development, knows common standards and deals with an undifferentiated market.

Moreover, the current development process should be more analyzed to subsequently fit the functional structure to a more market oriented organization structure. This will be done according to the principle of Structured Analysis after which the organization will be designed to a market oriented structure and its underlying processes. These two SADT models will be serving as a basis for further implementation in System Dynamics measuring their performance.

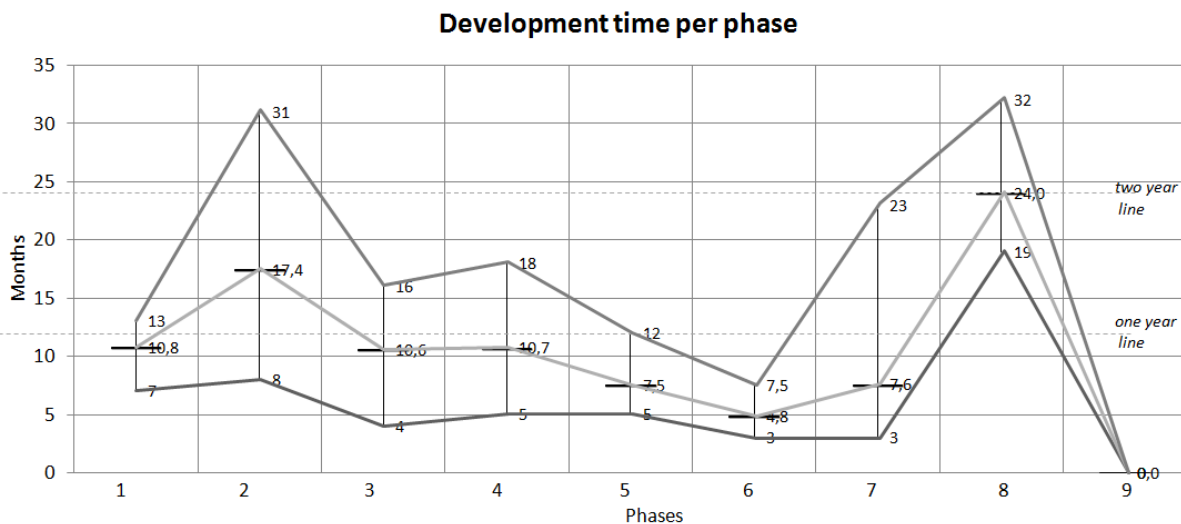
## **RESEARCH MODELS**

### **Results**

The current functional organizational structure has a single-product line and operates in an undifferentiated market. In combination with long product development and common standards these characteristics make sure that the sales risk remains irresponsible high. The current market asks for a more market oriented organization structure assuming rapid product cycles, customer knowledge advantage, product unique to segment, minimum outsourcing and important market segments. These have been taken into account during the design of the new organization structure. However, it is not possible to design a new organization structure and its processes before the current structure and corresponding activities have been studied as well. By conducting multiple interviews and a survey it became possible to focus on several activities within the functional structure that did not match the characteristics of demand-driven development and the desired market oriented organization structure. The list below shows the

results after the structured analysis of the functional organization structure and forms the framework for design of the market oriented organization structure:

1. Currently, finding the target group is done by an external agency bureau and not by Project Development themselves. In this way unnecessary failure is at risk since the target group maybe incorrect at time of start sales. Hiring an own marketing staff creates specialization and better coordination with the private dwelling consultants;
2. A self conducted survey under the Project Development department shows a large gap between knowing the target group (during second phase scenario development) and start sales (during price and contracting). Twelve project developments have been studied concerning their development time and it seems that the average gap is about 33.6 months. This contributes to the long product development and the high sales risk. Figure 1 below shows the minimum, average and maximum development time over twelve projects from 2008 till May 2012. Most important success factors are 1) developments only for the private market, 2) attracting subsidy to speed up the construction process and 3) developing the project independently and not together with other parties. The most important failure factors are 1) reviewing the investment decision after the third phase, 2) the project size in number of dwellings is too large, 3) financial feasibility and 4) possible delay regarding development time by rising construction costs resulting in an unbalanced budget.



**Figure 1: Development time per phase measured over 12 projects from 2008 till May 2012 plotting minima, maxima and mean (source: progress reports Mitros Project Development).**

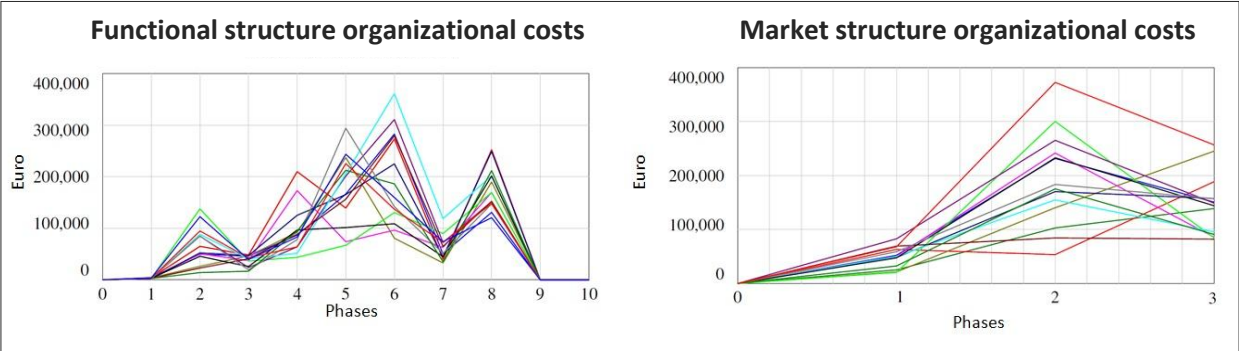
3. The knowledge and skills of the construction companies are not being used and exploited because the new developed private dwellings are designed by an architect. Well established construction companies have housing concepts that do not requires architects and specifications to tender. The tender procedure thereby also contributes to the long product development. Main side effect is that meanwhile the target group will be loosed out of sight;

4. Within the functional organization structure the customer should be allocated in the market. With over 27,000 current tenants the target group should be within reach. However, these current tenants are not actively approached by Mitros Project Development. Research under exit surveys over the years 2009 (407 respondents), 2010 (295 respondents) and 2011 (145 respondents) showed that many tenants relocate from a Mitros rental dwelling towards a private dwelling. Over the mutation percentage of 6.0% (measured over 2010 and 2011) 6.8% moved to a private dwelling new estate. In numbers this new target group is about 110 till 120 households each year. These households are classified to age and type of private dwelling that they revoke. Table 1 below shows the new target group that is considered as important for the market oriented organization structure.

Number of tenants relocated to private dwellings, new estate						
Year	% private dwelling	% new estate	% private dwelling, new estate	Number over area		
				# Utrecht	# Nieuwegein	# Total Mitros
2009	42%	15%	<b>6.3%</b>	unknown	unknown	<b>unknown</b>
2010	51%	12%	<b>6.2%</b>	89	21	<b>110</b>
2011	41%	19%	<b>7.9%</b>	95	27	<b>122</b>

**Table 1: New target group (source: combined exit surveys Mitros 2009 – 2011 and vacated dwellings 2010 -2011)**

It is interesting to notice that the predetermined organizational costs are higher in the development phases that do not take much development time. Figure 2 shows that the organizational costs are relatively low in the beginning of the project development but the development time is however long. This is partly explained by the not parallel development phases. Each phase could officially start only after the phase before is completed. The project development team is using an architect to make the preliminary and final design which includes the specifications where upon construction companies are contracted according to the lowest price principle. Based upon the current organization structure the SD model has been transformed into the market oriented organization structure of SADT.



**Figure 2: System Dynamic output graph where each line represents a scenario of the total organizational costs per fictive project development.**

The development time of the new proposed organization structure is not based upon case studies of private project developers but on interviews and the SADT model taken into account the omitted processes and activities. Commercial project developers have an average development time of about 12 till 18 months. This development time suits the SADT model activities find, retain and direct. Finding the target group and select the construction panel will not take years but expect to take three to six months. The retaining part concerning the multiple interactive discussion and design meetings will take place on a short, regular basis and shall take about five months. The directing part before the construction period knowing elaborating urban program of requirements and price and contracting will take at least four months. With a construction period as long as within the functional structure the average development time is about 39 months. Figure 2 on the previous page shows the market oriented structure and its organizational costs. It is clear to see that the new structure has a shorter development time and lower organizational costs. The new organizational structure will have a total development time of about 12 – 18 months based upon the SADT model and interviews. The average development time contains five months for each phase (Find, retain, direct) excluding the construction time. The construction time is kept the same as the functional organization structure (24 months).

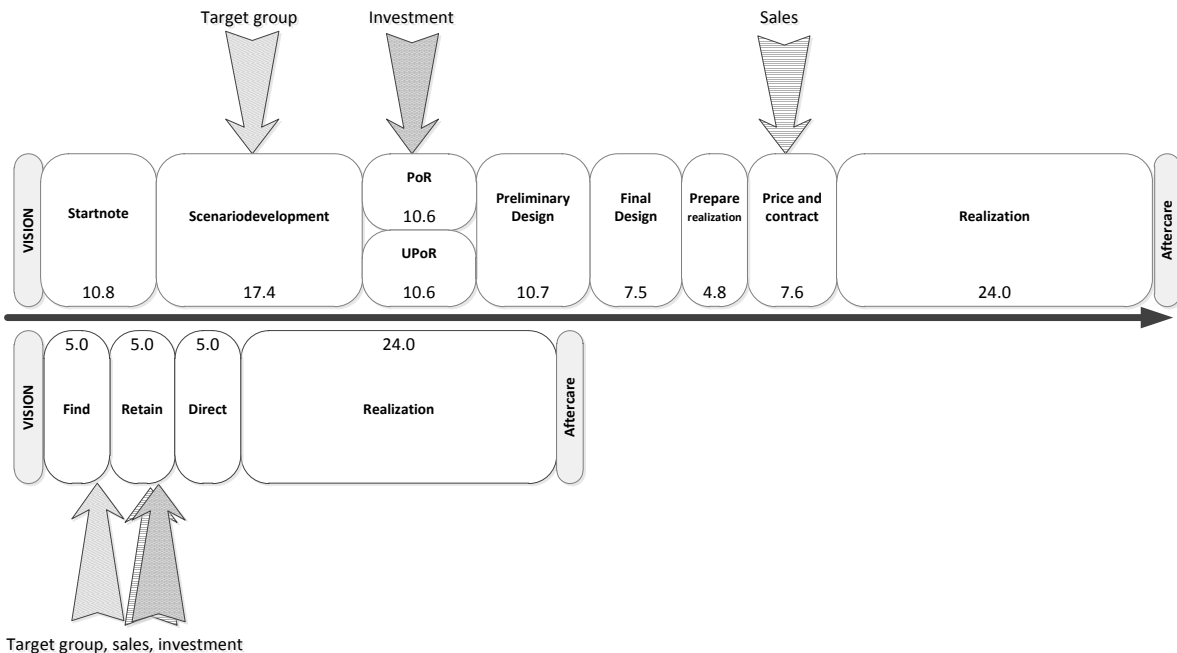
The organizational costs are compared to each other to say something about the difference between the two structures. The market oriented structure has 50.2% less organizational costs compared to the functional organization structure. This is mainly because the development time is reduced with 58% in the new proposed market oriented organization structure. The average development time for the functional structure is 93.4 months and the average development time for the market oriented structure is 39 months. That is a difference of 4.5 years. Please notice that the new proposed structure assumes that governmental procedures will be successfully run through before inviting the construction panels. Eventhough, the project development itself will have less development time and activities which are easier to manage and organize.

## **CONCLUSION AND RECOMMENDATION**

This paper discussed a widely known problem in the housing market. Because of the high supply and low demand in the housing market, project developments concerning private dwellings are facing high sales risk. This also applies for housing corporations developing private dwellings. Because of the additional social drivers housing corporations have, it seemed very interesting to conduct this research at housing corporation Mitros. The research problem stated: 'Corporations do not know how they must adapt their organization in order to thereafter realize the right product for the right buyer.' The main research question is consistent with the research problem knowing 'What type of organization supports the implementation of demand-driven development for housing corporations?' In this context demand-driven development is considered to be a possible direction of the solution.

The answer to the main research question is that the market oriented organization structure supports the implementation of demand-driven development best for the department of Project Development. This structure makes use of innovation in order to survive in the current wilderness cluster of the business life cycle of housing corporations. The market oriented structure is making full use of important market segments, product unique to this segment,

buyer strength, customer knowledge advantage, rapid product cycles and minimum efficient scale in outsourcing. The housing corporations should make a shift from the current functional organizational structure to a more market oriented organizational structure. The functional structure has namely a long product development (average of 5.8 years from vision till start constructing) and the market oriented structure is more commercially oriented resulting in a development time of about 12 till 18 months. Figure 3 below shows the differences between the two organization structures regarding development time and important moments like finding the target group, sales and investment.



**Figure 3: Differences between the current functional organization structure on top and the new proposed and designed market oriented structure below regarding development time and important moments as finding the target group, sales and investment.**

Besides, the market oriented organization structure that is designed for Mitros Project Development is closer to the core business of the organization: focusing on the current tenants. Offering the lower income households the possibility to buy a private dwelling is seen as one of the drivers for housing corporations to develop. In this way the department of Project Development starts a circulation/ flow on the housing market counteract on skew housing. Therefore, the main recommendation to Mitros Project Development is highly related to the answer of the main research question. Making use of the current tenants and approach them actively for project developments, will ensure that the core business of the housing corporation is guaranteed since you develop private dwellings for households with a lower income. Furthermore, an important conclusion after conducting this research is that almost 7% of the mutation percentage is considered to be as the new target group which can be specified to age and preferred dwelling type. This 7% could be expressed in numbers over the mutation percentage. In the year 2010 110 tenants and in the year 2011 122 tenants have moved to a

private dwelling. Focusing on these group results in less pressure for the new implemented marketing staff and existing sales staff of the market oriented structure because of the easier to approach target group instead of finding all new buyers in the market through advertising.

Looking at the associated organizational costs it can be concluded that the costs per project development are not in proportion with the development time. These figures are displayed according to the output of the system dynamics models. This means that the development time is independent in respect to the organizational costs. The organizational costs are predetermined but most part of these costs will be incurred during the phases that do not take much time. In other words, the organization of the department Project Development does much work and receive relatively little money during the first phases of the project development. In addition they receive much many for little work in the last phases.

The new designed organization structure believes that the housing corporations should become a director between the target group, municipality and construction company providing exclusivity to these groups. Therefore it can be said that the new determined role of the housing corporation should be the one of director. This new role is supported by the new designed organization and is intended to lower the sales risk. Taken these points into account it could be stated that the research objective is achieved. The overall conclusion is listed below:

- Make an organizational shift to a more market oriented structure and its associated processes and activities. The actions below support this market oriented structure that contribute to a lower sales risk having a directing role as housing corporation:
  - Current tenants as target group;
  - Own marketing and sales staff that actively approach the target group;
  - Make use of the construction companies' housing concepts and the related flexibility in floor plans and the dwelling price certainty;
  - Try to make agreements with the municipality and identify what procedures to follow before finding the housing panel and construction panel;
  - Sell development rights to the construction panel to bind the contractor to you as a developer and subsequently become your construction partner;
  - Let the housing panel become housing partner in terms of signing an option agreement to bind them to you as a developer.

### **Recommendations**

It is highly recommended to extend the data collection concerning the new target group under current tenants in terms of years that have been studied. The years 2009, 2010 and 2011 have been studied and are nevertheless the most important data because these years are after the large crisis of 2008 which means that the outcome of the data collection and interpretation are representative for the time we are in. Subsequently, hiring an own marketing & sales staff is of great added value for actively approaching the current tenants. This research only proposes a new organizational structure but does not list the activities in terms of steps on how to achieve this organization. The list of conclusions is consistent with the recommendations toward the department of Project Development.

