

Organizational performance and Real estate

**An evaluation research of the Dutch method
'NTA 8021, Performance measurement of real estate'**



Paul Meijer

March 2011

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Graduation thesis

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PREFACE

This graduation thesis is written within the framework of the research laboratory Real Estate Management of the department Real Estate & Housing at the faculty of Architecture of the Delft University of Technology.

It contains an evaluation research based on the draft method 'NTA 8021, Performance measurement of real estate' published in March 2009. The method is developed by the Dutch Ministry of Defence in cooperation with the NEN, the Dutch standardization institute. Its higher aim is to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand and real estate supply. The Workgroup NTA 8021 of the NEN is momentarily awaiting evaluations of the proposed method.

Strategic management and -design intrigues me since my post bachelor study Business Administration and study at the Royal Netherlands Defence Academy. As a commissioned officer within the Dutch Ministry of Defence and student at the Delft University of Technology this evaluation research of the proposed NTA 8021 provides the opportunity to acquire knowledge about the subject and to provide useful feedback to inter alia my colleagues.

A word of appreciation cannot be neglected. Thanks to the members of the Committee Higher Technical Skills of the Royal Netherlands Air Force to offer me the this opportunity. Thanks to my student colleagues, teachers and mentors for having a good time and support in Delft. Special thanks to my wife and family for their love, patience and support to accomplish this mission.

Houten, March 2011

Paul Meijer

SUMMARY

The draft method 'NTA 8021, Performance measurement of real estate' is published in March 2009. Its higher aim is to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand and real estate supply. The Workgroup NTA 8021 is momentarily awaiting evaluations of the method. The evaluations should provide information about its usefulness and where necessary proposals for further improvement into a Dutch standard (NEN).

Many organizations use real estate to accommodate their employees to perform their activities in a safe, healthy and pleasant environment to deliver products or services. From a strategic perspective real estate can be considered as a mean to support organizational processes and with it contribute to the performance of an organization.

Three difficulties are related to the optimization of real estate demand with –supply. It concerns difficulties in the process of choice making in accommodation strategy design. These are:

1. A choice is based on at least one criterion. This raises the question: how to align (translate and order) organizational goals into criteria.
2. Multiple designs can fit into one intended purpose. This raises the question: how to choose between multiple alternatives that match a common purpose? (Binnekamp, 2010, p.1)
3. A multitude of decision makers have a say in the design process. This raises the question: how to cope with multiple stakeholders that have conflicting interests in achieving organizational goals? (Binnekamp, 2010, p.1)

These three difficulties compose the problem statement of this thesis which is: how can stakeholders of an organization (demand) select the optimal real estate alternative (supply) taking into account the properties of each alternative?

The research objective is to evaluate the draft method 'NTA 8021 Performance measurement of real estate' and provide useful feedback to the Workgroup NTA 8021.

The summative evaluation of the draft method 'NTA 8021 Performance measurement of real estate (NTA 8021)' culminated in the following answer of the defined problem statement. The NTA 8021 is not able to support stakeholders of an organization (demand) to select the optimal real estate alternative (supply) taking into account the properties of each alternative. First, because the NTA 8021 does not provide generic organizational goals to align them towards defined real estate criteria. Second, because the NTA 8021 is not able to properly cope with multiple stakeholders that have conflicting interests in achieving their organizational goals. The measurement methodology provided by the NTA 8021 is unreliable to use as input for multi criteria decision making. Proper preference measurement scales are needed to use the criteria as input for a multi criteria decision making methodology which allows mathematical operations of addition and multiplication to determine the optimal real estate alternative.

To provide proposals for improvement a formative evaluation of the NTA 8021 is conducted. A toolset is created to classify and interpret the meaning of the NTA 8021 in relation to a sample of eight other accommodation strategy design methods. The toolset represents the whole picture of accommodation strategy design and consists of combined and visualized relevant aspects from theoretical perspectives towards strategy design and general aspects of agreement. In the course of its creation is explained what would be the ideal classification profile. The method that meets this profile is considered ideal.(figure 0.1)

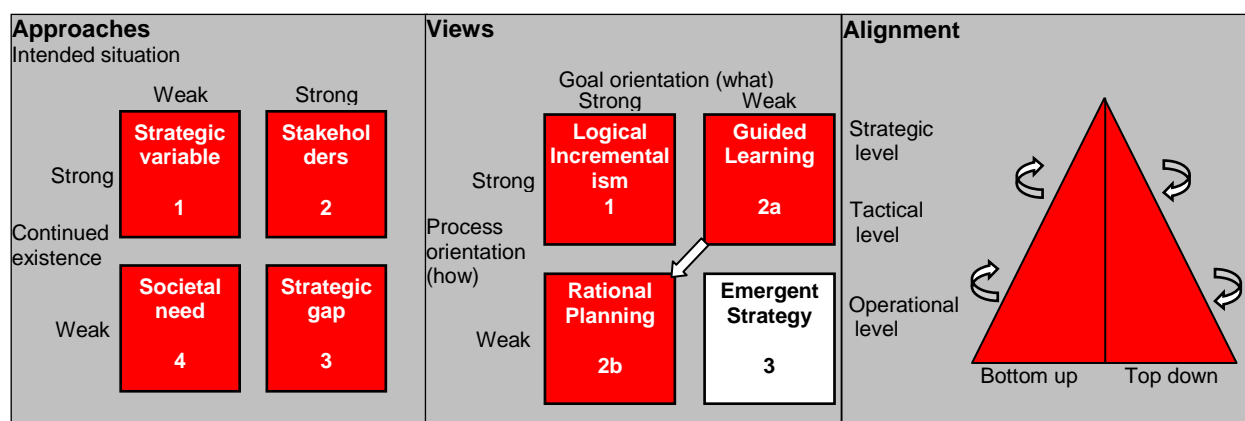


Figure 0.1; Ideal profile

The representative sample used for this thesis contains the following nine accommodation strategy design methods:

1. Scenario planning, Dewulf et al. (1999 cited in De Jonge et al., 2009);
2. Generic strategies and context analysis, O'Mara (1999 cited in De Jonge et al. 2009);
3. Accommodation functionality assessment, Vijverberg (2002 cited in De Jonge et al., 2009);
4. Aligning corporate real property with corporate strategy, Roulac(2001,cited in De Jonge et al.,2009);
5. Strategic alignment model, Osgood (2004, cited in De Jonge et al., 2009);
6. Strategic real estate plan, Fritzsche et al. (2004, cited in De Jonge et al., 2009);
7. Designing an Accommodation Strategy (DAS Frame), De Jonge et al. (2009);
8. Housing choice model, Ikiz-Koppejan et al. (2009);
9. Draft NTA 8021 Performance measurement of real estate, NEN (2009).

The formative evaluation made clear that none of the evaluated methods, including the NTA 8021 (NEN, 2009), met this ideal profile. The nearest methods that meet this profile are the DAS Frame (De Jonge et al., 2009) and the Housing choice model (Ikiz-Koppejan et al., 2009) for their completeness in describing the entire process. These methods are both process orientated but tend to incrementalism. Because they lack in some phases the explicit goal/content orientation in the form of a tool or technique they are still seen as guided learning but have the potential for logical incrementalism. Second the evaluation made clear that the meaning of the NTA 8021 towards accommodation strategy design is considered not a method but a tool to support the process of accommodation strategy design. According to dictionaries a tool is something used in the performance of an operation, an instrument. A method is defined as a means or manner of procedure, especially a regular and systematic way of accomplishing something. The NTA 8021 is considered a tool because its product/result is an interim product within the process. Third it made clear that the sample of methods in relation to the defined ideal accommodation strategy design profile lacks two necessary instruments. It lacks an instrument that enables the alignment of organizational goals towards criteria and an instrument that enables multi criteria decision making involving proper preference measurement.

Useful elements for establishing the alignment instrument are the parts of the Scenario planning (Dewulf et al.,1999 cited in De Jonge et al., 2009). It concerns the organizational context analysis, the stakeholders analysis and scenario planning technique for determining important criteria in the future. Further the analytical framework and generic strategies from Generic strategies (O'Mara 1999, Singer 2005 both cited in De Jonge et al. 2009) are useful for determining a certain generic accommodation strategy. The cross tables in Aligning corporate real property with corporate strategy (Nourse and Roulac, 1993, Roulac, 2001, both cited in de Jonge et al., 2009) are useful for their explicit relationships of translation and ordering of real estate goals. Useful elements for establishing a group decision instrument were not found.

Two necessary instruments are established based on the useful elements of the sample. First the 'Alignment instrument' and second the 'Tetra decision making software'. The 'Alignment instrument' consist of two parts. The first part consist of aligning organizational goals towards real estate goals. To translate these goals their relationships are established and visualized. To rank the real estate goals the most important strategic factor 'the driving force' of the organization must be determined. With this driving force the applicable real estate goals and their order can be established. The second part consists of aligning the real estate goals towards a limited amount of real estate criteria. Determining the applicable criteria is dependent on the value of importance of applicable real estate goals, the applicable real estate strategy, sequence of importance of organizational performance aspects and sequence of importance of organizational goals. The determination is further supported by an overview of real estate decisions. The 'Tetra decision making software' enables multi criteria decision making involving proper preference measurement. The Tetra software tool can be used to evaluate choices on existing or hypothetical situations using preference function modelling (Binnekamp 2010). The evaluation is based on at least three alternatives which are rated on each of the criteria. In the case of single decision making a single evaluator specifies his or her ratings. With the group decision making model multiple decision makers can participate in the Tetra process.

To find out if the two established instruments are useful in the practice of accommodation strategy design a demonstration is performed with an example. It concerned an example wherein a piece of real estate of the Dutch Ministry of Defence is brought in line with the achievement of organizational goals to improve the organizational performance as a whole. The demonstration showed that the established instruments are useful in the practice of accommodation strategy design to determine the optimal real estate alternative and can help improving the NTA 8021.

To improve the draft method 'NTA 8021 Performance measurement of real estate' another procedure is suggested for the NTA 8021 involving the existing method Scenario planning (Dewulf et al., 1999 cited in De Jonge et al., 2009) and the two established instruments. The suggested procedure for the NTA 8021 consist of the following steps:

1. Perform a stakeholder analysis to determine the stakeholders that have an interest in the accommodation design process.
2. Establish a user profile by defining the functional demand for the operational level.

The functional demand for the operational level is defined by (a) representative(s) of the tactical/operational level and (a) real estate specialist(s). The current and (near)future demand (0-5 years) is defined through determining the applicable objective criteria mentioned in the list of themes, subthemes and criteria for a certain real estate scale level for the current and (near)future (0-5 years) situation.

The initial (still to be further elaborated) NTA 8021 questionnaire uses ordinal six point scales for every criterion. This methodology of measuring criteria is subjective. The applicable criteria and their norms compose the constraints for the users profile. To ensure consistent reliable outcomes of the matching process, the real estate supply and alternatives should be judged solely on facts. In other words, judged on criteria that apply objective measurement. Different objective measurement scales are allowed in the matching process.

The initial NTA 8021 contains a large amount of criteria that are systematically divided from a list of six themes to subthemes and criteria. Instead of the questionnaire, this list can be used as a checklist for establishing the functional current and (near)future demand (0-5 years) for a certain real estate scale level (area, complex, building, unit) for the operational level of the organization. If an objective criteria is applicable its norm should be determined in the current and (near)future situation. It is assumed that the representative(s) of the tactical/operational level has insight in the applicable (near)future developments concerning the operational level of the organization. Examples for near future developments are: decrease or increase of production; expected reorganization; new machines or production line; new way of working.

3. Establish an organization profile by defining the demand for the tactical level.

The demand for the strategic/tactical level is defined by (a) representative(s) of the strategic/tactical level and (a) real estate specialist(s). The current and (far)future demand (0-10 years) are defined through aligning organizational goals towards a limited amount of real estate criteria to judge and select real estate supply that contributes to the organizational performance. To support establishing criteria of the (far)future demand the 'Scenario planning' proposed by Dewulf, G., Den Heijer, A., et al. (1999 cited in De Jonge et al., 2009) can be used. The 'Alignment instrument' enables the alignment of organizational goals towards real estate goals, a real estate strategy and real estate criteria. These criteria are allowed to be subjective because they are used as input for a multi criteria decision analysis involving preference measurement.

4. Establish a real estate profile by performing a site survey on the demanded criteria mentioned in the users profile.
5. Match the user profile with the real estate profile by showing the deviations between the two profiles.
6. Define interventions and design alternatives, based on the user profile criteria norms and take into account the organization profile selection criteria, to align the real estate profile towards the user- and organization profile.
7. Select the optimal alternative using the 'Tetra' decision making software. Multiple stakeholders of an organization can select the optimal alternative based on their preference towards selection criteria by using multi criteria decision making involving preference measurement.

The suggested procedure for the NTA 8021 allows multiple stakeholders of an organization (demand) to select the optimal real estate alternative (supply) taking into account the properties of each alternative which contribute in achieving organizational goals and improve organizational performance.

Classification of the suggested NTA 8021 (figure 0.2) in relation to the ideal profile shows that it is improved compared to the initial NTA 8021 (figure 0.3). It is improved because it addresses more approaches, focuses on process and goals and aligns all organizational levels. As a tool it supports the accommodation strategy design process.

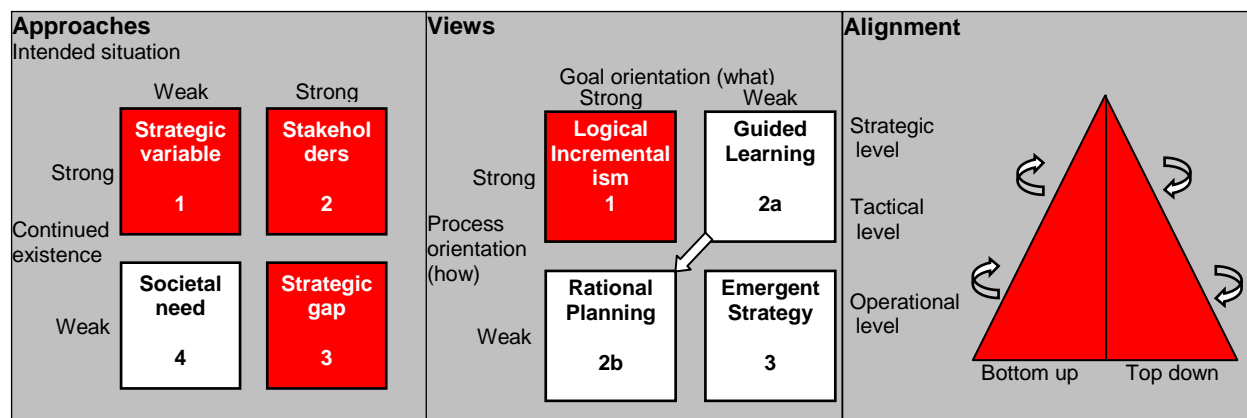


Figure 0.2; Suggested NTA 8021

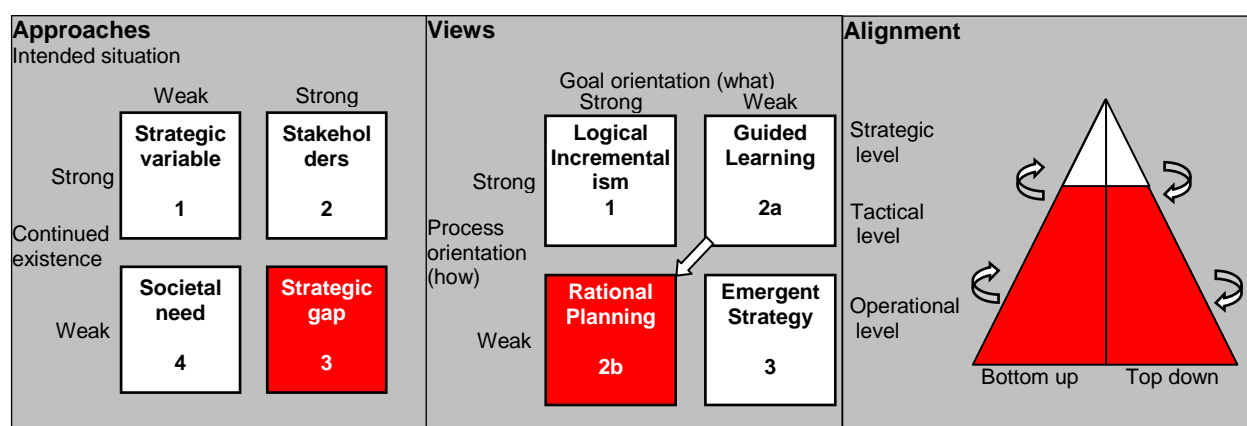


Figure 0.3; Initial NTA 8021

The suggested NTA 8021 still it does not cover the entire accommodation process. It supports the accommodation strategy design process. If the workgroup NTA 8021 desires to meet this ideal profile and cover the whole accommodation strategy design process it should add and deal with the societal need approach and determine how exactly a selected alternative is to implemented and controlled.

To improve the draft method 'NTA 8021 Performance measurement of real estate' and contribute to its development towards a Dutch standard (NEN) it is recommended:

1. To implement the method Scenario planning (Dewulf et al., 1999 cited in De Jonge et al., 2009) and the established instruments 'Alignment instrument' and 'Tetra decision making software';
2. According to the suggested procedure 'NTA 8021 Performance measurement of real estate'.

The NTA 8021 is still informative and some elements like the questionnaire need further elaboration before they can be actually used. Nevertheless an attempt is made to improve the NTA 8021 further in becoming a NEN. Practical research has to be performed to find out if the suggested NTA 8021 procedure and its containing instruments will finally work.

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1 INTRODUCTION

1.1 Motive

The draft method 'NTA 8021, Performance measurement of real estate' is published in March 2009 (NTA 8021). It is developed by the Dutch Ministry of Defence in cooperation with the NEN, the Dutch standardization institute. Besides the Ministry many organizations use real estate to accommodate their employees to perform their activities in a safe, healthy and pleasant environment to deliver products or services. From a strategic perspective real estate can be considered as a mean to support organizational processes and with it contribute to the performance of an organization. To that effect the higher aim of the NTA 8021 is to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand and real estate supply.

The concept of connection in the sense of matching real estate supply, demand and organizational performance is subject of research in the department Real Estate & Housing at the faculty of Architecture of the Delft Technical University. This research investigates the considerations that users or owners of real estate face during the accommodation process in relation to for instance functionality, costs or quality. Until now the research findings related to the subject are integrated in the reader Designing an Accommodation Strategy of De Jonge et al. (2009).

Like the Dutch Ministry of Defence, organizations are more often in search for the optimal accommodation to achieve multiple goals. Optimal in this matter means more than the lowest price, it means representing an image or culture, satisfying employees within certain financial conditions. De Vries (2007, p.343) concluded in her dissertation Performance through Real estate that 'real estate can contribute to organizational goals and therefore to organizational performance'. To optimize the match successfully explicit relationships between organizational goals and real estate properties as criteria are necessary, together with proper instruments to establish this connection.

The Workgroup NTA 8021 of the NEN is momentarily awaiting evaluations of the method. They want to know if the method provides the information and tools to fulfil its higher aim of optimizing the match of real estate supply and demand to achieve organizational goals. The evaluations should provide information about its usefulness and where necessary proposals for further improvement towards a NEN (Dutch standard).

Problem formulation	Conceptualization	Analysis and synthesis	Utilization	Implementation	Conclusion
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1.2 Problem description

Improving organizational performance through achieving organizational goals by optimizing the match of real estate demand and real estate supply is a process of choice making. It is a part in the larger process of designing a real estate-¹ or accommodation strategy that supports the organizations primary processes and contributes to its overall performance. The latter process consists of aligning the organizational demand into real estate demand. The real estate supply is subsequently matched with the demand. In the case of a current or future mismatch interventions are considered and possible solutions are designed to bridge the gap. Usually multiple alternatives are the result of this exercise from which a choice has to be made for the optimal alternative. When the optimal alternative is chosen it can be work-out, planned and implemented. To reach this situation a number of difficulties have to be dealt with.

The first difficulty in optimizing the match concerning the process of choice making relates to the following relevant attribute:

1. A choice is based on at least one criterion.

This raises the question: how to align organizational goals into real estate criteria.

Goals are defined in an organizational strategy. This is a long term plan regarding the function of the organization in society, wherein the organization declares which goals it wants to achieve in which order, which resources it is going to use, according to which ways. Real estate of an organization can be considered as one of the five strategic resources (Joroff et al. 1993 cited in De Vries, 2007, p.28). Besides real estate these other resources are: capital, people, technology and information to support the primary processes of the organization (figure 1.1). A primary process forms the existence of an organization and consists of all activities from where the output contributes to the products or services for the customer.

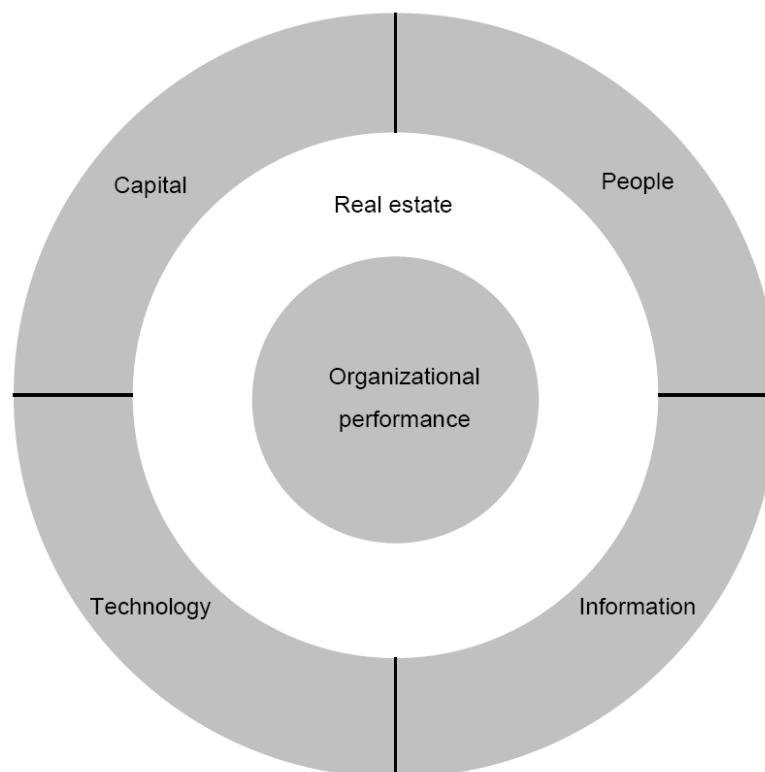


Figure 1.1; Real estate as the fifth resource
Source; Joroff (1993) in De Vries (2007, p.28)

¹ A real estate strategy for an organization as output of the design process is in this thesis considered as an accommodation strategy for an organization.

An accommodation strategy aims to align organizational goals into real estate goals. The alignment consists of establishing a translation and order of organizational goals into real estate goals. The alignment of these goals are hindered by insufficient knowledge in this particular area. According to Ramakers (2008, p.56) 'the studies of Nourse and Roulac (1993) and Scheffer, Singer en Van Meerwijk (2006) are the most useful' in the sense of describing the relationships and importance between organizational goals and real estate goals.

Organizational performance concerns the viability of an organization (De Vries, 2007, p.27). According to Tangen (2005, pp.34-46) it concerns the composition of the aspects: profitability (output-input), productivity, (output/input) and distinctiveness (organizational attraction expressed into market share). The extent to which an organization realizes these aspects, according to the judgement of its stakeholders, defines the organizational performance as a whole (figure 1.2).

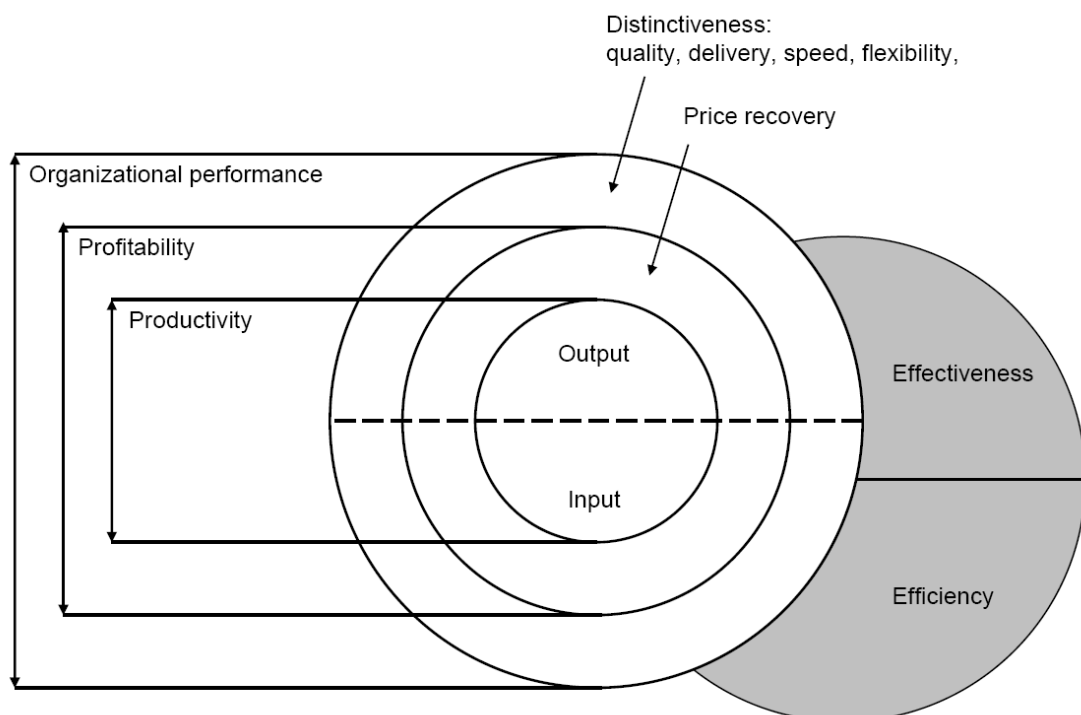


Figure 1.2; Triple P-model
Source; Tangen (2005, p.43)

To steer an organization and to compare its performance with other organizations it is of importance to establish benchmarks. A benchmark is a determined standard used to compare performance of internal processes or against those of others. A benchmark can be seen as a set of performance criteria. It is of importance that the amount of criteria is limited to guarantee steering control of the organization. Performance criteria are measurable aspects that have a relation with the organizational performance aspects. The norm of the performance criteria expresses the desirable score.

To measure and influence organizational performance in relation to the deployment of strategic resources insight is necessary in which structural real estate aspects and properties are related to real estate goals and organizational goals. At this moment there are a few researches that provide this insight. The most useful research in this matter is from Appel-Meulenbroek and Feijts (2007). This research showed that certain properties of the structural real estate aspects; location, building, installation, floor and workplace, have an impact on multiple real estate goals. The floor lay-out for instance is related to innovation stimulation, satisfaction improvement, flexibility increasement and accommodation costs reduction.

The second and third difficulty in optimizing the match concerning the process of choice making are mentioned by Binnekamp (2010, p.1). He relates these difficulties to the following relevant attributes:

2. 'Multiple designs can fit into one intended purpose.

This raises the question: how to choose the design that fits best.

3. A multitude of decision makers have a say in the design process.

Which is the problem of group choice making'.

The second difficulty in optimizing the match can be related to the view of the organization as a partnership between stakeholders (coalitions of people) and resources to achieve a common purpose. This common purpose or goal is usually continuity or viability of the organization. The example used by Binnekamp (2010), shown in figure 1.3, concerned the renovation and extension of the Amsterdam museum of contemporary art. The two stakeholders involved were the staff of the museum and the municipality of Amsterdam. Both stakeholders wanted a museum that assured its future. Despite this common purpose they both chose different alternatives because of different criteria.

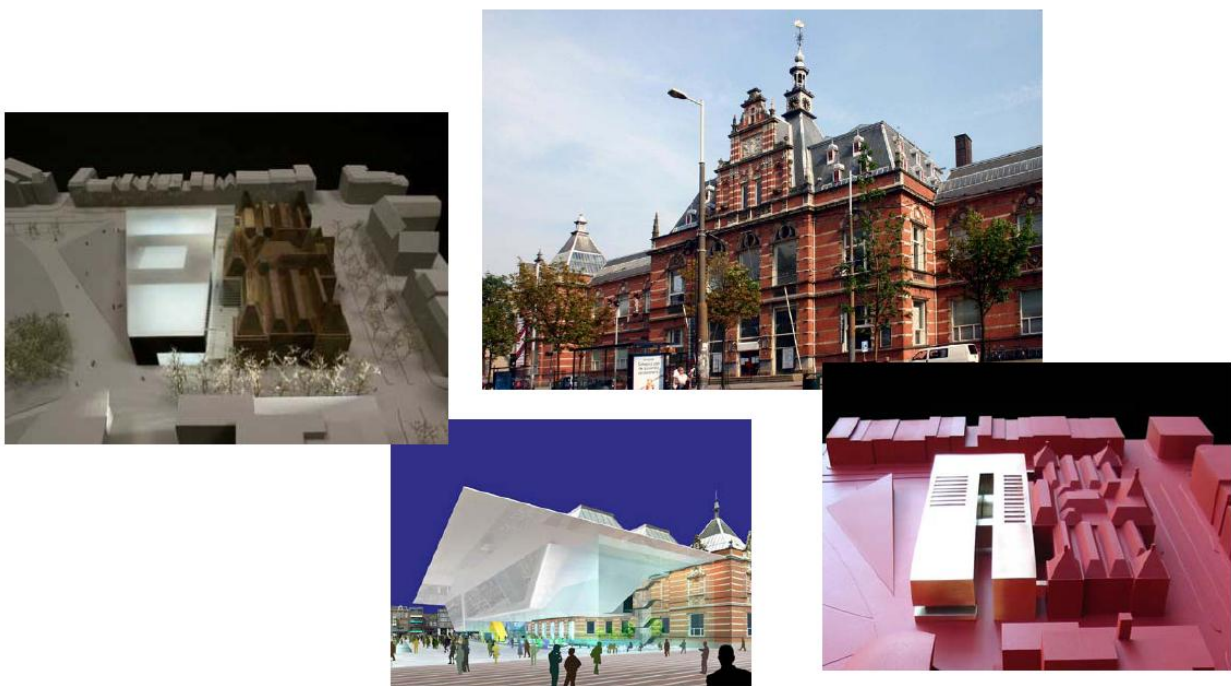


Figure 1.3; Renovation and extension of the Amsterdam museum of contemporary art – The Stedelijk Museum Amsterdam
Source; Binnekamp, R., 2009. *Group Decision Making in Architecture and Urban Planning, Modelling Stakeholder's Preferences in methods of Design Decision Making*. Colloquium presentation

The third difficulty can be related to the view that from a common purpose more specific goals are determined based on the interests and influences of multiple stakeholders of the organization. The example used by Binnekamp (2010), shown in figure 1.4, concerned the development of the new office for the VPRO broadcasting company. He explains that 'the architects and management persisted in their view that the design reflected the practical requirements of the users, who in turn maintained that quite the opposite was true. The result has been that most of the people who have to work in the building are extremely dissatisfied and disappointed' (Binnekamp 2010, p.19).