Regarding the current tenants as new target group, this research would like to recommend further study regarding qualifying the characteristics of these tenants in relation with skew

housing among all tenants of Mitros. This seems to have influence on their relocation behavior according to Van der Rijst (2012) who conducted research amongst the tenants of Mitros and two other housing corporations within Utrecht. In Utrecht, 28% of all skew tenants have a relocation need, which means that 72% of the total skew tenants have no desire to move within two years. The number of respondents amongst Mitros tenants in the research of Van der Rijst (2012) were 468 and from this group 13% are skew tenants. A rough estimation states that amongst the 27,830 current tenants, there are 3,617 skew tenants. The recommendation concerning this theme is to extend the respondents to all Mitros tenants classified by name and living address and in this way get insight in the new target group that can be approached by the marketing and sales staff within the new proposed market oriented organization structure.

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**“There is never a final ending, there is always a new beginning!”**

Name	Henk Schotsman
2005 – 2009	Bachelor of Built Environment, Hogeschool Utrecht
2009	Graduation ‘organizational workplace development
2009 – 2012	MsC in Construction Management and Engineering
2012 - 2012	Graduation

## APPENDICES

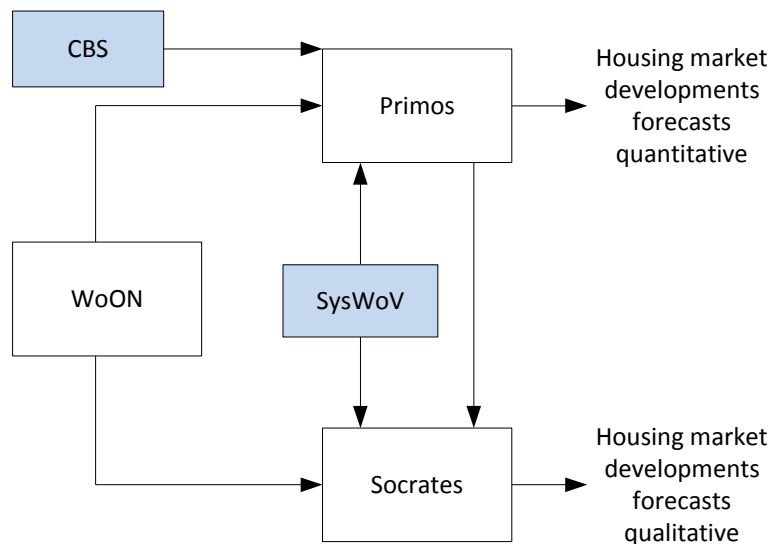
### Appendix 1.1

Chapter 1.2 Research Approach, p. 10

Source VROM Ministry (2011)

Explanation The *“WoonOnderzoek Nederland”* (*“afgekort WoOn, wat voorheen het WBO was”*) and the forecast models of Primos and Socrates are important instruments to study the housing market developments by the Ministry of Internal Affairs and Kingdom Relations.

The Socrates model is composed by the System Dwelling Supply (*“Systeem Woning Voorraad or SysWoV”*) and the *“WoOn”* research to forecast housing market developments in a qualitative way from a quantitative direction. The Primos model is composed by the Central Bureau for Statistics (CBS) and the *“WoOn”* and *“SysWoV”* research forecasts housing market developments in a quantitative way.



### Appendix 1.2

Chapter 1.3 Research Model, p. 13

Explanation Underneath list shows all interviewees and expert meetings during the period February 2012 till July 2012.

Interview			
Name	Company	Function	Data
Bertrams, Pleun	Mitros	Projectontwikkelaar acquisitie	Several times
Bok, Martijn	BAM woningbouw	Projectmanager	18-4-2012
Bosch, Koos	BAM woningbouw	Senior projectmanager	18-4-2012
Brokken, Gysele	Mitros	Manager bedrijfsbureau	13-2-2012
Buuren, Jos van	Mitros	Portefeuilleontwikkelaar	16-2-2012
Gassal, Frans van	TU Eindhoven	Ass. prof. Performance Engineering	9-5-2012
Hoes, Renee	Mitros	Concernjurist	27-2-2012
Kok, Nancy	Gemeente Utrecht	Manager grondzaken	10-5-2012



Li, Wing-Hoo	Mitros	Internal Auditor	5-3-2012
Loos, Roselie	Mitros	Adviseur marktstaf	20-2-2012
Massop, Ina	Gemeente Utrecht	Gebiedsmanager	10-5-2012
Mol, Nico	Vesteda	Directeur Projectontwikkeling	11-4-2012
Moorman, Clé	Mitros	Ontwikkelmanager	2-4-2012
Roelofs, Michiel	HURSK vastgoedontwikkeling	Ontwikkelaar	21-5-2012
Rötscheid, Rob	Mitros ai	Bestuursvoorzitter	12-3-2012
Schuldink, Paula	Mitros	Ontwikkelaar	14-2-2012
Van Buuren, Jos	Mitros	Portefeuilleontwikkelaar	16-2-2012
Van Es, Michel	Woonzorg	Directeur Projectontwikkeling	4-4-2012
Van Os, Peter	RIGO	Partner	15-3-2012
Van Ree, Bob	Mitros	Manager projectontwikkeling	Several times
Wijnbeld, Danny	Mitros	Directeur MPO	27-2-2012
Wit, Henk de	Gemeente Utrecht	Gebiedsmanager	10-5-2012

### Meetings

Meeting Organizational change within Mitros			19-3-2012
Akkanat, Kadir	Mitros	Accountmanager BOG	
Brouwer, Jan Pieter	Mitros ai	Directeur Onderhoudsgroep	
Hanegraaf, Marieke	Twynstra Gudde	Adviseur	
Jonkers, Remco	Mitros	Contractbeheerder	
Symposium Twynstra Gudde "'Op weg naar 2025' - Toekomstroutes voor woningcorporaties"			28-3-2012
Toekomstscenario groep Krachtige concurrentie			
Appeljan, Peter	Syntrus Achmea Vastgoed	Directeur Woningbelegging	
Bonnema, Alex	Elkien	Bestuurder	
Meeting Organizational change within Mitros Project Development			12-4-2012
Esser, Gera	Mitros	Gebiedsmanager	
Ijtsma, Eelco	Mitros	Projectmanager	
Lekkerkerker, Jan-Willem	Mitros	Projectmanager	
Ruiter, Majolein	Mitros	Ontwikkelingsmanager	
Staffhorst, Bastiaan	Mitros	Manager stad Utrecht	
Ten Brink, Joop	Mitros	Portefeuilleontwikkelaar	
Van den Berg, Chellie	Twynstra Gudde	Senior consultant	
Van Denter, Sabine	Mitros	Projectmanager	
Van der Burg, Jan	Mitros	Senior projectmanager	
Van Wijk, Carline	Mitros	Projectmanager	
Individual meetings concerning Functional Organization Structure Verifying SADT			3-5-2012
Akkermans, Pieter	Mitros	Ontwikkelmanager	
Brokken, Gysele	Mitros	Manager Bedrijfsbureau	
Harsveldt, Sjoerd	Mitros	Ontwikkelmanager	
Kamerbeek, Oscar	Mitros	Verkoop adviseur nieuwbouw	

Ruiter, Majolein	Mitros	Ontwikkelmanager
Worm, Hans	Mitros	Procescontroller

## Appendix 2.1

Chapter 2.1 Current state of the housing market, p. 15

Source ABF Research, SysWoV (2012) processed by author

Explanation Detailed calculation for the approximation of construction year and number of dwellings. The tables below show a calculation of the percentage dwellings build in the period 1971 till 1990 and the average age of a dwelling in Utrecht.

Construction year	Utrecht #	Nederland #	Utrecht	NL	Difference
Supply -1905	34.495	492.535	6,8%	6,8%	-0,06%
Supply 1906-1930	36.471	568.228	7,2%	7,9%	-0,72%
Supply 1931-1944	29.070	412.103	5,7%	5,7%	-0,01%
Supply 1945-1959	44.896	748.784	8,8%	10,4%	-1,57%
<b>Supply 1971-1980</b>	<b>84.049</b>	1.201.190	16,5%	16,6%	-0,16%
<b>Vrrd. 1981-1990</b>	<b>81.734</b>	1.095.848	16,0%	15,2%	0,85%
<b>Supply 1960-1970</b>	<b>78.388</b>	1.146.886	15,4%	15,9%	-0,52%
Supply 1991-2000	64.027	851.536	12,6%	11,8%	0,76%
Supply 2001+	56.721	700.693	11,1%	9,7%	1,42%
total	509.851	7.217.803	100%	100%	

Percentage build in 1971-1990 = 47,9 per cent

509.851	100%
244.171	<b>47,9%</b>

Construction year	Dwellings #	Age till 2012	Percentage	(Number of dwellings * Age) / Total dwellings
1905	34.495	107	6,8%	7,239
1918	36.471	94	7,2%	6,724
1938	29.070	74,5	5,7%	4,248
1952	44.896	60	8,8%	5,283
1976	84.049	36,5	16,5%	6,017
1986	81.734	26,5	16,0%	4,248
1965	78.388	47	15,4%	7,226
1996	64.027	16,5	12,6%	2,072
2006	56.721	6	11,1%	0,668
	509.851	468	100%	<b>43,725</b>

Average age of a dwelling in Utrecht is 43 years

**Appendix 2.2**

Chapter 2.1 Current state of the housing market, p. 16

Source ABF Research, SysWoV (2012)

Explanation Detailed figures according to figure 2.1 Number of dwellings according to their ownership.

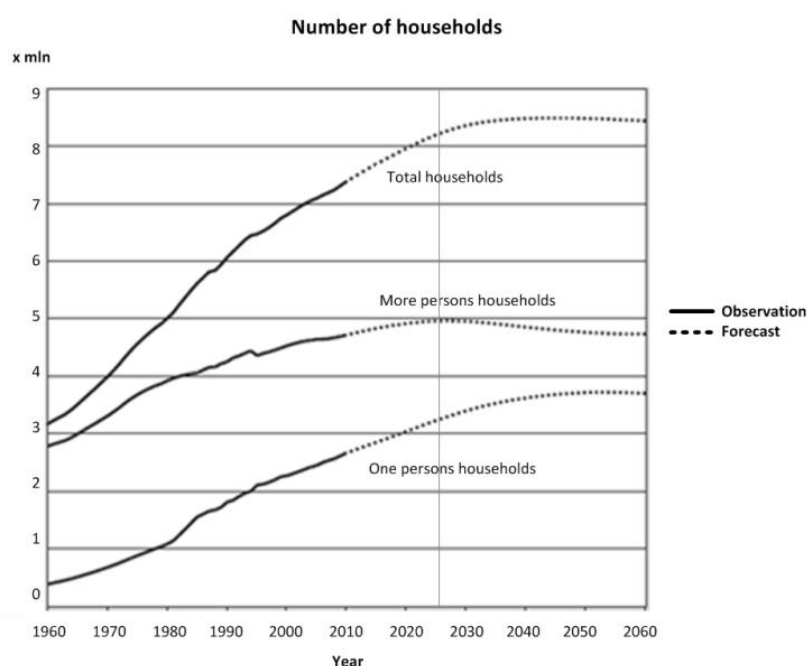
Ownership in the Netherlands		
Year	Supply buyer's market	Supply rental market
1985	2.253.122	3.036.199
1987	2.386.862	3.096.215
1989	2.547.455	3.151.938
1991	2.704.594	3.187.654
1993	2.842.427	3.200.552
1995	2.994.104	3.197.818
1997	3.172.727	3.184.843
1999	3.366.608	3.155.751
2001	3.546.812	3.104.100
2003	3.711.347	3.052.719
2005	3.861.231	2.997.488
2007	4.016.874	2.950.172
2009	4.181.007	2.923.511
2011	4.309.213	2.908.590

**Appendix 2.3**

Chapter 2.2 Population developments till 2025, p. 17

Source CBS – van Duin &amp; Stoeldraijer (2011)

Explanation Households forecast. The graph below shows the number of households divided in single and multiple households and a total number of households from 1960 till 2010 and forecasts till 2060.



**Appendix 4.1**

Chapter 4.2 Business strategy, p. 30

Source Miles & Snow (1978)

Explanation Characteristics of the defender, analyzer and prospector related to the entrepreneurial-, engineering-, and administrative problems.

<b>Characteristics of the Defender strategy typology</b>		
<b>Entrepreneurial Problem</b>	<b>Engineering Problem</b>	<b>Administrative Problem</b>
Problem	Problem	Problem
How to 'seal off' a portion of the total market to create a stable set of products and customers?	How to produce and distribute goods or services as efficiently as possible?	How to maintain strict control of the organization in order to ensure efficiency?
Solutions	Solutions	Solutions
<ol style="list-style-type: none"> <li>1. Narrow and stable domain;</li> <li>2. Aggressive maintenance of domain (for example, competitive pricing and excellent customer service);</li> <li>3. Tendency to ignore developments outside of domain;</li> <li>4. Cautious and incremental growth primarily through market penetration;</li> <li>5. Some product development but closely related to current goods or services</li> </ol>	<ol style="list-style-type: none"> <li>1. Cost-efficient technology;</li> <li>2. Single core technology;</li> <li>3. Tendency toward vertical integration;</li> <li>4. Continuous improvements in technology to maintain efficiency.</li> </ol>	<ol style="list-style-type: none"> <li>1. Financial and production experts most powerful members of the dominant coalition; limited environmental scanning;</li> <li>2. Tenure of dominant coalition is lengthy; promotions from within;</li> <li>3. Planning is intensive, cost oriented and completed before action is taken;</li> <li>4. Tendency toward functional structure with extensive division of labor and high degree of formalization;</li> <li>5. Centralized control and long-looped vertical information systems;</li> <li>6. Simple coordination mechanisms and conflict resolved through hierarchical channels;</li> <li>7. Organizational performance measured against previous years; reward system favors production and finance.</li> </ol>
Cost and Benefits	Cost and Benefits	Cost and Benefits
It is difficult for competitors to dislodge the organization from its small niche in the industry, but a major shift in the market could threaten survival.	Technological efficiency is central to organizational performance, but heavy investment in this areas requires technological problems to remain familiar and predictable for lengthy periods of time.	Administrative system is ideally suited to maintain stability and efficiency but it is not well suited to locating and responding to new product or market opportunities.

<b>Characteristics of the Prospector strategy typology</b>		
<b>Entrepreneurial Problem</b>	<b>Engineering Problem</b>	<b>Administrative Problem</b>
Problem	Problem	Problem
How to locate and exploit new product and market opportunities?	How to avoid long-term commitments to a single technological process?	How to facilitate and coordinate numerous and diverse operations?
Solutions	Solutions	Solutions
<ol style="list-style-type: none"> <li>1. Broad and continuously developing domain;</li> <li>2. Monitors wide range of environmental conditions and events;</li> <li>3. Creates change in the industry;</li> <li>4. Growth through product and market development;</li> <li>5. Growth may occur in spurts.</li> </ol>	<ol style="list-style-type: none"> <li>1. Flexible, prototypical technologies;</li> <li>2. Multiple technologies;</li> <li>3. Low degree of routinization and mechanization; technology embedded in people.</li> </ol>	<ol style="list-style-type: none"> <li>1. Marketing and research and development experts most powerful members of the dominant coalition;</li> <li>2. Dominant coalition is large, diverse, and transitory; may include an inner circle;</li> <li>3. Tenure of dominant coalition not always lengthy; key managers may be hired from outside as well as promoted from within;</li> <li>4. Planning is comprehensive, problem oriented and cannot be finalized before action is taken;</li> <li>5. Tendency toward product structure with low division of labor and low degree of formalization;</li> </ol>

		<ol style="list-style-type: none"> <li>6. Decentralized control and short-looped horizontal information systems;</li> <li>7. Complex coordination mechanisms and conflict resolved through integrators;</li> <li>8. Organizational performance measured against important competitors; reward systems favor marketing and research and development.</li> </ol>
<b>Cost and Benefits</b>	<b>Cost and Benefits</b>	<b>Cost and Benefits</b>
Product and market innovation protect the organization from a changing environment, but the organization runs the risk of low profitability and overextension of its resources.	Technological flexibility permits a rapid response to a changing domain but the organization cannot develop maximum efficiency in its production and distribution system because of multiple technologies.	Administrative system is ideally suited to maintain flexibility and effectiveness but may underutilize and misutilize resources.

**Characteristics of the Analyzer strategy typology**

<b>Entrepreneurial Problem</b>	<b>Engineering Problem</b>	<b>Administrative Problem</b>
<b>Problem</b>	<b>Problem</b>	<b>Problem</b>
How to locate and exploit new product and market opportunities while simultaneously maintaining a firm base of traditional products and customer?	How to be efficient in stable portions of the domain and flexible in changing portions?	How to differentiate the organization's structure and processes to accommodate both stable and dynamic areas of operation?
<b>Solutions</b>	<b>Solutions</b>	<b>Solutions</b>
<ol style="list-style-type: none"> <li>1. Hybrid domain that is both stable and changing;</li> <li>2. Surveillance mechanisms mostly limited to marketing; some research and development;</li> <li>3. Steady growth through market penetration and product-market development.</li> </ol>	<ol style="list-style-type: none"> <li>1. Dual technological core; stable and flexible component;</li> <li>2. Large and influential applied engineering group;</li> <li>3. Moderate degree of technical rationality.</li> </ol>	<ol style="list-style-type: none"> <li>1. Marketing and engineering most influential members of dominant coalition, followed closely by production;</li> <li>2. Intensive planning between marketing and production concerning stable portion of domain; comprehensive planning among marketing, engineering and product managers concerning new products and markets;</li> <li>3. 'Loose' matrix structure combining both functional divisions and product groups;</li> <li>4. Moderately centralized control system with vertical and horizontal feedback loops;</li> <li>5. Extremely complex and expensive coordination mechanisms; some conflict resolution through product managers, some through normal hierarchical channels;</li> <li>6. Performance appraisal based on both effectiveness and efficiency measures, most rewards to marketing and engineering.</li> </ol>
<b>Cost and Benefits</b>	<b>Cost and Benefits</b>	<b>Cost and Benefits</b>
Low investment in research and development, combined with imitation of demonstrably successful products, minimizes risk but domain must be optimally balanced at all times between stability and flexibility.	Dual technological core is able to serve a hybrid stable-changing domain but the technology can never be completely effective or efficient.	Administrative system is ideally suited to balance stability and flexibility but if this balance is lost, it may be difficult to restore equilibrium.

**Appendix 4.2**

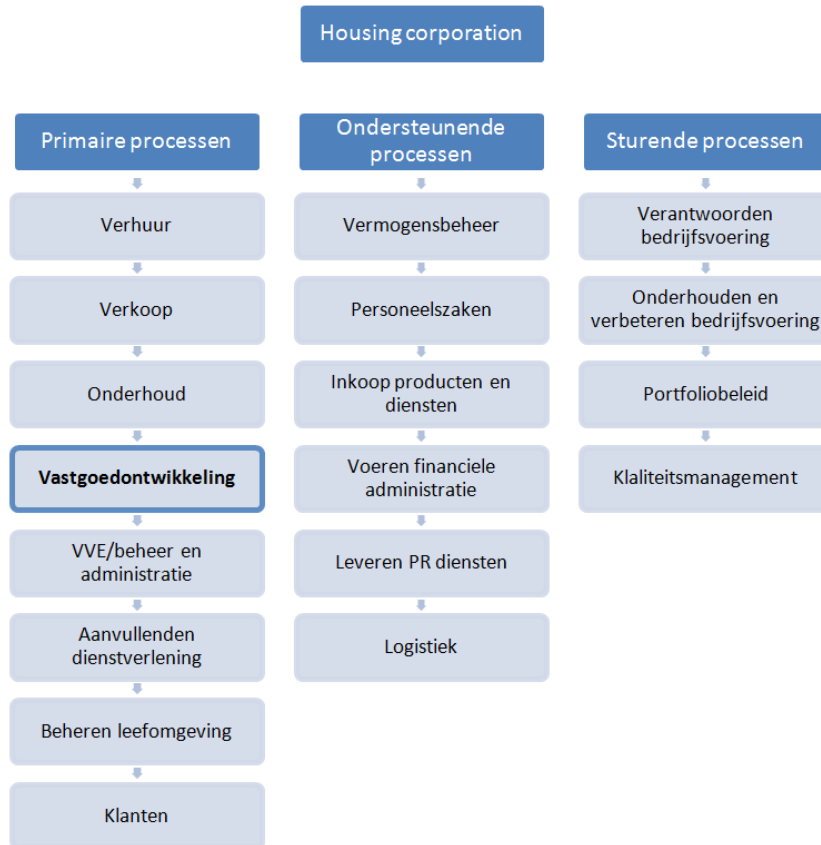
Chapter 4.3 Structure, p. 33

Source Lawrence &amp; Lorsch (1969), in: Maula (2006)

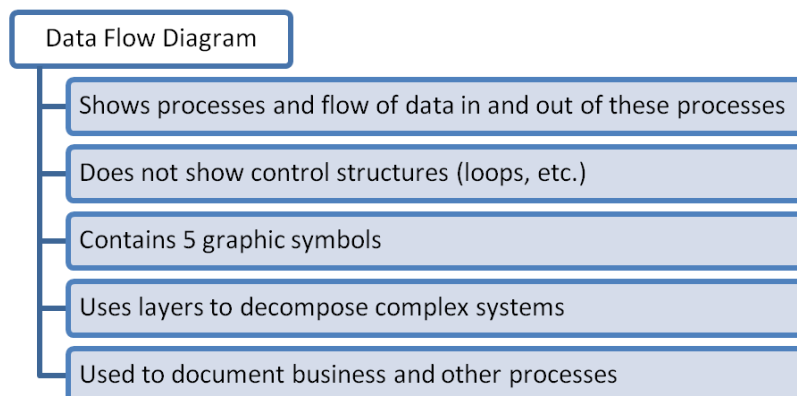
Explanation Elements of structural configurations contingency factors.

	<b>Simple structure</b>	<b>Machine Bureaucracy</b>	<b>Professional Bureaucracy</b>	<b>Divisionalized Form</b>	<b>Adhocracy</b>
<b>Key coordinating mechanism</b>	<b>Direct supervision</b>	<b>Standardization of work</b>	<b>Standardization of skills</b>	<b>Standardization of outputs</b>	<b>Mutual adjustments</b>
<b>Design parameters:</b>					
Specialization of jobs:	Low	High	High	Some between HQ	High
- Horizontal	High	High	Low	Some and divisions	Low
- Vertical					
Training	Low	Low	High	Some for division	High
Indoctrination	Low	Low	High (retraining)	Some managers	Varies
Formalization of behavior	Low	High	Low	High with divisions	Low
Bureaucratic/ organic	Organic	Bureaucratic	Bureaucratic	Bureaucratic	Organic
Grouping	Usually functional	Usually functional	Functional and market	Market	Functional and market
Unit size	Large	Large (at bottom, narrow elsewhere)	Large at bottom, narrow elsewhere	Large (between HQ and divisions)	Small throughout
Planning and control systems	Little	Action planning	Little	Perfect control	Limited action planning
Liaison devices	Few	Few	Some in administration	Few	Many throughout
Decentralization	Centralization	Limited horizontal decentralization	Hor. and Vert. decentralization	Limited vertical decentralization	Selective decentral.
<b>Contingency factors:</b>					
Age (typically)	Young	Old	Varies	Old	Young
Size (typically)	Small	Large	Varies	Very Large	Varies
<b>Technical system</b>					
- Regulation	Low	High	Low	High	Low
- Complexity	Low	Low	Low	Low	Low/ High
- Automated	No	No	No	No	No/ Often
<b>Environment</b>					
- Complexity	Low	Low	High	Low	High
- Dynamism	High	Low	Low	Low (diversified markets)	High (sometimes disparate)
<b>Power</b>					
- Focus	Strategic apex	Technostructure, often external	Professional operators	Middle line	Experts
- Fashionable	No	No	Yes	Yes	Especially

**Appendix 4.3**  
 Chapter 4.4 Process, p. 35  
 Source Derived from the Sensus-processmanagement method.  
 Explanation Hierarchic process scheme of housing corporations.



**Appendix 5.1**  
 Chapter 5.1 Structured Analysis and Design Technique, p. 40  
 Source  
 Explanation Data flow diagram contents.



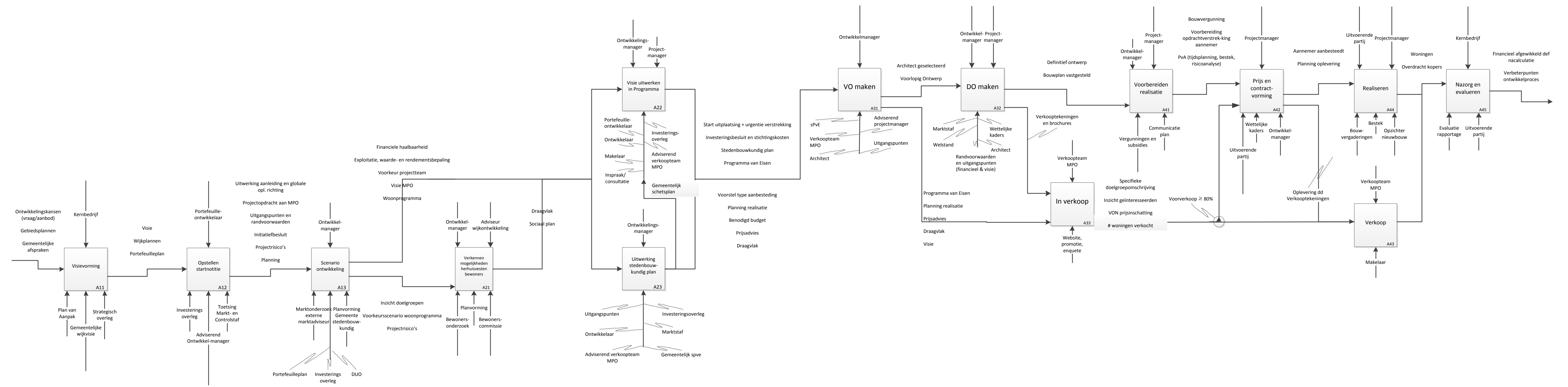
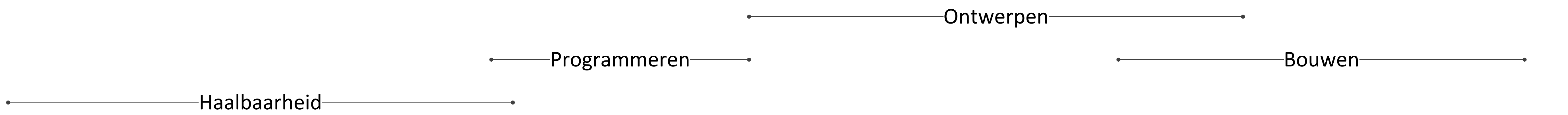
**Appendix 6.1**

Chapter 6.1 SADT model, p. 48

Source Derived from Mitros Project Development internal documents.

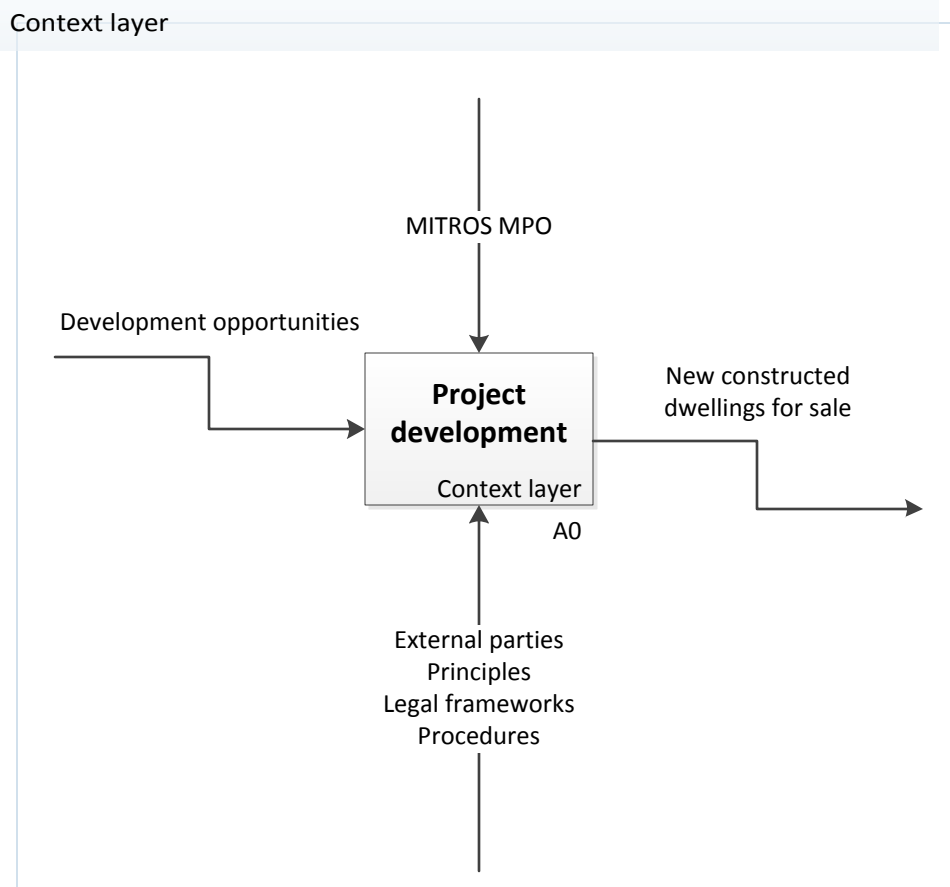
Explanation This SADT model from the functional organization structure provides clear insight in the activities and processes of project developments. This model will not be fully screened in this thesis because the emphasis lies on the market oriented structure and the current structure will therefore be seen as the basis.