Interior VPRO office after the building was completed



Interior VPRO office after modification by the user

Figure 1.4; The development of the new office for the VPRO broadcasting company
Source; Binnekamp (2010)

1.3 Problem statement

In the problem description difficulties are explained with regard to the optimization of the match between real estate demand and real estate supply as a process of choice making to achieve organizational goals. The three difficulties raised the following questions that have to be elaborated to perform a useful evaluation on the NTA 8021:

1. How to align (translate and order) organizational goals into real estate criteria?
2. How to choose between multiple alternatives that match a common purpose?
3. How to cope with multiple stakeholders that have conflicting interests in achieving organizational goals?

Combining the difficulties and questions composes a decision making problem as problem statement:

How can stakeholders of an organization (demand) select the optimal real estate alternative (supply) taking into account the properties of each alternative?

- A stakeholder is a person or a group of persons with an interest or stake in the organization like users of the organizational real estate, managers of the organization, customers, clients, suppliers, neighbours or government agencies.
- Select refers to the process of choice or decision making on alternatives according to a certain procedure or algorithm.
- Optimal means the best or the highest possible outcome.
- Properties are criteria, attributes or characteristics of structural real estate elements like location, building, installation, floor and workplace.

The problem statement raises the following questions to be answered:

1. What is the essence of the NTA 8021 and how does it cope with the mentioned difficulties of choice making in accommodation strategy design?
2. Which theoretical perspectives and agreements towards strategy and its design can be used to form a evaluation toolset that:
 - Represents the whole picture of accommodation strategy design;
 - Can be used to classify accommodation strategy design methods on their position in the whole picture;
 - Can be used to analyse accommodation strategy design methods on their provided instruments?
3. Which instruments enable:
 - The alignment of organizational goals towards real estate criteria;
 - Multi criteria decision making?
4. What is the usefulness of these instruments?
5. How can these presumably useful instruments be implemented in the NTA 8021?

1.4 Objective

The research objective is to evaluate the NTA 8021 Performance measurement of real estate and provide useful feedback to the Workgroup NTA 8021.

1.5 Relevance

The scientific contribution of this thesis is delivering a tool for classifying accommodations strategy design methods and delivering an instrument to align organizational goals into real estate aspect properties as criteria for selecting the optimal supply.

This thesis investigates the concept of connection in the sense of matching real estate supply, real estate demand and organizational performance from a strategic point of view. Public- and non-public organizations are increasingly in search for the optimal accommodation to achieve multiple organizational goals. Due to economical-, technical- and social developments in the last thirty years organizations are searching for a balance to distinct themselves from others within acceptable financial conditions.

Several methods and instruments aim to establish and optimize this connection but not one of them can be classified as the best. Therefore new methods are still sought like the latest method NTA Performance measurement of real estate. This thesis evaluates this method and tries to provide useful feedback to support the workgroup NTA 8021 to develop their method.

1.6 Research design

'A research design is an action plan for getting from here to there, where *here* describes the investigators research question(s) and *there* describes the knowledge derived from the research. In between the *here* and *there* are a set of steps and procedures that may be highly prescribed or emerge as the research proceeds' (Groat and Wang, 2002, p. 11). It is the logical sequence that connects the collected data to the initial research question of the study and to its conclusion.

The research design for this thesis is based on evaluation research. It combines the approaches of summative- and formative evaluations. Summative evaluations give feedback on the impact or usefulness of a subject in question. The feedback is usually provided through a written report intended for external parties. Formative evaluations give feedback for improvement of the subject in question without formal consequences. The feedback is usually intended for internal use of a subject in development. This combination of both approaches results in a written report for the external Workgroup NTA 8021. The report provides feedback on the usefulness of the NTA 8021 and provides recommendations for improvement in becoming a Dutch standard.

The research design consists of the following six phases: problem formulation; conceptualization; analysis and synthesis; utilization; implementation and; conclusion shown in figure 1.5. In the first phase, problem formulation, the research field is explored to define the difficulties with regard to the optimization of the match between real estate demand and real estate supply as a process of choice making to achieve organizational goals. The exploration is performed with a literature survey. As a result the problem statement and research questions are formulated to conduct the research. The first phase includes a brief summative evaluation of the NTA 8021 to determine its usefulness and the way it copes with the established difficulties. The remaining difficulties will serve as input for performing a formative evaluation. In the second phase, conceptualization, a toolset is created for conducting a formative evaluation of the NTA 8021. A literature review is executed to determine: which aspects represent the whole picture of accommodation strategy design; which aspects can be used to classify accommodation strategy design methods on their position in the whole picture; which aspects can be used to analyse accommodation strategy design methods on their provided instruments. Further a sample including the NTA 8021 is determined of accommodation strategy design methods that together compose the whole picture of accommodation strategy design. A formative evaluation on the sample is performed to determine the meaning of the NTA 8021 within the whole picture of accommodation strategy design and to determine which instruments of the sample can help improve the NTA 8021 and achieve its objective. In the third phase, analysis and synthesis, two instruments are elaborated. First an instrument that enables alignment of organizational goals towards real estate criteria. Second an instrument that enables multi criteria decision making. In the fourth phase an example is used to test the elaborated instruments on their usefulness. In the fifth phase is reasoned how the instruments can fit together in the NTA 8021. The sixth phase consist of a general conclusion and recommendations to improve the NTA 8021 for achieving its objective and development towards a Dutch standard.

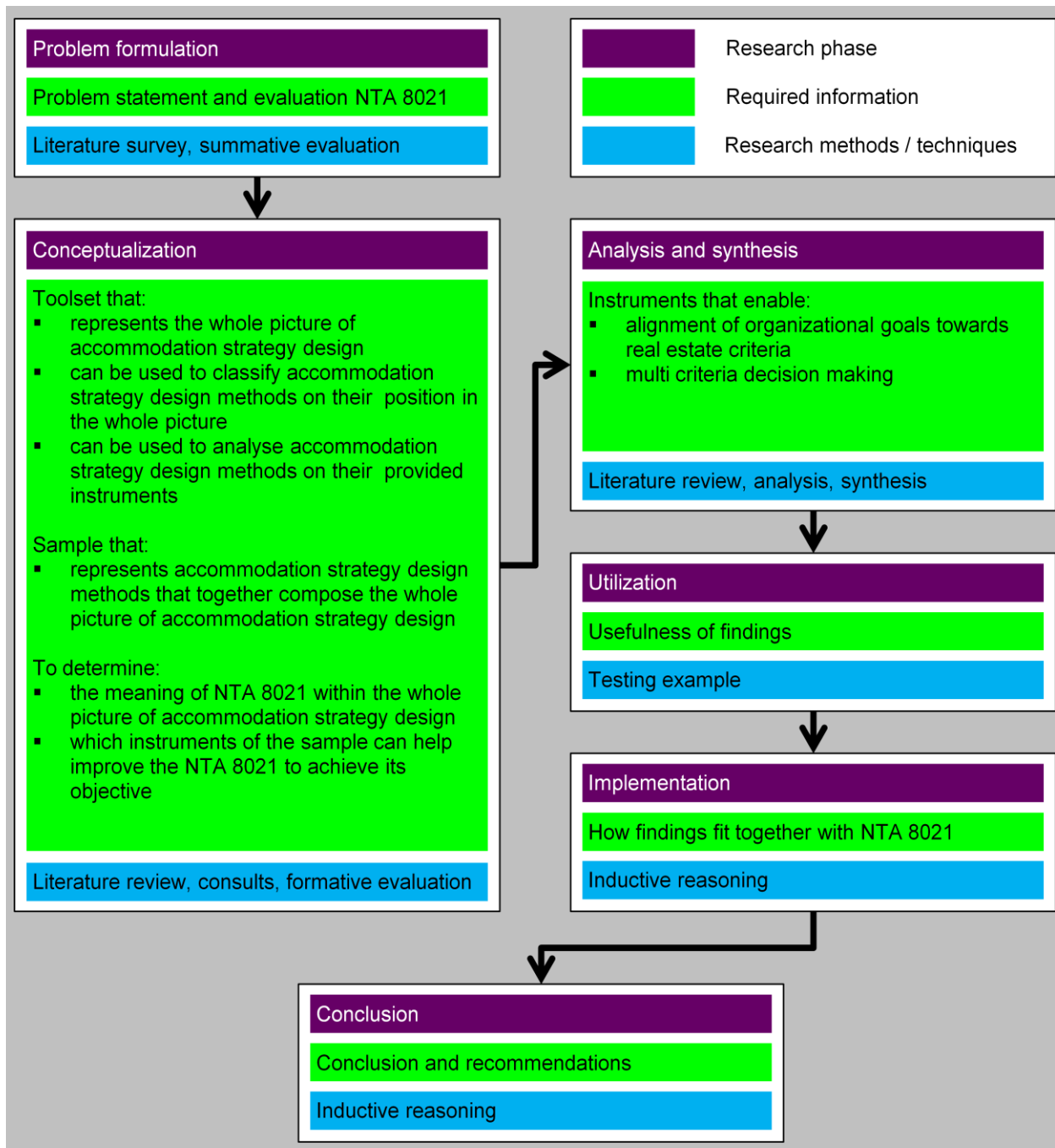


Figure 1.5; Research model

1.7 Readers guide

The evaluation research in this graduation thesis is divided into six phases. Each phase contains one or more chapters. To provide an overview of the structure and content of the thesis the phases and their chapters are shown in figure 1.6. The first chapter introduces the topic together with the three difficulties related to choice making in accommodation strategy design. These indicate the problem statement and objective of this thesis. The second chapter analyses and evaluates the NTA 8021 on the way it copes with the difficulties related to accommodation strategy design. In chapter three theoretical perspectives and agreements towards strategy and strategy design are sought and analysed to create a toolset that represents the whole picture of accommodation strategy design. The toolset is used to evaluate a sample of accommodation strategy design methods including the NTA 8021 to determine the meaning of the NTA 8021 within the whole picture and to find out which instruments of the sample can help improve the NTA 8021. In chapter four and five two instruments are elaborated concerning alignment of goals towards criteria and multi criteria decision making to improve the NTA 8021. The instruments are tested in chapter six by demonstrating their usability with an example. Chapter seven discusses the implementation of the found instruments into the NTA 8021. This thesis finishes with conclusions and recommendations.

Problem formulation	Conceptualization	Analysis and synthesis	Utilization	Implementation	Conclusion
Introduction 1	Conceptualization 3	Alignment of goals towards criteria 4	Demonstration of instruments 6	Implementation of instruments 7	Conclusions and recommendations 8
Evaluation of NTA 8021 2		Multi criteria decision making 5	<div>1 = Chapter number</div>		

Figure 1.6; Readers guide

1.8 References

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2 EVALUATION OF NTA 8021

2.1 Introduction

The draft method 'NTA 8021 Performance measurement of real estate' (NTA 8021) finds its origin in the Dutch Ministry of Defence and is momentarily further developed by the Workgroup NTA 8021 towards a NEN (Dutch standard). The workgroup consists of members from public and non-public organizations.

To answer the main question, first the essence of the NTA 8021 (2009) is described. The essence consists of excerpts of the draft method and is translated from Dutch to English. To ensure a coherent story the method is partially adjusted and edited. Due to the applicable copyright, the Dutch draft method 'NTA 8021 Performance measurement of real estate' can be ordered on the website <http://www.nen.nl/web/Normshop/Norm/NTA-80212009-Ontw.-nl.html>. For graduating a bought copy is attached in Appendix II. Second the NTA 8021 is analysed and discussed on the way it copes with the previous defined difficulties in optimizing the match between real estate demand and supply in a process of choice making. These difficulties raised the following questions: how to align (translate and order) organizational goals into real estate criteria; how to choose between multiple alternatives that match a common purpose; how to cope with multiple stakeholders that have conflicting interests in achieving organizational goals. Finally conclusions are drawn if the NTA 8021 is able to optimize the match between real estate demand and supply.

Problem formulation	Conceptualization	Analysis and synthesis	Utilization	Implementation	Conclusion
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2.2 Essence

2.2.1 Objective

The objective of the NTA 8021 is to offer a tool to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand with real estate supply. Questions that need to be answered are: to what extent does the available real estate fits the new needs and; how can the current real estate be adapted or maintained in the optimal way to these new needs. The NTA 8021 reaches a hand in determining the accommodation strategy and the decision making process.

2.2.2 Applicability

The NTA 8021 can be used to: define the organizational demand for real estate by establishing performance criteria, this is called the 'usage profile'; assess the current real estate supply on the established performance criteria, this is called the 'real estate profile'; match and analyse the organizational demand for real estate to the available real estate supply, this called the 'performance analysis'.

With the information several practises are possible:

- To establish and communicate specific needs of a stakeholder;
- To record specific needs of a stakeholder;
- To record specific performance of a building or portfolio;
- To benchmark different buildings;
- To develop accommodation scenarios (sic)².

2.2.3 Target groups

The target groups for the NTA 8021 are numerous. It ranges from big organizations with many buildings to organizations with a few buildings and from owners and users of real estate to architects, project developers and maintenance companies.

2.2.4 Elements

Real estate can be judged on many criteria which vary from aspects like accessibility to comfort. To ensure all possibilities the NTA 8021 makes use of six themes:

- User value, the degree in which real estate can be used for intended activities;
- Physical value, the degree in which is obliged to building legislation;
- Facilitating value, the degree in which support functions are available;
- Image value, the degree of desired appearance;
- Economical value, the financial value of real estate;
- Technical value, the degree of durability of real estate and its surroundings.

Each of the mentioned six themes consists of sub themes. They are on their turn subdivided into performance aspects for different spatial levels like area, complex, building and unit. The performance aspects are expressed into indicators(sic)³ 'criteria' measured on six point scales.

The functional performance analysis is the result of a measurement. The result is an overview of deviations in terms of shortage points and plus points of the real estate profile in relation to the usage profile. With a (still to be further elaborated) questionnaire the usage profile is determined for different functions like office, living or education. The functions are translated into performance aspects and criteria. The criteria are expressed on a six point scale where 1 is excellent and 6 is very bad. In the usage profile is defined which performance aspects and criteria points are expected of the real estate.

² Within the field of real estate management the word scenario is used to describe a possible future. In this case the word refers to possible solution or alternative. The word scenario is changed into alternative.

³ An indicator says something about a performance aspect but is in the NTA 8021 not related to a process. The word criterion would be more appropriate. The word indicator is therefore changed into criterion.

The demands can vary in different performance aspects and range from absolutely necessary to nice to have. The stakeholders backgrounds and interests determine the choice for certain performance aspects and their value on importance. The importance is expressed into A, B or C, where A is of highest, B is of higher and C is of medium importance. The criteria, their points and importance rating, are used to establish a usage profile in an objective measurable order. The most important question for selecting in this case is: what is or are the organizational goal(s) a stakeholder wants to achieve based on which performance aspect and criteria points?

The real estate: area, complex, building and unit, are assessed through a survey on the spot based on the usage profile. This will generate a list with criteria and points per performance aspect of the actual appearance of the real estate.

Matching both profiles will generate an overview of deviations. The degree of deviations is measured with the real estate profile in relation to the usage profile. If this comparison is negative, the real estate supply doesn't fulfil the demanded performance criteria. In some circumstance the negative equation can be removed or overcome by technical interventions. If possible interventions on existing real estate do not bridge the gap new real estate is to be realized.

The NTA 8021 has in total almost 500 performance aspects, ranging from presence of applicable permits to the difficulty degree of demolition. Filling in all these aspects does not fulfil an effective way of establishing the profiles. In order to provide a quick scan the maximum amount of aspects should not transcend 25. A more thorough scan should not transcend the amount of 150. The origin of these amounts is not explained. The selection of aspects is different per stakeholder and type of building. Therefore three kinds of methods are available to select the relevant performance aspects:

- A standard selection of performance aspects with for predetermined use, for example only judging a housing complex with performance aspects relevant for living; (a presumed maximum of 150 aspects)
- The set up default performance aspects for predetermined use, for example office use with the performance levels already clear; (a presumed maximum of 150 aspects)
- To judge performance on a higher level by judging underlying items as a whole, this means not further elaborating in detail. (a maximum of 25 aspects)

The performance measurement compares the usage profile to the real estate profile with deviations as a final result. The next thing is to generate possible interventions combined into different alternatives to align the real estate profile towards the user profile to reach the optimum. The possible alternatives are expressed into costs (intervention costs + exploitation costs after the interventions). When these latter costs are compared with renewal (investment costs + exploitation costs) the cost effectiveness can be determined. The cost effectiveness is expressed in the amount of years the investment is earned back by saving exploitation/operating costs. The amount of years the investment is earned back is determined by calculating (Δ investment costs/ Δ exploitation costs). The results per unit or building can be shown in a matrix in order to calculate the costs for the different alternatives. The alternatives are then compared to the organizational goals to make a final choice for implementation (the NTA 8021 does not provide clear information by whom, on what and how these alternatives are compared on the organizational goals).

2.2.5 Procedure

The performance analysis consists of matching the demand side (organizational goals) with the supply side (real estate) according to the following steps: (figure 2.1)

1. Establish a usage profile through translating organizational goals into real estate demand by using a questionnaire containing questions with six point scales;
2. Establish a real estate profile by performing a site survey on the demanded criteria mentioned in the usage profile;
3. Match the usage profile with the real estate profile by showing the deviations between the two profiles;
4. Prioritize performance aspects on importance;
5. Define interventions and alternatives to align the real estate profile towards the usage profile expressed into costs (intervention costs + exploitation costs after the interventions);
6. Compare the alternatives (solutions) to the organizational goals and make a choice for implementation. In the case of choosing an existing (already built) alternative the optimum is to be achieved in the large vertical rectangle of the matching step. In the case of a new (to be build) alternative the optimum is to be achieved in the smaller vertical dashed rectangle of the matching step.

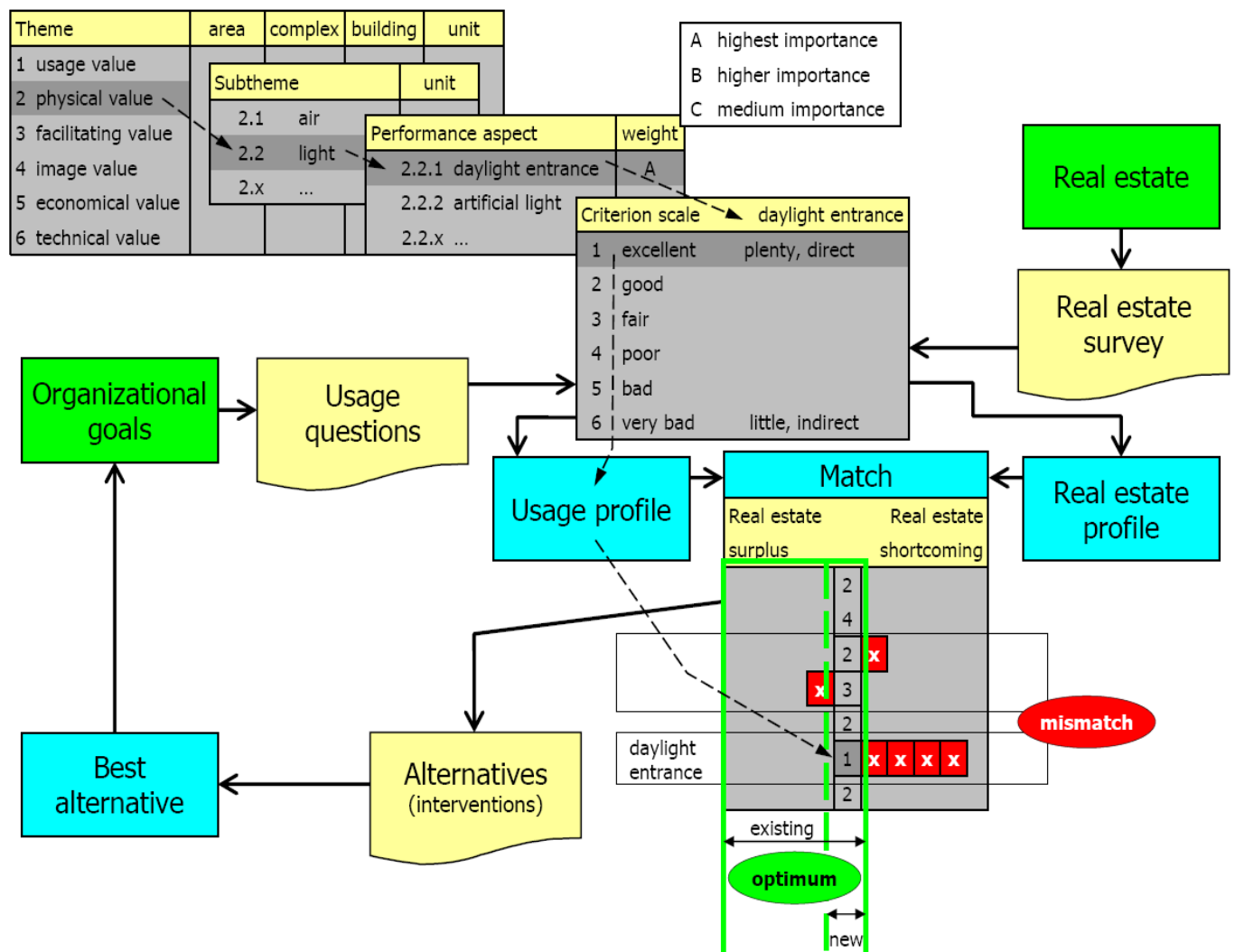


Figure 2.1; Performance analysis and process scheme

Source; Translated from NTA 8021, Performance measurement of real estate (2009) with addition of the steps 5 and 6

2.3 Analysis and discussion

2.3.1 Evaluation questions

In this paragraph the NTA 8021 is analysed and discussed according to the following questions:

1. How does the NTA 8021 align (translate and order) organizational goals into real estate properties as criteria?
2. How is the optimal alternative chosen taking into account the properties of each alternative that fits the best the organizational goals?
3. How does the NTA 8021 cope with multiple stakeholders that have conflicting interests in achieving the organizational goals?

These questions are used to elaborate the difficulties of improving organizational performance through achieving organizational goals by optimizing the match of real estate demand and real estate supply.

2.3.2 Alignment

How does the NTA 8021 translate and order (align) organizational goals into real estate properties as criteria? Although the NTA 8021 mentions and show that organizational goals are the basis of the translation into criteria it does not define or provide generic organizational goals. Without these generic goals it is impossible to perform a translation into criteria and establish an order in line with the importance of organizational goals. Presumably the 'so called' translation is performed by a stakeholder who has one or more organizational goals in mind that serve best its interest. The stakeholder performs the translation of imaginary goals into criteria and establishes an order which is purely based on preference rather than on empirical evidence.

The stakeholder selects the performance aspects on preference with the use of a questionnaire. The stakeholder is asked to fill in a large amount of questions concerning criteria and subsequently rate it on a six point scale. Afterwards the different criteria are weighed on importance to establish an order of A, B, or C. The NTA 8021 assumes following this procedure to perform an objective measurement as claimed in a similar used method.

The selection and measurement procedure of the NTA 8021 is similar to the Design Quality Indicator (DQI). 'The Design Quality Indicator is based on a research project to provide a toolkit for improving the design of buildings' (Gann et al., 2003, pp.318). The DQI also focuses on real estate functions and is striving for a user's design intent. The latter can be seen as the usage profile of the NTA 8021. Like the NTA 8021 the backbone of the DQI is the questionnaire and its six point scales. The DQI also assigns weights to the different criteria to order them on importance and claims to perform an objective measurement.

The fact remains, despite these claims, that the NTA 8021 does not provide generic organizational goals or empirical evidence to align these goals towards defined real estate criteria based on proper interrelationships.

2.3.3 Choice making

How is the optimal alternative chosen taking into account the properties of each alternative that fits the best the organizational goals? The performance analysis consists of matching the usage profile with the real estate profile. Matching both profiles will generate an overview of deviations. In case of shortcomings on the real estate profile possible interventions are planned or designed and combined into alternatives to bridge the gap between the profiles. The optimal alternative, in theory, is the one without any further shortcomings on the real estate profile. In practise it is possible that physical interventions are in conflict with each other to match the usage profile. In this matter is assumed that multiple alternatives have no shortcomings left in relation to the real estate profile.

The NTA 8021 prescribes that the alternatives are expressed into costs (intervention costs + exploitation costs after the interventions). The intervention costs are seen as investment costs. The cost effectiveness of each alternative is then to be calculated. The cost effectiveness is expressed in years the investment is earned back (Δ investment costs/ Δ exploitation costs). The alternative which is the most cost effective is assumed the optimal alternative and wins. The costs effectiveness is hereby the only criterion on which the optimal alternative is to be chosen. This raises the question: what happens if the costs exceed the budget?

If multiple alternatives have no shortcomings left in relation to the established usage profile the optimal alternative is selected on cost effectiveness. The alternative which is the most cost effective is considered the optimal alternative. The answer to the question: what happens if the costs or costs effectiveness exceed the budget, is probably an adaptation of the usage profile.

2.3.4 Coping with conflicts

How does the NTA 8021 cope with multiple stakeholders that have conflicting interests in achieving the organizational goals? This question refers to multi criteria decision making (MCDM) or multi criteria decision analysis (MCDA). MCDA can be defined as a certain way to solve a problem for decision makers that have to deal with multiple and conflicting evaluations on possible solutions. For instance if there is a limited budget and none of the alternatives can fulfil the optimal match because of that limited budget?

The elements needed to perform a MCDA in relation to this thesis are: alternatives (A); criteria (C); stakeholders (S); weights (W) to order the criteria and an algorithm to solve the problem. These elements together form the following MCDA model (figure 2.2).

			A1	A2	A3
S1	C1	W1			
S1	C2	W2			
S3	C3	W3			

Figure 2.2; MCDA model

Unfortunately the NTA 8021 does not provide information to answer the question how it copes with multiple stakeholders that have conflicting interests in terms of MCDA. To determine if it can, the question is addressed to the similar method, the Design Quality Indicator (DQI).

Markus (2003, pp. 399-404) expressed the following criticism on the DQI. He disapproves the claim of the DQI that subjective quality aspects can be measured objectively. He states that 'the contrast between objective and subjective is not as the DQI claims and as many others seem to assume. The difference is in the type of measuring instrument used. In one case, the instrument is a person, in the other (say) a sound level meter or thermometer'. 'There is no combination with regard to the data itself, they are all subjective or qualitative'. He concludes that this way of scoring, weighing and calculating is not reliable.

Binnekamp (2010, pp.36) concludes in his chapter on notes on multi criteria decision analysis that in the case of preference measurement 'the mathematical operations of addition and multiplication are not applicable to the measurement scales as proposed by Stevens (1946)'. The psychologist Stevens introduced four different types of scales for measurement. These are nominal-, ordinal-, interval- and ratio scales. The DQI and the NTA 8021 use mainly ordinal scales to measure preferences of stakeholders. This means that the scores on the scales of the DQI or the NTA 8021 cannot be used as input for MCDA.

Dewulf and Van Meel (2004, pp.248-249) agree with Markus (2003, p.400) that the 'DQI uses subjective measurement for everything. Users are asked to assess not only the feel or inspirational quality of a building, but also the lighting, air quality and the accessibility to wheelchair users. It is questionable why these issues should be judged based on opinions instead of facts. It seems strange that so many issues should be reduced to subjective judgement'. They acknowledge the fact that 'although it has scientific imperfections it is accessible and understandable to the layman and is actually being used'. This emphasizes the need for a tool for measuring alternatives on other criteria rather than money.

2.3.5 Further discussion

The previous analysis and comment make clear that the difficulties are not coped with in the NTA 8021. Multiple stakeholders have to determine a limited amount of criteria that have an explicit relationship with organizational performance aspects and -goals to use in a multi criteria decision analysis methodology involving proper preference measurement.

To guarantee steering control on the performance of an organization and prevent exhaustive exercises it is of importance that the amount of criteria is limited. The limitation of criteria is described in the NTA 8021 in terms of judging performance on a higher level by judging underlying items as a whole. In this matter the NTA 8021 mentions that the amount should not transcend 25. Unfortunately it does not describe how this is established.