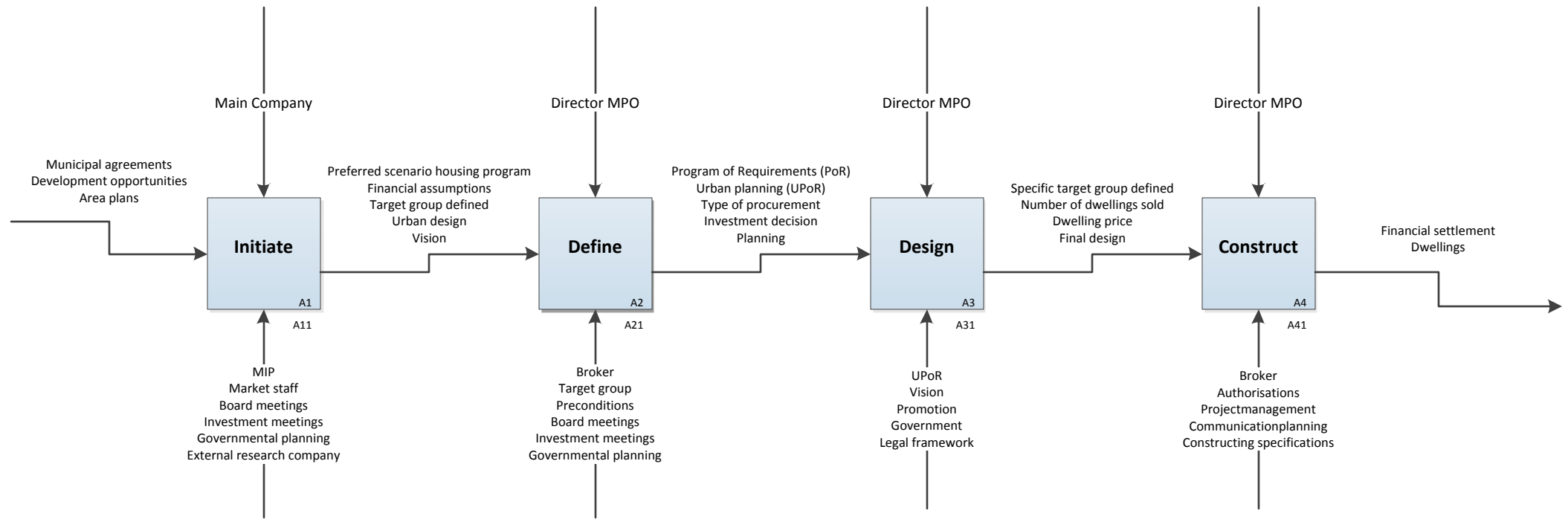


Functional structure

Traditionele aanbesteding met gescheiden koop/aanneemovereenkomst als  
uitgangspunt bij sloop/nieuwbouw (binnenstedelijke ontwikkelingen)



A1 layer - Developmentprocess



Fase 1

Akkoord opdrachtverstrekking uitvoeren haalbaarheidsonderzoek MPO

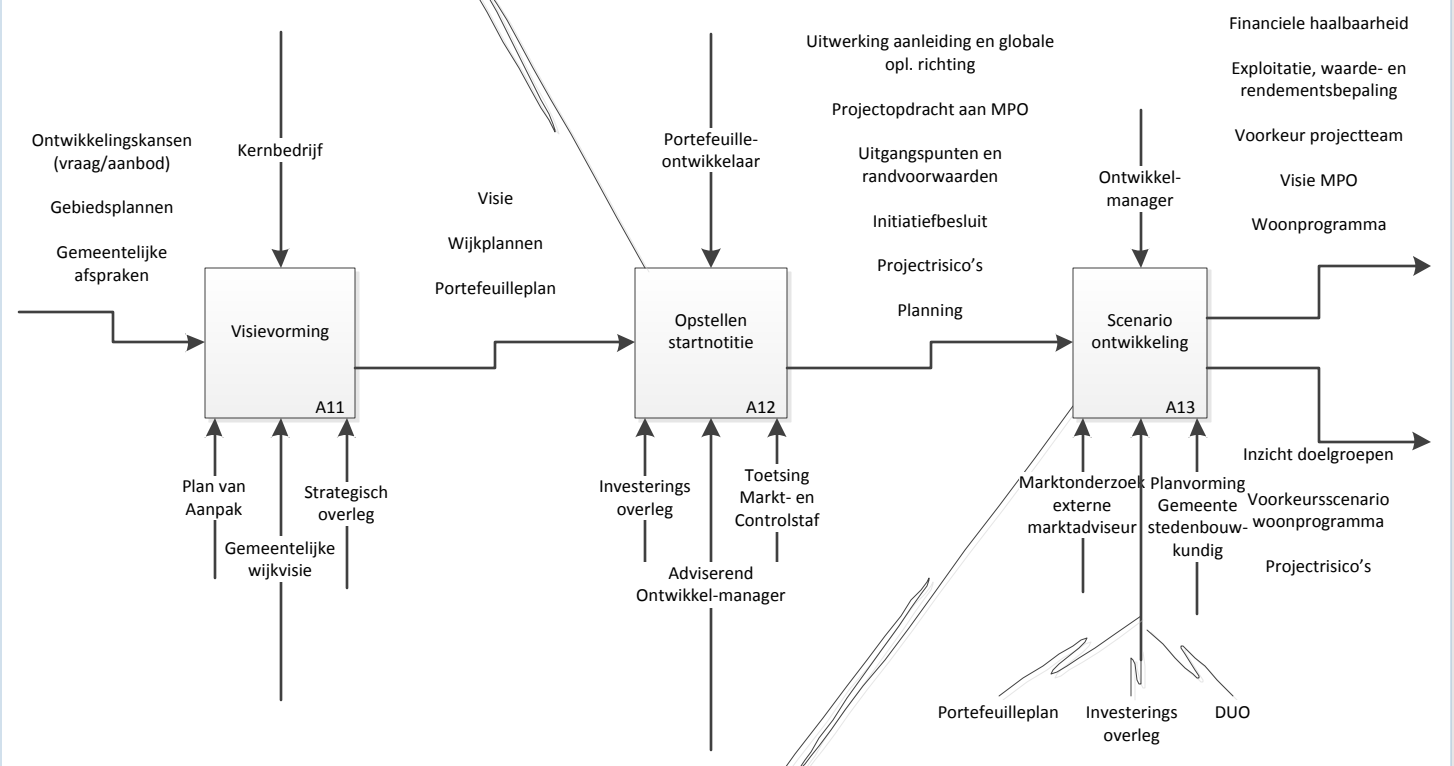
Akkoord prognose:

- investeringsbudget
- slooibudget
- programma en ontwerp
- planning start bouw dd
- planning start uitplaatsing en start sloop

Akkoord start fase 2 haalbaarheidsonderzoek conform activiteitenplanning/stappenplan

Akkoord vrijgave fasebudget fase 2 en 3

A2 Laag - Initiëren



Fase 2

Akkoord voorgestelde oplossingsrichting

Akkoord prognose:

- investeringsbudget
- slooibudget
- programma en ontwerp
- planning start bouw dd
- planning start uitplaatsing dd en start sloop dd

Akkoord start fase PvE conform activiteitenplanning/stappenplan

## A2 Laag - Definiëren

### Fase 3

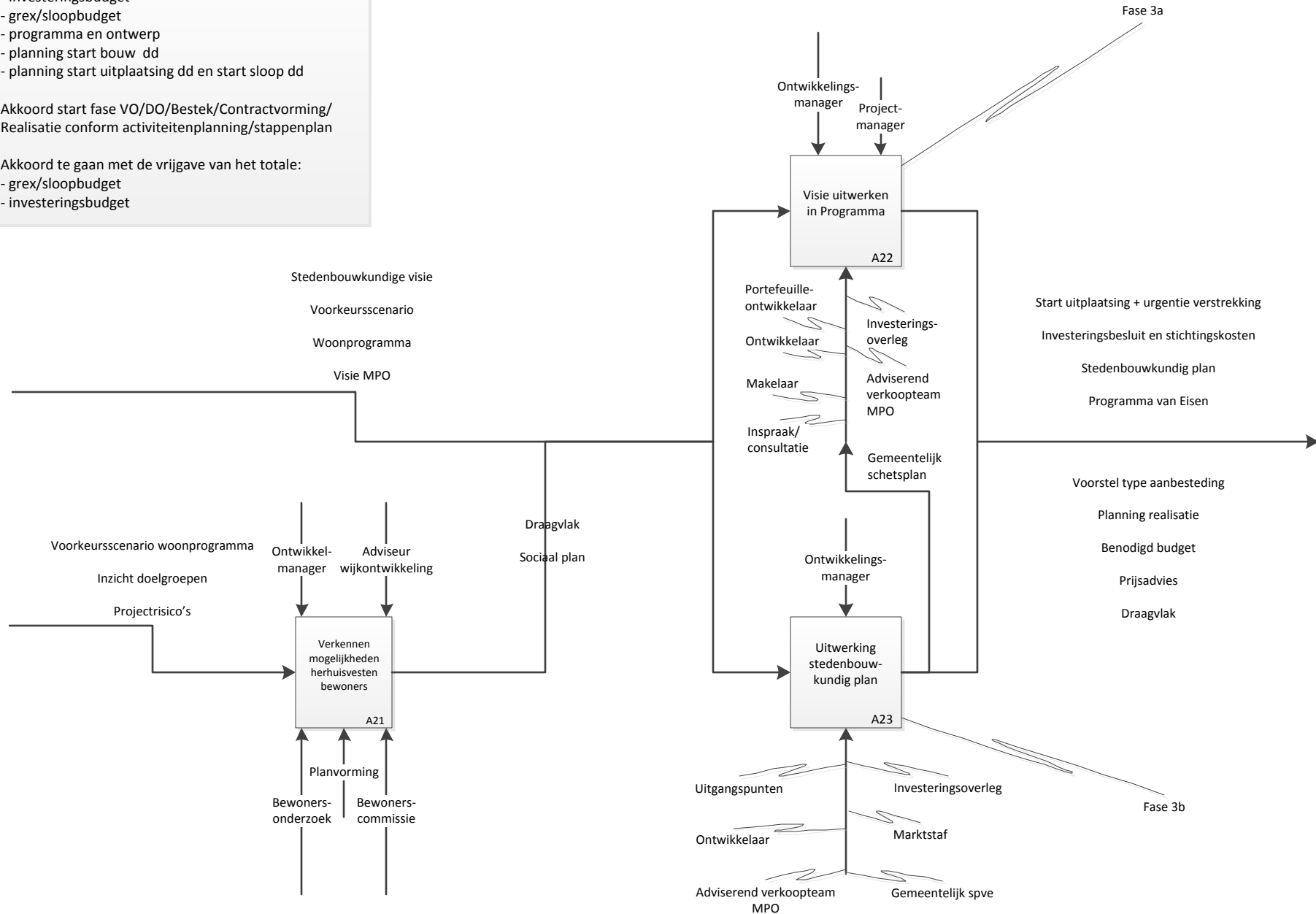
Akkoord te gaan met wijzigingen in:

- investeringsbudget
- grex/sloopbudget
- programma en ontwerp
- planning start bouw dd
- planning start uitplaatsing dd en start sloop dd

Akkoord start fase VO/DO/Bestek/Contractvorming/Realisatie conform activiteitenplanning/stappenplan

Akkoord te gaan met de vrijgave van het totale:

- grex/sloopbudget
- investeringsbudget



Fase 4

Akkoord te gaan met wijzigingen in:

- investeringsbudget
- sloopbudget
- programma en ontwerp
- planning start verkoop
- planning start bouw dd en oplvering dd
- planning start uitplaatsing dd en start sloop dd

Akkoord afgerond VO/DO/Bestek/Contractvorming/Realisatie conform activiteitenplanning/stappenplan

Akkoord te gaan met start fase DO/Bestek/Contractvorming/Realisatie conform activiteitenplanning/stappenplan

Akkoord te gaan voorstel extra BO besluit

Fase 5

Akkoord te gaan met wijzigingen in:

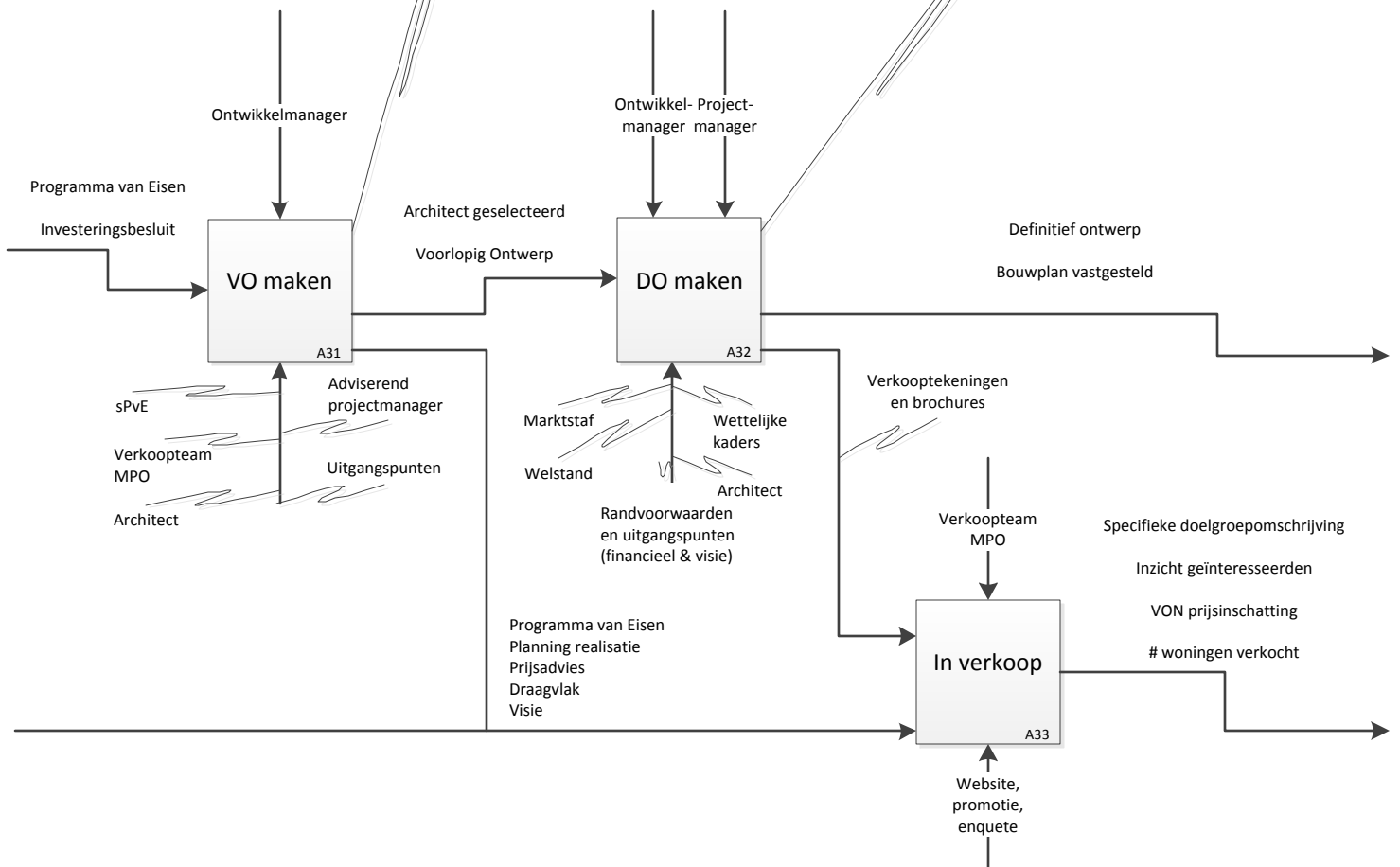
- investeringsbudget
- sloopbudget
- programma en ontwerp
- planning start verkoop
- planning einde uitplaatsing dd en start sloop
- planning start bouw dd en oplevering dd

Akkoord afgerond DO/Bestek/Contractvorming/Realisatie

Akkoord te gaan met start fase Bestek/Contractvorming/Realisatie conform activiteitenplanning/stappenplan

Akkoord te gaan voorstel extra BO besluit

A2 laag - Ontwerpen



Fase 7

- Akkoord te gaan met wijzigingen in:
- investeringskosten
  - programma en ontwerp
  - planning start bouw dd en oplevering dd

Akkoord afgeronde Contractvorming

Akkoord te gaan met start fase Contractvorming conform activiteitenplanning/stappenplan