Another way to reduce the amount of criteria to be judged on preference is their significance to organizational performance. Criteria and their norms that are obliged due to legislation, building standards or otherwise obvious without discussion can be seen as requirements or constraints rather than criteria. These requirements are important to identify possible interventions and the determination of suitable alternatives but can be left out in the actual selection process to determine the optimal alternative.

The used scales in the NTA 8021 for measuring preferences are not applicable to perform a multi criteria decision analysis that uses mathematical operations of addition and multiplication. To determine the optimal alternative proper preference measurement scales are needed that allow these operations.

2.4 Conclusion

The NTA 8021 is not able to support stakeholders of an organization (demand) to select the optimal real estate alternative (supply) taking into account the properties of each alternative. First, because the NTA 8021 does not provide generic organizational goals (strategic level) to align them towards defined real estate criteria (operational level). To improve organizational performance, guarantee steering control and prevent exhaustive exercises stakeholders have to determine a limited amount of criteria that are explicitly related to organizational goals and –performance aspects. Second, because the NTA 8021 is not able to properly cope with multiple stakeholders that have conflicting interests in achieving their organizational goals. The measurement methodology provided by the NTA 8021 is unreliable to use as input for multi criteria decision making. Proper preference measurement scales are needed to use the criteria as input for a multi criteria decision making methodology which allows mathematical operations of addition and multiplication to determine the optimal real estate alternative.

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3 CONCEPTUALIZATION

3.1 Introduction

In the previous chapter is concluded that the draft method 'NTA 8021 Performance measurement of real estate' (NTA 8021) is not able to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand with real estate supply. The NTA 8021 does not cope with the difficulties of aligning organizational goals to real estate criteria and multi criteria decision making. To better understand why, it is necessary to position the NTA 8021 within a broader context of strategy design theory.

In their reader De Jonge et al. (2009) have made a search for relevant strategy- and strategy design theories and analyzed their different perspectives on their usefulness to (as they mentioned) 'underpin the theory of accommodation strategies and strategy design'. They noticed that strategy pluralism in the sense of using and combining different perspectives is the way to create a complete picture. To analyze and position six frequently used methods in relation to the theory they used the four views of Idenburg (1992; in Wissema 2001) as umbrella categorisation. To extend the strategy pluralism approach this chapter adds two more umbrella categorisations to be used to analyze and position accommodation strategy design methods.

The first step in conducting a formative evaluation on the NTA 8021 is to create a toolset. It has to be a toolset that: represents the whole picture of accommodation strategy design; can be used to classify accommodation strategy design methods on their position in the whole picture; can be used to analyse accommodation strategy design methods on their provided instruments. The second step is to determine a sample of used accommodation strategy design methods that together cover the whole picture of the accommodation strategy design process. The third step is to interpret the meaning of the NTA 8021 in relation to the other methods within the whole picture. The final step is to determine which instruments of the sample cope with the mentioned difficulties of alignment and multi criteria decision making in order to improve the NTA 8021 and achieve its objective.

This chapter continues in the next paragraph with an explanation of real estate management and its role in the organization. In the third paragraph general aspects of agreement towards strategy are determined that are relevant for accommodation strategy design. Subsequently theoretical perspectives towards strategy are described, discussed and elaborated for their contribution to accommodation strategy design. In the fifth paragraph a toolset is created by combining the aspects of agreement with the perspectives towards strategy and its design process to support the evaluation. In the succeeding paragraph the sample of used accommodation strategy design methods is presented. In paragraph seven the sample including the NTA 8021 is evaluated. The sample is evaluated to interpret the meaning of the NTA 8021 in relation to accommodation strategy design and to determine which instruments can help improve the NTA 8021 to properly cope with the mentioned difficulties.



3.2 Real estate management

Organizations need real estate to accommodate its employees and activities. The defined requirements for accommodation depend on the functions real estate has to fulfil for the organization. Van der Voordt and Van Wegen (2000 cited in De Vries 2007, p.74) have distinguished four main functions. These are:

- The utility function (accommodating people and activities);
- The technical function (shelter safety and protection against weather elements, providing an interior climate);
- The economical function (balancing conditions on investments, maintenance and operating costs) and;
- The symbolic function (image reinforcement and representativeness)'.

The optimal accommodation for an organization is based on a mix of these four functions in order to support the primary processes and contribute to the overall performance of the organization.

The focus on the economical function in the last forty years has led to a managerial way of thinking related to real estate and real estate services. De Jonge et al. (2009, pp.15-16) explain that the oil crisis of 1973, the introduction of the computer and information technology established a managerial approach to real estate and real estate services. The economic and subsequent corporate recession of the 1980's resulted in a further pressure on staff- and support departments such as real estate. As a consequence corporations moved back to their core business and the departments had to justify themselves for their presence in the organization. More recent, developments in demographics, internationalization and globalization have changed the focus towards the added value of real estate to the organization.

The development of real estate management within organizations is described by Joroff et al. (1993) cited in De Jonge et al. (2009, pp.16-17). 'Based on empirical evidence, Joroff defined five different stages to real estate management. The role of the corporate real estate unit and ambitions it has to fulfil, are specified at each stage.' The development of a real estate unit within organizations starts at stage 1 from a pure technical management approach towards a strategic management approach in phase 5. An overview of the development stages in time is added from Roulac (2001, p.133). The stages and development in time are shown in figure 3.1.

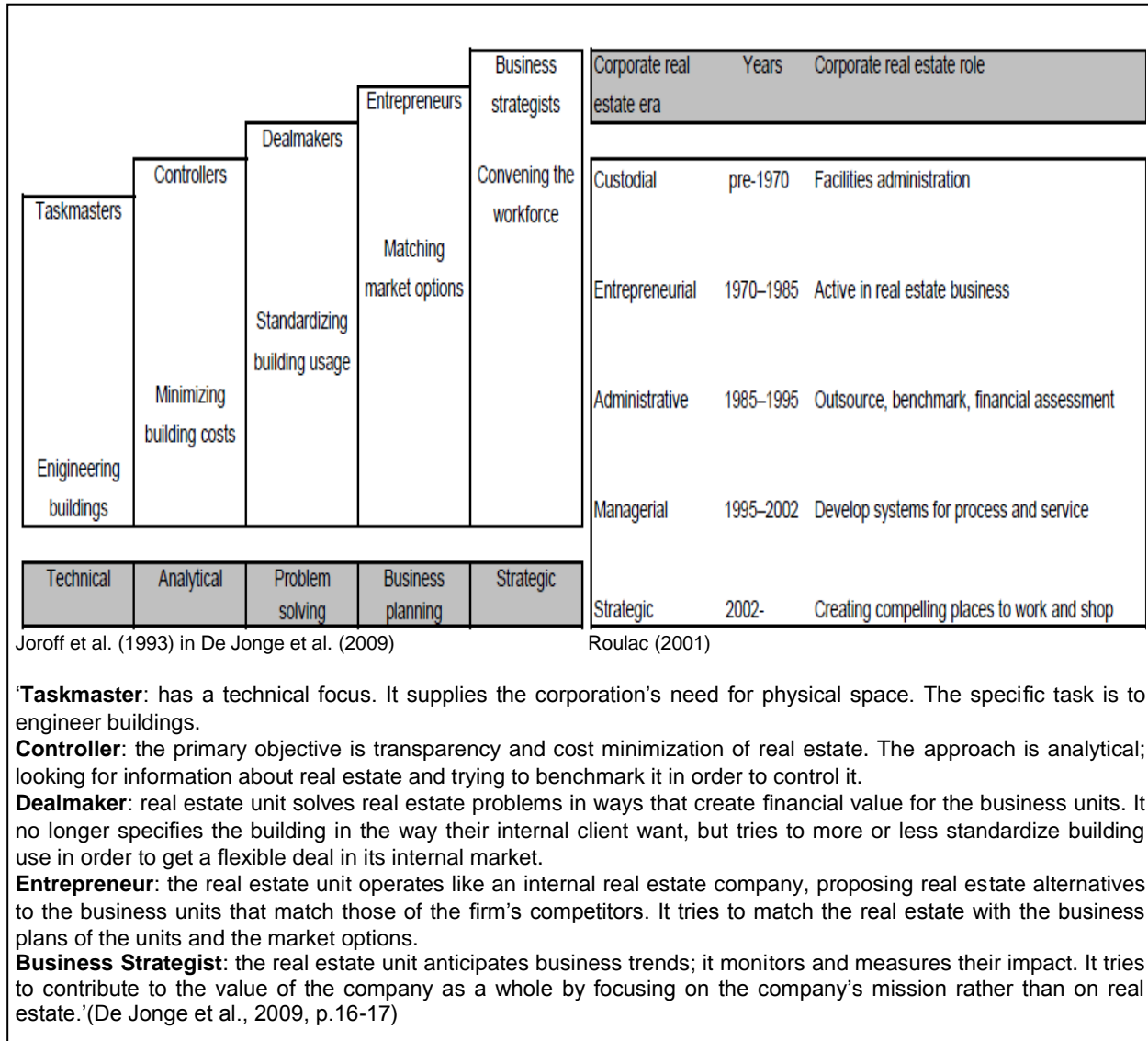


Figure 3.1; Real Estate Management development model
Source; De Jonge et al. (2009) and (Roulac 2001, p.133)

De Jonge et al. (2009, p.17) explained that 'the development model is additive by nature. In a corporate real estate unit there will always be a mix of stages. In stage two, three and four decisions on real estate are based on efficiency. In stage five, real estate also needs to be effective for the business as a whole'.

3.3 Agreements towards strategy

In order to design a strategy it is essential to understand the noun strategy. This is according to most dictionaries explained as 'a plan of action designed to achieve a particular goal' or a 'detailed plan for achieving success in situations such as war, politics, business, industry or sport, or the skill of planning for such situations'. In the military usage, strategy refers to 'a nation's overall war plans, whereas tactics refers to the disposition of armed forces in combat'. But not everyone totally agrees on these dictionary definitions.

Mintzberg et al. (1998, pp.9-15) define strategy as 'five P-things: a Plan of action i.e. a target situation, it looks ahead; a Pattern i.e. what can be seen in retrospect, it looks behind; a unique Position in the market, it looks below; a Perspective i.e. what Drucker (1970, p.5) refers to as the organization's theory', up-to the vision of enterprise, it looks above or; a Ploy, a specific manoeuvre e.g. to mislead competitors, it is a threat'.

The five P-things of Mintzberg et al. place strategy in a three dimensional space. The perception of an organizations' top management on its environment establishes a vision or target situation. The other environmental elements pattern (behind), position (current) and perspective (front) are necessary to navigate or manoeuvre the organization to the target situation. To reach this target situation unharmed with a full deployed workforce (action) is only possible if there is a battle plan with the necessary ploys.

Mintzberg et al. (1998) distinguish furthermore intended strategies and emergent strategies. The intended strategy is previously planned based on deliberate decision making and subsequently executed. This strategy is similar to the earlier mentioned definition as a plan of action. The emergent strategy is a spontaneous strategy and is not previously planned. Decisions made in this strategy are based on anticipating on day to day events. A strategy can thus be seen as a planned action or unplanned action.

It seems that in theory discussions about aspects of strategy have the trait to come to an open end. To form a classification set it is necessary to start looking for shared aspects relevant for accommodation strategy design. Chaffee (1985, pp.89-90) cited by Mintzberg et al. (1998, p.16) mentioned the following general areas of agreement towards strategy:

- "Strategy concerns both organization and environment. A basic premise of thinking about strategy concerns the inseparability of organization and environment. The organization uses with strategy to deal with changing environments;
- The substance of strategy is complex. Because change brings novel combinations of circumstances to the organization, the substance of strategy remains unstructured, unprogrammed, non routine and non repetitive;
- Strategy affects the overall welfare of the organization. Strategic decisions are considered important enough to affect the overall welfare of the organization;
- Strategy involves issues of both content and process. The study of strategy includes both the actions taken, or the content of strategy, and the processes by which actions are decided and implemented;
- Strategies are not purely deliberate. Theorists agree that intended, emergent, and realized strategies may differ from one another;
- Strategies exist on different levels. Firms have corporate strategy (What businesses shall we be in?) and business strategy (How shall we compete in each business?);
- Strategy involves various thought processes. Strategy involves conceptual as well as analytical exercises. Some authors stress the analytical dimension more than others, but most affirm that the heart of strategy making is the conceptual work done by leaders of the organization".

The general areas of agreement towards strategy that are relevant for accommodation strategy design can be summarized into the following general aspects:

1. Context,
The organization and environment form in fact the relevant contextual aspects towards strategy design methods. People usually prefer a stable situation for a certain period of time to perform at their best. Therefore strategies are drawn up with a certain time span in relation and matching their changing environment. It is up to the general management of an organization to sense and anticipate significant changes affecting the organization and its goals. The relevancy in this view lies in the general aspect of regularly updating a strategy towards changing circumstances. Both mentioned aspects are without doubt closely related to the general aspect context;
2. Organizational performance,
Welfare can be distinguished in continued existence of the organization and the persistency of achieving a certain situation. The overall welfare of the organization is also seen as overall performance. De Vries (2007, p.66) mentioned that 'performance is on the one hand aimed at products, production and services and on the other hand at achieving organizational objectives';
3. Formation,
This general aspect of agreement is relevant towards strategy design because of its focus on the different aspects content, process or both in strategy formation;
4. Decision making,
Because of anticipating on continues changing circumstances an intended strategy cannot remain permanently. The realized strategy is the result of a decision making process and therefore seen as a general aspects in accommodation strategy design;
5. Alignment,
Different organizational levels affect each other. An organization has a certain hierarchy where the top defines the objectives to achieve and where the bottom is trying to achieve the objectives by deploying certain activities. The general aspect towards strategy design is the alignment of organizational levels;
6. Pluralism,
Using various thought processes to design a strategy is considered a relevant aspect towards accommodation strategy design. The general aspect is this matter is summarized as pluralism.

3.4 Perspectives towards strategy

3.4.1 Context

The previous paragraph already mentioned the organization and its environment in relation to context. From this perspective the organization can be seen as an open system that is influenced by its environment and at the same influences the environment. This means that changes in the environment affect the organization and visa versa. To remain a healthy balance between the two a regularly update of the strategy is essential.

The developments or elements in the environment that influence the organization form the general context. Douma et al. (1996, p.74) distinguish the following seven elements of the general context: 'law; demography; economy; society; technology; ecology and; public opinion (figure 3.2). These are the most common contextual elements of every Dutch organization. Besides these seven there are elements which can be regionally bounded and business specific'.

De Vries (2007, pp. 104-107) has investigated several models and theories on specific contextual elements. She has categorised them into three main elements which form the organizational context (figure 3.2):

- 'Leadership and structure, the way the organization is formally and informally managed;
- Goals and strategy, what the organization is trying to achieve in what manner;
- Culture, the behaviour of people within the organization'.

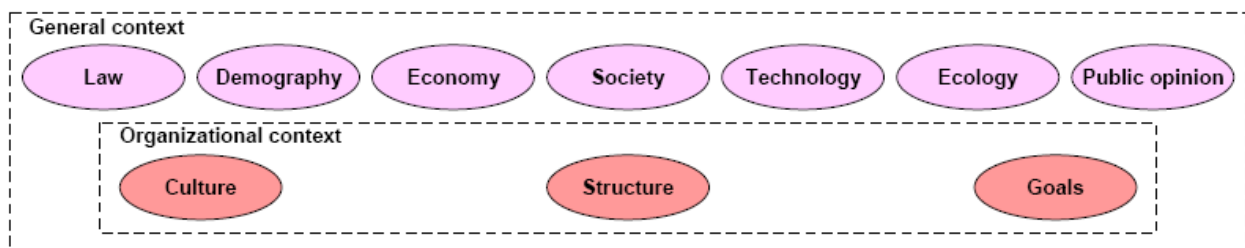


Figure 3.2; General and organizational context
Source; Based on the De Vries (2007, p.107)

The general- and organizational context influence accommodation strategy design as a derivative from the corporate- or general strategy. This contextual influence is explained in the first chapter from the view that real estate is one of the five resources of an organization that support the primary processes to contribute to the overall performance of the organization. De Vries (2007) combined and visualized the organization as an open system, performance and its fifth resource in figure 3.3.

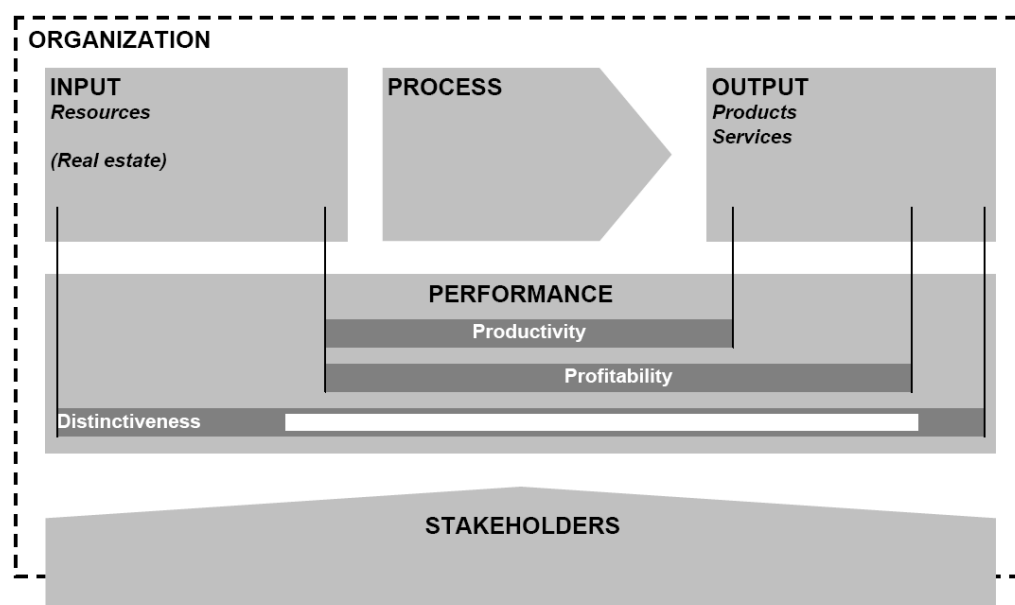


Figure 3.3; Combination organizational performance and input – output model
Source; De Vries (2007, p.70)

The interrelationships with other resources and structural changes in the organization have an influence on real estate. In return real estate influences organizational performance and its environment by its structure, lay out and appearance. Optimizing the match between demand and supply of real estate is the continuous effort to accomplish. This means that the relevant aspects, general context, organizational context, organizational performance and regularly updating the strategy are considered essential towards accommodation strategy design.

3.4.2 Approaches

Snellen (1979 cited in Zeldenrijk 2008, p.19) distinguished the following five different approaches towards the strategic design process:

- 'Strategic variable approach', the strategic variable is the decisive factor or set of factors for success or failure of an organization, like employees, customers or organizational culture. The crucial factor can be found in- or outside the organization;
- 'Business we-are-in approach', the accent is focused towards the identity of the organization, to derive insight about the core business and primary objectives of the organization;
- 'Strategic gap approach', compare what you have got with what you want, determine the difference and find the activity that closes or transcend that difference. If the gap can not be bridged indicates that the objectives have to be reduced, if the gap is easily bridged means objectives can be extended;
- 'Stakeholders approach' means coming to a communal objective on specific themes.
- 'Societal need approach' this approach emerges the social (civil) function of the organization. Not only opportunities and threats but also the external effects of the strategy and its impact on the society are determined.

Further he distinguished two types of objectives in relation to these approaches. The first is aimed at achieving an intended situation and the second is aimed at continued existence of the organization. As stated in the general areas of agreement the way of achieving organizational objectives does say something about the performance of the organization.

How can these approaches help to position accommodation strategy design methods? To start, the business we-are-in approach is discussed. This approach has a more predetermined relation towards accommodation strategy design. It is considered purely for designing an organizational strategy and serves in this matter as an approach to deliver the input for designing an accommodation strategy. The more concrete, clearer and up to date the organizational strategy the more concrete, clearer and up to date the input is for the accommodation strategy design process.

All four remaining approaches can directly be related towards accommodation strategy design. The strategic variable approach determines the critical success factors towards accommodation strategy design from the organizational context. The strategic gap approach refers to the continuous effort of real estate managers in optimizing the match between organizational demand and real estate supply. The word strategic in this approach refers to the future real estate demand of the organization. This future demand is then to be matched with the current supply. The differences are to be determined together with alternatives to close the gap. The stakeholder approach addresses the interrelationship with other organizational resources, processes and levels in order to contribute to overall performance of the organization. The societal need approach investigates the effects of the accommodation strategy on the organizational and general context and functions as a check and control mechanism. Therefore all approaches should be dealt with in the process.

The four approaches are aimed at the two types of objectives, intended situation and continued existence, of organizational performance. In my opinion the approaches can be aimed at one or both of the objectives. Further the degree of focus on the objectives can be questioned. The strategic variable approach is strongly focussed on continued existence of the organization and less on achieving a certain situation. The variables for success and failure are derived from the organizational context and concern the existence. The contrary approach is the strategic gap approach. This one is strongly focussed on achieving a certain situation. Bridging the gap is the way the intended situation is achieved. The continued existence of the organization is in this approach inferior. The one which focuses strong on both objectives is the stakeholder approach. In general people tend to argue from- and for their positions, interests and tasks in an organization. The societal need approach is neither strong focussed on existence or on intended situation. It contains in essence the effects of the other approaches. This latter approach is performed when the others are elaborated.

The four remaining relevant approaches of Snellen and their two objectives realizing a certain situation and continued existence of the organization can be visualized. They are shown in figure 3.4. The axes show the focus on objectives and the squares on the approaches. The distinction in strong and weak is enables to place the approaches in perspective.

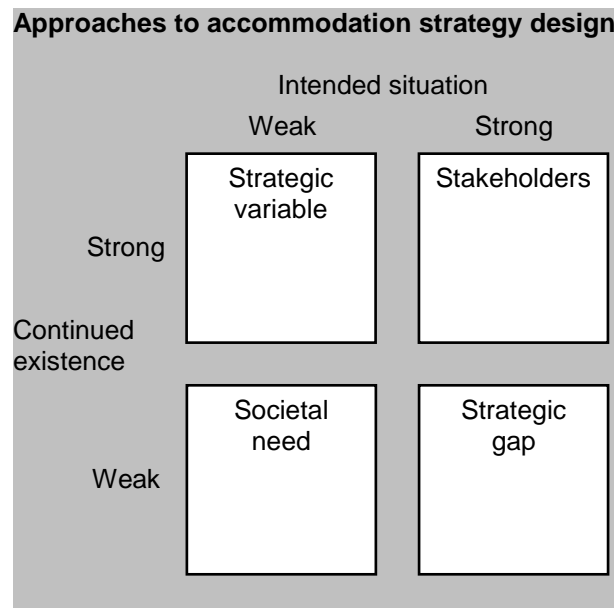


Figure 3.4; Approaches towards accommodation strategy design

If all approaches must be dealt with to compose the accommodation strategy design process what would be their most preferable sequence? The most logical order would be: strategic variable approach; stakeholders approach; strategic gap approach and; societal need approach.

The first step to deal with is the strategic variable approach. This approach is applicable at the start of the process because it determines the existence of the organization and its function in society. The variables can be identified through analysing sources like the organizations' context, strategy, mission, vision, employees, customers, processes, core values, long-term uncertainties and possible future scenarios. The most important factor to identify is the driving force of an organization. This factor serves as the basis for further decisions and therefore shapes the future of an organization. It is the principle on which organizational goals are translated and ordered into real estate goals. In their studies Nourse and Roulac (1993, cited in Ramakers 2008) and Scheffer et al. (2006) use the driving forces defined by Tregoe and Zimmerman (1980, cited in Ramakers 2008 and Scheffer et al. 2006) to relate them to real estate goals. This approach answers the questions: why and for whom is this organization on earth? Why does this organization exist and will it still exist in the future? The answers must be given by the general management of the organization.

The second step is the stakeholders approach. After the real estate goals and their order are defined by the general management it is necessary to analyse which other stakeholders on which organizational levels have an interest in the achievement of the goals. Large organizations usually have different organizational or managerial levels. The most common differentiation into levels is the strategic- tactical- and operational level. Each level has a different focus and interest in relation to the primary processes of the organization. To reach consensus in the organization about the accommodation strategy it is significant to use a top-down and bottom-up approach. It consists of cooperation in decision making between stakeholders at the top- and the lower management of the organization. It is expected that the required information is more accurate, less filtered and the motivation of lower management levels is higher to implement the strategy. In this approach stakeholders establish the real estate demand containing conceptual choices, conditions and properties for the concerned real estate.

The third step is the strategic gap approach. This approach in relation to the accommodation strategy design process is profound elaborated by De Jonge et al. (2009) in their method 'Designing an Accommodation Strategy, (DAS) Frame'. The framework is described as an iterative process with four key steering events: (figure 3.5):

- What we need versus what we have: determine the mismatch between current demand and current supply;
- What we (might) need in the future versus what we have now: determine the mismatch between future demand and current supply;
- Alternatives of what we could have: design, evaluate and select alternatives to bridge the mismatch;
- Step by step plan to realize what we want to have in the future: design the transformation of current supply into selected future supply.

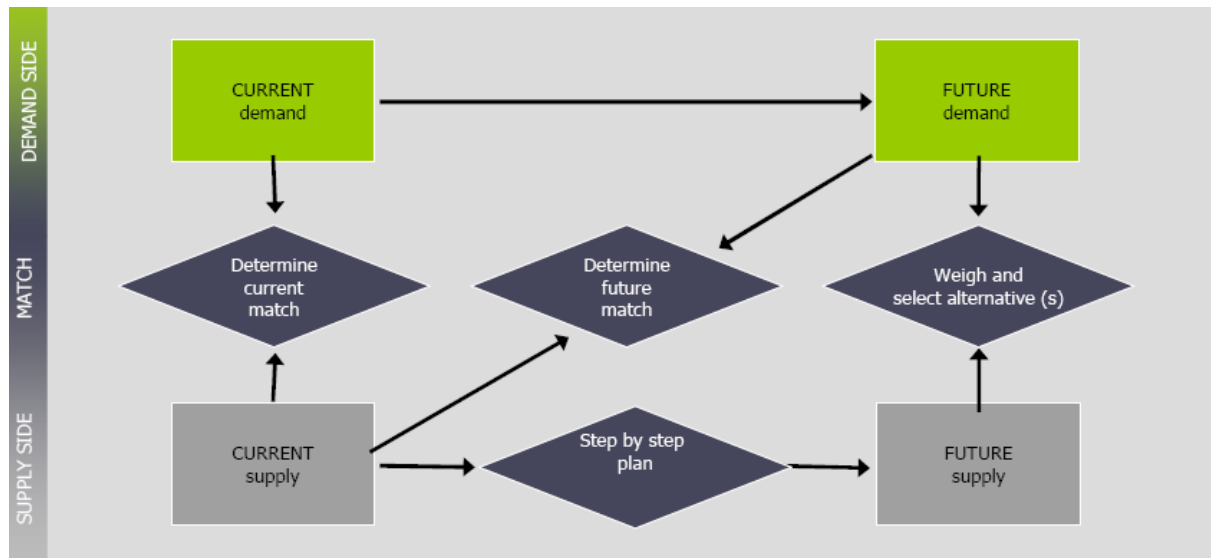


Figure 3.5; Designing an Accommodation Strategy, DAS Frame
Source; De Jonge et al. (2009)

The DAS Frame contains a basic structure of the accommodation strategy design process. According to the authors it can be used for the various types of real estate and multi level decision making. They say that the framework does not prescribe a predefined starting point, but during the process all stages will be passed, wherein some cases the stages will present themselves more than once. It is this basic structure of the DAS Frame and its iterative use that shows and clarifies the strategic gap approach. To avoid misunderstandings, the DAS frame is in combination with other methods most probably able to deal with more approaches than solely the strategic gap approach.

The fourth and last step is the societal need approach. This approach investigates the effects of the (to be) realized accommodation strategy on the organizational performance. It can be considered as the general context of the organization. In fact the approach closes and starts up again the sequence of approaches in relation to accommodation strategy design. The most preferable sequence in the accommodation strategy design process is shown in (figure 3.6).