Akkoord te gaan voorstel extra BO besluit

Fase 8

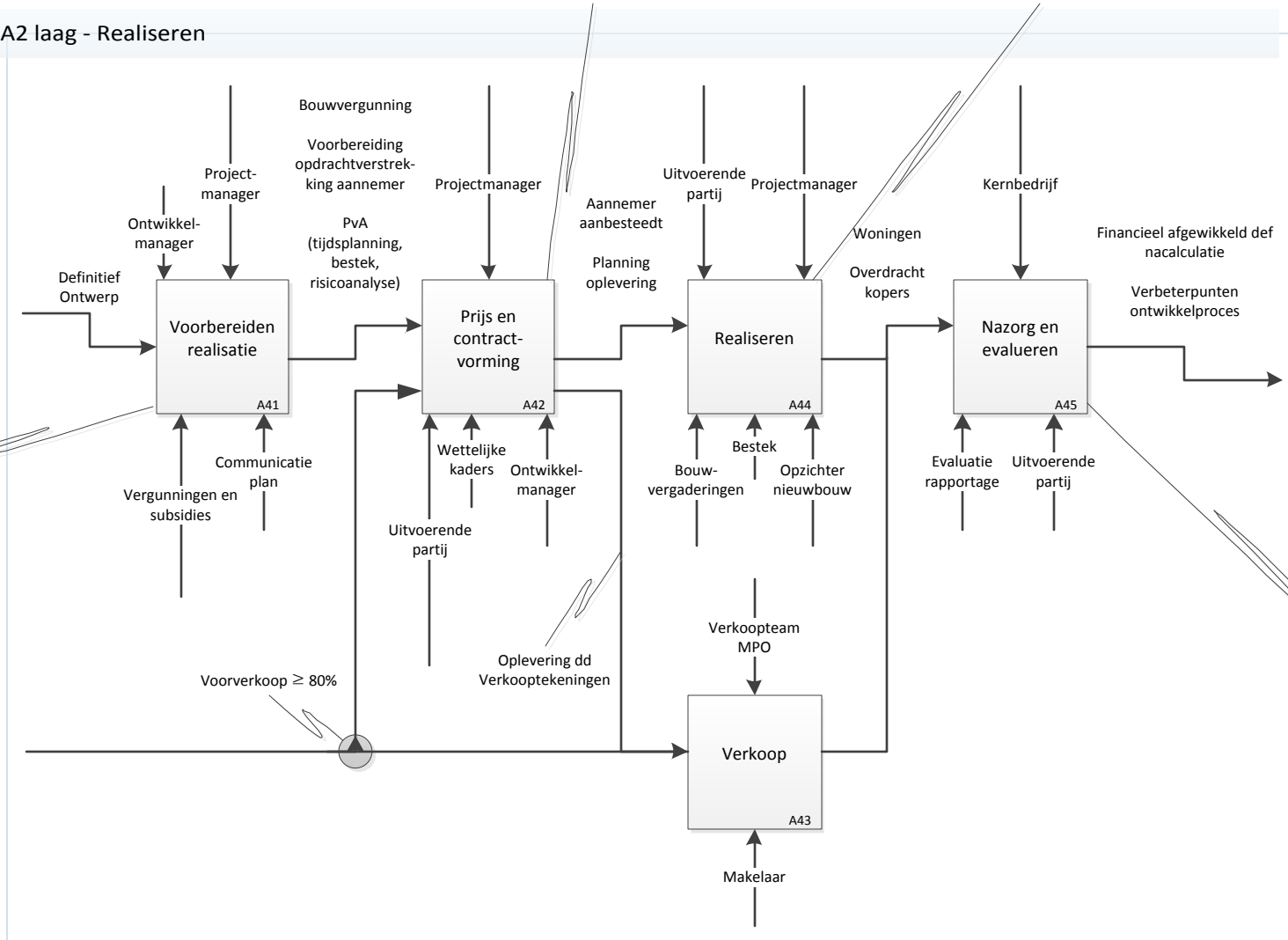
Akkoord te gaan met voorlopige nacalculatie

Akkoord te gaan met afgeronde realisatie en woonrijpmaken

Akkoord te gaan met start fase 9: nazorg en evaluatie conform activiteitenplanning/ stappenplan

Akkoord te gaan met overdracht vastgoed aan kernbedrijf

A2 laag - Realiseren



Fase 6

- Akkoord te gaan met wijzigingen in:
- investeringsbudget
  - programma en ontwerp
  - start verkoop dd
  - start sloop dd
  - planning start bouw dd en oplevering dd

Akkoord afgerond Bestek/ Contractvorming/Realisatie

Akkoord te gaan met start fase Contractvorming/Realisatie conform activiteitenplanning/ stappenplan

Akkoord te gaan voorstel extra BO besluit

Fase 9

Akkoord te gaan met afronding fase 9: nazorg en evaluatie

Akkoord te gaan met nacalculatie

Akkoord te gaan met decharge MPO

**Appendix 6.2**

Chapter 6.2 Data collection, p. 49

Source Online survey by author.

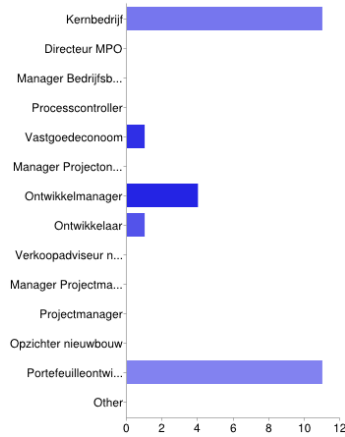
Explanation To verify the SADT model (appendix 6.1) this online anonymous survey has been held under the project development department. Outcome of this survey have been processed in the SADT model to give a realistic and reliable overview of the current functional organization structure. The number of respondents is 16 out of 29.



# 16 reacties

## Overzicht [Complete reacties bekijken](#)

### 1. Het opstellen van de startnotitie



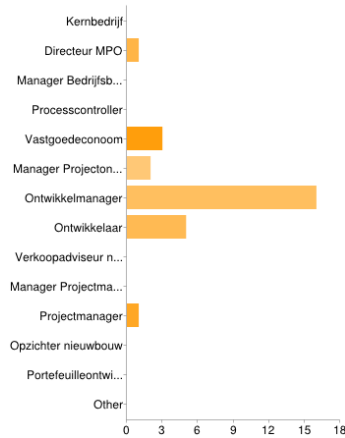
Kernbedrijf	11	69%
Directeur MPO	0	0%
Manager Bedrijfsbureau	0	0%
Processcontroller	0	0%
Vastgoedeconoom	1	6%
Manager Projectontwikkeling	0	0%
Ontwikkelaar	4	25%
Verkoopadviseur nieuwbouw	0	0%
Manager Projectmanagement	0	0%
Projectmanager	0	0%
Opzichter nieuwbouw	0	0%
Portefeuilleontwikkelaar	11	69%
Other	0	0%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

### Wat is de output van deze activiteit? Welke inzichten, documenten en/of producten?

stand punt betreffende de hoofdlijnen voor het te realiseren/ handhaven product. Een vertaling van de gebiedsvisie toegespitst op een specifiek deelgebied wat vervolgens als apart project gedefinieerd wordt. De uitkomst is een visie document waarin duidelijk staat wat het huidige probleem is en wat de wenselijke uitkomst is met een indicatie van de financieel ruimte. De mate van detail van de wenselijke uitkomst kan nog heel divers zijn. Van gelukkige bewoners tot een 0-energie woning bijvoorbeeld. het document dient als startpunt voor de opdracht aan MPO. Een visie vanuit de kernbedrijf op de o ...

### 2. Scenario ontwikkeling (haalbaarheid)



Kernbedrijf	0	0%
Directeur MPO	1	6%
Manager Bedrijfsbureau	0	0%
Processcontroller	0	0%
Vastgoedeconoom	3	19%
Manager Projectontwikkeling	2	13%
Ontwikkelaar	16	100%
Verkoopadviseur nieuwbouw	5	31%
Manager Projectmanagement	0	0%
Projectmanager	1	6%
Opzichter nieuwbouw	0	0%
Portefeuilleontwikkelaar	0	0%
Other	0	0%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

### Wat zijn naast een voorkeursscenario andere deliverables van de haalbaarheidsstudie?

Tijdens deze fase is de ontwikkelmanager verantwoordelijk voor presenteren van een voorkeursscenario. In deze fase kan het inhoudelijk aansturen geheel of gedeeltelijk overgedragen aan de ontwikkelaar nagelang diens ervaring en kwaliteiten. Uitkomsten van onderzoeken die de geschetste problemen bevestigen of nuanceren. Tevens laat het document zien hoe de wenselijke uitkomst op een financieel haalbare wijze te realiseren is. Mochten er meerdere mogelijkheden zijn zal een afweging gemaakt worden welke van de opties als voorkeursscenario gepresenteerd worden. Een afgewogen voorkeursscenario. ...

### 3. Opstellen van het PvE



Kernbedrijf	4	25%
Directeur MPO	0	0%
Manager Bedrijfsbureau	0	0%
Processcontroller	0	0%
Vastgoedeconoom	2	13%
Manager Projectontwikkeling	0	0%
Ontwikkelaar	11	69%
Verkoopadviseur nieuwbouw	6	38%
Manager Projectmanagement	1	6%
Projectmanager	2	13%
Opzichter nieuwbouw	3	19%
Portefeuilleontwikkelaar	1	6%
Other	2	13%
Other	0	0%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

**Wat zijn de drie belangrijkste punten uit het PvE?**

minimale eisen kwaliteit (aanvullende )wensen | Tijdens deze fase is de ontwikkelmanager verantwoordelijk voor presenteren van een voorkeursscenario. In deze fase kan het inhoudelijk aansturen geheel of gedeeltelijk overgedragen aan de ontwikkelaar nagelang diens ervaring en kwaliteiten. Na vaststelling van één oplossingsrichting (mogelijk een combinatie van nieuwbouw koop en huur en renovatie of zelf verkoop bestaand bezit) Zal per onderdeel een definitief eisenpakket opgesteld worden. Hierbij is de ontwikkelmanager de procesverantwoordelijke en zal de input voor de PVE's afkomstig zijn van ...

**4. Opstellen van Stedenbouwkundig PvE**



Rol	Aantal	Percentage
Kernbedrijf	0	0%
Directeur MPO	0	0%
Manager Bedrijfsbureau	0	0%
Processcontoller	0	0%
Vastgoedeconoom	2	13%
Manager Projectontwikkeling	0	0%
Ontwikkelmanager	14	88%
Ontwikkelaar	7	44%
Verkoopadviseur nieuwbouw	0	0%
Manager Projectmanagement	0	0%
Projectmanager	0	0%
Opzichter nieuwbouw	0	0%
Portefeuilleontwikkelaar	0	0%
Other	1	6%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

**Wat wordt er tijdens het sPVE gemaakt?**

Plan wat voor het gebied geldt. | Tijdens deze fase is de ontwikkelmanager verantwoordelijk voor presenteren van een voorkeursscenario. In deze fase kan het inhoudelijk aansturen geheel of gedeeltelijk overgedragen aan de ontwikkelaar nagelang diens ervaring en kwaliteiten. Tijdens het SPVE zal voor het deelgebied met ontwerpers en belanghebbende een stedenbouwkundig plan gemaakt worden waarin het gewenst Mitros programma gerealiseerd kan worden en wat recht doet aan de omgeving en omwonende. een kwalitatieve en kwantitatieve omschrijving van de uiteindelijk op te leveren gebouwde omgeving. Plan ...

**5. Voorlopig Ontwerp maken**



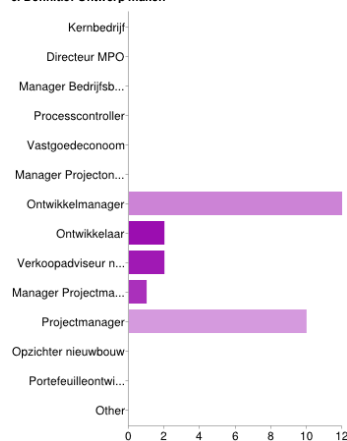
Rol	Aantal	Percentage
Kernbedrijf	0	0%
Directeur MPO	0	0%
Manager Bedrijfsbureau	0	0%
Processcontoller	0	0%
Vastgoedeconoom	2	13%
Manager Projectontwikkeling	0	0%
Ontwikkelmanager	15	94%
Ontwikkelaar	8	50%
Verkoopadviseur nieuwbouw	2	13%
Manager Projectmanagement	0	0%
Projectmanager	5	31%
Opzichter nieuwbouw	0	0%
Portefeuilleontwikkelaar	0	0%
Other	0	0%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

**Wat is naast het voorlopig ontwerp nog meer 'output' van deze activiteit?**

wensen van het kernbedrijf | Tijdens deze fase is de ontwikkelmanager verantwoordelijk voor presenteren van een voorkeursscenario. In deze fase kan het inhoudelijk aansturen geheel of gedeeltelijk overgedragen aan de ontwikkelaar nagelang diens ervaring en kwaliteiten. In deze fase worden de ontwerpen van het vastgoed obv het PVE uitgewerkt en getoetst aan de financiële kaders die gesteld zijn. In deze fase start de verschuiving van de directe aansturing van adviseur van ontwikkelmanager/ontwikkelaar naar e projectmanager. kostenraming gebouwde omgeving en woningen (eerste) inventarisatie asbe ...

**6. Definitief Ontwerp maken**



Rol	Aantal	Percentage
Kernbedrijf	0	0%
Directeur MPO	0	0%
Manager Bedrijfsbureau	0	0%
Processcontoller	0	0%
Vastgoedeconoom	2	13%
Manager Projectontwikkeling	0	0%
Ontwikkelmanager	12	75%
Ontwikkelaar	2	13%
Verkoopadviseur nieuwbouw	2	13%
Manager Projectmanagement	1	6%
Projectmanager	10	63%
Opzichter nieuwbouw	0	0%
Portefeuilleontwikkelaar	0	0%
Other	0	0%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

**Wat is naast het definitief ontwerp nog meer 'output' van deze activiteit?**

bouwmethode, inrichting. Tijdens deze fase is de ontwikkelmanager verantwoordelijk voor de uitwerking van het ontwerp welke uitgewerkt wordt door diverse adviseurs, die aangestuurd worden door een projectmanager. In sommige projecten blijft de ontwikkelaar bij het project betrokken om bepaalde werkzaamheden van de ontwikkelmanager uit te voeren. In deze fase worden de ontwerpen van het vastgoed obv het PVE uitgewerkt en getoetst aan de financiële kaders die gesteld zijn. De ontwikkelmanager is eindverantwoordelijk, ook in deze fase, maar de projectmanager trekt het proces verder. ?? Bouwkoste: ...

**7. Voorbereiden van de realisatie**



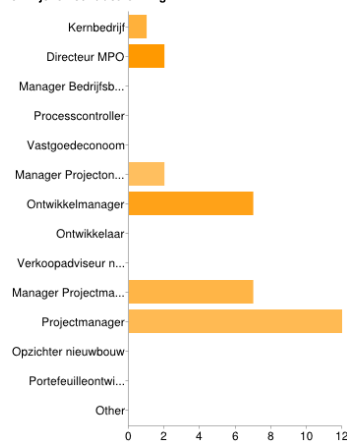
Rol	Aantal	Percentage
Kernbedrijf	0	0%
Directeur MPO	0	0%
Manager Bedrijfsbureau	0	0%
Processcontroller	0	0%
Vastgoedeconoom	0	0%
Manager Projectontwikkeling	0	0%
Ontwikkelmanager	7	44%
Ontwikkelaar	0	0%
Verkoopadviseur nieuwbouw	1	6%
Manager Projectmanagement	2	13%
Projectmanager	14	88%
Oprichter nieuwbouw	2	13%
Portefeuilleontwikkelaar	0	0%
Other	0	0%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

**Wat zijn de producten, inzichten of documenten die tijdens het voorbereiden van de realisatie worden verworven/ gemaakt (output)?**

aanbesteding, bouwteam, beslek en contractstukken en vergunningen. Tijdens deze fase is de ontwikkelmanager verantwoordelijk voor de uitwerking van het ontwerp welke uitgewerkt wordt door diverse adviseurs, die aangestuurd worden door een projectmanager. Het meeste werk voor verricht door de projectmanager: verhuur en verkoopdocumenten marketingplan ?? bouwvoorbereiding aanbestedingsdocumenten, plan van aanpak realisatie, voorbereiding realisatiebesluit | bestek + bijbehorende tekeningen aannemingsovereenkomst huurovereenkomst koopovereenkomst omgevingsvergunning | Fase 6 document Documentenset (teken) ...