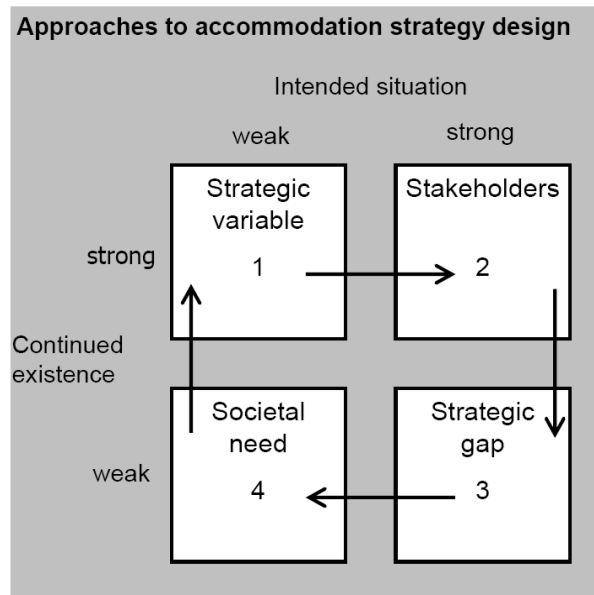


Figure 3.6.; Sequence of approaches towards accommodation strategy design

3.4.3 Formation

In Strategy Safari Mintzberg et al. (1998, pp.4-7) describe ten schools of strategy formation where every school has both its limitations and contributions. In fact he shows small parts of strategic reality (the strategy beast). A distinction is made between prescriptive and descriptive strategies. The first three schools are prescriptive in nature and more concerned with how strategies should be formulated than with how they necessarily do form. The strategy is the product of the design process. The six schools that follow consider specific aspects of the process of strategy formation, and describe how a strategy is created. The final school is the configuration school, although could be argued that this school really combines the others. In this school people are seeking to be integrative (figure 3.7). 'Configuration in the latest version has focused on matching organization structure, processes, relationships and boundaries to achieve strategic objectives' (Johnson, 2005 cited in Huczynski and Buchanan 2007, p.523)

Distinction		School	Strategy formation	Focus
Prescriptive	1	Design	Conceptual process	Basic framework for 2 and 3
	2	Planning	Formal process	Systematic formation
	3	Positioning	Analytical process	Content oriented
Descriptive	4	Entrepreneurial	Visionary process	Individual mind focused
	5	Cognitive	Mental process	
	6	Learning	Emergent process	Adaptation to complexity
	7	Power	Process of negotiation	In- and external confrontation
	8	Cultural	Collective process	Internal oriented
	9	Environmental	Reactive process	External oriented
Integrative	10	Configuration	Transformation process	Integrative

Figure 3.7; Schools of strategy formation and their focus

Source; Mintzberg et al. (1998, pp.4-7)

The teaching of strategic management has, for the most part, highlighted the rational and prescriptive side of the process, namely the first three schools (design, planning, and positioning). Strategic management has commonly been portrayed as revolving around the discrete phases of formulation, implementation, and control, carried out in almost cascading steps. This bias is heavily reflected in practice, particularly in the work of corporate and governmental planning departments as well as of many consulting firms. This clearly indicates that forming a strategy is more than performing a trick or following a procedure. Nevertheless an accommodation strategy is usually derived from a general- or corporate strategy and therefore mostly prescriptive.

The formation of an accommodation strategy can be distinguished into prescriptive (product), descriptive (process) or integrative (both). The product focus of 'an accommodation strategy is on the tactical level related to the portfolio and on the operational level to the buildings' (Den Heijer and De Jonge, 2004 cited in De Jonge et al., 2009, p.10,21). Formation focussed on product means opting between prescribed alternatives on accommodation (portfolio) strategies or/and maintenance (object) plans. The process focus of an accommodation strategy is related to the development, assessment and opting of unique/tailor-made alternative real estate strategies and/or maintenance plans. The formation is considered both (integrative) when two or more elements of the formation are either different focussed on product or process.

3.4.4 Views

Idenburg (1993, pp.132-137) presents a typology which is based on the extent to which strategies focus on either the objective (goal) or the process. 'Is a train timetable or a street map prescriptive or descriptive? Strategic management, the train timetable or the street map, does not give a step by step description of how to get from A to B. Strategic management is the constructive change of situations by organizations of people. In that sense, there can be no valid comparison with the artist's struggle with his materials to produce pottery, as Mintzberg suggests. The future of our organizations is not inevitable. We can influence that future if we know which objectives we must pursue in order to achieve a desired position. There are two fundamental dimensions in strategy development, goal orientation (what) and process orientation (how)'.

Wissema (2001 cited in De Jonge et al. 2009, p.28) defines a focus on the objective as 'the extent to which the strategy development focuses on formulating a desired situation for the organisation. If the focus on the objective is strong, reasoning is done backwards from the perspective of the desired future to find out what has to be done to achieve the objective. If the focus on the objective is weak, reasoning is done from the present to the future, step by step. Wissema considers a focus on the process as the extent to which the people of an organisation are consciously dealing with each other to arrive at a vision on the future and, subsequently, its realisation. The outcome is of second importance. The categorisation "focus on the objective - focus on the process" results in four views on strategy and strategy development visualized by Idenburg': (figure 3.8).

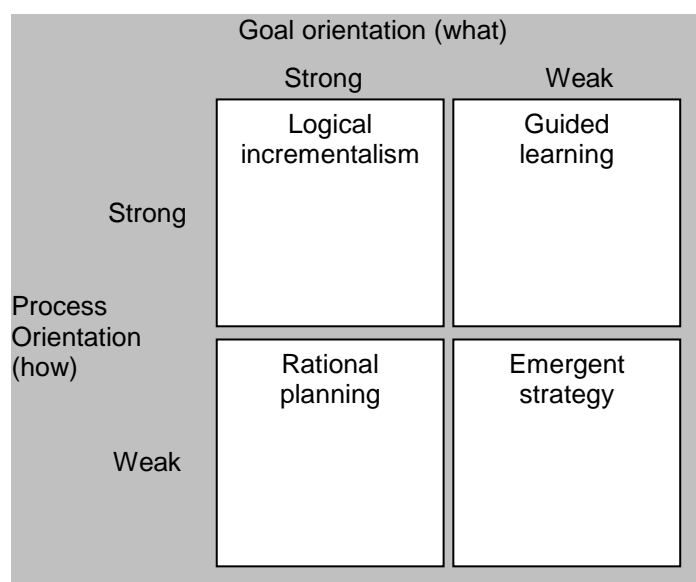


Figure 3.8; Four views on strategy development
Source; Idenburg (1993)

'The view of logical incrementalism recognizes that the planned implementation of a strategy from A to Z is an illusion. Every successful strategy development process has elements of goal orientation and process orientation. The process develops in phases but each following phase builds on the previous phase and has its own internal logic: structure follows strategy, but organizational structure also impacts strategy development. Analysis and action are successive steps but ideas often manifest themselves in behaviour. On the way from A to B, it becomes apparent that there are many routes to B. Besides the steering of process and goal orientation of the organization we must also recognize that the players within the organization have their own objectives and are experiencing their own learning processes. Logical incrementalism recognizes that the reality of strategic management comprises steering objectives as well as people. Incremental processes can be steered by leaders who recognize both their policy dimension and their political dimension' (Idenburg, 1993, pp.135-136).

'The guided learning-process approach to strategy development attempts to introduce mental models of reality, so that they may be discussed. In this focus view on the process of strategy development, a common image of reality, a common language and the joint acquisition of new insights is just as important as the definition of exact objectives for a desired future. In a world which often turns out to be unpredictable, one must steer the situation from inner motivation and openness to change, because external objectives cannot continuously determine the course to be taken. Scenarios are used not for their prescriptive quality or goal orientation but rather to influence consciousness, mental models and common language development. The orientation is the route from A to B. On the way, the objective shifts and one comes to the conclusion that B is really a new starting point and that one must plot a course from there to C or D. The learning process approach recognizes that it is difficult or impossible to predict the future external and internal environment, and those organizations in a competitive situation in which the time factor is often important must learn quickly. The one-sided view of this approach is the creation of 'paralysis by analysis', characterized by a flat hierarchy, intelligent professionals, lots of information and ideas and being exclusively preoccupied with learning processes' (Idenburg, 1993, pp.134-135).

'In the rational planning view, strategy development is concerned with the development and formulation of attainable objectives. A management team located in 'A' studies the alternatives and selects the route to be taken to 'B'. The processes of rational planning, i.e. how to get from A to B, are often unclear and simplistic. After the selection of the route to be taken, there are rational arguments and analytical considerations as the basis for explicitly formulated options or optimal solutions for defined problems. These are reduced to manageable sub-problems which must lead to plans of action. The implementation of these plans of action is controlled through 'management by objectives'. Measuring is knowing. The approach is conceptual and systematic. This view of strategy development is founded on the assumption of a more or less predictable world in which the future position of the company can be determined in terms of quantifiable objectives. Rational planning implies a deep involvement by top management in the formulation of strategies and action plans. Day-to-day choices with regard to the investment of scarce resources, money, people and time, are made in relation to the pursuit of the stated objectives. The rational planning view assumes that people act in a structured and rational manner. But management will always require the human touch' (Idenburg, 1993, p.133).

'In the fourth view of strategy development, that of emergent strategy, we miss both goal orientation and process orientation. According to this view, it is not possible to develop a perspective of the future and formulate explicit objectives in an unpredictable environment; instead, it is necessary to react in a flexible, opportunistic and accidental manner to new, unpredictable developments, and 'muddle through'. Companies are regularly confronted with unexpected events, which can sometimes also be seen as a break in a trend. Strategic objectives then have to be adjusted. If the route to B is blocked, returning to A is the most obvious. Previous learning experiences may not be relevant to the new situation and the learning process cannot be guided if an immediate reaction is required. In that case, necessity knows no law, action drives the new reflection. This view leaves the door wide open for all kinds of irrational mechanisms, wishful thinking, ignorance and conformism. The development is then motivated by external events which overshadow long term trends and structured changes. There are no techniques, tools or programmes at the manager's disposal. Vision becomes hallucination', (Idenburg, 1993, p.136-137).

This typology of Idenburg to classify the design of strategies on objective and process is also applicable to the design of accommodation strategies. Like the NTA 8021, an accommodation strategy design usually starts with establishing the real estate demand. This demand is to be derived and translated from the organizational strategy and their goals if it has to contribute to the organizational performance. At the start it is not known which and how real estate goals are derived from the organizational strategy and its goals. Subsequently conceptual choices have to be made, conditions determined and real estate properties defined. In other words formulating the desired situation, the objective, can be considered as a guided learning view. When the objective, the real estate demand, is known or set it is matched with the real estate supply. In the case of a mismatch, interventions for shortcomings are determined and alternatives designed. When an alternative is chosen it can be further elaborated, planned and realized according to a certain project management method like for instance the project based method. If this method is conceptual and systematic from the known real estate demand, the objective, till the realization of the chosen alternative it can be considered as a rational planning view. An accommodation strategy design method can be classified within one of the four views or successively in two views. To design and realise an accommodation strategy the logical incrementalism view is primarily preferred because of its focus on both process and product. Secondary preferred is the combination and sequence of guided learning followed by rational planning. Tertiary and least preferred is the emergent strategy view because it does neither focus on process nor on product.

3.4.5 Decision making

Decision making is a daily activity in people's lives. Every decision has consequences for the future to come. Decisions made in organizations therefore have consequences for the stakeholders and their future. But what is making decisions exactly? To make a decision one should have a choice. A choice is based on certain criteria to select an alternative. Therefore decision making is seen as a process of choice making. This perspective is already treated in the previous chapters and related to the problem statement: How can stakeholders of an organization select the optimal real estate alternative taking into account the properties of each alternative? For better understanding the concept decision making this paragraph treats some other perspectives in relation to the organization its stakeholders and strategy design.

A process usually precedes the actual decision making. Heijnsdijk (1994, p.147) defines the following process phases: impulse of problem description; diagnosis of information; criteria for desired alternatives; alternative solutions; evaluation and choice of alternative; decision authorization; execution; verification. Simon (1977 cited in Heijnsdijk 1994, p.148) summarizes the phases in decision making into the four activities: search; design; choice; and review.

According to Mintzberg and Waters (1985 cited in De Jonge et al. 2009, p.29) strategy making has to do with decision making and therefore it can be seen as a pattern in a stream of decisions. The actual realized strategy derives from mixed processes. The mix consists of an actual intended strategy and an emergent strategy. The first is based on deliberate decision-making and the second is based on anticipating on day to day events (figure 3.9).

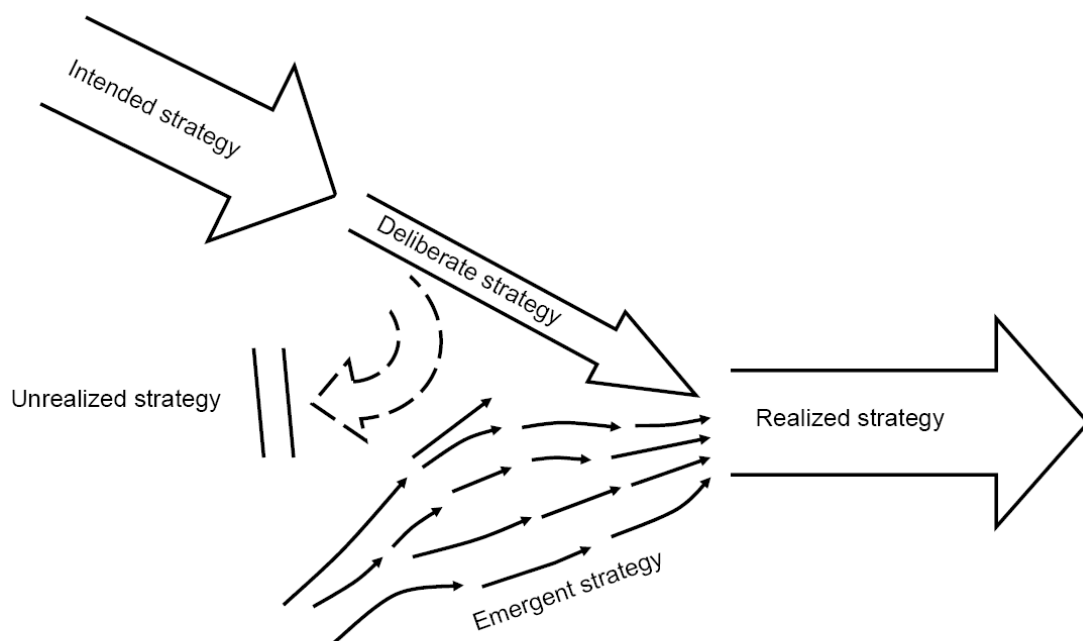


Figure 3.9; Relation between intended and emergent strategies
Source; Mintzberg et al. (1998)

Huczynski and Buchanan (2007, pp. 730-761) mentioned that decision making in organizations can be analysed on different levels. Each level focuses on its own key issues and possesses its own theoretical perspectives. These levels are interrelated, with one influencing and being affected by the others.

The making of decisions in organizations is according to Heijnsdijk (1994, p.146) connected to three management levels: strategic (strategic variables); organizational (design variables) and; operational (steering variables). The strategic decisions are about the organization and its surrounding environment. Decisions on this level contain usually a lot of uncertainty and are in general centralized. Organizational decisions are about horizontal and vertical task partition of power and responsibilities. Operational decisions are about controlling activities. These are quite decentralized and more certain in their programmability. A quantitative method is usually applicable to this kind of decisions.

Den Heijer (2006 cited in De Jonge, 2009, p.19) went one step further in connecting the decision making in organizations to the three management levels and their variables. She connected the management levels to the four domains of corporate- and public real estate management, the applicable stakeholders and their main variables (figure 3.10).

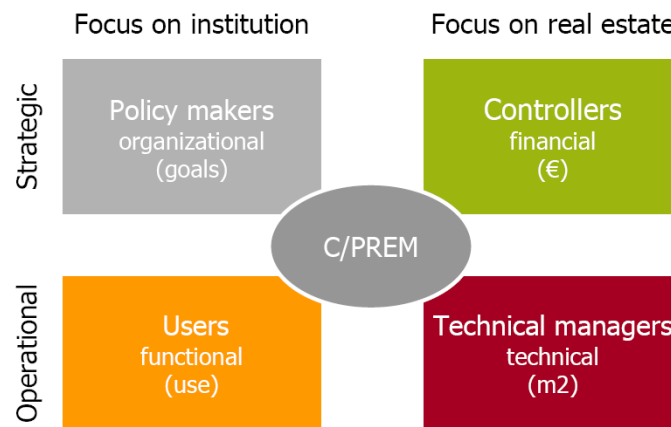


Figure 3.10; Adapted combination of stakeholders and main variables
Source; Based on Den Heijer (2006) cited in De Jonge (2009, p.19)

Huczynski and Buchanan (2007, pp. 730-761) argued that power and politics have an impact on decision making in organizations. It involves power and conflict between individuals and groups in organizations (figure 3.11).

Level of analysis	Key Issues	Theoretical perspectives
Individual	Limits to information processing Personal biases	Information processing theory Cognitive psychology
Group	Effects of group dynamics on individuals perceptions, attitudes and behaviours	Groupthink, group polarization and group cohesiveness
Organizational	Effects of conflicts, power and politics	Theories of organization conflict, power, politics and decision making

Figure 3.11; Levels of decision making
Source; Huczynski and Buchanan (2007, p.731)

On the individual level they distinguished three different types of models: prescriptive, descriptive and explanatory. Prescriptive models of decision making recommend how individuals should behave in order to achieve a desired outcome. These models are known by names as, decision trees, programme evaluation and review technique (PERT) and critical path method (CPM). Descriptive models of decision making are about how individuals actually make decisions. The behavioural theory of decision making is the earliest and most influential descriptive model. Explanatory models of decision making are about what decisions were made and aim to provide an explanation of how they occurred.

On the group level of decision making there are advantages and disadvantages to be considered. Huczynski and Buchanan (2007, p.757) argued that 'groups offer the advantage of a greater pool of knowledge, different perspectives, greater problem comprehension and increased acceptance of decisions. Disadvantages of groups can be considered under the headings of personality factors, social conformity, diffusion of responsibility, minority domination, logrolling, goal displacement, group brainstorming, groupthink and satisficing'

The two main tasks for the general management of an organization are: first to coordinate the work activities within the organization and second to adjust to circumstances outside the organization. According to Huczynski and Buchanan (2007, p.753) individuals in the organization have to deal with the fact that rules, procedures and precedents seldom determine what should be done in every particular case. Decisions which are unprogrammed have to be made. This means that discretion has to be used, judgements have to be made and decisions have to be formally announced. This ambiguity and uncertainty provides the political context within decision making occurs within organizations.

'The actual decision making is performed in the phase choice' Heijnsdijk (1994, p.147). First alternatives will be screened for feasibility and then the remaining alternatives will be evaluated. Hereby four kinds or activities are distinguished (figure 3.12). These are based on two dimensions: is the information complete and; are the decision makers agreed on the objectives (goals).

		Information complete?	
		Yes	No
Agreed on goals	Yes	I Analysing	II Judging
	No	III Negotiating	IV Gambling / Intuition

Figure 3.12; Different kinds of decision making
Source; Heijnsdijk (1994, p.151)

- I, The decision is made on basis of facts. The best solution could be calculated.
- II, The individual makes a subjective decision based on unexplainable procedures.
- III, A group of decision makers makes a decision based on conflicting and opposing interests.
- IV, In the case where information is incomplete and goals are not agreed on, the outcome is unpredictable. The decision can be based on intimidation, manipulation, gambling or on someone's intuition.

Tuden and Thompson (1959, 1967 cited in Huczynski and Buchanan 2007, p.754) used the dimensions of agreement or disagreement over goals and beliefs about cause-and-effect relations as a way of distinguishing four different situations faced by decision makers in organizations (figure 3.13).

		Consensus on goals or problem definition?	
		agree	disagree
Beliefs about cause-and-effect relationships	certainty	I Computational strategy Rational model	III Compromise strategy Political model
	uncertainty	II Judgement strategy Incremental model	IV Inspirational strategy Garbage can model

Figure 3.13; Conditions favouring different decision making processes
Source; Huczynski and Buchanan (2007, p.754, based on Tuden 1959 and Thompson 1967)

- I, When there is certainty about cause and effects and there is consensus on goals or problem definition then a computational strategy involving the rational decision making model is favoured. It is a matter of calculations.
- II, When there is uncertainty about cause and effects but there is consensus on goals or problem definition, then a judgemental strategy involving incremental decision making model is favoured. It is a matter of trial and error by making many small decisions over a certain period of time.
- III, When there is certainty about cause and effects but disagreement about goals or problem definition, then a compromise strategy involving a political decision making model is favoured. It is a matter of managing or manipulating the decision making process to cut a deal between stakeholders involved.
- IV, When there is neither certainty about cause and effects nor agreement about goals and problem definition, then an inspirational strategy involving the garbage can model of decision making is favoured. It is a matter of picking choice opportunities (the garbage can) for the mixture of problems solutions and participants.

Binnekamp et al. (2006, p.11-13) mentioned that in the field of architecture and urban planning in the past decades a steady increase is noticed in the size of design teams and the number of specialists involved. In this open design philosophy, all stakeholders having an interest can influence the design and as such they become decision makers. This development has increased the relevance of a multi stakeholder design problem. They deal with the multi stakeholder design problem by using preference measurement for Multi Criteria Decision Making. 'The preference of stakeholders for one design in comparison with other designs can be established without much difficulty. By measuring the preferences of the involved stakeholders in a correct way, a criterion like architectural beauty can be accounted for' (Binnekamp et al. 2006, p.281).

The previous perspectives on the concept decision making in organizations make clear that it is a relevant aspect in strategy- and accommodation strategy design. It concerns stakeholders with different interests from different organizational domains and levels. This makes it a group decision making problem based on the stakeholders' individual preferences with multiple criteria. An organizational problem wherein first consensus has to be reached on the goals before a more analytical, rational model can be used to solve the problem.

3.4.6 Alignment

After a strategy is designed or developed it has to be implemented in the organization to make it work, in other words, achieving goals or a vision. Douma et al. (1996, p.351) define strategy implementation as: 'Strategy implementation is the entire bundle of activities aimed at realizing the formulated goals in the strategic plan with the help of means and along the pointed routes in the strategic plan'. According to this definition it is not necessary to achieve the actual formulated objectives. Douma et al. (1996, p.351) explain that the actual realized strategy is the result of intended and emergent strategies. 'The definition is aimed at the question if the intellectual process of designing a strategy is followed by an operation process aimed at realizing the formulated strategy.

Three shortcomings are mentioned by Douma et al. (1996, p.354) which could cause problems when implementing a strategy. These are a lack of reality in the strategic plans, too rigid plans and the underestimating of possible resistance in the organizations. The first shortcoming, a lack of reality, is caused by the fact that in most organizations the strategic plans are more and more formulated by specialists in a kind of corporate planning unit. A disadvantage is that the ones who have to work with the strategic plans, heads of sections or middle managers, play a minor role in the development of the plans. Another disadvantage is that the delivered information to the specialists and in the end the top management is filtered or coloured by those who have different interests. The second shortcoming, too rigid strategic plans, refers to the aspect in which strategic plans have the flexibility to anticipate on future events. If a plan is too rigid it is doomed to fail when crucial events occur concerning the future of the organization. The third shortcoming is underestimating the resistance in the organization when a new plan is introduced. This resistance does not necessarily relate to rational aspects. It can have an emotional or cultural motive or interest to resist against a new plan.

Douma et al. (1996, pp.357-362) argue that 'failing implementation of a strategy is caused by the limited and isolated view on strategy. Limited, because designing a strategy is seen as a pure rational and intentional process. Isolated, because strategic decisions are in essence not related to tactical decisions. Rationality, strategy and planning are the three key concepts of strategic planning literature'. The focus in their view is set on the opposites, intuition, tactics and spontaneity of these three key concepts (figure 3.14).

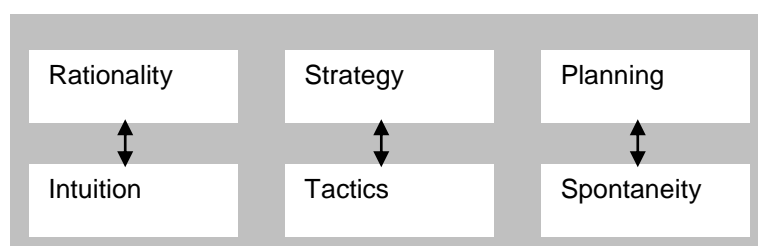


Figure 3.14: Rationality, Strategy and Planning and their opposites
Source; Douma (1996, p.357)

His first mentioned point of criticism is based on empirical research. This research proves that top managers in practice do not always make decision based on rationality. It seemed that 'soft' information in the form of impressions, feelings and speculations often plays a larger role than 'hard' information presented in written reports and meetings. Instead of following the logical sequence in the strategic planning process it appears that decision making by top managers is far from a structured process. This way of decision making is described as intuition. He concludes that formulating and implementing a strategy is not entirely based on rationality but also on the skills and intuition of decision makers. This conclusion is supported by the findings of the previous paragraph on decision making in relation to the completeness and purity of 'hard' information and the different kinds of decision making situations.

His second mentioned point of criticism applies to the separation of strategic and tactical decisions. Of course they are related to each other but strategic decisions form the framework in which tactical and operational decision are made. This is nuanced by stating that effective top managers do not first formulate clear strategic goals, followed by making decisions on the tactical and operational levels. Strategic goals are vague and are not made explicit. These managers do have a common sense of direction for the organization to develop and have the ability to steer, plan, organize and combine tactical and operational decisions towards something concrete. The actual realized strategy can not be foreseen but is depending on occasions. This point of view is in my opinion related to charismatic leaders with a clear personal vision as target situation to achieve with an organization which is for the biggest part owned by them. Unfortunately these managers are rather scarce and stakeholders of public organizations and public limited companies will demand clear goals to be sure their interests are secured in reaching a certain target situation. The essence of this point of criticism lies in the difference between target situation and goals. The desired target situation may be vague or very futuristic but the goals towards that situation should always be 'SMART', specific, measurable, acceptable, realistic and time bound related with room for manoeuvre capabilities for the tactical and operational level to absorb contextual changes.

The third point of criticism he mentioned is the conception of strategy. It focuses on the conception that strategies are seen as a result of conscious decision making and intentional behaviour. He refers to the vision of Mintzberg and Waters (1985) where they define strategy as 'pattern in a stream of decisions'. It is described as a continuum distinguished between intended and emergent strategies. Douma et al. (1996) argue that this could be the case in an organization where there is no central command. If there is a vacuum of command different stakeholders can paralyze the decision making process which could lead to chaos or they can reach a compromise. He further argues that this vision could be the case when an organization is faced with factors from outside the organization which forces the decision making in a certain direction. This point of criticism refers to the contextual developments influencing the organization and its goals. The vacuum of command has to be filled in with a general management which anticipates and reacts on these developments by regularly updating their strategy in order to steer the organization towards a desired situation favouring the organization's existence and their stakeholders.

In order to avoid the previous described shortcomings Douma et al. (1996, pp.362-365) suggest several models. The most relevant model is the top-down and bottom-up model. It consists of cooperation in decision making between managers at the top and the lower management of the organization. It is expected that the required information is more accurate and less filtered. Further it is expected that the motivation to implement the strategy is higher of the lower management.

The relevancy of alignment of organizational levels towards real estate management is explained by Den Heijer and De Jonge (2004) cited in De Jonge et al. (2009, p.10,21) in terms of 'aligning the corporate-, real estate- and maintenance policy (figure 3.15). She stated that 'if these policies are not aligned, opportunities will be missed'. In relation to designing an accommodation strategy the top-down model means aligning organizational goals (strategic level) with real estate goals (tactical level) and real estate aspect properties (operational level). The bottom up model in this matter means the involvement of stakeholders from applicable organizational levels in the process.

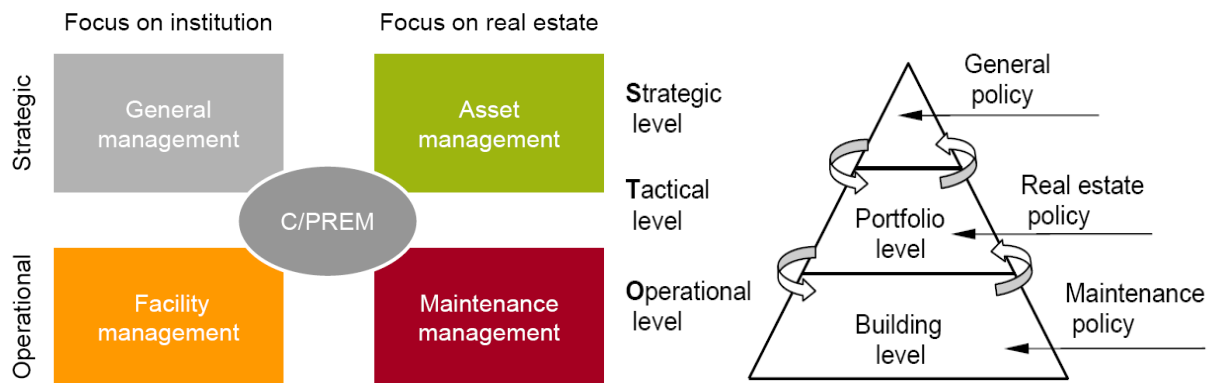


Figure 3.15; Four domains of C/PREM and alignment of organizational levels with real estate policy
Source; Figure adapted towards PREM (based on Den Heijer and De Jonge, 2004 cited in De Jonge, 2009, p.10,21)

3.4.7 Pluralism

According to De Jonge et al. (2009, p.28) 'strategies are not unambiguous in form and contents. They mentioned that several authors have developed typologies of strategies, but none received consensus on his categorisation principle. Wissema (2001, p.174 cited in De Jonge et al. 2009, p.28) stated that 'all approaches show a small part of reality, while every approach comes to the fore in specific cases'.

This indicates that developing a strategy is like shopping from the perspectives to arrive at a certain point, to see the 'strategic beast'. In fact all aspects of the phenomenon strategy and strategy development contribute in understanding the phenomenon. Strategy design theory does not give a clear step by step description of how to get from A to B. Strategies are derived from a creative process built up of different parts in a certain sequence to arrive at a certain point.

All previous mentioned perspectives of strategy design towards accommodation design can be discussed, rejected or accepted. They make clear that designing an accommodation strategy is also a composition of perspectives. Like the approaches of Snellen or the views of Idenburg, every single part limits the scope to develop an accommodation strategy.

For example, along the way of realizing a strategy not everything is analysable but some aspects have to be learned or experienced to continue. In terms of Idenburg this indicates that the strength of focus on process and product shifts along the way of designing an accommodation strategy. The guided learning view is attended to create awareness and new ideas for establishing a future concept before it attends rational planning to select the route to realize the established concept. Shifting views is not the same as logical incrementalism where the future concept is developed along the way guided by strong leaders who are fully aware of their environment.