**8. Prijs- en contractvorming**



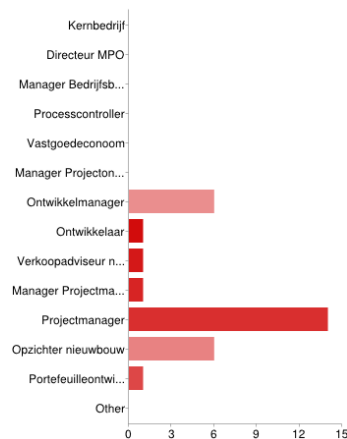
Rol	Aantal	Percentage
Kernbedrijf	1	6%
Directeur MPO	2	13%
Manager Bedrijfsbureau	0	0%
Processcontroller	0	0%
Vastgoedeconoom	0	0%
Manager Projectontwikkeling	2	13%
Ontwikkelmanager	7	44%
Ontwikkelaar	0	0%
Verkoopadviseur nieuwbouw	0	0%
Manager Projectmanagement	7	44%
Projectmanager	12	75%
Oprichter nieuwbouw	0	0%
Portefeuilleontwikkelaar	0	0%
Other	0	0%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

**Wat is de output van deze activiteit?**

contract en uitvoerende aannemer. Tijdens deze fase is de ontwikkelmanager verantwoordelijk voor de contracten. De inhoudelijke werkzaamheden worden gedaan door een projectmanager. Het resultaat moet een succesvolle contractvorming zijn waarbij het bouwplan met een zo gunstig mogelijk resultaat aanbesteed is en vervolgens gerealiseerd kan worden bij voldoende voorverkoop. een aannemer ictm een prijs voor het in de vorige vraag ontworpen project. ?? Contracten en overeenkomsten | contract en prijs aannemingsovereenkomst, projectplanning realisatiefase, definitief projectresultaat | het tot stand komen van ...

**9. Realiseren**



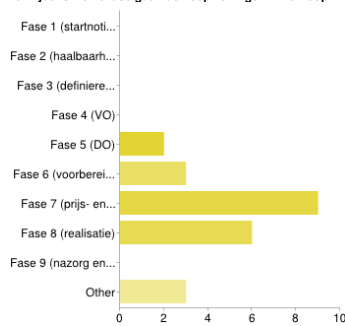
Rol	Aantal	Percentage
Kernbedrijf	0	0%
Directeur MPO	0	0%
Manager Bedrijfsbureau	0	0%
Processcontroller	0	0%
Vastgoedeconoom	0	0%
Manager Projectontwikkeling	0	0%
Ontwikkelmanager	6	38%
Ontwikkelaar	1	6%
Verkoopadviseur nieuwbouw	1	6%
Manager Projectmanagement	1	6%
Projectmanager	14	88%
Oprichter nieuwbouw	6	38%
Portefeuilleontwikkelaar	1	6%
Other	0	0%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

**Welke output kent de realisatiefase (8) nog meer dan 'vastgoed'?**

inrichting ( woonrijp) | Tijdens deze fase is de ontwikkelmanager verantwoordelijk voor de realisatie. De inhoudelijke werkzaamheden worden gedaan door een projectmanager. In deze fase wordt het plan gerealiseerd en wordt verantwoording afgelegd over de eventueel afwijkingen tov de contractering (meer en minderwerk). | ?? | realiseren van het onroerend goed | Beheerdocument | Realisatie van het plan conform specs, financiële kader en tijd. | Afspraken maken met woonbedrijf (ic huur) en monitoren verkoopproces (ic verkoop) | svz financieel resultaat | Ontwikkelmanager = proceseigenaar huur- en koopovereenkoms ...

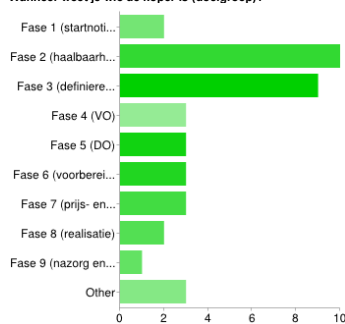
**10. Tijdens welke fase gaan de koopwoningen in verkoop?**



Fase 1 (startnotitie)	0	0%
Fase 2 (haalbaarheid)	0	0%
Fase 3 (definieren pve)	0	0%
Fase 4 (VO)	0	0%
Fase 5 (DO)	2	13%
Fase 6 (voorbereiden realisatie)	3	19%
Fase 7 (prijs- en contractvorming)	9	56%
Fase 8 (realisatie)	6	38%
Fase 9 (nazorg en evaluatie)	0	0%
Other	3	19%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

**Wanneer weet je je koper is (doelgroep)?**



Fase 1 (startnotitie)	2	13%
Fase 2 (haalbaarheid)	10	67%
Fase 3 (definieren pve)	9	60%
Fase 4 (VO)	3	20%
Fase 5 (DO)	3	20%
Fase 6 (voorbereiden realisatie)	3	20%
Fase 7 (prijs- en contractvorming)	3	20%
Fase 8 (realisatie)	2	13%
Fase 9 (nazorg en evaluatie)	1	7%
Other	3	20%

Mensen kunnen meer dan één selectievakje selecteren, en daarom kan het percentage hoger dan 100% zijn.

**Aantal dagelijkse reacties**



**Appendix 6.3**

Chapter 6.2 Data collection, p. 50

Source Progress reports Mitros Project Development January 2008 till May 2012

Explanation The table below shows you the minimum, maximum, mean in months and the number of projects that have been measured over the development phases. On the right side the sum of the minimum, maximum and mean development time has been expressed in total months and total years. For example, when a project will go through every phase with minimum development time the total duration of the project will take 4.5 years (or 54 months).

Phase	1	2	3	4	5	6	7	8	9	Months	Years
$\mu$	10.8	17.4	10.6	10.7	7.5	4.8	7.6	24.0	-	93.4	7.8
<	7	8	4	5	5	3	3	19	-	54.0	4.5
>	13	31	16	18	12	7.5	23	32	-	152.5	12.7
Measured over # of projects	4	7	7	7	6	6	7	4	0	12	12

**Appendix**

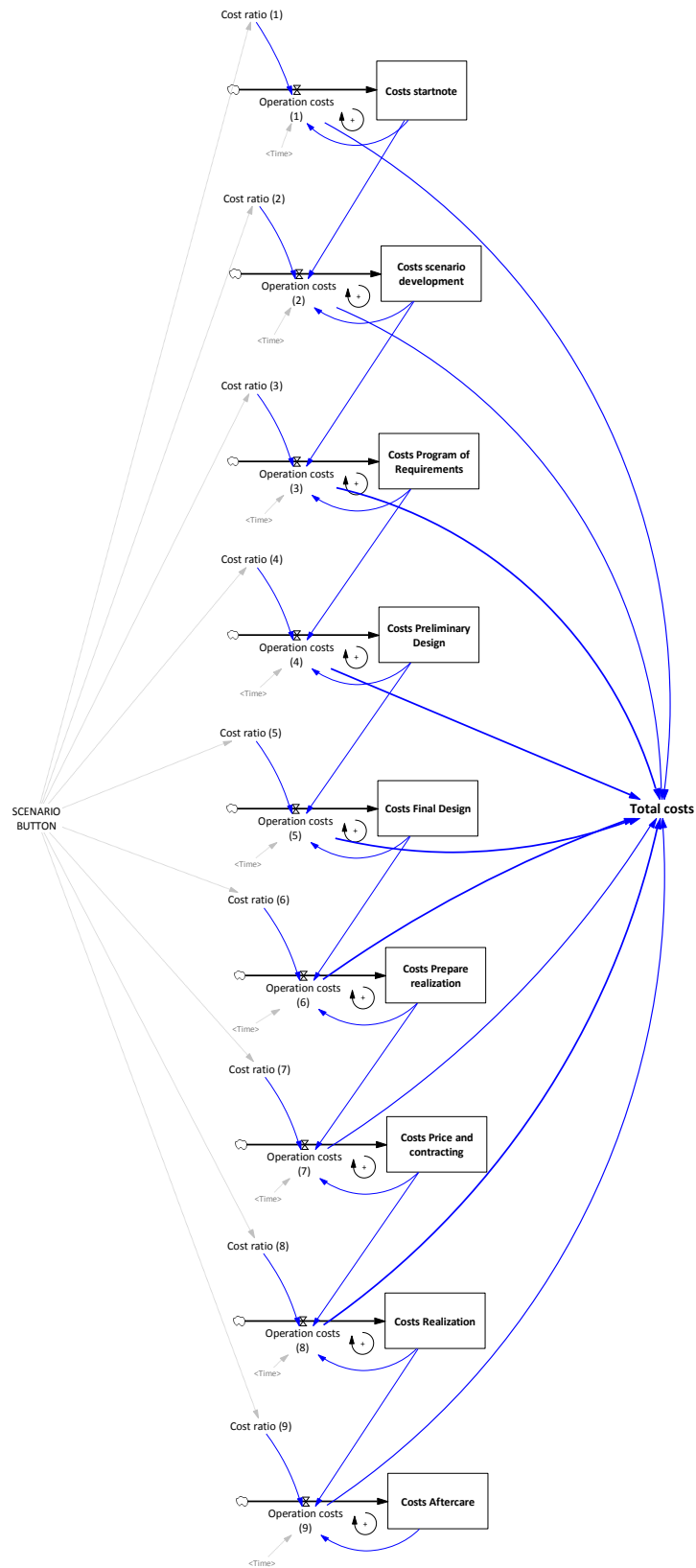
Chapter  
Source

Explanation

**6.4**

6.3 SD model, p. 51

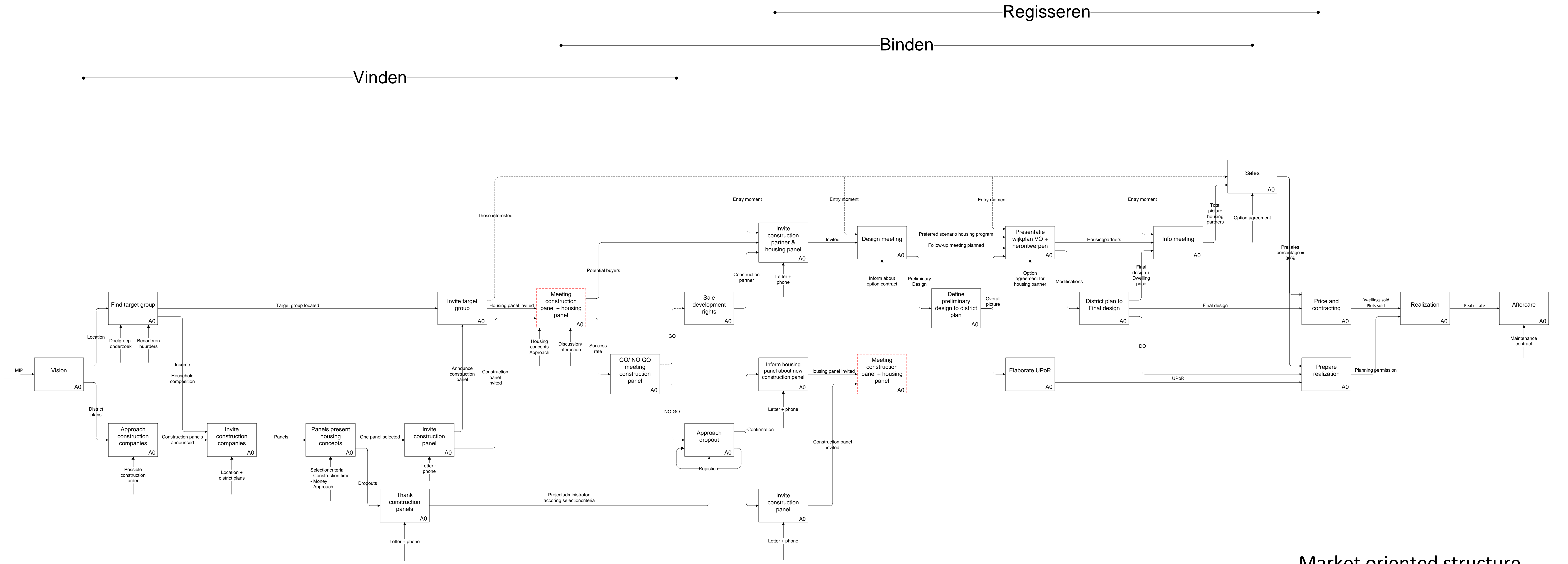
Print screen of the System Dynamics model designed by author only showing the first two phases. This appendix shows the total model (colored).



**Appendix 7.1**

Chapter 7.2 SADT model, p. 56

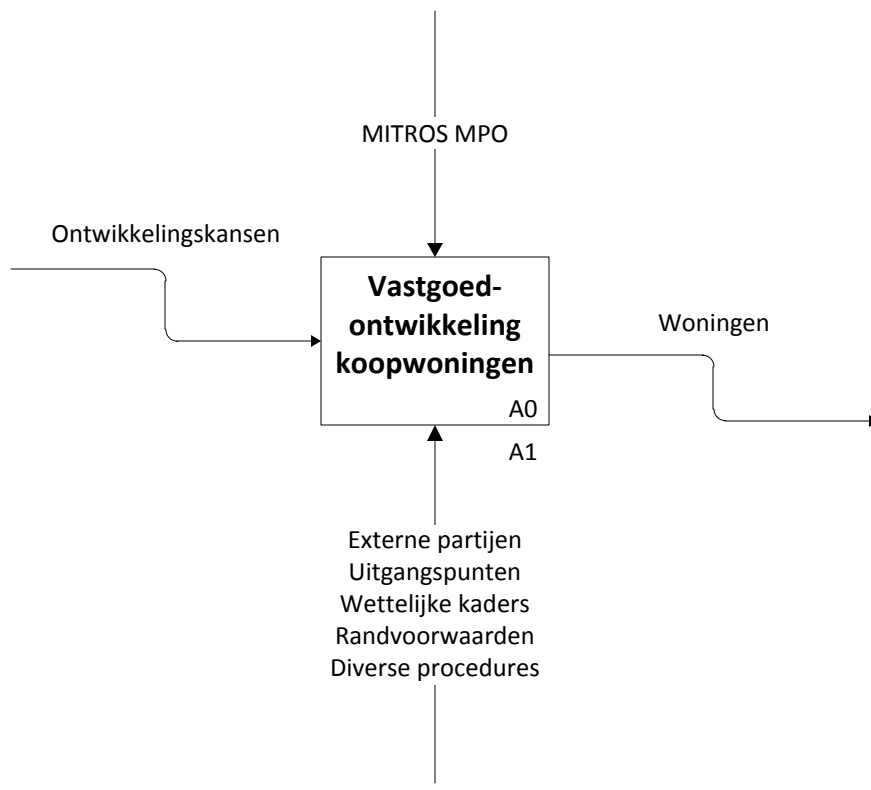
Explanation This SADT model from the new designed market oriented organization structure provides clear insight in the activities and processes of project developments. Chapter 7 Market oriented organization structure and paragraph 7.2 SADT model will provide a detailed explanation of the layers and processes/ activities according to paragraph 5.1 Structured Analysis and Design Technique on page 39.



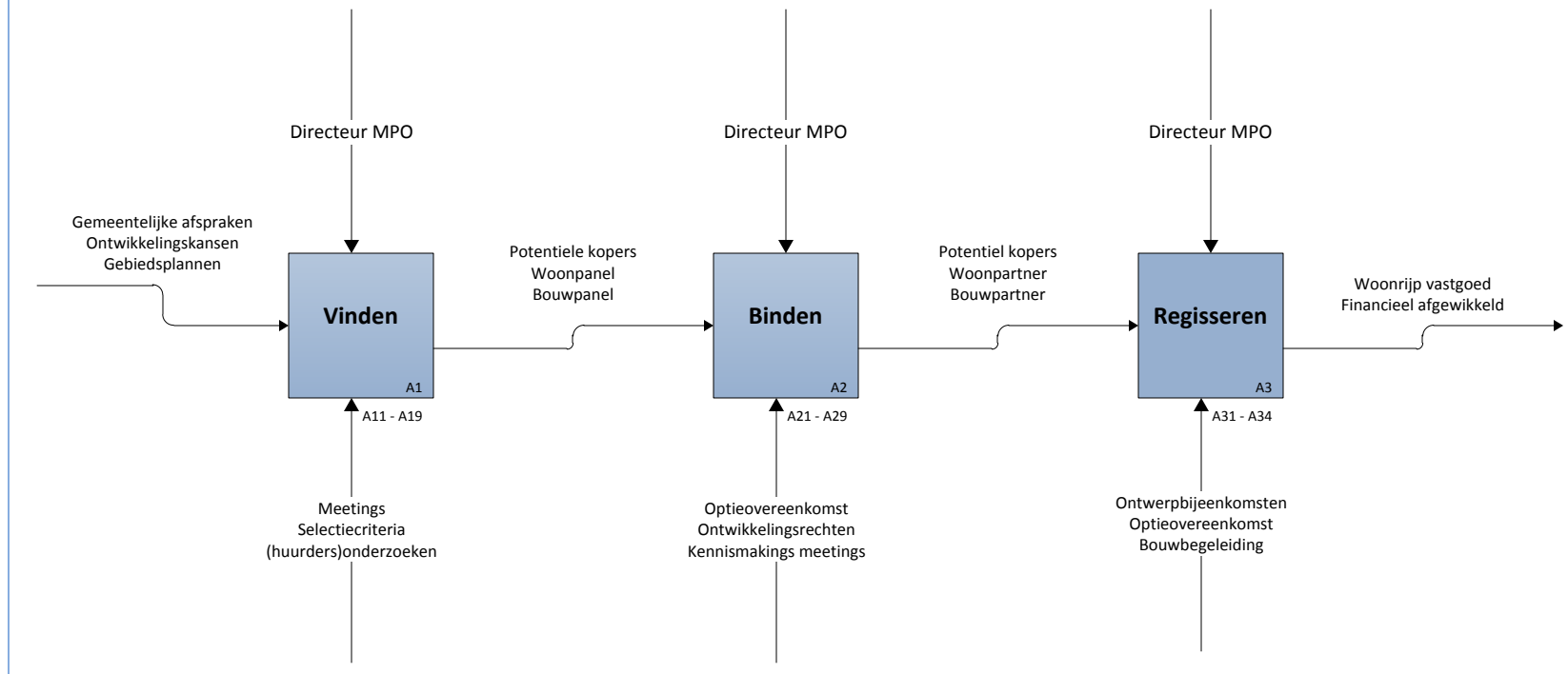
Market oriented structure

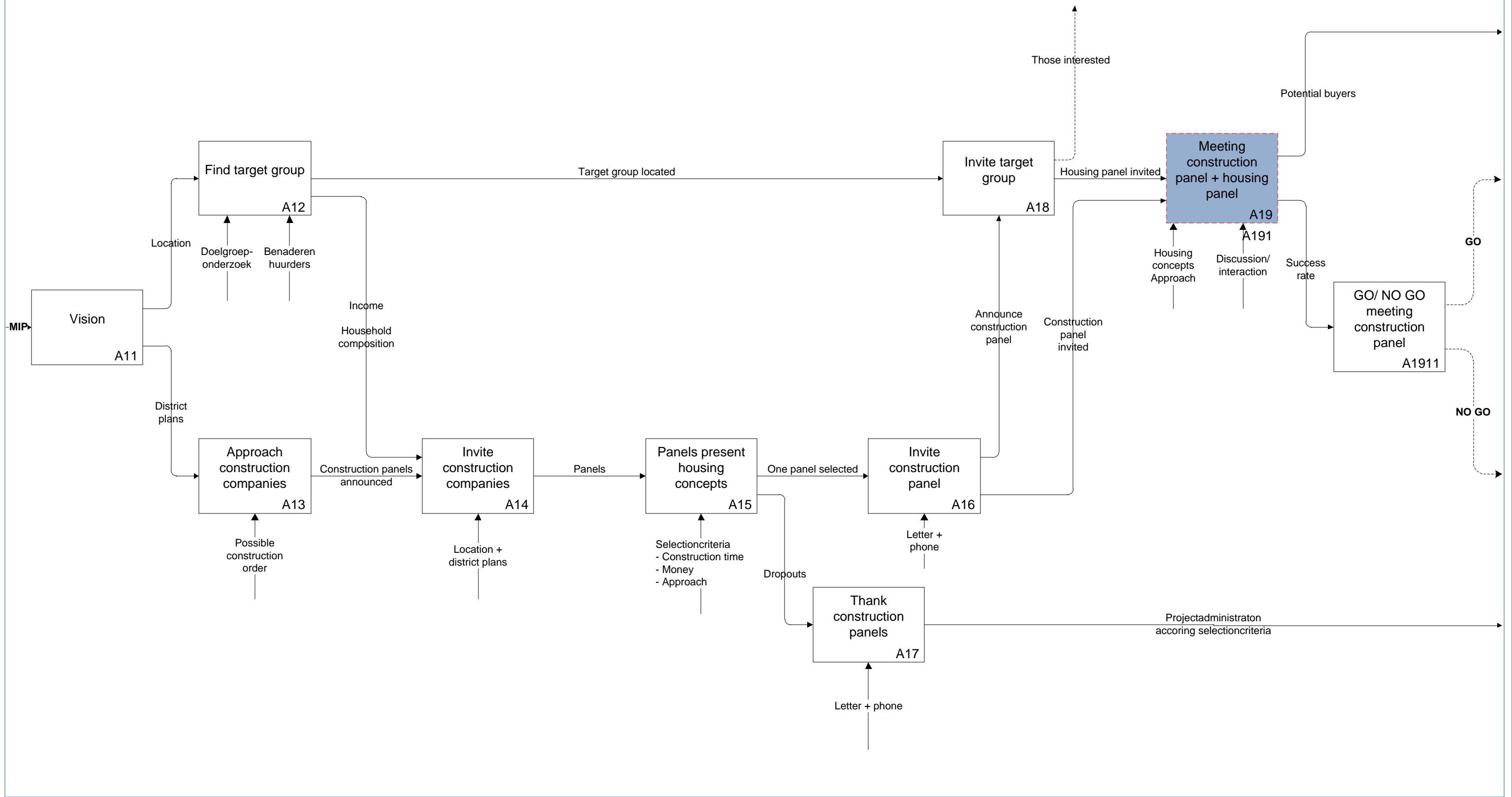


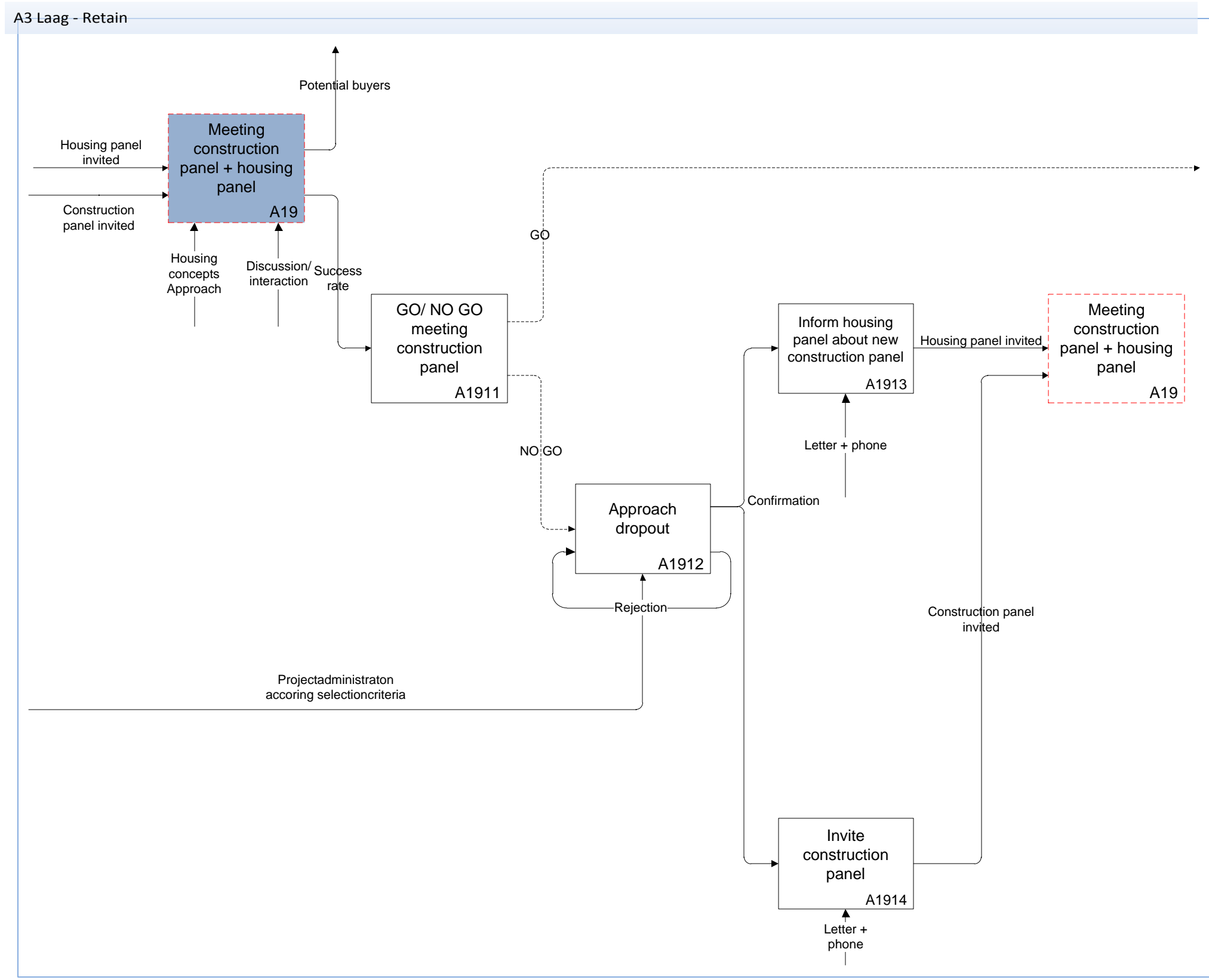
A0 Toplaag



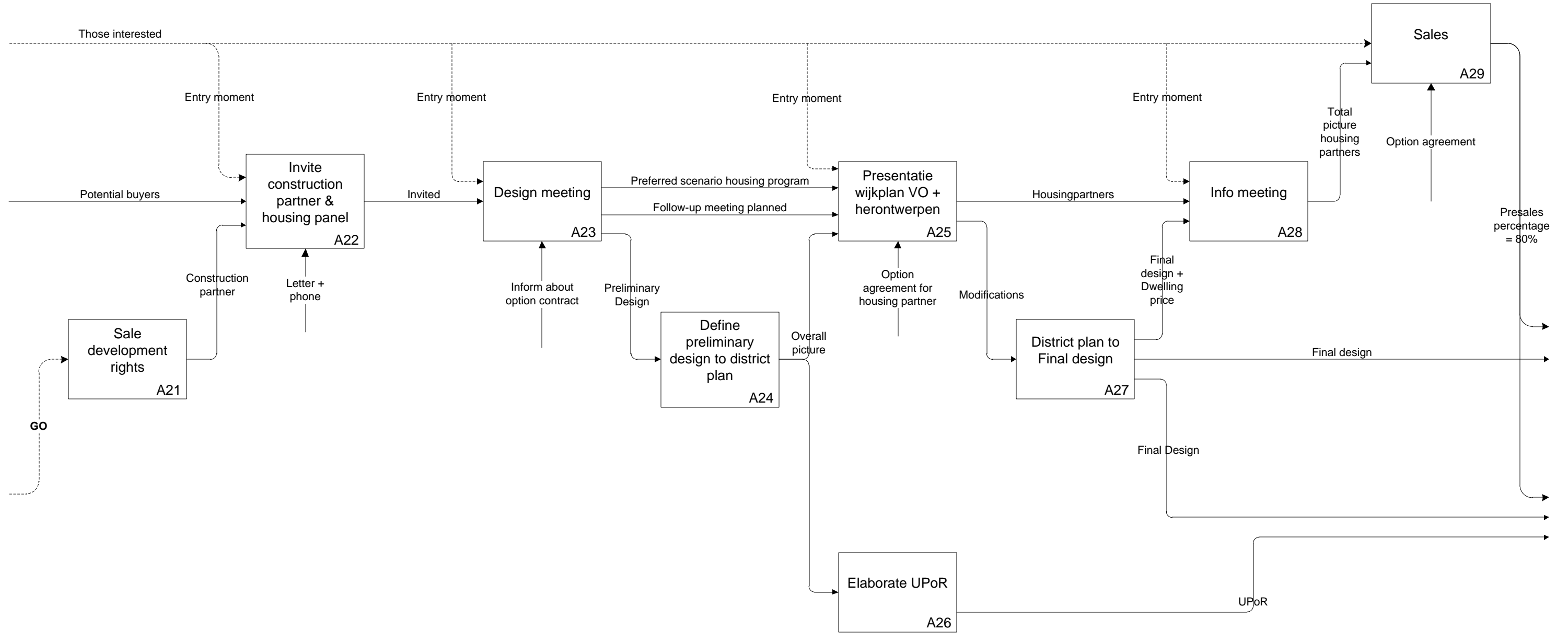
## A1 laag - Ontwikkelproces



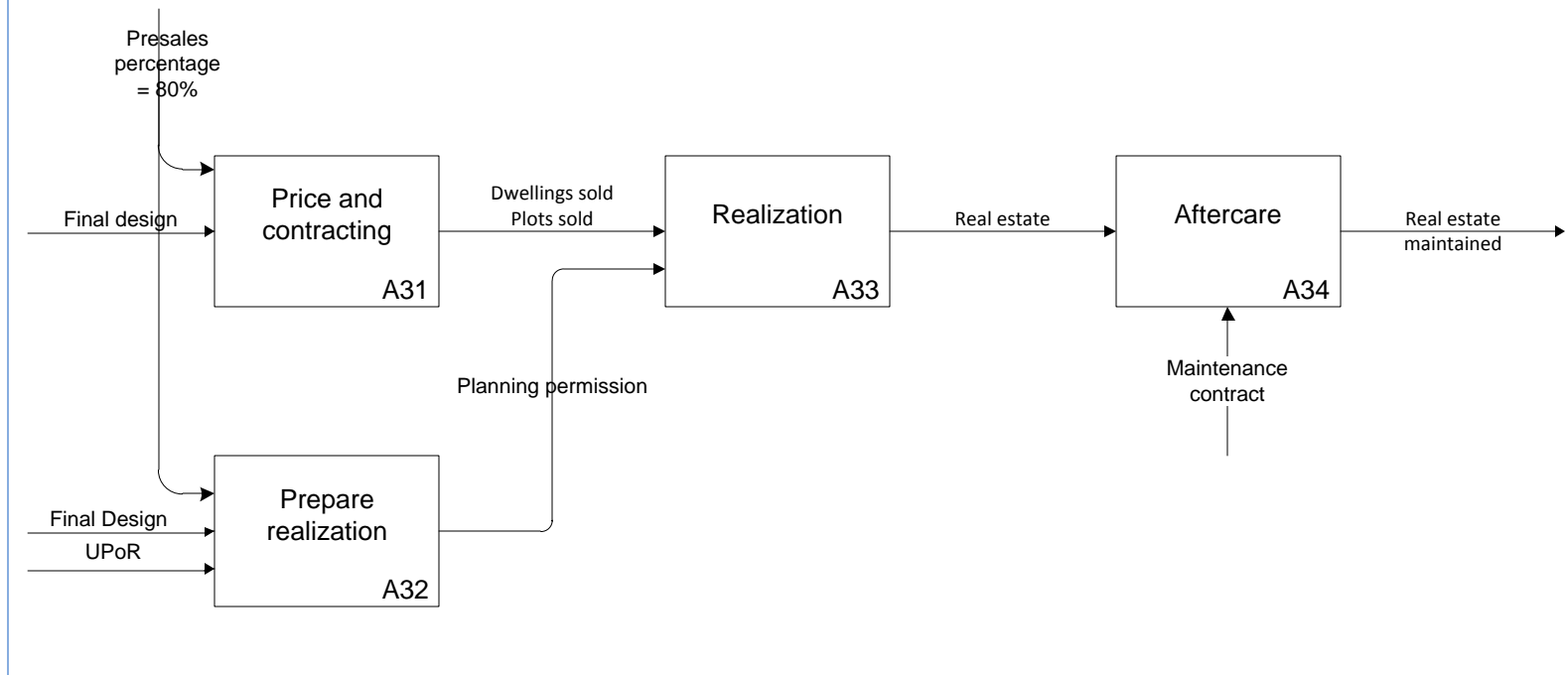




A2 laag - Retain



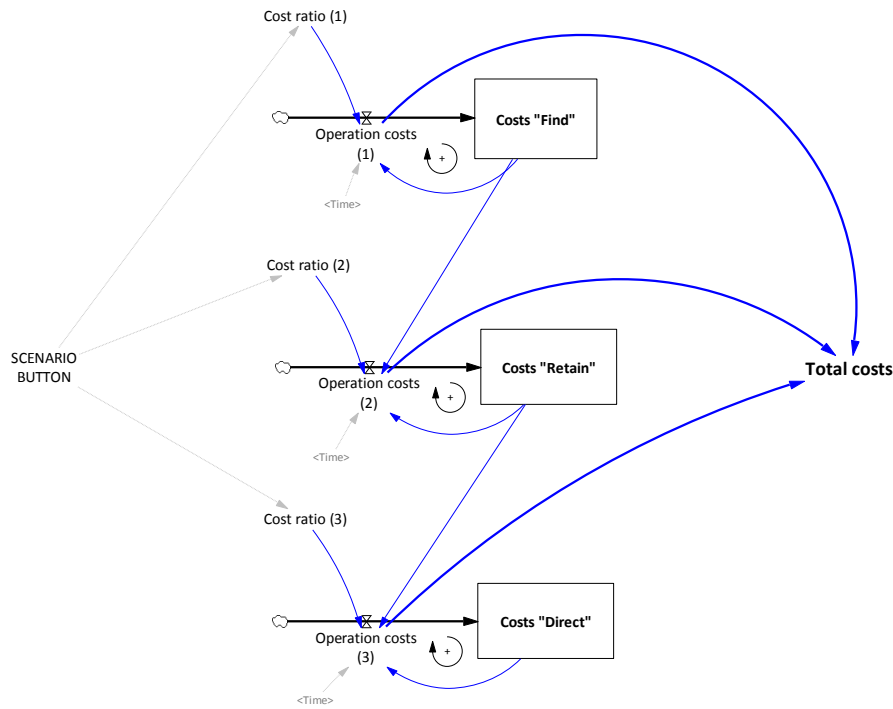
A2 laag - Direct



**Appendix 7.2**

Chapter 7.3 SD model, p. 60

Explanation Full SD model of the market oriented organization structure. The structure is the same as the functional organization structure but contains other data. The explanation how this data is derived is stated on page 54.



**Appendix 7.3**

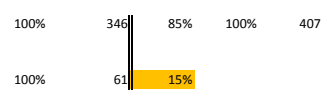
Chapter 7.3 SD model, p. 62

Explanation A detailed calculation of the converted market oriented organization structure phase Retaining.

Functional organization structure						
Phases	Program of (PoR)	Requirements	Preliminary Design (PD)		Final Design (FD)	
Number	3		4		5	
Variable	Operational costs	Development time	Operational costs	Development time	Operational costs	Development time
μ	35	10	60	10	40	7
<	10	4	14	5	5	5
>	100	16	100	18	100	12
Converted to Market oriented organization structure						
Phases	Retaining					
Per month	μ	= (< value market oriented structure + > value market oriented structure) / 2				
Per month	<	= (< operational costs PoR / > development time PoR) + (< operational costs FD / > development time FD)				
Per month	>	= (> operational costs PoR / < development time PoR) + (> operational costs FD / < development time FD)				

## EXIT ENQUETE

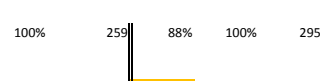
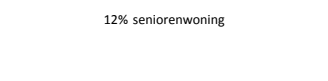
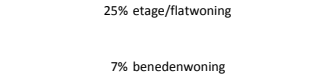
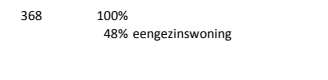
Verhuursreden 1									
2009	antw	leeftijd	aantal						
27	1 - een bestaande woning	1 - Jonger dan 35 jaar	183	53%	100%	346	85%	100%	407
27	1 - een bestaande woning	2 - 35 - 55 jaar	90	26%					
27	1 - een bestaande woning	3 - Ouder dan 55 jaar	73	21%					
27	2 - Een nieuwbouwwoning	1 - Jonger dan 35 jaar	35	57%	100%	61	15%		
27	2 - Een nieuwbouwwoning	2 - 35 - 55 jaar	13	21%					
27	2 - Een nieuwbouwwoning	3 - Ouder dan 55 jaar	13	21%					
28	1 - Een koopwoning	1 - Jonger dan 35 jaar	126	75%	100%	169	42%	100%	405
28	1 - Een koopwoning	2 - 35 - 55 jaar	37	22%					
28	1 - Een koopwoning	3 - Ouder dan 55 jaar	6	4%					
28	2 - Een huurwoning	1 - Jonger dan 35 jaar	93	39%	100%	236	58%		
28	2 - Een huurwoning	2 - 35 - 55 jaar	67	28%					
28	2 - Een huurwoning	3 - Ouder dan 55 jaar	76	32%					
29	1 - Een eengezinswoning	1 - Jonger dan 35 jaar	103						
29	1 - Een eengezinswoning	2 - 35 - 55 jaar	56		368	100%			
29	1 - Een eengezinswoning	3 - Ouder dan 55 jaar	17						
29	2 - Etage/flatwoning	1 - Jonger dan 35 jaar	52						
29	2 - Etage/flatwoning	2 - 35 - 55 jaar	17						
29	2 - Etage/flatwoning	3 - Ouder dan 55 jaar	23		92				
29	3 - Benedenwoning	1 - Jonger dan 35 jaar	14						
29	3 - Benedenwoning	2 - 35 - 55 jaar	8						
29	3 - Benedenwoning	3 - Ouder dan 55 jaar	3		25				
29	4 - Bovenwoning	1 - Jonger dan 35 jaar	21						
29	4 - Bovenwoning	2 - 35 - 55 jaar	7						
29	4 - Bovenwoning	3 - Ouder dan 55 jaar	3		31				
29	5 - Seniorenwoning	1 - Jonger dan 35 jaar	0						
29	5 - Seniorenwoning	2 - 35 - 55 jaar	2						
29	5 - Seniorenwoning	3 - Ouder dan 55 jaar	42		44				
29	6 - Anders	1 - Jonger dan 35 jaar	11						
29	6 - Anders	2 - 35 - 55 jaar	9						
29	6 - Anders	3 - Ouder dan 55 jaar	23						
2010	antw	leeftijd	aantal						
27	1 - een bestaande woning	1 - Jonger dan 35 jaar	148	57%	100%	259	88%	100%	295
27	1 - een bestaande woning	2 - 35 - 55 jaar	63	24%					
27	1 - een bestaande woning	3 - Ouder dan 55 jaar	48	19%					
27	2 - Een nieuwbouwwoning	1 - Jonger dan 35 jaar	22	61%	100%	36	12%		
27	2 - Een nieuwbouwwoning	2 - 35 - 55 jaar	10	28%					
27	2 - Een nieuwbouwwoning	3 - Ouder dan 55 jaar	4	11%					
28	1 - Een koopwoning	1 - Jonger dan 35 jaar	98	70%	100%	141	51%	100%	277
28	1 - Een koopwoning	2 - 35 - 55 jaar	34	24%					
28	1 - Een koopwoning	3 - Ouder dan 55 jaar	9	6%					
28	2 - Een huurwoning	1 - Jonger dan 35 jaar	68	50%	100%	136	49%		
28	2 - Een huurwoning	2 - 35 - 55 jaar	35	26%					
28	2 - Een huurwoning	3 - Ouder dan 55 jaar	33	24%					
29	1 - Een eengezinswoning	1 - Jonger dan 35 jaar	89						
29	1 - Een eengezinswoning	2 - 35 - 55 jaar	40		255	100%			
29	1 - Een eengezinswoning	3 - Ouder dan 55 jaar	10						
29	2 - Etage/flatwoning	1 - Jonger dan 35 jaar	36						
29	2 - Etage/flatwoning	2 - 35 - 55 jaar	15						
29	2 - Etage/flatwoning	3 - Ouder dan 55 jaar	9		60				
29	3 - Benedenwoning	1 - Jonger dan 35 jaar	9						