Pluralism as relevant aspect lies in the extent of attended perspectives to compose the 'reality', 'the strategic beast' or in other words the whole picture of accommodation strategy design.

3.5 Toolset

This paragraph focuses on the question: which relevant aspects are unique and which can be combined to form a toolset for classifying and analysing accommodation strategy design methods. It has to be a toolset that: represents the whole picture of accommodation strategy design; can be used to classify accommodation strategy design methods on their position in the whole picture; can be used to analyse accommodation strategy design methods on their provided instruments. The synthesis is performed by combining the aspects of agreement with the perspectives towards strategy and strategy design into an classification toolset of pictures. In this way accommodation strategy design methods can be visually classified by filling in these pictures. The overview of the relations between the theoretical perspectives, aspects of agreement and classification tools is shown in figure 3.16.

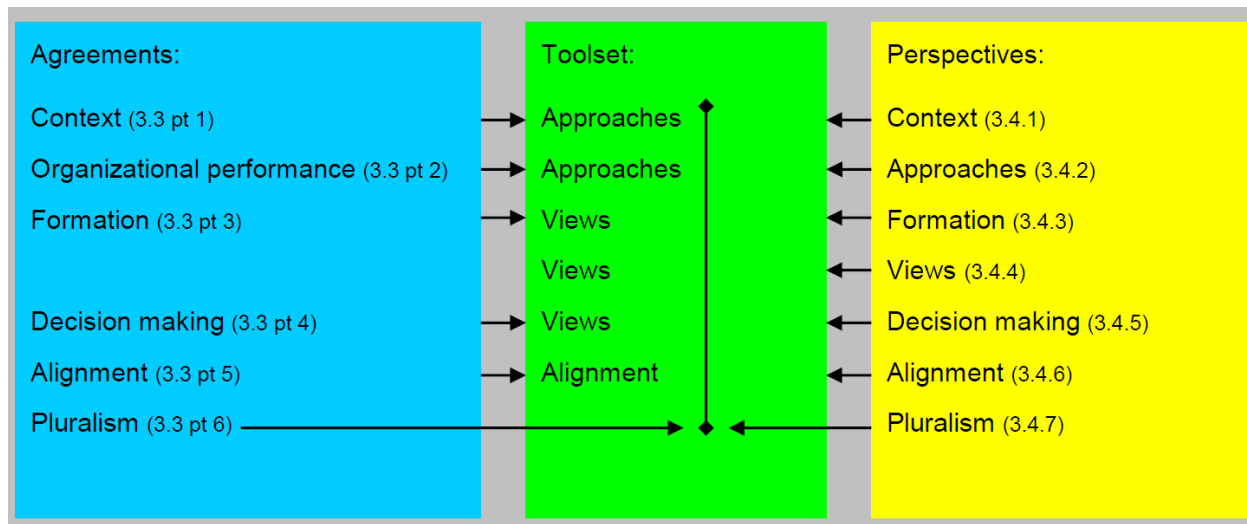


Figure 3.16; Relations between theoretical perspectives, aspects of agreement, and classification tools

The first mentioned aspect of agreement is context. This aspect is further elaborated into general- and organizational context in the paragraph context. In the paragraph approaches is explained that these two types of context are present in the theoretical perspective approaches of Snellen towards accommodation strategy design. The general context is treated in the societal need approach and the organizational context is treated in the strategic variable approach. Organizational performance is the second relevant aspect of agreement which is related to the approaches. The two different kinds of objective, and therefore all four approaches, compose the aspect organizational performance in this perspective. The extent to which an organization realizes its goals, according to the judgement of its stakeholders, defines the organizational performance as a whole. Thus all approaches each, are relevant for the performance of an organization but it comes to the fore in the stakeholder approach. The two treated aspects can be combined with the theoretical perspective approaches into one classification tool (figure 3.17).

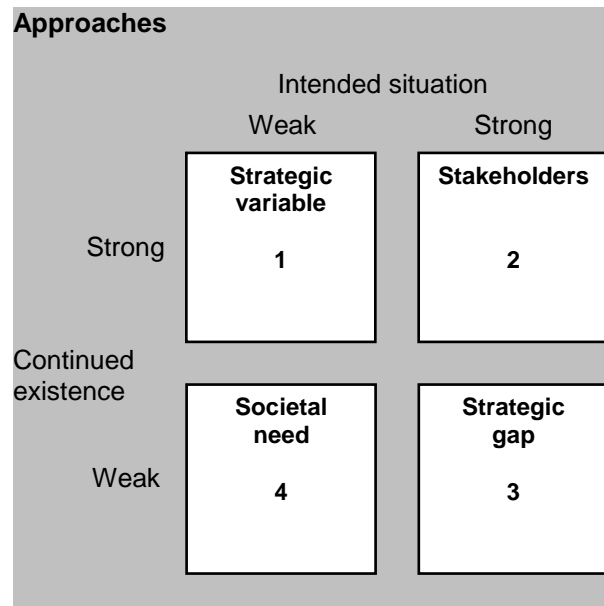


Figure 3.17; Classification tool approaches

The third aspect is formation, focus on content, process or both. This aspect refers to the perspective formation of Mintzberg and is treated in the four views of Idenburg. Content is related to rational planning, process to guided learning and both to logical incrementalism. The different kinds of decision making from Heijnsdijk and the conditions favouring different decision making processes of Huczynski and Buchanan can be logically combined with the four views of Idenburg because of their similarities. The view logical incrementalism can be combined with the judgement kind of decision making and the judgement strategy (incremental model). The rational planning view can be combined with the analysing kind and a computational strategy (rational model). This refers to the multi stakeholder decision making as multi criteria decision analysis (MCDA). The guided learning view can be combined with the negotiating kind and a compromise strategy (political model). The last view, emergent strategy, can be combined with the gambling/intuition kind and the inspirational strategy (garbage can model). Therefore these aspects can be combined with the theoretical perspective views into one classification tool (figure 3.18).

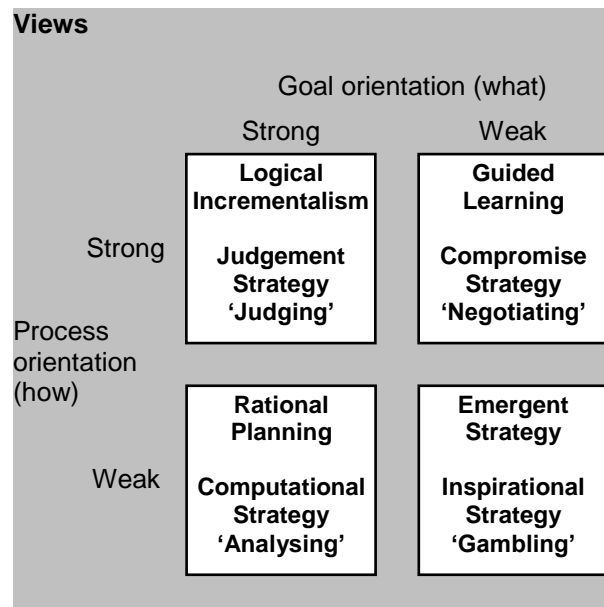


Figure 3.18; Classification tool views

As explained in the paragraph views the logical incrementalism view is primarily preferred to design and realise an accommodation strategy. Secondary preferred is the combination and sequence of the views guided learning followed by rational planning. Secondary preferred is the combination and sequence of guided learning followed by rational planning. Tertiary and least preferred is the emergent strategy view because it does neither focus on process nor on product.

The relevant aspect alignment of organizational levels is closely related to organizational performance. The better these levels are harmonised in supporting primary processes the more able they are to contribute to the organizational performance. Den Heijer and De Jonge cited in De Jonge et al. (2009) already defined the essential levels to be aligned in accommodation strategy design. Together with the use of the top-down and bottom-up model suggested by Douma et al. the relevant aspect alignment can be used to classify accommodation strategy design models. Top-down alignment refers to organizational goals (strategic) to real estate goals as criteria (tactical) and to real estate properties as sub criteria (operational). Bottom-up alignment refers to the alignment in decision making where stakeholders from relevant organizational levels participate in the choice making process of accommodation design. These aspects can be combined with the theoretical perspective alignment into one classification tool (figure 3.19). A full alignment is needed to design and realise an accommodation strategy in order to contribute to the overall performance of the organization.

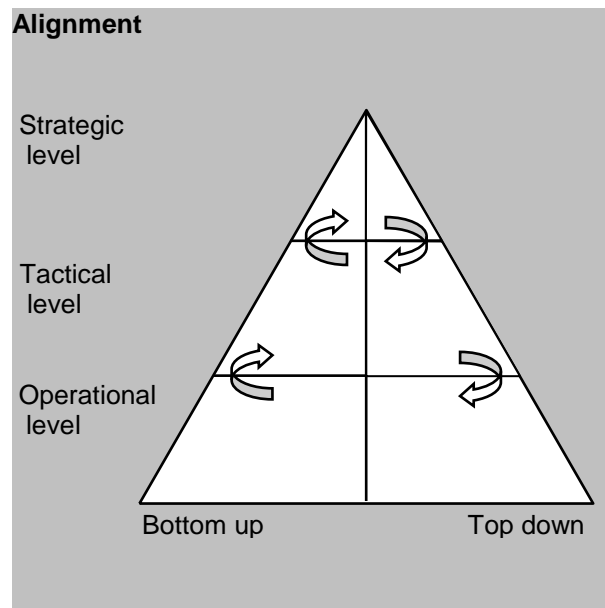


Figure 3.18; Classification tool alignment

The aspect pluralism is in essence, connected to the all relevant aspects and perspectives towards accommodation strategy design. This means that for the classification of the methods this aspect will be covered by the other classification aspects.

The synthesis has combined and integrated the initial amount of relevant aspects to classify accommodation strategy design methods. The remaining three generic classification tools containing the initial aspects are: Approaches, Views and Alignment.

3.6 Sample of methods

This paragraph provides a representative sample of accommodation strategy design methods that together compose the whole picture of accommodation strategy design. Representative is defined in this matter as: regularly used or recently published. Regularly used methods imply usefulness and acceptability. Recently published methods are new and provide possibly new insights.

The representative sample used for this thesis contains the following nine accommodation strategy design methods:

1. Scenario planning, Dewulf et al. (1999);
2. Generic strategies and context analysis, O'Mara (1999);
3. Accommodation functionality assessment, Vijverberg (2002);
4. Aligning corporate real property with corporate strategy, Roulac (2001);
5. Strategic alignment model, Osgood (2004);
6. Strategic real estate plan, Fritzsche et al. (2004);
7. Designing an Accommodation Strategy (DAS Frame), De Jonge et al. (2009);
8. Housing choice model, Ikiz-Koppejan et al. (2009);
9. NTA 8021 Performance measurement of real estate, NEN (2009).

In the DAS Frame of De Jonge et al. (2009) the essence of the first six regularly used methods are described for designing an accommodation strategy. The methods represent more or less the different parts of the whole picture of strategy design. These methods were depicted within and compared while employing the DAS (Designing an Accommodation Strategy) Frame. The DAS Frame served as a basis structure to put all the methods in perspective. The Centre for People and Buildings produces and shares knowledge about the relation between people and buildings. They have recently designed a decision making support model for accommodating organizations. This model is called 'Huisvestingskeuzemodel' (Housing choice model). The latter method is the subject of this evaluation research.

3.7 Evaluation

3.7.1 Classification

To interpret the meaning of the NTA 8021 in relation to the other methods within the whole picture of accommodation strategy design the sample is classified according to the created toolset. The description of the methods, its analysis and classification is performed in Appendix I, Classifying the methods. Next an overview is provided that consists of the summaries of all methods from the sample. They contain the subjects: objectives; intended results; used instruments/techniques; addressed approaches, addressed views on orientation and decision making and; addressed alignment of organizational levels. A visual overview of the classification is presented in the figures 3.19, 3.20, 3.21.

The objective of the method Scenario planning based on Dewulf et al. (1999 cited in De Jonge et al. 2009) is to enable decision makers to design an accommodation strategy that is specific and able to use as a guideline for decisions on specific objects. The intended result of the method is a specific developed object policy plan containing a phased realisation planning. The method addresses all approaches towards accommodation strategy design. It makes use of the instruments analysis, interviewing and scenario planning. The method describes the process of establishing an accommodation strategy based on developed future scenarios that is specific and able to use as a guideline for decisions on specific objects. The described procedure implies that decisions are made by a group of stakeholders based on negotiations and compromises. Its strong focus on process and way of decision making is related to guided learning. The method describes and explains the top down alignment of the strategic level, the organizational strategy with the tactical level, the accommodation strategy. It is assumed that the methods aligns the tactical level with the strategic level from a bottom up approach by the participation of stakeholders from these levels.

The objective of the method Generic strategies and context analysis based on O'Mara (1999 cited in De Jonge et al. 2009) is to provide guidance to better align real estate and facilities to the needs of the organization. The result of the method can be one or more prescribed generic strategies. It solely addresses the strategic variable approach. The method uses an analytical framework with strategic variables and important factors as instrument to judge which of the three predetermined generic accommodation strategies are applicable for execution. This way of strategy development applies to logical incrementalism and a judging kind of decision making by senior management. It aligns from a top down approach the strategic level, the organizational strategy with the tactical level, the accommodation strategy.

The objective of the method Accommodation functionality described in Vijverberg (2002) and based on Vijverberg (2000) is to make an accommodation policy operational. The result of the method per building consists of one of the six prescribed alternative solutions which subsequently should lead to clear object intervention plans. It addresses solely the strategic gap approach towards accommodation strategy design. The method uses the evaluation instrument to determine prescribed possible solutions for buildings of an organization. The process is highly systematic wherein the organizational management (strategic level) determines a minimal acceptable evaluation for the various parameters as they apply to each building. The latter is related to the view of rational planning. The method aligns from a top down approach the tactical and operational level.

The objective of the method Aligning corporate real property with corporate strategy based on Nourse and Roulac (1993 cited in De Jonge et al. 2009) and Roulac (2001) is to show the relations between real property strategies, space and place contributions and sources of competitive advantages for the corporation. The result of this method is one or a combination of prescribed real property strategies with operating decisions that support the corporate strategy. It addresses the strategic variable approach due to its elaboration of driving forces into operating decisions. The method uses the instrument of cross tables containing established relationships between explicit elements. Assumed multiple stakeholders should use linear programming to establish a solution space. The method is mainly product focussed due to its formal and analytical linking character. Together with the suggested linear programming approach this method is related to the rational planning view. The method enables alignment between the strategic, tactical and operational level from a top down approach. Assumed multiple stakeholders and the suggested decision making approach would establish a full bottom up alignment. Would because it is not quite clear how exactly this is performed.

The objective of the method Strategy alignment model (Osgood 2004) is to link real estate initiatives with core business strategy and for measuring results as organisational outcomes. The result of this method is a set of linked spatial related real estate aspects (strategy) supporting the elements of corporate business strategy. It addresses the strategic variable- and stakeholders approach. It makes use of an alignment model and alignment map. The method is process orientated and advocates stakeholder participation which are aspects that relate the guided learning view. Due to its stakeholders approach it establishes a full bottom up alignment. From a top down approach the method aligns the strategic with the tactical level.

The objective of the method Strategic real estate plan based on Fritzsche et al. (2004 cited in De Jonge et al. 2009) is to derive specific real estate plans of approach for the various objects in the portfolio. The results of this method are real estate plans of approach per object. How these object plans are further elaborated and matched is not defined. It addresses the strategic variable- and strategic gap approach. In the latter the elements are mentioned but not further explained. It makes use of a generic accommodation plan and a cross table. The method is more process orientated due to the description of the different elements of strategy design and therefore related to the view guided learning. Although the decision making process refers to rational planning in the sense of MCDA it is not further elaborated. The elaborated way of strategy development refers to guided learning. The method 'strategic real estate plan' aligns all the organizational levels from a top down approach. Bottom up alignment is not mentioned or described.

The objective of the method DAS Frame (De Jonge et al. 2009) is to provide an analytical structure on the accommodation strategy design process. The result of the method is to establish a future portfolio strategy which is to be achieved by a step by step plan on building level. The process consists of matching demand and supply by determining four key steering events. It addresses all four approaches towards accommodation strategy design. The method makes use of the DAS Frame and instruments from existing methods to integrate them into the model. The method is process orientated due to the description of the different elements of the accommodation strategy design. By using other methods as tools to produce interim products the DAS Frame tends to incrementalism. If the latter two steering events had included clear explicit instruments or techniques that allow group decision making and that prescribed systematically, in steps, how the selected alternative should be implemented and controlled it would. Therefore the DAS Frame is viewed as guided learning. The decisions conducting this method are made by the designer(s). The (interim)results are to be reflected and assessed by the client. The method aligns all organizational levels from a top down and bottom up approach.

The objective of the Housing choice model is to provide a clear generic structure with building blocks for the best possible office accommodation and the process towards it. The result of the method is a full operational organization working within its adjusted or new building(s). The processes consists of collecting and analysing information, determine intentions and ambitions, followed by making conceptual choices about accommodation, realized through elaboration and implementation. It addresses all four approaches towards accommodation strategy design. The method makes use of the housing choice model and refers to supportive tools/instruments to contribute in the accommodation strategy design process. But it does not use explicit instruments/technique in every phase and therefore refers to guided learning. The decision making strategy is based on group discussions, debates and negotiations. The method has the ability to align all organizational levels from a top down and bottom up approach.

The objective of the NTA 8021 Performance measurement of real estate is to offer a tool to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand with real estate supply. The result of the method is to establish accommodation scenarios (alternatives) expressed into object interventions and costs. The method is focussed on the strategic gap approach. The instrument used is a questionnaire to establish the usage profile and determination of the real estate profile. The process starts with establishing a usage profile based on a questionnaire to determine the minimal performance aspects of the portfolio demand. It continues with rational and analytical considerations for optimal attuning this demand with supply by designing various scenarios (alternatives) containing object interventions and costs. The decision making process concerning the selection of the optimal alternative is based on the analysis of costs and contribution towards organizational goals. The accommodation strategy design process and decision making process is analytic and systematic and related to the view of rational planning. The method aligns the tactical level and operational level from a top down approach. A bottom up approach is assumed from the operational level to the tactical level with the determination of the usage profile.

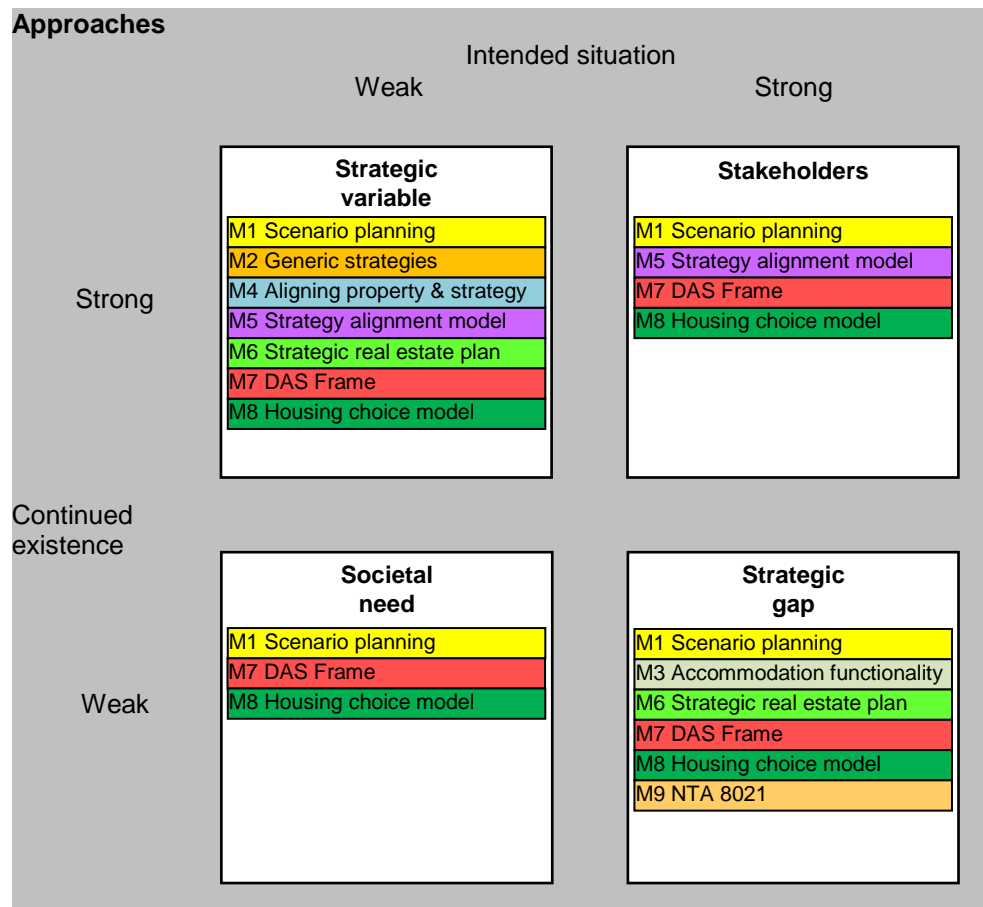


Figure 3.19; Overview of methods classified on approaches

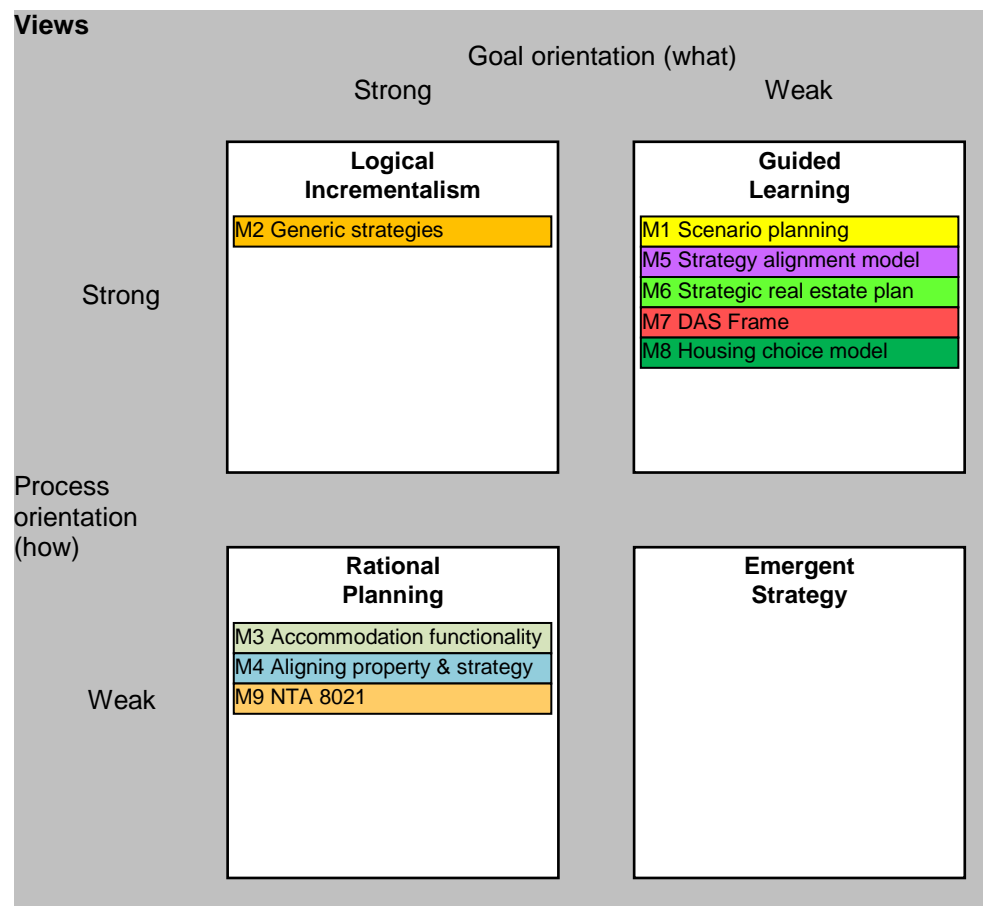


Figure 3.20; Overview of methods classified on views

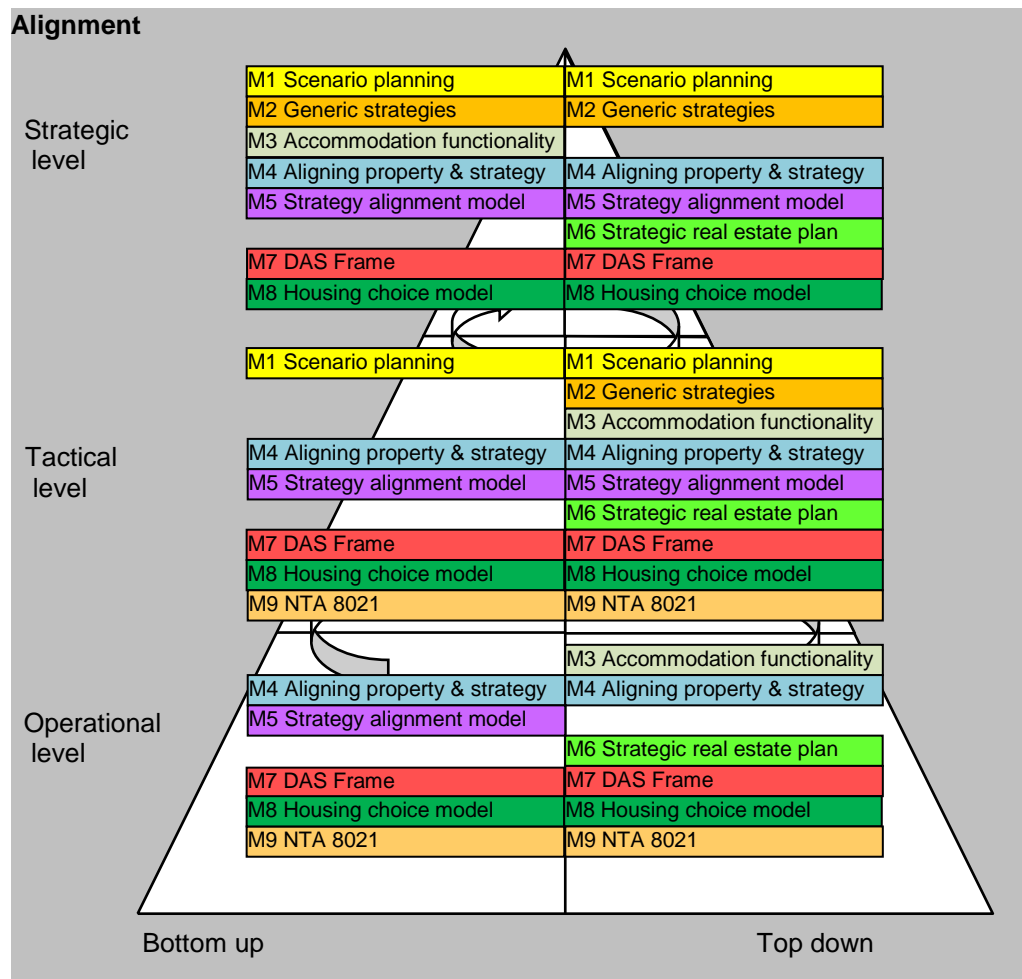


Figure 3.21; Overview of methods classified on alignment

3.7.2 Interpretation

The toolset is created in paragraph 3.5 to represent the whole picture of accommodation strategy design. In the course of its creation is also explained what would be the ideal classification profile. The method that meets this profile is considered ideal (figure 3.22). In short this comes down to: addressing all approaches towards accommodation strategy design; the views logical incrementalism or the combination of views guided learning followed by rational planning and; a full alignment of organizational levels from a top down and bottom up approach. To begin with, the methods will be examined in relation to the ideal profile to establish the meaning of the NTA 8021 in the whole picture of accommodation strategy design theory. Then the sample of methods is examined to determine which instruments can contribute to properly cope with the mentioned difficulties of alignment and multi criteria decision making.

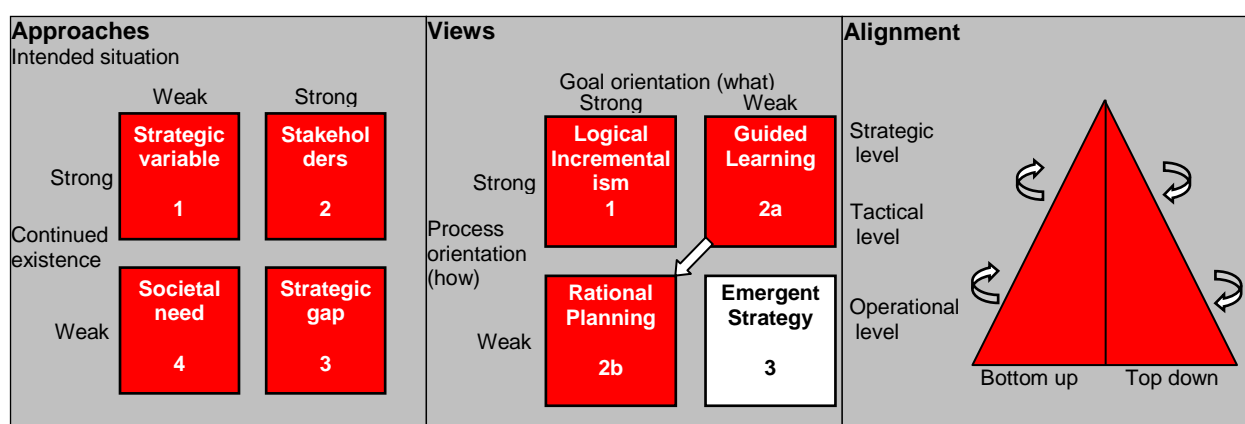


Figure 3.22; Ideal profile:

The first aspect that is noticed is that none of the methods, including the NTA 8021, meet the ideal profile. The nearest methods that meet this profile are the DAS Frame (De Jonge et al., 2009) and the Housing choice model (Ikiz-Koppejan et al., 2009) for their completeness in describing the entire process. These methods are both process orientated but tend to incrementalism. Because they lack in some phases the explicit goal/content orientation in the form of a tool or technique they are still seen as guided learning but have the potential for logical incrementalism.

The second noticed aspect is that methods which are goal/content orientated (rational planning) focus on just one approach. Further they seem to have difficulties in establishing a full alignment. The method that is the nearest in achieving a full alignment is the method Aligning corporate real property with corporate strategies (Nourse and Roulac, 1993, Roulac, 2001, both mentioned in de Jonge et al., 2009). It is the nearest because it enables alignment between organizational driving forces, real estate strategies and operating decisions. Although it connects the three organizational levels it does not connect organizational goals to real estate goals and criteria because organizational goals are not defined. Furthermore the initial literature of this method mention elements that indicate the involvement of multiple stakeholders and the suggestion to use a linear programming approach. But it is not quite clear how exactly this is performed.

The third interesting aspect is that the process orientated DAS Frame and Housing choice model refer to other methods to use them as tools for designing and realising an accommodation strategy. According to dictionaries a tool is something used in the performance of an operation, an instrument. A method is defined as a means or manner of procedure, especially a regular and systematic way of accomplishing something. If the other methods are used as tools for establishing interim products in the accommodation strategy design process they will presumably never succeed in designing and realising an entire accommodation strategy on their own. The latter aspect is also applicable to the NTA 8021. The NTA 8021 does not cover the entire accommodation strategy design process. Its product/result can be seen as an interim product and consists of delivering alternatives expressed into costs.

The two approaches, top down and bottom up, towards the aspect alignment cover the mentioned difficulties. Top-down alignment is referred to as establishing an alignment (translation and order) of organizational goals (strategic) to real estate goals (tactical) to real estate properties as criteria (operational). Bottom-up alignment refers to the alignment in decision making where stakeholders from relevant organizational levels participate in the choice making process of accommodation design. Alignment as group decision making wherein multiple stakeholders with multiple criteria and multiple alternatives select the optimal alternative.

Which instruments are used for top down alignment? The instruments can be distinguished in the following ways of focus. A focus on aligning the process, a focus on aligning strategies/goals towards criteria or both. Instruments that align the process are Scenario planning (Dewulf et al., 1999 cited in De Jonge et al., 2009) and in a way the described development/linking process towards a Strategic real estate plan (Fritzsche et al., 2004 cited in De Jonge et al. 2009). The instrument that aligns strategies/goals towards criteria are the cross tables of Aligning corporate real property with corporate strategy (Nourse and Roulac, 1993, Roulac, 2001, both cited in de Jonge et al., 2009). The analytical framework, tables and generic strategies shown in Generic strategies (O'Mara 1999, Singer 2005 both cited in De Jonge et al. 2009) focus on both.

Which instruments can contribute to properly cope with the difficulty of top down alignment? From the process alignment instruments can be said that the Scenario planning (Dewulf et al., 1999 cited in De Jonge et al., 2009) is useful to determine possible criteria that are important in the future while it takes into account all four approaches. For the alignment of strategies/goals towards criteria the cross tables of the Aligning corporate real property with corporate strategy (Nourse and Roulac, 1993, Roulac, 2001, both cited in de Jonge et al., 2009) and tables and generic strategies of O'Mara (1999, cited in De Jonge et al. 2009) and Singer (2005 cited in De Jonge et al. 2009) are considered to contribute in the most effective way.

Which instruments are used for bottom up alignment in relation to group decision making? These instruments can also be distinguished in two ways of focus. A focus on aligning the process and a focus on aligning multiple stakeholders and criteria towards the optimal alternative. Instruments that align the process are analysis of relevant stakeholders, interviewing of stakeholders on their problems and intentions towards accommodation and negotiations about (interim) results. Instruments that enable group decision making are mentioned in some methods but unfortunately not further elaborated.

Which instruments can contribute to properly cope with the difficulty of bottom up alignment in relation to group decision making? The process alignment instruments are needed and useful but at the end of also this process there must be a clear rational way of determining the best alternative. Unfortunately no instruments are available in the sample of methods that can contribute in an effective way to tackle the difficulty of multi criteria decision making.

It is noticed that the NTA 8021 is considered a tool instead of a method for designing an accommodation strategy. As it is seen as a tool that supports the accommodation strategy design process it does not have to meet the ideal profile with all aspects. This evaluation indicates that the ideal accommodation strategy design profile lacks two necessary instruments. First an instrument that enables the top down alignment of organizational goals towards criteria. Second an instrument that enables bottom up alignment in the sense of enabling multi criteria decision making.

To improve the NTA 8021, achieve its objective while dealing with the mentioned difficulties of aligning organizational goals towards criteria and group/multi criteria decision making it should contain these instruments. To deal with the first mentioned difficulty parts of the Scenario planning (Dewulf et al., 1999 cited in De Jonge et al., 2009) are useful. It concerns the parts: analyzing the organizational context concerning the organization's vision, mission, objectives and most important variables, the stakeholders analysis and scenario planning technique for determining important criteria in the future. Further the analytical framework and generic strategies from Generic strategies (O'Mara 1999, Singer 2005 both cited in De Jonge et al. 2009) are useful for determining a certain generic accommodation strategy. Last the cross tables in Aligning corporate real property with corporate strategy (Nourse and Roulac, 1993, Roulac, 2001, both cited in de Jonge et al., 2009) are useful for their explicit relationships of translation and ordering of real estate goals.

3.8 Conclusion

To better understand why the NTA 8021 is not capable of improving organizational performance through achieving organizational goals by optimizing the match of real estate demand with real estate supply it is positioned within a broader context of strategy design theory. The theory is used for deriving and analysing relevant aspects towards accommodation strategy design. To conduct a formative evaluation the derived aspects are combined and visualized in a toolset representing the whole picture of accommodation strategy design. In the course of creating the toolset is explained what would be the ideal profile. The method that meets this profile is considered ideal.

To interpret the meaning of the NTA 8021, in relation to the other methods within the whole picture, the sample is classified according to the toolset and examined in relation to the ideal profile. The meaning of the NTA 8021 towards accommodation strategy design is considered a tool instead of a method. According to dictionaries a tool is something used in the performance of an operation, an instrument. A method is defined as a means or manner of procedure, especially a regular and systematic way of accomplishing something. It is considered a tool because its product/result can be seen as an interim product in relation to the entire accommodation strategy design process.

Further this evaluation makes clear that the defined ideal accommodation strategy design profile lacks two necessary instruments. First an instrument that enables the alignment of organizational goals towards criteria. Second an instrument that enables multi criteria decision making. To improve, as a tool, the NTA 8021 and achieve its objective it should contain those instruments that can deliver alignment and multi criteria decision making.

Useful elements for establishing the alignment instrument are the parts of the Scenario planning (Dewulf et al., 1999 cited in De Jonge et al., 2009). It concerns the organizational context analysis, the stakeholders analysis and scenario planning technique for determining important criteria in the future. Further the analytical framework and generic strategies from Generic strategies (O'Mara 1999, Singer 2005 both cited in De Jonge et al. 2009) are useful for determining a certain generic accommodation strategy. The cross tables in Aligning corporate real property with corporate strategy (Nourse and Roulac, 1993, Roulac, 2001, both cited in de Jonge et al., 2009) are useful for their explicit relationships of translation and ordering of real estate goals. Useful elements for establishing a group decision instrument were not found.

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4 ALIGNMENT OF GOALS TOWARDS CRITERIA

4.1 Introduction

The first mentioned difficulty in designing an accommodation strategy is the alignment of organizational goals into real estate properties as criteria. The criteria represent the real estate demand and are used for judging and selecting real estate supply. In the second chapter a summative evaluation is performed on the draft method 'NTA 8021 Performance measurement of real estate' (NTA 8021) on the way it copes with the mentioned difficulty. It is determined that the NTA 8021 does not provide generic organizational goals or other empirical evidence to help align organizational goals towards real estate properties as criteria. This determination is underlined in the third chapter. In this chapter a formative evaluation is performed on a sample of accommodation strategy design methods including the NTA 8021. It is considered that the NTA 8021 is not a method but a tool to support the process of accommodation strategy design. It is made clear that the ideal accommodation strategy design profile lacks the necessary instrument that enables the alignment of organizational goals towards criteria. To improve the NTA 8021 and achieve its objective it should contain such an instrument. Besides useful elements mentioned in paragraph 3.8 more information is needed to create an instrument that enables organizational goals to be aligned towards a limited amount of real estate criteria to judge and select real estate supply that contributes to the organizational performance.

In the next paragraph relevant literature is used, sought and organized to establish the intended alignment. It is analysed on elements and their relationships towards organizational performance, organizational goals, real estate goals and real estate properties. New- and already known relationships are established and visualized in tables to realize the alignment from organizational goals towards real estate properties as criteria. The alignment is accomplished in two phases. A phase that aligns organizational goals to real estate goals and a phase that aligns real estate goals to real estate criteria. The first phase consists of two steps. Step one is elaborated in paragraph three and focussed on establishing relationships for translation. Step two is elaborated in the fourth paragraph and focussed on ranking. The second phase is explained and elaborated in paragraph five. It consists of combining real estate properties from several studies that are proven to have an effect on organizational performance. These properties are classified towards real estate aspects to form criteria that are subsequently appointed to real estate goals. In paragraph six a procedure is suggested to realize an alignment of organizational goals towards criteria by using the established tables. In paragraph seven conclusions are drawn if the created instrument enables the intended alignment.



4.2 Literature overview

The literature overview in figure 4.1 presents studies, researches and papers that contain elements and their relationships to create an instrument that enables translating and ranking (aligning) organizational goals towards real estate properties as criteria. The main elements (coloured green) to compose the instrument are: organizational goals; organizational performance; real estate goals and; real estate aspect properties. The elements and relationships that support establishing the relationships between the main elements are coloured yellow. The relationships that need to be established are question marked (coloured blue). The relationships for translation are: organizational goals to organizational performance to real estate goals and; real estate strategies to real estate goals. The relationships for ranking real estate goals are: driving forces to organizational performance to organizational goals.

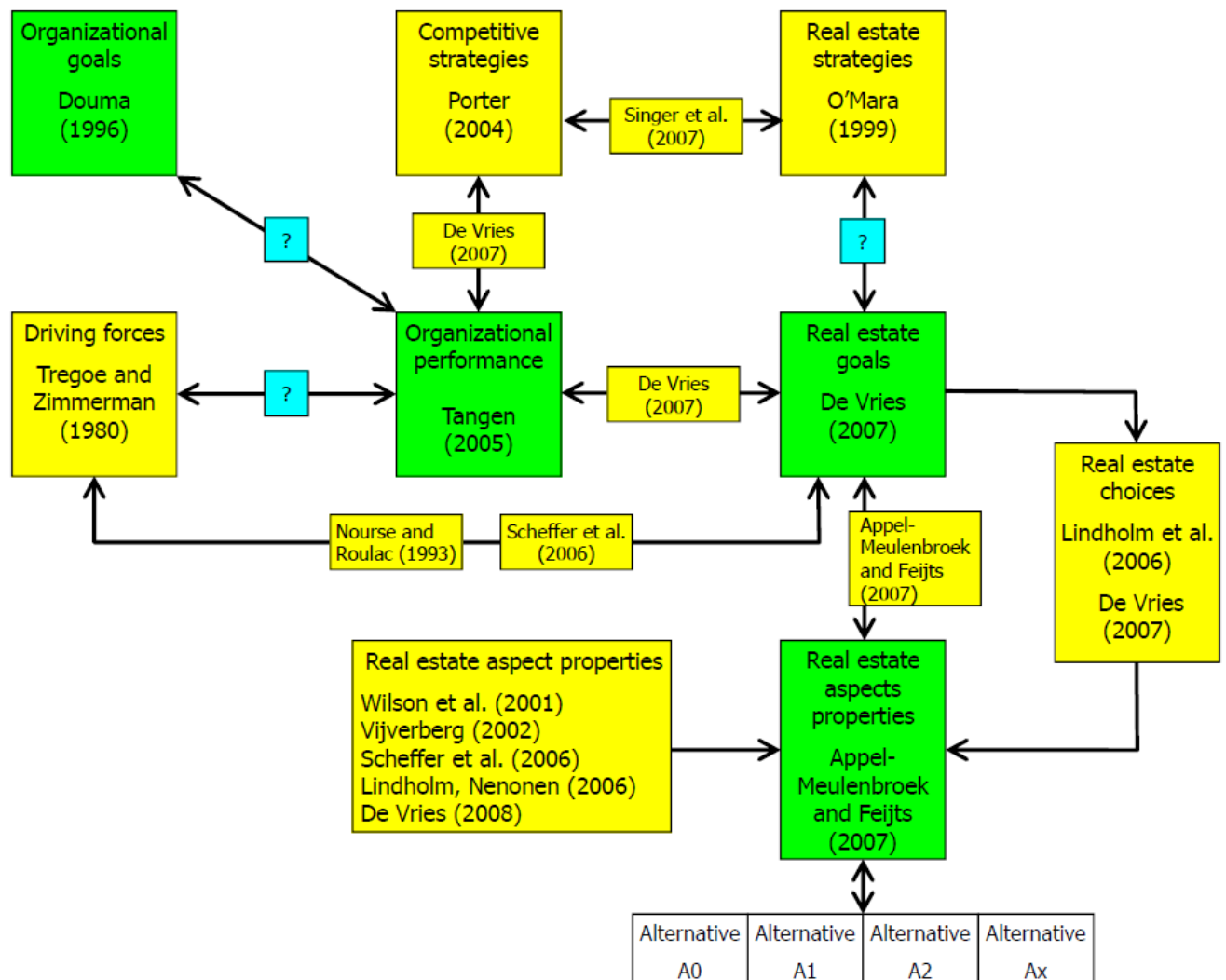


Figure 4.1; Literature overview

4.3 Translation of goals

4.3.1 Organizational goals

Douma et al. (1996, pp.54-60) have in their educational book 'corporate strategy' defined an integral hierarchy of generic organizational goals (figure 4.2). They argue that an organizations main purpose is striving for continuity regarding its function in society. This is to a certain extent achieved when the organization is able to secure its economical- and social viability. These aspects of viability, their applicable generic goals and the way these goals are to be achieved are explained in the next paragraphs.

The economic viability depends in the first place on the profit the organization makes. In general can be said: the higher the profits the better the economic viability of the organization. To make sure the organization withstands possible future misfortunes it cannot simple extent its past profit records. Organizations that are dependent on just one supplier or customer make them vulnerable. That is why in the second place the dependence of organizations has to be taking into account. Future plans, in most cases, do not work out as initially planned. Flexibility is therefore, in the third place, important for the economic viability of an organization.

The social viability of an organization depends on the way an organization is capable of delivering social expectancies. For employees of an organization it is important that the organization provides a pleasant work environment, a comfortable social atmosphere, a career development or secondary rewards like a car. This can be referred to as individual acceptance of the organization. For the society in general it is of importance that the organization provides work, pays taxes, takes care of its environment, supports social charities, in other words responds to the societal needs. This is to be referred as the social acceptance of the organization.

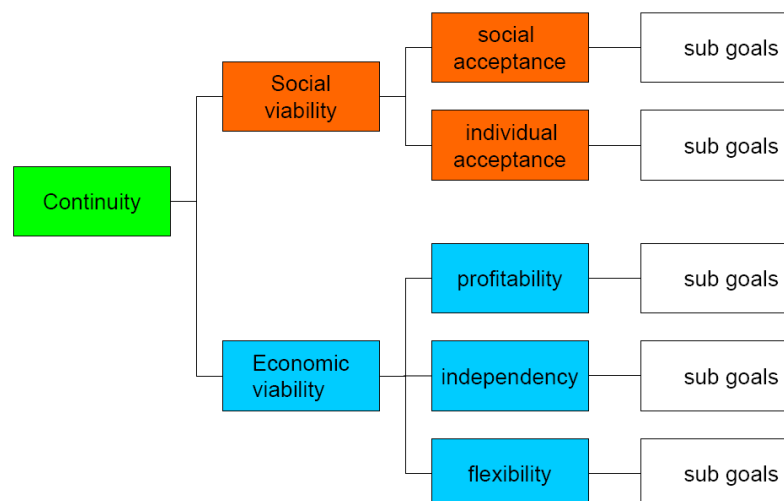


Figure 4.2; Integral hierarchy of generic organizational goals
Source; Douma et al. (1996, p.55)

The achievement of the five generic organizational goals is explained as follows. The generic goal social acceptance is achieved if the environment accepts the organization and its social function in the society in the form of its activities. The environment is represented by the organizations stakeholders like suppliers, customers, clients, governmental agencies, action groups and neighbours. The second generic goal individual acceptance is achieved if the employees of the organization accept and appreciate the activities they have to perform to the conditions provided. The third generic goal profitability is achieved when the organization satisfies its participants in financial and economical ways. It has to pay participants like employees, suppliers and shareholders. The management of the organization, in general, strives to grow. Grow is important for shareholders to increase its dividend and for employees in terms of career development. It strives to increase earning capacity important for all participants and solvability as a condition for viability. The fourth generic goal independency of the organization is achieved when the organization is minimally dependent on certain suppliers for its input and certain customers for its output (products, services). The fifth and last generic goal flexibility is achieved when the organization can cope with unexpected misfortunes.

4.3.2 Real estate goals

De Vries (2007, p. 329) concluded in her dissertation that there are ten ways to improve organizational performance with real estate. These are accommodation costs reduction, production increasement, flexibility increasement, culture improvement, risk management, financing opportunities improvement, image reinforcement, innovation stimulation, satisfaction improvement, synergy improvement. She based her conclusion on these ten generic real estate goals on literature from int. al. Nourse and Roulac (1993), De Jonge (1996), Lindholm, Kibler and Leväinen (2006) and empirical findings. These ways of improving organizational performance with real estate can be considered real estate goals for an organization to achieve (figure 4.3).

Image reinforcement

Reinforce the image of the organization by using real estate to represent the organization or by using it as a marketing instrument to sell more products or services.

Culture improvement

Improve culture by using real estate to introduce a culture change or support the manner of interaction within an organization.

Production increasement

Increasing production by using real estate to work more efficiently.

Satisfaction improvement

Improve satisfaction through realizing and maintaining a nice and good workplace where employees like to work or a nice and good meeting place where clients and customers like to do business.

Synergy improvement

Improving synergy by simulation the cooperation between organizational departments or sections.

Innovation stimulation

Stimulate innovation by creating possibilities with real estate for cooperation and innovation.

Accommodation costs reduction

Reducing real estate and organizational costs through savings on investment costs and exploitation costs of existing real estate, additional costs and transport costs.

Risk management

Control risks through choosing for different types of ownership or exploitation.

Flexibility increasement

Increasing flexibility with the use of technical-, spatial-, organizational- measures to design the real estate for multiple use.

Financing opportunities improvement

Improvement of the organizations financing opportunities by using real estate to attract capital or to improve its solvability.

Figure 4.3; Real estate goals
Source; De Vries (2007, p.359)

De Vries (2007, p.290) has in her so called 'map' the relationships elaborated between the different real estate goals. She found out that some goals can strengthen or oppose each other. This map gives insight in the total system of influence within Institutes of Higher Professional Education. She acknowledged that these relationships are not quantifiable but more guiding within the context of Institutes of Higher Professional education. Despite the fact that these mutual established relationships are interesting and good to know they are not used for establishing the alignment instrument because they are explicitly gathered in the context of Institutes of Higher Professional Education and therefore are not generally applicable to other organizations.

4.3.3 Organizational performance aspects

Organizational performance concerns the viability of an organization as stated in chapter one. Tangen (2005) conducted a research, based on practical nature and performance literature from the last thirty years, to clarify the meaning of the terms productivity, performance, profitability, efficiency, effectiveness and their interrelationships. According to Tangen (2005, pp.34-46) 'organizational performance concerns the composition of the aspects: profitability (output-input), productivity, (output/input) and distinctiveness (organizational attraction expressed into market share). The extent to which an organization realizes these aspects, according to the judgement of its stakeholders, defines the organizational performance as a whole (figure 4.4)'. In order to relate these aspects to organizational- and real estate goals they are further elaborated.

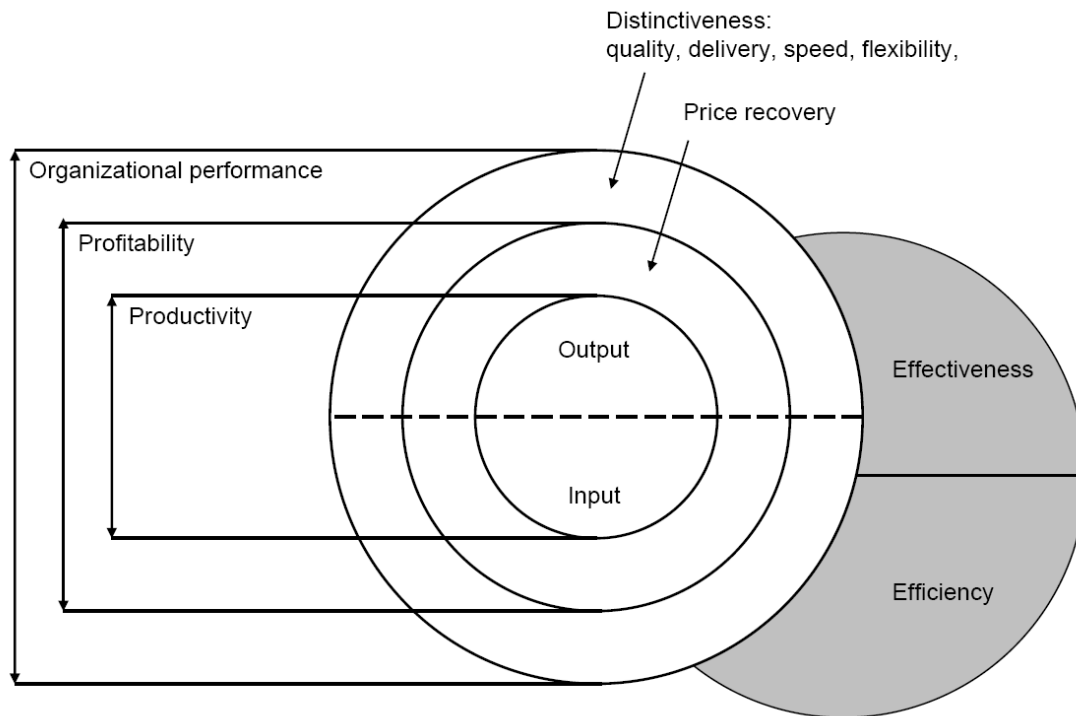


Figure 4.4; Triple P-model
Source; Tangen (2005)

Tangen (2005, p.43) explained these aspects according to the models layers. 'Productivity is the central core of the triple P-model and has a rather straightforward operational definition of productivity as the relation between output quantity (i.e. correctly produced products which fulfil their specifications) and input quantity (i.e. all resources that are consumed in the transformation process). It is here argued that even though it is difficult to measure different quantities by the same standard, the concept of productivity is purely a physical phenomenon and must therefore be defined as one'. This aspect indicates the efficiency of the organizational processes. 'Profitability is also seen as a relationship between output and input, but it is a monetary relationship in which the influences of price-factors (i.e. price recovery) are included'. This aspect indicates the efficiency and effectiveness of the organization as a whole. 'Performance is the umbrella term of excellence and includes profitability and productivity as well as other non-cost factors such as quality, speed, delivery and flexibility'. This last aspect concerns its distinctiveness in relation to other organizations. This aspect concerns the organizational attraction expressed into market share. These three performance aspects will play a central role in establishing the translation of organizational goals towards real estate goals.

4.3.4 Competitive strategies

De Vries (2007) related the three competitive strategies of Porter (1985) and her ten defined generic real estate goals to the three organizational performance aspects of Tangen (2005) (figure 4.5). The three competitive strategies are:

- An organization with a cost leadership strategy strives for the lowest possible costs in its production processes and for the lowest possible prices of products and services in a certain sub market (reduction of costs).
- An organization with a differentiation strategy strives to produce unique products and services and sell it for premium or relatively high prices to many customers in a broad market (creating customer loyalty).
- An organization with a focus strategy strives to serve a certain sub market (niche). It strives to gain a certain competitive advantage with innovative or brand products. (serving a submarket)

Competitive strategies (Porter, 1985)	Organizational performance aspects (Tangen, 2005)	Real estate goals (De Vries, 2007)
Focus strategy	Distinctiveness	Image reinforcement, culture improvement, production increase
Differentiation strategy	Productivity	Satisfaction improvement, synergy increase, innovation stimulation
Cost leadership strategy	Profitability	Accommodation costs reduction, risk management, flexibility increase, financing opportunities improvement

Figure 4.5; Relationships between competitive strategies, performance aspects and real estate goals
Source; De Vries (2007, p.77)

The central role of the organizational performance aspects and the established relationships are used as basis for further translation towards organizational goals.

4.3.5 Real estate strategies

Singer, Bossink and Vande Putte (2007) applied the three competitive strategies of Porter (2004)⁴ in their paper to investigate how organizations use corporate real estate to support their competitive strategy. 'The purpose of their paper Corporate real estate and competitive strategy is to provide a theoretical and empirical overview and analysis of effective combinations of firms real estate and competitive strategies. The paper constructs a model that integrates three real estate strategies and three competitive strategies. Case studies in ten multinational firms in The Netherlands apply the model, and describe and analyse the combinations of the firms' real estate- and competitive strategies'.

To construct the model they applied the three generic real estate strategies defined by O'Mara (1999 cited in Singer et al., 2007, p.26). These are explained by them in the following way (figure 4.6):

- 'A value-based strategy deliberately expresses the values and strategic direction of the organisation in its real estate. It highlights both a building's function and meaning to the organisation. It uses the physical setting to symbolise values and to influence employees' and customers' behaviour. It utilises the buildings' communicative power, and expresses a corporate image. The value-based approach considers the firm's relationship with its customers, employees, and the community, and this is visualised in its corporate objects.
- A standardisation strategy attempts to merely control and coordinate facility design and real estate operations across the entire organisation. It sets standards, and applies them throughout the company. To standardise decision-making on real estate and facilities, organisations primarily rely upon predictions about their future facility requirements. A standardisation strategy occupies a great deal of real estate and a predictable use of the assets is one of its basic characteristics. It focuses on control of business effectiveness, costs, and employees' behaviour. Firms' standardised real estate portfolios are implicit and explicit exemplifications of their rational style.

⁴ Porter (2004) is the third edition of Porter (1985).

- An incremental strategy uses space in bits and pieces over time. The more uncertain managers are about their organisation's future, the more they want to delay major commitments until better information is available. Under these conditions, the primary concern of the organisation is to meet the physical requirements of the operations. Organisations implementing an incremental strategy do not put an emphasis on employee amenities or visual aesthetics. It often results in a random collection of various buildings, which most of the times does not deliberately contribute to the expression of an organisation's competitive strategy'.

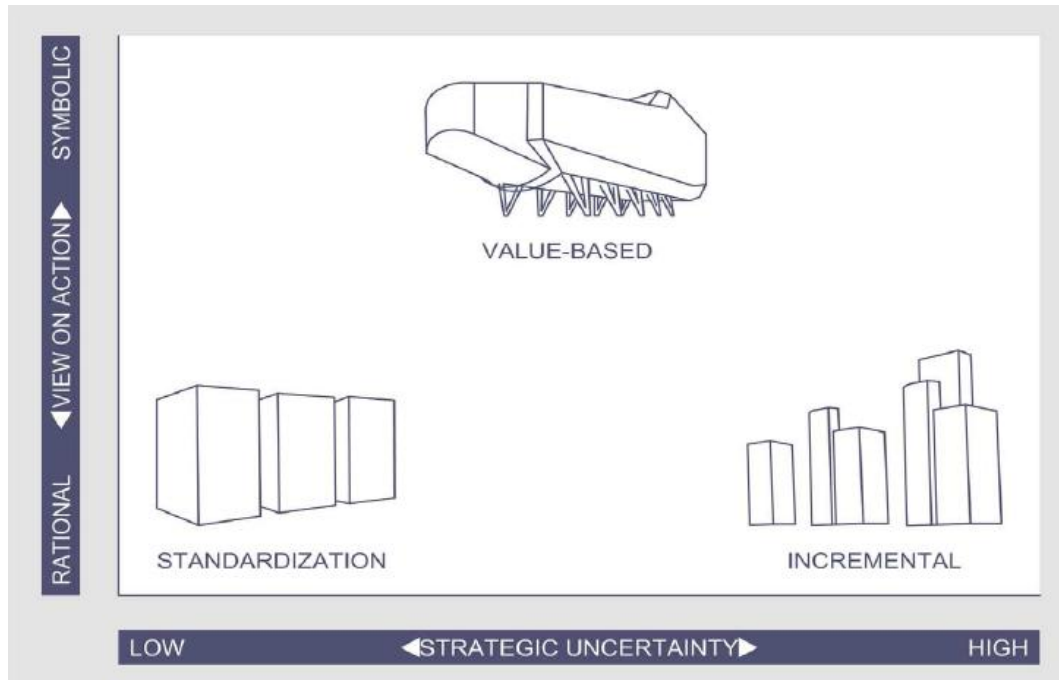


Figure 4.6; Generic real estate strategies
Source; O'Mara (1999 visualized by Singer 2005, p.30)

Their investigation established some findings which come down to the ensuing conclusions. A value-based real estate strategy supports the competitive strategy of differentiation and differentiation focus, and does not contribute to the competitive strategy of cost leadership. A standardisation real estate strategy supports all three generic competitive strategies: cost leadership, differentiation, and focus. An incremental real estate strategy is ambiguous, and does not support any of the three competitive strategies.