29	3 - Benedenwoning	2 - 35 - 55 jaar	8						
29	3 - Benedenwoning	3 - Ouder dan 55 jaar	3		20				
29	4 - Bovenwoning	1 - Jonger dan 35 jaar	7						
29	4 - Bovenwoning	2 - 35 - 55 jaar	3						
29	4 - Bovenwoning	3 - Ouder dan 55 jaar	0		10				
29	5 - Seniorenwoning	1 - Jonger dan 35 jaar	0						
29	5 - Seniorenwoning	2 - 35 - 55 jaar	0						
29	5 - Seniorenwoning	3 - Ouder dan 55 jaar	26		26				
29	6 - Anders	1 - Jonger dan 35 jaar	12						
29	6 - Anders	2 - 35 - 55 jaar	5						
29	6 - Anders	3 - Ouder dan 55 jaar	20						
2011	antw	leeftijd	aantal						
27	1 - een bestaande woning	1 - Jonger dan 35 jaar	62	53%	100%	117	81%	100%	145
27	1 - een bestaande woning	2 - 35 - 55 jaar	28	24%					
27	1 - een bestaande woning	3 - Ouder dan 55 jaar	27	23%					
27	2 - Een nieuwbouwwoning	1 - Jonger dan 35 jaar	17	61%	100%	28	19%		
27	2 - Een nieuwbouwwoning	2 - 35 - 55 jaar	6	21%					
27	2 - Een nieuwbouwwoning	3 - Ouder dan 55 jaar	5	18%					
28	1 - Een koopwoning	1 - Jonger dan 35 jaar	42	74%	100%	57	41%	100%	140
28	1 - Een koopwoning	2 - 35 - 55 jaar	11	19%					
28	1 - Een koopwoning	3 - Ouder dan 55 jaar	4	7%					
28	2 - Een huurwoning	1 - Jonger dan 35 jaar	33	40%	100%	83	59%		
28	2 - Een huurwoning	2 - 35 - 55 jaar	23	28%					
28	2 - Een huurwoning	3 - Ouder dan 55 jaar	27	33%					
29	1 - Een eengezinswoning	1 - Jonger dan 35 jaar	31						
29	1 - Een eengezinswoning	2 - 35 - 55 jaar	18		136	100%			
29	1 - Een eengezinswoning	3 - Ouder dan 55 jaar	7						
29	2 - Etage/flatwoning	1 - Jonger dan 35 jaar	24						
29	2 - Etage/flatwoning	2 - 35 - 55 jaar	11						
29	2 - Etage/flatwoning	3 - Ouder dan 55 jaar	8		43				
29	3 - Benedenwoning	1 - Jonger dan 35 jaar	6						
29	3 - Benedenwoning	2 - 35 - 55 jaar	0						
29	3 - Benedenwoning	3 - Ouder dan 55 jaar	4		10				
29	4 - Bovenwoning	1 - Jonger dan 35 jaar	9						
29	4 - Bovenwoning	2 - 35 - 55 jaar	5						
29	4 - Bovenwoning	3 - Ouder dan 55 jaar	0		14				
29	5 - Seniorenwoning	1 - Jonger dan 35 jaar	0						
29	5 - Seniorenwoning	2 - 35 - 55 jaar	0						
29	5 - Seniorenwoning	3 - Ouder dan 55 jaar	13		13				
29	6 - Anders	1 - Jonger dan 35 jaar	3						
29	6 - Anders	2 - 35 - 55 jaar	1						
29	6 - Anders	3 - Ouder dan 55 jaar	6						



2009  
Van degene die een woning hebben verlaten is 42% naar een koopwoning vertrokken. Van die 42% betrof 15% een nieuwbouwwoning.

25 personen die in 2009 een nieuwbouwwoning, koopwoning betrokken  
6% is het totaal van de mensen die een nieuwbouwwoning, koopwoning betrokken in 2009

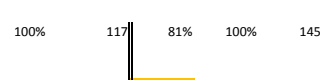
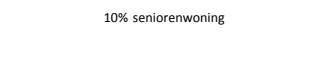
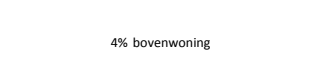
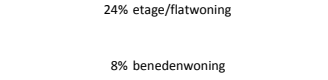
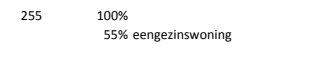
TOTAAL VAN 2009						
jaar	% koop	% nb	% nb, koop	# Utrecht	# Nieuwegein	# Totaal Mitros
2009	42%	15%	6%			onbekend



2010  
Van degene die een woning hebben verlaten is 51% naar een koopwoning vertrokken. Van die 51% betrof 12% een nieuwbouwwoning.

17 personen die in 2010 een nieuwbouwwoning, koopwoning betrokken  
6% is het totaal van de mensen die een nieuwbouwwoning, koopwoning betrokken in 2010

TOTAAL VAN 2010						
jaar	% koop	% nb	% nb, koop	# Utrecht	# Nieuwegein	# Totaal Mitros
2010	51%	12%	6%	89	21	110



2011  
Van degene die een woning hebben verlaten is 41% naar een koopwoning vertrokken. Van die 41% betrof 19% een nieuwbouwwoning.

11 personen die in 2011 een nieuwbouwwoning, koopwoning betrokken  
8% is het totaal van de mensen die een nieuwbouwwoning, koopwoning betrokken in 2011

TOTAAL VAN 2011						
jaar	% koop	% nb	% nb, koop	# Utrecht	# Nieuwegein	# Totaal Mitros
2011	41%	19%	8%	95	27	122

### AANTAL MITROS HUURDERS NAAR NIEUWBOUW, KOOP

jaar	% koop	% nb	% nb, koop	Aantallen over werkgebied		
				# Utrecht	# Nieuwegein	# Totaal Mitros
2009	42%	15%	6,3%	onbekend	onbekend	onbekend
2010	51%	12%	6,2%	89	21	110
2011	41%	19%	7,9%	95	27	122

### TOTAAL DOELGROEP ZITZENDE HUURDERS

jaar	Verdeeld over type woningen						Ingedeeld naar leeftijd		
	EGW	FLW	BEW	BOW	SW		<35	35-55	>55
2009	48%	25%	7%	8%	12%		75%	22%	4%
2010	60	26	9	4	11		70%	24%	6%
2011	50	38	9	13	12		74%	19%	7%

### AANTAL MITROS WONINGEN GESLOOPT

	Benedenwoning		Eengezinswoning		Flat zonder lift		Onzelfstandige woonruimte		Totaal	Gesloopt	Totalen
		Bovenwoning	Flat met lift	Flat zonder lift	Maisonnette						
2010											
NIEUWEGE	10	7	42	186	42	34	17	338	0	338	
UTRECHT	109	129	293	410	487	45	170	1.643	204	1.439	
Mitros	119	136	335	596	529	79	187	1.981	204	1.777	
2011											
NIEUWEGE	11	8	63	198	43	33	13	369	24	345	
UTRECHT	131	146	471	437	626	69	180	2.060	858	1.202	
Mitros	142	154	534	635	669	102	193	2.429	882	1.547	