Their conclusion that an incremental strategy does not support a competitive strategy is purely based on the findings of the studied firms. It can be argued that an incremental strategy can be used by organizations who are for a reasonable period of time in uncertainty about future developments or future decisions concerning their accommodation. This strategy leaves all options open, manages risks and is very flexible. This strategy can therefore support the competitive strategy cost leadership.

Although not explicitly elaborated by Singer et al. (2007) there is a combination that some firms use. It is a hybrid form of the value-based and standardization strategy; say the value-based standardization strategy:

- A value-based standardization strategy consists of a mix of value-based- and standardization strategy elements. The organization using this form tries to combine the advantages of both and reduce their disadvantages. In this matter the organization is in search of a balance to improve internal- and external satisfaction by aesthetics and functionality. The aesthetics and functionality of real estate designs is used for satisfying employees and communicate culture and image. With this approach the organization aims to increase production and stimulate innovation. By standardizing particular aspects of the real estate it is expected that the goals impact the entire organization and establish a dominant culture and image. The cost and control of real estate can be better steered by standardizing aspects and using economies of scale.

4.3.6 Establishing relationships

Earlier is explained that the central role of the organizational performance aspects and the established relationships of De Vries (2007) are used as basis for further translation towards organizational goals.

The generic organizational goals of Douma et al. (1996) are related to the organizational performance aspects of Tangen (2005) and real estate goals of De Vries (2007) as follows (figure 4.7):

- Social acceptance is mainly related to distinctiveness because of its external focus. It is further related to image reinforcement and culture improvement for external purposes;
- Individual acceptance is partly related to distinctiveness and productivity. Distinctiveness is related to culture improvement for internal purposes and production increase. Productivity is related to employee satisfaction increase and synergy increase;
- Growth, profitability is partly related to productivity and profitability. Productivity is related to synergy increase and innovation stimulation. Profitability is related to accommodation costs reduction;
- Independency of the organization is related to profitability. Profitability in this sense is related to risk management and financing opportunities improvement;
- Flexibility of the organization is related to profitability and on its turn to spatial and usage flexibility increase.

For establishing a full translation the real estate strategies of O'Mara (1999) and the defined hybrid real estate strategy value-based standardization are added. This is performed on the bases of the discussion and conclusion of Singer et al. (2007) and shown in figure 4.7, Translation of goals.

organizational goals (Douma et al., 1996)		competitive strategies (Porter, 1985)	organizational performance aspects (Tangen, 2005)	real estate strategies (O'Mara, 1999)	real estate goals (De Vries, 2007)
continuity	social viability	focus	distinctiveness comparative advantage	value-based	image reinforcement
				value-based standardization	culture improvement
				standardization	production increase
	economic viability	differentiation	productivity output/input	value-based standardization	satisfaction increase
				standardization	synergy increase
				-	innovation stimulation
	flexibility	cost leadership	profitability output-input	standardization	accommodation costs reduction
				incremental	risk management
				-	financing opportunities improvement
				incremental	flexibility increase

Figure 4.7; Translation of goals

Source; Adapted relationships between competitive strategies, performance aspects and real estate goals of De Vries (2007) and expanded with organizational goals and real estate strategies

4.4 Ranking of goals

Ramakers (2008) analysed eight scientific studies which claimed to align (translate and order) organizational strategies with real estate strategies. She concluded that 'the studies of Nourse and Roulac (1993) and Scheffer, Singer and Van Meerwijk (2006) are the most useful'. The most useful because they contain the most complete directional strategies as starting point for alignment. Both studies use the concept of driving forces from Tregoe and Zimmerman (1980) and relate them to real estate strategies/added values⁵ from respectively Nourse and Roulac themselves and De Jonge (1996).

To start with Nourse and Roulac (1993 cited in Ramakers 2008), Linking real estate decisions to corporate strategy. 'The purpose of their study is to show the links between the nine driving forces of an organization and real property strategies and real estate operating decisions. They relate the nine driving forces of an organization from Tregoe and Zimmerman (1980) with their eight defined real property strategies (goals) with the use of fourteen determined operating decisions (figure 4.8). An organization first has to determine its most applicable driving force before it can align its organizational goals to real property strategies (goals)'.

P Primary importance S Secundaire importance T Tertiaire importance NA Not applicable	Real estate goals	Driving forces								
		1 Products offered	2 Market needs	3 Techno logy	4 Production capacity	5 Method of sale	6 Method of distribution	7 Natural resources	8 Size / growth	9 Return / profit
1	Occupancy cost minimization	P	T	S	T	P	S	T	T	P
2	Flexibility	T	P	P	NA	NA	NA	NA	S	S
3	Promote human resources objectives	T	T	P	P	T	S	T	S	T
4	Promote marketing message	S	S	S	S	S	P	S	P	S
5	Promote sales and selling process	S	P	S	S	P	P	S	P	S
6	Facilitate production, operations, service delivery	P	S	S	P	S	P	P	S	S
7	Facilitate managerial process and knowledge work	S	S	P	S	T	T	S	S	S
8	Capture the real estate value creation of the business	NA	NA	NA	NA	NA	P	P	S	P

Figure 4.8; Driving forces and real estate goals
Source; Adapted Nourse and Roulac (1993) in Ramakers (2008, p.39)

The nine driving forces of Tregoe and Zimmerman (1980 cited in Ramakers 2008) are elaborated in figure 4.9. They define the driving force as 'the primary determiner of the scope of future products and markets'. The organizations driving force is the most important strategic factor on which further decisions are based. Therefore the driving force is found at the start of the strategy- and accommodation design process.

Nourse and Roulac (1993 cited in Ramakers 2008) value their link on a scale of primary importance, secondary importance, tertiary importance and not applicable. However Nourse & Roulac are specific in the quality of the link they do not argue why they think the link is important or not.

⁵ The strategies of Nourse and Roulac (1993) and added values of De Jonge (1996) are in this thesis considered as real estate goals to achieve for an organization to contribute to the overall performance.

Products offered, The organization with products offered as its driving force has a concept of its products which is key to the future markets it serves. The products offered-driven organization will continue to produce and deliver products similar to those it has. New products will have characteristics very similar to those of current products. This organization will focus on higher penetration of its current geographic markets and the particular market segments where there is a need for its products. It will constantly be looking for ways to improve or extend these products.

Market needs, The organization whose driving force is market needs will provide a range of products to fill current and emerging needs in the market segment or customer groups it serves. It will be constantly looking for alternative ways to fill the needs it is currently filling. It will also be constantly searching for new or emerging needs in the market segment it serves. The market needs-driven organization develops or acquires new and different products to meet needs in its market segments. When it explores new geographical markets or market segments, they will have characteristics similar to those it currently serves. For the organization driven by market needs, significant resources will be directed to functions such as needs analysis and market research. The timely development and offering of new products is very critical.

Technology, An organization that is driven by technology offers only products or services that emanate from or capitalize on its technological capability. In such an organization, technology determines the scope of products offered and markets served, rather than the products and markets determining the technology. The technology driven organization would seek a variety of applications for its technology. It would do this through the products or services it develops from this technology, or by selling the output of this technology to those who would develop further products or services. While the technology-driven organization usually strives to be the technological and innovative leader in this field, it will not always be the initiator of technological breakthroughs made elsewhere to a variety of applications.

Production capability, An organization that is driven by production capability offers only those products that can be made or developed using its production know-how, processes, systems and equipment. The organization will manufacture products with long runs and economies of scale. Focus will be on efficiency in production with emphasis on those products with maximum efficiency. New products could be quite different from current products, while still utilizing existing production know-how, processes, systems and equipment. This organization may make products for another organization as a means of utilizing this capability. It may also lease or sell its capability to others.

Method of sale, An organization that is driven by its method of sale will determine the products it provides, the markets it enters, and its geographic scope on the basis of the capabilities and limitations of that primary method of sale. An organization that is driven by its method of sale may seek other sales approaches that are similar to or compatible with its current method of sale. Its other capabilities, particularly method of distribution, will be developed to support its method of sale. This organization may sell products from other organizations to gain maximum advantage from its method of sale driving force.

Method of distribution, An organization that is driven by method of distribution will determine the products it sells, the customers it sells them to, and its geographic scope on the basis of those kinds of products or services and customers that can be handled through its established distribution channels. It may seek other distribution channels that are similar to its current method of distribution. Its other capabilities, particular method of sale, will be developed to support that method of distribution. This organization may distribute products from other organizations to gain maximum advantage from its distribution network.

Natural resources, An organization with natural resources as a driving force would develop its products and markets through the use or conservation of its natural resources. It would concentrate on control of those resources as a means of increasing their value. An organization that is natural resource-driven may sell those natural resources to others or turn them into products. Just because an organization owns or buys natural resources to support its products, such as a steel company, does not mean that its driving force is natural resources.

Size/growth, An organization whose driving force is size/growth determines the scope of the products it offers, the markets it serves, and its geographic scope from its desire to become larger or smaller. Size/growth is the driving force only if the desire to grow only leads to a change in the product and market scope. An organization that wants rapid growth, but within its current product and market scope, is not size/growth driven. The organization with size/growth as its driving force will set levels of size and growth significantly different from its current level of performance. This organization will push into new unrelated products or markets. Size/growth does not automatically mean getting larger. It may mean a controlled reduction if such a reduction determines the scope of products and markets. Size growth is not likely to be a long-term driving force. Organizations typically remain size/growth driven for a limited period of time to enable them to move toward another driving force.

Return/profit, An organization that is return profit-driven will determine the scope of its products and markets from its desire for specific levels of return/profit. Return/profit is the driving force only if a change is made in the product or market scope in order to achieve its return/profit requirements. An organization that wants to increase its return and profit and yet stay within its current product scope and market scope is not return/profit-driven. To be return/profit driven these return and profit targets must be used to determine the scope of future products or markets and not as a screen for particular products or markets to select within that product scope. This driving force may lead an organization to change from one line of related products to a different line of related products because of return/profit considerations. The return/profit-driven organization's product/market choices may be constrained or limited by its need to produce a consistent return.

Figure 4.9; Driving forces of Tregoe and Zimmerman (1980)
Source; Ramakers (2008, p.46)

Scheffer, Singer and Van Meerwijk (2006) also used the driving forces of Tregoe and Zimmerman (1980) in their research paper. 'The purpose of their paper Enhancing the contribution of corporate real estate to corporate strategy is to provide corporate real estate executives with a measurement tool for pinpointing and enhancing the contribution of corporate real estate to corporate strategy. They designed a measurement tool by adopting a theoretical framework in which the seven added values (goals) of real estate from De Jonge (1996) are aligned with nine corporate strategic driving forces (figure 4.10). The practical applicability of this tool is validated by assessing the contribution of corporate real estate to corporate strategy at 14 Dutch-based global corporations'.

<i>Added values</i>							
<i>Driving forces</i>	<i>Productivity</i>	<i>Costs</i>	<i>Risk</i>	<i>Value</i>	<i>Flexibility</i>	<i>Culture</i>	<i>PR & Marketing</i>
<i>Products</i>	●	●	●	○	○	○	○
<i>Market</i>	○	○	●	○	●	○	●
<i>Technology</i>	●	○	●	○	●	●	○
<i>Production</i>	●	○	●	○	○	○	○
<i>Resources</i>	●	○	●	●	○	○	○
<i>Distribution</i>	○	○	●	○	○	○	●
<i>Sales</i>	○	●	●	○	○	○	●
<i>Growth</i>	○	○	●	○	○	○	●
<i>Profit</i>	○	●	●	●	○	○	○

Figure 4.10; Relationship between driving forces and added values (real estate goals)
Source; Scheffer, Singer and Van Meerwijk (2006, p.193)

Scheffer, Singer and Van Meerwijk (2006) value their relationships relevant or not. Like Nourse and Roulac (1993 cited in Ramakers 2008) they do not argue why the link is relevant or not. They added a management model for measuring the alignment of corporate real estate with corporate strategy. According to Ramakers (2008, p.54) 'this model asks a lot of own interpretation by the manager, which makes the model more compliant'.

Both studies align driving forces to real estate goals. Although there is some compliance towards the established relationships they are currently the most useful. The value scales of importance of Nourse and Roulac (1993 cited in Ramakers 2008) make it possible to establish an order between the different real estate goals.

In order to rank the real estate goals established by De Vries (2007) the real estate 'strategies' of Nourse and Roulac (1993) and added values of De Jonge (1996) are converted to the goals of De Vries. The nine driving forces of Tregoe and Zimmerman (1980) are subsequently categorised into the organizational performance aspects of Tangen (2005). After that, they are fine tuned towards the generic organizational goals of Douma et al. (1996). The translation and order (alignment) of real estate goals is shown in figure 4.11, Alignment of goals.

Because the real estate goals culture improvement and synergy increasement are partly or not mentioned in Nourse and Roulac (1993) and Scheffer et al. (2006) does not mean that they are not important. It does mean that they are not researched. Their applicability is therefore at the disposal of the one(s) who rank(s) the goals. The exercise of ranking is because of the different value scales, compliance and partly or not mentioned goals a subjective process. Although its subjectivity it is valuable for identifying the important real estate goals as most useful means to support the organization primary processes and contribute to its performance through achieving organizational goals.

Alignment of goals		competitive strategies (Porter,1985)		focus strategy serving a submarket			differentiation strategy creating customer loyalty			cost leadership strategy reduction of costs			
		real estate goals (De Vries,2007)		image reinforcement	culture improvement	production increase	satisfaction improvement	synergy increase	innovation stimulation	accommodation costs reduction	risk management	flexibility increase	financing opportunities improvement
organizational goals (Douma,1996)		driving forces (Tregoe and Zimmerman,1980)	organizational performance (Tangen,2005)										
continuity	social acceptance	products offered	distinctiveness	S		P	T		S	P		T	N / A
		market needs	comparative advantage	P		L	T		S	L	L	P	N / A
		method of sale		L		S	T		T	P	L	N / A	N / A
		method of distribution		P		P	S		S	L	L	N / A	P
				L							L		
	individual acceptance												
		technology	productivity output/input	S	L	S	P		P	S	L	P	N / A
						L					L	L	
	growth, profitability	production capability		S		P	P		S	T	L	N / A	N / A
		size/growth	profitability output-input	P		S	S		S	T	L	S	P
		return/profit		L		S	T		S	P	L	S	P
		natural resources		S		P	T		S	T	L	N / A	P
						L					L		L
	independency												
	flexibility												
economic viability													

Figure 4.11; Alignment of goals

4.5 Alignment towards criteria

Appel-Meulenbroek and Feijts (2007) have in their paper CRE effects on organizational performance: measurement tools for management made an analysis on relevant literature to identify real estate aspects that influence organizational performance. In total, 38 relevant articles on extensive empirical studies, frameworks or practice were found and analysed. The authors belong to several research areas, like ergonomics, environmental psychology, facility management, logistics, engineering, sustainability and indoor environments. Their study resulted in a list of real estate properties that were proven to have an effect on organizational performance. The properties originate from combining all these studies and eliminating similar or identical results, and are grouped into categories. They classified these properties into the following real estate aspects: location, building, installation, floor and workplace. They appointed the properties to the seven corporate real estate strategies⁶ of Lindholm and Leväinen (2006). These strategies are: increasing the value of assets; promoting marketing and sales; increasing innovation; increasing employee satisfaction; increasing productivity; increasing flexibility; and reducing costs.

In line with the analysis of Appel-Meulenbroek and Feijts (2007) the following five studies were analysed on possible additional real estate properties that can have an effect on organizational performance. These studies are: Vijverberg (2000); Wilson et al. (2001); Scheffer et al. (2006); Lindholm and Nenonen (2006) and; De Vries (2006).

The identified real estate properties as criteria are related to the real estate goals established by De Vries (2007). This is done by converting the corporate real estate strategies of Lindholm and Leväinen (2006) towards the goals of De Vries. The relationships between the criteria, real estate goals, organizational performance aspects and organizational goals are shown in figure 4.12, Alignment towards Real estate criteria.

As a positive side effect of these analyses the total amount of criteria that are explicitly related to organizational goals and –performance aspects is limited to 42. This amount of 42 is much less than the amount of almost 500 provided by the NTA 8021. The exercise of aligning organizational goals to criteria is with a total amount of 42 criteria better manageable for the stakeholders as decision makers.

As mentioned, Ramakers (2008) analysed eight scientific studies which claimed to align organizational strategies with real estate strategies. She concluded that ‘the particular study of Lindholm, Kibler and Leväinen (2006) is not very useful for establishing the alignment. Although it is not very useful for establishing an integral alignment, their decisions on operational level that may follow from their defined seven real estate strategies are indeed useful. These decisions from Lindholm and Leväinen (2006, p.42) can support the opting of real estate criteria. These decisions are related to the real estate goals established by De Vries (2007) in the same way as for the second scheme. The result is shown in figure 4.13, Real estate decisions.

⁶ The strategies of Lindholm, Kibler and Leväinen (2006) are considered in this thesis as real estate goals to achieve for an organization to contribute to the overall performance.

Real estate decisions		competitive strategies (Porter,1985)	focus strategy serving a submarket			differentiation strategy creating customer loyalty			cost leadership strategy reduction of costs			
		real estate goals (De Vries,2007)	image reinforcement	culture improvement	production increase	satisfaction improvement	synergy increase	innovation stimulation	accommodation costs reduction	risk management	flexibility increase	financing opportunities improvement
organizational goals (Douma,1996)		organizational performance (Tangen,2005)										
continuity	social viability	social acceptance	distinctiveness comparative advantage			representative landmark select locations that attract customers provide space that attract customers provide environment that supports the sale choose convenient lay out and location for providers maintain building,floor to support image adjust building,floor to support image other/new building to support image make symbolic statements through design and location create workplaces that support brand			design facilities that improve the creation and delivery of products provide environment that enhances productivity maintain facilities to accommodate optimal operations adjust buildings to enhance production			
		individual acceptance										
		productivity output/input	functional, efficient workplace			seek locations convenient to employees provide pleasant working environment provide functional workplaces provide desired amenities respond quickly to real estate (maintenance) requests choose convenient locations for employees in separate buildings choose maintenance level irt utility adjust building, floor,workplace to improve synergy allow users to participate in design phase develop usability of the workplaces emphasize knowledge work settings design facilities that allow innovative processes use workplaces more efficiently			minimize aquisition, operating, financing costs create economies of scale conduct only routine maintenance other/new building to reduce accommodation costs obtain current valuations of facilities select suitable locations redevelop obsolete properties create and maintain IT system for propertymanagement choose leasing instead of owning negotiate short-term leases balance between outsourced and in house services manage risk associated with properties obtain current values of assets create flexible workplace solutions favour multiple use facilities select services offices			
	growth, profitability											
	profitability output-input	effective meetingplace										
	economic viability	independancy	Real estate decisions on operational level, rearranged from Lindholm and Levainen (2006)									
flexibility												

Real estate decisions on operational level, rearranged from Lindholm and Levainen (2006)

Figure 4.13; Real estate decisions

4.6 Procedure

The established figures with tables align organizational goals towards criteria to judge and select real estate supply that contributes to the organizational performance. The applicable driving force of the organization and importance values of real estate goals help further reducing the amount of criteria to a set that can be used as input for a multi criteria decision making methodology. To call it an instrument for alignment the following procedure is suggested:

1. Determine the most applicable driving force of the organization (figure 4.9);
2. Determine, based on the organizations driving force, the related organizational performance aspect, and organizational goal (figure 4.11);
3. Rank the real estate goals on importance (figure 4.11);
4. Categorize, based on the order of real estate goals, the necessary composition of organizational performance aspects and organizational goals;
5. Determine the most relevant real estate strategy (figure 4.7);
6. Harmonise the real estate goals to the relevant real estate strategy;
7. Determine the most applicable criteria in relation with the established real estate goals and – strategy (figure 4.12 and 4.13).

4.7 Conclusion

To improve the NTA 8021 and achieve its objective it should contain an instrument that enables the alignment of organizational goals towards a limited amount of criteria that can be used to judge and select real estate supply that contributes to the organizational performance. Tables and a procedure are created to enable the alignment and limitation of criteria.

In theory these tables enable the alignment of organizational goals towards a limited amount of real estate criteria. To find out if this 'Alignment instrument' is useful it has to be demonstrated in an example.

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5 MULTI CRITERIA DECISION MAKING

5.1 Introduction

The second and third mentioned difficulty in designing an accommodation strategy are related to multi criteria decision making. It concerns multiple stakeholders of an organization having conflicting interests in selecting the optimal accommodation alternative among multiple designs. The stakeholders from different organizational domains and levels have different interests towards the functions and properties of real estate that support the primary processes in order to achieve organizational goals. In chapter two is determined that the draft method 'NTA 8021 Performance measurement of real estate' (NTA 8021) does not properly cope with multiple stakeholders that have conflicting interests in achieving their organizational goals because the measurement methodology of the NTA 8021 is unreliable to use as input for multi criteria decision making. The evaluation performed in chapter three showed that none of the methods provide an instrument that enables multi criteria decision making. To improve the NTA 8021 and achieve its objective it should contain such an instrument.

The essence of the problem is briefly recapitulated why the NTA 8021 cannot properly cope with the mentioned difficulties concerning multi criteria decision making. According to Binnekamp et al. (2006, pp. 11-13) 'in the field of architecture and urban planning the selection of the optimal alternative is dealt with by using preference measurement. Measuring preferences in a multi criteria decision model implies mathematical operations of addition and multiplication'. Barzilai (to appear in June 2010 cited in Binnekamp, p.27) concludes that 'these operations are not applicable to measurement scales as proposed by Stevens (1946)'. The NTA 8021 uses mainly Stevens' ordinal scales to measure preferences of stakeholders to establish a usage profile of real estate. The same scales are used to perform a survey to establish the real estate profile. The scores on the ordinal scales cannot be used for solving a multi criteria decision making problem. This raises the question: what is a proper preference measurement methodology for stakeholders of an organization to use in multi criteria decision making to select the optimal real estate alternative?

To answer the question first the theory of proper preference measurement is further explained. Then the elements, procedure and software tool for multi criteria decision analysis (MCDA) involving proper preference measurement are explained.



5.2 Theory of proper preference measurement

Barzilai (to appear in April 2010, pp.1-3) described the theory of preference function modelling and its mathematical foundations of decision theory. He explained the mathematical foundations by identifying the conditions for measuring preference and showed that classical measurement and evaluation theories cannot serve as the mathematical foundation of decision theory, game theory, economics, or other scientific disciplines because they do not satisfy these conditions. The following explanation of the conditions is based on excerpts from the original text and is adjusted to ensure a coherent story.

The construction of the mathematical foundations of any scientific discipline requires the identification of the conditions that must be satisfied to enable the application of the mathematical operations of linear algebra and calculus. The applicability of mathematical operations is addressed by von Neumann and Morgenstern (1944) in the context of measurement of individual preferences. They stated that preference is not a physical property of the objects being valued but a subjective, psychological property. Whether psychological properties can be measured or not was an open question in the 1940's. The position that psychological variables cannot be measured was supported by Campbell's view (1920) on the role of measurement in physics.

To re-state Campbell's position in current terminology the following is needed. By an empirical system E we mean a set of empirical *objects* together with *operations* (functions) and possibly the relation of *order* which characterize the property under measurement. A mathematical model M of the empirical system E is a set with operations that reflect the empirical operations in E as well as the order in E when E is ordered. A scale s is a mapping of the objects in E into the objects in M that reflects the structure of E into M (in technical terms, a scale is a homomorphism from E into M) (figure 5.1).

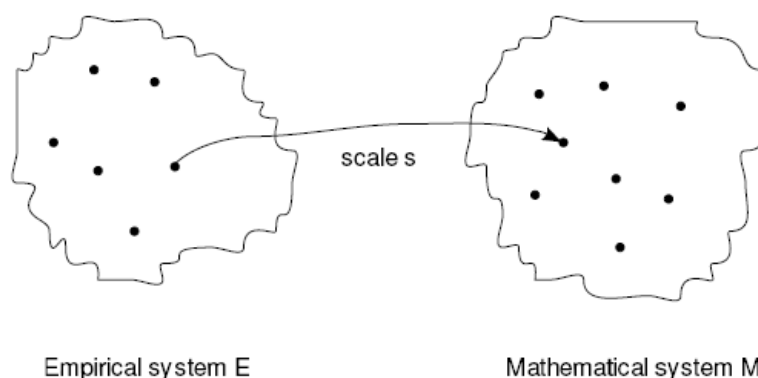


Figure 5.1; A scale is a mapping of the objects in the empirical system into the objects in the mathematical system
Source; Binnekamp (2010, p. 25)

The purpose of modelling E by M is to enable the application of mathematical operations on the elements of the mathematical system M . Campbell stated that 'the object of measurement is to enable the powerful weapon of mathematical analysis to be applied to the subject matter of science'. The main elements of Campbell's view are summarized by J. Guild (cited in Ferguson et al. 1940) in the context of measurement of sensation. He stated that for psychological variables it is not possible to construct a scale that reflects the empirical operation of addition because such an empirical addition operation has not been defined; if the empirical operation does not exist, its mathematical reflection does not exist as well.

The framework of mathematical modelling is essential. To enable the application of mathematical operations, the empirical objects are mapped to mathematical objects on which these operations are performed. In mathematical terms, these mappings are functions from the set of empirical objects to the set of mathematical objects. Given two sets, a large number of mappings from one to the other can be constructed, most of which are not related to the characterization of the property under measurement: A given property must be characterized by empirical operations which are specific to this property and these property-specific empirical operations are then reflected to corresponding operations in the mathematical model. Measurement scales are those mappings that reflect the specific empirical operations which characterize the given property to corresponding operations in the mathematical model. Therefore, the construction of measurement scales requires that the property-specific empirical operations be identified and reflected in the mathematical model. Moreover, the operations should be chosen so as to achieve the goal of this construction which is the application of mathematical operations in the mathematical model. So far the explanation of Barzilai about the mathematical foundations of preference function modelling by identifying the conditions for measuring preference.

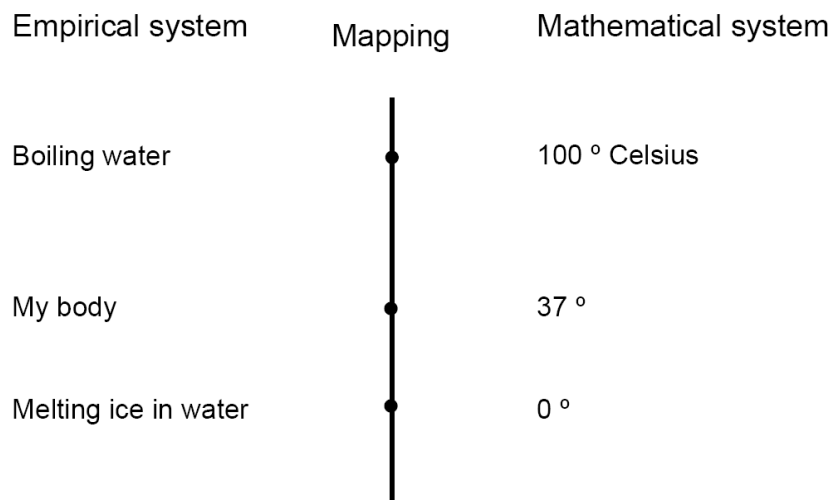


Figure 5.2; Mapping the empirical system E into the mathematical system M
Source; Adjusted from Binnekamp (2009)

Binnekamp (2009) used in his colloquium presentation the example of establishing the temperature of a body to explain the conditions for proper preference measurement (figure 5.2). To measure the temperature of my body on a scale from 0 to 100 the empirical objects associated with the 0-point and 100-point had to be specified. The empirical object associated with the 0-point is melting ice in water and the object associated with the 100-point is boiling water. Proper preference measurement is based on this principle. To measure preference properly on a scale at least three empirical objects have to be associated with two different objects on that scale to allow the mathematical operations.

5.3 Multi criteria decision analysis and preference measurement

Chapter two explained the difficulty that multiple stakeholders can have conflicting interests in achieving organizational goals when selecting the optimal alternative. This difficulty can be dealt with by using multi criteria decision analysis (MCDA). The MCDA-model is shown in figure 5.3. The elements needed to perform a MCDA are: alternatives (A); criteria (C); stakeholders as decision makers (S); weights (W) to order the criteria and an algorithm to solve the problem.

			A1	A2	A3
S1	C1	W1			
S1	C2	W2			
S3	C3	W3			

Figure 5.3; MCDA model

To evaluate MCDA methodologies involving preference measurement Binnekamp (2010, pp.31-36) defined the following generic formal procedure : '1, specify the alternatives; 2, specify the decision maker's criteria tree; 3, rate the decision maker's preferences for each alternative against each leaf criterion; 4, to each leaf criterion assign the decision maker's weight; 5, use an algorithm to yield an overall preference scale. The procedure for a group of decision makers is identical to the procedure for a single decision maker, with the exception that each decision maker has to rate his preference for the alternatives on each criterion'. He discovered that 'to evaluate any MCDA methodology involving preference measurement on whether it has a mathematical foundation it is only needed to examine the preference scales, by using Barzilai's classification of scales'. Binnekamp (2010, p.81) concluded on his performed survey on current MCDA approaches involving preference measurement that 'preference function modelling is the only decision theoretical methodology that enables the construction of measurement scales to which linear algebra and calculus are applicable'.

Based on this theory, a practical methodology for constructing proper preference scales and a software tool that implements it have been developed. It is called Tetra.

The Tetra software tool can be used to evaluate choices on existing or hypothetical situations using preference function modelling. The evaluation is based on at least three alternatives which are rated on each of the criteria. In the case of single decision making a single evaluator specifies his or her ratings. With the group decision making model multiple decision makers can participate in the Tetra process. The Tetra process consists of eight steps:

1. Create a model
2. Define the decision makers or stakeholders.
3. Identify and define at least three alternatives to be able to make the comparison possible.
4. Define criteria upon which the decision will be based. It is possible to use subcriteria.
5. Define relatively the weights for all the criteria.
6. Define reference alternatives for each criterion to establish a scale or use actual alternatives. The least preferred (reference) alternative is rated 0 and the highest preferred (reference) alternative is rated 100.
7. Each decision maker (stakeholder) enters his or her ratings for each alternative with respect to each criterion.
8. Solve the model that has been created to compute the overall scores and get a numerical rating of all the decision makers.

5.4 Conclusion

The remaining difficulties in designing an accommodation strategy are related to multi criteria decision making. It concerns multiple stakeholders of an organization having conflicting interests in selecting the optimal accommodation alternative among multiple designs.

The difficulties related to multi criteria decision making can be dealt with by using proper preference measurement. Proper preference measurement is based on the principle of associating at least three empirical objects on a scale that allows the application of mathematical operations. In mathematical terms, the associations are functions from the set of empirical objects to the set of mathematical objects. The construction of measurement scales requires that the property specific empirical operations are identified and reflected in the mathematical model. This raised the question: what is a proper preference measurement methodology for stakeholders of an organization to use in multi criteria decision making to select the optimal real estate alternative?

A survey performed by Binnekamp (2010) on current MCDA approaches involving preference measurement revealed that preference function modelling is the only theoretical methodology that enables the construction of measurement scales to which linear algebra and calculus are applicable. This theory is used to develop the 'Tetra decision making software'. It allows the construction of proper preference scales and contains a software tool to implement it. To find out if the 'Tetra decision making software' is useful it has to be demonstrated in an example.

5.5 References

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6 DEMONSTRATION OF INSTRUMENTS

6.1 Introduction

To find out if the two established instruments are useful in practice a demonstration is performed with an example. It concerns the instruments established in the previous chapters four and five. The first one, 'Alignment instrument', aligns organizational goals towards a limited amount of real estate criteria and the second one, 'Tetra decision making software', involves preference measurement in multi criteria decision making.

This demonstration is performed to improve the draft method 'NTA 8021 Performance measurement of real estate' (NTA 8021) as a tool supporting in the accommodation strategy design process. The demonstration is not meant to elaborate entire phases in the accommodation strategy design process. It is focussed on the usefulness of the two established instruments. Therefore it is not needed to work out all the relevant aspects in accommodation strategy design process as determined in chapter three. The aspects that are addressed while demonstrating its usefulness are the strategic variable approach and a part of the strategic gap approach to establish the alignment between organizational goals and criteria. The strategic variable approach is addressed to determine the driving force and important factors for success or failure of an organization. The strategic gap approach is addressed to match the real estate demand and supply by showing the deviations, interventions and designed alternatives to be judged on criteria aligned to organizational goals. From the latter approach it is not needed to fully elaborate the element future demand in the form of scenarios and the implementation plan to demonstrate the usefulness of the alignment instrument. In this way the aspects rational planning view and top down alignment are addressed to demonstrate the usefulness of the instruments. The aspect bottom up alignment is addressed through judging the alternatives on multi criteria with the Tetra decision making software.

To improve the NTA 8021 as a tool and achieve its objective the two instruments are tested in practice on their usefulness in the accommodation strategy design process. The example concerns a building of the Dutch Ministry of Defence. It is stated that the current tasks and size of the applicable organizational unit remains unchanged. First the organizations identity and strategic variables are described to determine its most important driving force. Then the organizational goals are aligned towards real estate goals and its applicable real estate strategy. The real estate strategy and its goals are subsequently aligned towards real estate criteria for selecting the optimal real estate alternative. To show how these selection criteria are used in the accommodation strategy design process the current situation and condition of a building is described. The applicable constraints are derived from the real estate policy to match and design three alternatives. The alternatives are rated on preference scales related to the selection criteria in the 'Tetra decision making software'. Finally a conclusion is drawn about the usefulness of the instruments.



6.2 Example

6.2.1 1.Determine the most applicable driving force of the organization

The Ministry of Defence organizational identity and strategic variables are briefly described and analysed to provide a contextual background and its driving force. The identity of the military forces is described as always quick and flexible deployable in The Netherlands and abroad under difficult and life threatening circumstances to preserve peace and security supported by a professional and modern organization with qualified personnel and modern, safe and high-quality materiel to contribute to stability and freedom in the world. Their main product is delivering combat power through training, preparing and maintaining combat readiness of operational units and their deployment. Core values are performance aimed and professional. The employees are an important strategic variable of the organization. Analysing the information about the identity makes clear that the Ministry is a unique organization that is most related to the driving force production capability (figure 6.1). This driving force is described as: an organization that is driven by production capability offers only those products that can be made or developed using its production know-how, processes, systems and equipment. The organization will manufacture products with long runs and economies of scale. Focus will be on efficiency in production with emphasis on those products with maximum efficiency. New products could be quite different from current products, while still utilizing existing production know-how, processes, systems and equipment. This organization may make products for another organization as a means of utilizing this capability. It may also lease or sell its capability to others.

Products offered, The organization with products offered as its driving force has a concept of its products which is key to the future markets it serves. The products offered-driven organization will continue to produce and deliver products similar to those it has. New products will have characteristics very similar to those of current products. This organization will focus on higher penetration of its current geographic markets and the particular market segments where there is a need for its products. It will constantly be looking for ways to improve or extend these products.

Market needs, The organization whose driving force is market needs will provide a range of products to fill current and emerging needs in the market segment or customer groups it serves. It will be constantly looking for alternative ways to fill the needs it is currently filling. It will also be constantly searching for new or emerging needs in the market segment it serves. The market needs-driven organization develops or acquires new and different products to meet needs in its market segments. When it explores new geographical markets or market segments, they will have characteristics similar to those it currently serves. For the organization driven by market needs, significant resources will be directed to functions such as needs analysis and market research. The timely development and offering of new products is very critical.

Technology, An organization that is driven by technology offers only products or services that emanate from or capitalize on its technological capability. In such an organization, technology determines the scope of products offered and markets served, rather than the products and markets determining the technology. The technology driven organization would seek a variety of applications for its technology. It would do this through the products or services it develops from this technology, or by selling the output of this technology to those who would develop further products or services. While the technology-driven organization usually strives to be the technological and innovative leader in this field, it will not always be the initiator of technological breakthroughs made elsewhere to a variety of applications.

Production capability, An organization that is driven by production capability offers only those products that can be made or developed using its production know-how, processes, systems and equipment. The organization will manufacture products with long runs and economies of scale. Focus will be on efficiency in production with emphasis on those products with maximum efficiency. New products could be quite different from current products, while still utilizing existing production know-how, processes, systems and equipment. This organization may make products for another organization as a means of utilizing this capability. It may also lease or sell its capability to others.

Method of sale, An organization that is driven by its method of sale will determine the products it provides, the markets it enters, and its geographic scope on the basis of the capabilities and limitations of that primary method of sale. An organization that is driven by its method of sale may seek other sales approaches that are similar to or compatible with its current method of sale. Its other capabilities, particularly method of distribution, will be developed to support its method of sale. This organization may sell products from other organizations to gain maximum advantage from its method of sale driving force.

Method of distribution, An organization that is driven by method of distribution will determine the products it sells, the customers it sells them to, and its geographic scope on the basis of those kinds of products or services and customers that can be handled through its established distribution channels. It may seek other distribution channels that are similar to its current method of distribution. Its other capabilities, particular method of sale, will be developed to support that method of distribution. This organization may distribute products from other organizations to gain maximum advantage from its distribution network.

Natural resources, An organization with natural resources as a driving force would develop its products and markets through the use or conservation of its natural resources. It would concentrate on control of those resources as a means of increasing their value. An organization that is natural resource-driven may sell those natural resources to others or turn them into products. Just because an organization owns or buys natural resources to support its products, such as a steel company, does not mean that its driving force is natural resources.

Size/growth, An organization whose driving force is size/growth determines the scope of the products it offers, the markets it serves, and its geographic scope from its desire to become larger or smaller. Size/growth is the driving force only if the desire to grow only leads to a change in the product and market scope. An organization that wants rapid growth, but within its current product and market scope, is not size/growth driven. The organization with size/growth as its driving force will set levels of size and growth significantly different from its current level of performance. This organization will push into new unrelated products or markets. Size/growth does not automatically mean getting larger. It may mean a controlled reduction if such a reduction determines the scope of products and markets. Size growth is not likely to be a long-term driving force. Organizations typically remain size/growth driven for a limited period of time to enable them to move toward another driving force.

Return/profit, An organization that is return profit-driven will determine the scope of its products and markets from its desire for specific levels of return/profit. Return/profit is the driving force only if a change is made in the product or market scope in order to achieve its return/profit requirements. An organization that wants to increase its return and profit and yet stay within its current product scope and market scope is not return/profit-driven. To be return/profit driven these return and profit targets must be used to determine the scope of future products or markets and not as a screen for particular products or markets to select within that

Figure 6.1; Driving forces of Tregoe and Zimmerman (1980)
Source; Ramakers (2008, p.46)

6.2.2 2.Determine related performance aspect, and organizational goal

According to figure 6.2 Alignment of goals the driving force production capability is within the organizational performance aspect productivity. The performance aspect productivity is hereby considered the most important of the three performance aspects that compose the organizational performance as a whole. The organizational goal to be achieved within this aspect is growth/profitability. This generic goal is considered the most important goal of the five generic goals that enable the continuity of the organization.

6.2.3 3.Rank real estate goals on importance

The real estate goals related to this driving force are ranked on importance with the use of figure 6.2 shown in &6.2.4.

6.2.4 4.Determine composition of performance aspects and organizational goals

The ranked real estate goals are subsequently categorized to establish the necessary composition of organizational performance aspects and organizational goals. The related real estate strategies per real estate goal are added, based on figure 6.3, to provide a broad overview.

Productivity

- | | | |
|-----------------------------------|-----------------------|--------------------------------------|
| 1. Satisfaction improvement (1xP) | individual acceptance | value-based standardization strategy |
| 3. Innovation stimulation (1xS) | growth/profitability | |

Distinctiveness

- | | | |
|--------------------------------------|-----------------------|--------------------------|
| 2. Production increasement (1xP,1xS) | individual acceptance | standardization strategy |
| 4. Image reinforcement (1xs) | social acceptance | value-based strategy |

Profitability

- | | | |
|--------------------------|----------------------|--------------------------|
| 5. Risk management (1xS) | independency | incremental strategy |
| 6. Cost reduction (1x) | growth/profitability | standardization strategy |

All organizational performance aspects are addressed that compose the organizational performance as a whole. Not all organizational goals are addressed. The organizational goal flexibility is not addressed in figure 6.2 in relation to the organizations driving force. The flexibility of the organization does not have to be increased considering its real estate. But to ensure and support the economic viability of the organization a certain degree of flexibility is always required also in relation to its real estate but in this case not seen as a goal to be achieved to improve organizational performance.

Alignment of goals		competitive strategies (Porter,1985)	focus strategy serving a submarket			differentiation strategy creating customer loyalty			cost leadership strategy reduction of costs			
		real estate goals (De Vries,2007)	image reinforcement	culture improvement	production increase	satisfaction improvement	synergy increase	innovation stimulation	accommodation costs reduction	risk management	flexibility increase	financing opportunities improvement
organizational goals (Douma,1996)		driving forces (Tregoe and Zimmerman,1980)	organizational performance (Tangen,2005)									
continuity	social acceptance	products offered	S		P	T		S	P		T	N/A
		market needs	P		L	T		S	L	L	P	N/A
		method of sale	L		S	T		T	T	L	L	N/A
		method of distribution	P		P	S		S	P	L	N/A	P
	individual acceptance		L						S	L	N/A	
	social viability	technology	S		S	P		P	S		P	N/A
				L	L					L	L	
economic viability	growth, profitability	production capability	S		P	P		S	T	L	N/A	N/A
					L							
		size/growth	P		S	S		S	T	L	S	P
		return/profit	L		S	T		S	P	L	S	P
	independency	natural resources	S		P	T		S	T	L	N/A	P
					L							L
flexibility	flexibility											

Nourse and Roulac (1993) value the link between a driving force and real estate goal on a scale of Primary importance, Secondary importance, Tertiary importance and Not Applicable

Scheffer, Singer and Van Meerwijk (2006) state whether there is a Link between a driving force and real estate goal or whether there is no link at all, according to their own opinion

Importance ranking: P, S=L, T, N/A

De Vries (2007) links the real estate goals to organizational performance aspects and competitive strategies as:

Figure 6.2; Alignment of goals

organizational goals (Douma et al., 1996)		competitive strategies (Porter, 1985)	organizational performance aspects (Tangen, 2005)	real estate strategies (O'Mara, 1999)	real estate goals (De Vries, 2007)
continuity	social viability	focus	distinctiveness comparative advantage	value-based	image reinforcement
				value-based standardization	culture improvement
				standardization	production increasement
				value-based standardization	satisfaction increasement
	economic viability	differentiation	productivity output/input	standardization	synergy increasement
				-	innovation stimulation
		cost leadership	profitability output-input	standardization	accommodation costs reduction
				incremental	risk management
				-	financing opportunities improvement
				incremental	flexibility increasement

Figure 6.3; Translation of goals

Source; Adapted relationships between competitive strategies, performance aspects and real estate goals of De Vries (2007) and expanded with organizational goals and real estate strategies

6.2.5 5.Determine most relevant real estate strategy

The most applicable real estate strategy is considered a value-based standardization strategy. This consideration is based on the sequence of importance of real estate goals and their related real estate strategies. A value-based standardization strategy consists of a mix of value-based- and standardization strategy elements. The organization using this form tries to combine the advantages of both and reduce their disadvantages. In this matter the organization is in search of a balance to improve internal- and external satisfaction by aesthetics and functionality. The aesthetics and functionality of real estate designs is used for satisfying employees and communicate culture and image. With this approach the organization aims to increase production and stimulate innovation. By standardizing particular aspects of the real estate it is expected that the goals impact the entire organization and establish a dominant culture and image. The cost and control of real estate can be better steered by standardizing aspects and using economies of scale.

The organizational performance aspects productivity is defined in paragraph 4.3.3 as the relation between output quantity and input quantity. Improving the productivity in this sense is established by increasing the production (output) or reducing the accommodation costs (input). The driving force production capability is related to the organizational goal growth/profitability. Growth is mainly related to the real estate goal production increasement and profitability is mainly related to reducing accommodation costs. If an organization is not intended to grow the emphasis will be on reducing costs to achieve the organizational goal profitability. The Ministry of Defence has not the intention to grow. To improve the productivity of the organization through achieving the organizational goal profitability the emphasis in this case will be on the real estate goal reducing accommodation costs. This implies that the real estate goal production increasement is replaced by accommodation costs reduction.

6.2.6 6.Harmonise real estate goals to relevant real estate strategy

In order to achieve the organizational goals and contribute to the overall performance of the Ministry of Defence the following sequence of real estate goals should be involved:

1. Satisfaction improvement;
2. Accommodation costs reduction;
3. Innovation stimulation;
4. Image reinforcement;
5. Risk management.

6.2.7 7.Determine most applicable criteria

Which criteria are related to these latter mentioned real estate goals and value-based standardization strategy in such a way that:

- The emphasis is on the organizational performance aspect productivity;
- The emphasis is on the organizational goals individual acceptance and profitability;
- It represents a mix of value based- and standardization strategy elements;
- Balances the satisfaction of internal- and external stakeholders?

According to figure 6.4 the criterion workplace,design is related to the real estate goals: culture improvement; satisfaction improvement and; accommodation costs reduction. It is related to the organizational goals: individual acceptance and; profitability. It is related to all three organizational performance aspects with an emphasis on productivity (according to figure 6.5). According to figure 6.4 the criterion floor,lay-out,m2 is related to the real estate goals: satisfaction improvement; synergy increase; accommodation costs reduction; flexibility increase and; financing opportunities improvement. It is related to the organizational goals: social acceptance; individual acceptance; profitability and flexibility. It is related to all three organizational performance aspects. Together with the criterion workplace,design it provides a combination that represents the workplace and its direct environment in relation to the prescribed real estate goals, in particular the real estate goal satisfaction improvement, and value-based standardization strategy.

The real estate goal accommodation costs reduction can be related to several different ways to calculate costs. The NTA 8021 uses the single criterion costs effectiveness to achieve a general reduction of accommodation costs. To stay, in this case, in line of the NTA 8021 this criterion will be used in relation to accommodation costs reduction. The cost effectiveness is expressed in years the investment is earned back (Δ investment costs/ Δ exploitation costs).

The value-based standardization strategy aims to reduce accommodation costs and stimulate innovation. These real estate goals can be related to the criterion energy consumption (figure 6.4). The energy consumption of real estate is dependent on several aspects like insulation and efficiency of building installations. It is expected that innovative building installations help reduce the consumption of energy. This criterion is related to the organizational goals social acceptance and profitability. It is further related to the organizational performance aspects distinctiveness and profitability. Reducing energy costs by using innovative technology that reinforces the organization image in a positive way represents a win-win situation. A situation of achieving the three related organizational goals and improving the related organizational performance aspects. The overall energy consumption of a building is expressed according to the energy label methodology. With the energy label for buildings the energy consumption in MJ/m² of buildings is measured where: A is excellent (least consumption) and G is very bad.

To find a balance for improving and maintaining internal- and external satisfaction by aesthetics and functionality the criterion technical condition is used for satisfying employees and communicate the organizations image. According to figure 6.4 the criterion technical condition is related to the organizational goals: social acceptance; individual acceptance and; profitability. These organizational goals refer to the organizational performance aspects distinctiveness and profitability. This criterion is therefore suitable for establishing and maintaining a balance. The better the technical condition of real estate, the better it is for the image (external social satisfaction) and production increase (internal individual satisfaction) and the worse it is for the accommodation costs (profitability) of the organization. The technical condition of the building is expressed according to the NEN 2767, Dutch standard for condition assessment of buildings (2008). The condition is measured on a six point scale where: 1 is excellent; 2 is good; 3 is fair; 4 is poor; 5 is bad and; 6 is very bad.

The criterion building, representativeness is, according to figure 6.4, related to the real estate goals image reinforcement and satisfaction improvement. It is further related to the organizational goals social- and individual acceptance. It is exclusively related to the organizational performance aspect distinctiveness.

The criteria are aligned to the previous defined real estate goals by using the figures 6.4 and 6.5. They are related to the value-based standardization strategy and emphasize the performance aspect productivity and the organizational goals individual acceptance and profitability. The criteria represent a mix of value based- and standardization strategy elements and balances the satisfaction of internal- and external stakeholders. They are expressed in the following selection criteria:

- Workplace, design and floor, lay-out, m2;
- Costs effectiveness;
- Energy label;
- Technical condition;
- Building, representativeness.

Real estate criteria		competitive strategies (Porter,1985)	focus strategy serving a submarket			differentiation strategy creating customer loyalty			cost leadership strategy reduction of costs				
		real estate goals (De Vries,2007)	image reinforcement	culture improvement	production increase	satisfaction improvement	synergy increase	innovation stimulation	accommodation costs reduction	risk management	flexibility increase	financing opportunities improvement	
organizational goals (Douma, 1996)		organizational performance (Tangen,2005)											
continuity	social viability	social acceptance	distinctiveness comparative advantage	location,distance to parties location,accessibility location,environmental influences building,representativeness building, accessibility building, conform legislation building,technical condition building,energyconsumption floor,facilities position floor,accessibility			building,lay-out,m2 floor,lay-out,m2						
		individual acceptance											
		productivity output/input											
	economic viability	growth, profitability	profitability output-input	floor,design workplace,design building,technical condition			building,representativeness workplace,indoor climate workplace,privacy location,accessibility building,design building,lay-out,m2 floor,design floor,lay-out,m2 floor,accessibility workplace,design workplace,comfort			innovative technology amount teamworkplaces			
		independency											
		flexibility											
		Real estate criteria mentioned by: Appel-Meulenbroek, Feijts (2007) Scheffer, Singer, Van Meerwijk (2006) De Vries (2008) Wilson et al. (2001) Lindholm, Nenonen (2006) Vijverberg (2002)											
		building, location and orientation building,design building,technical condition building,energyconsumption building,remaining operating period building,exploitation costs/m2 building,occupancy costs building, m2/employee floor,design workplace,design workplace,costs building,lay-out,m2 building,standard elements floor,lay-out,m2 floor,height floor,mobility of elements floor,standard elements floor,accessibility leased space/total space building,design building,adaptability building,expansibility building,lay-out,m2 building,standard elements installations,flexibility floor,lay-out,m2 floor,height floor,mobility of elements floor,standardization of elements floor,facilities position workplace,rearrangement											

Figure 6.4; Alignment towards real estate criteria

Real estate decisions		competitive strategies (Porter,1985)	focus strategy serving a submarket			differentiation strategy creating customer loyalty			cost leadership strategy reduction of costs			
		real estate goals (De Vries,2007)	image reinforcement	culture improvement	production increase	satisfaction improvement	synergy increase	innovation stimulation	accommodation costs reduction	risk management	flexibility increase	financing opportunities improvement
organizational goals (Douma,1996)		organizational performance (Tangen,2005)										
continuity	social viability	social acceptance	representative landmark select locations that attract customers provide space that attract customers provide environment that supports the sale choose convenient lay out and location for providers maintain building,floor to support image adjust building,floor to support image other/new building to support image make symbolic statements through design and location create workplaces that support brand			design facilities that improve the creation and delivery of products provide environment that enhances productivity maintain facilities to accommodate optimal operations adjust buildings to enhance production						
		individual acceptance										
		productivity output/input	functional, efficient workplace			seek locations convenient to employees provide pleasant working environment provide functional workplaces provide desired amenities respond quickly to real estate (maintenance) requests choose convenient locations for employees in separate buildings choose maintenance level irt utility adjust building, floor,workplace to improve synergy allow users to participate in design phase develop usability of the workplaces emphasize knowledge work settings design facilities that allow innovative processes use workplaces more efficiently						
	economic viability	growth, profitability	effective meetingplace						minimize aquisition, operating, financing costs create economies of scale conduct only routine maintenance other/new building to reduce accommodation costs obtain current valuations of facilities select suitable locations redevelop obsolete properties create and maintain IT system for propertymanagement			
		profitability output-input										
		independency	Real estate decisions on operational level, rearranged from Lindholm and Levainen (2006)			choose leasing instead of owning negotiate short-term leases balance between outsourced and in house services manage risk associated with properties obtain current values of assets						
flexibility				create flexible workplace solutions favour multiple use facilities select services offices								

Figure 6.5; Real estate decisions

6.2.8 Supply

The current situation in this example concerns a military unit that is on alert 24 hours a day and seven days per week. The unit is stationed in a building from where it can be deployed whenever necessary. Personnel on their shift have to remain inside the perimeter of the building. The existing situation of the building is shown in figure 6.6. The building is 24 hours a day and seven days per week in use by a minimum of 4 persons and a maximum of 8 persons. It has four workplaces, four bedrooms, a storage room, a multifunctional room with a pantry, one toilet and one shower. The gross floor area of the building is 142m². The task and size of the unit remain unchanged as well as its location.

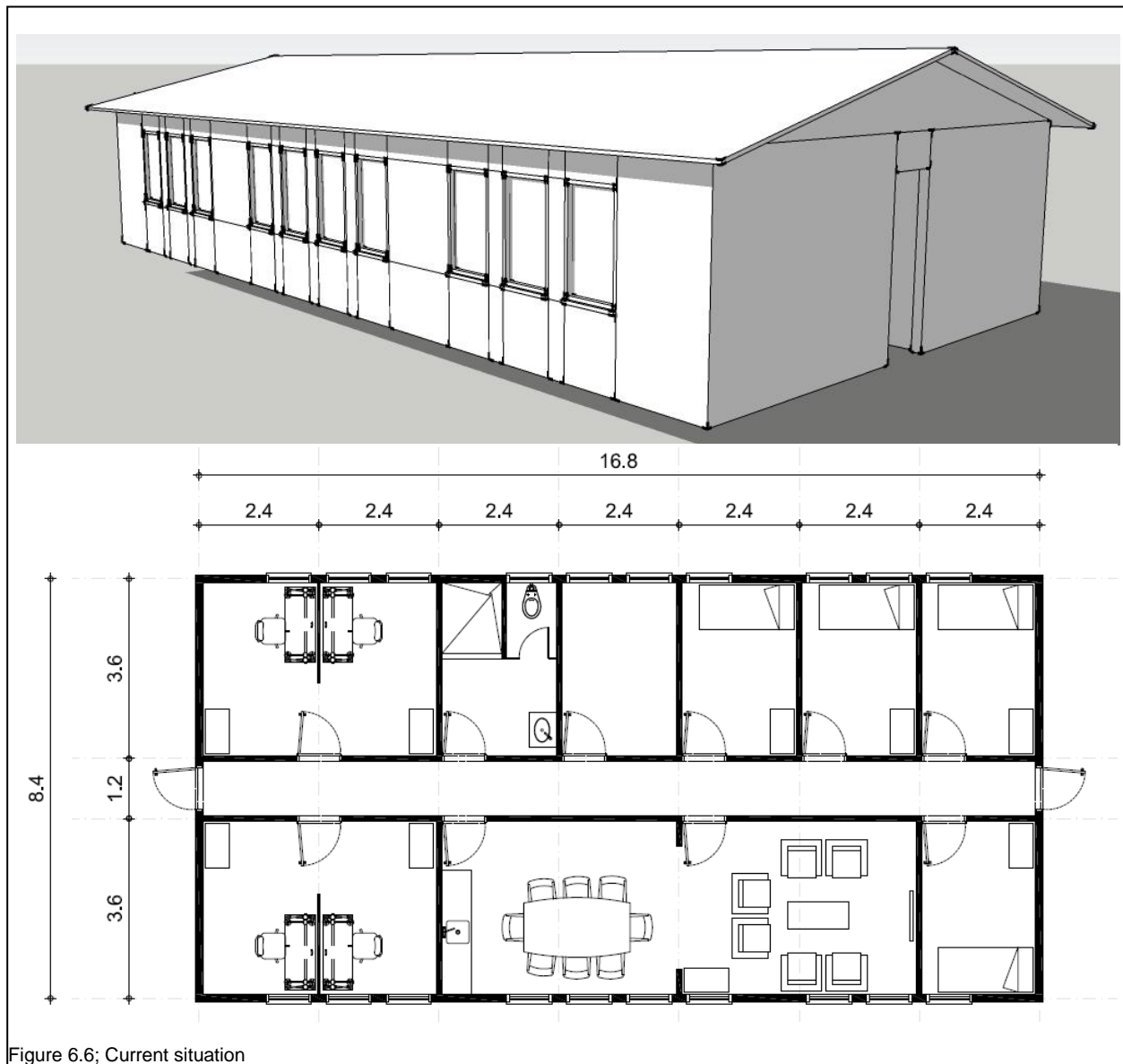


Figure 6.6; Current situation

The building is in a bad and deteriorated condition. The technical condition of the building at this moment scores a 5 (bad). The current overall energy consumption of the building is labelled F. Because of this condition the exploitation costs are €30000 per year which are relatively high when compared to other and similar used buildings. Interviews with the users of the building revealed that they are not satisfied with the current situation. Their discontent concerns besides the mentioned items the deteriorated appearances of the interior in which they have to function.

6.2.9 Demand

The NTA questionnaire is informative, does not contain all aspects and needs still to be further elaborated. This is why it is not used in this example. The organizations quantity- and quality demand for its real estate contains several minimum and maximum requirements or norms. These minimum and maximum norms are based on applicable legislation, elaborated concepts and real estate benchmarks with other public- and non-public organizations. The real estate policy prescribes the following current minimum and maximum norms related to this specific example:

- Conform applicable building legislation;
- Energy label minimum score of D for existing buildings;
- Energy label minimum score of A for new buildings;
- Technical condition minimum score of 3 for existing buildings;
- Technical condition minimum score of 2 for reconstructed buildings;
- Technical condition minimum score of 1 for new buildings;
- Separation of toilets and showers for men and women (derived from gender policy);
- When a building is reconstructed or replaced the real estate policy prescribes that the current spatial norms are applicable and required;
- Total Gross floor area (GFA) is limited to a maximum of 165m² based on use and current/near future (10 years) real estate policy norms;
- Minimum of 4 workplaces, GFA conform legislation;
- Minimum of 4 bedrooms, minimum GFA is 13m² per bedroom;
- 1 pantry;
- 1 multi functional room, minimum GFA is 17m²;
- 1 storage room, minimum GFA is 12m²;
- Investment costs are limited to €1500/m² VAT with a maximum of €250000.

A norm expresses the desirable score on a criterion scale. Together these mentioned norms express the desirable scores as constraints for matching and designing real estate alternatives. To ensure consistent reliable outcomes of the matching process the alternatives should be judged on facts. In other words, judged on criteria that apply objective measurement. In this way the selection process of the optimal alternative is not influenced by previous preferences. It is assumed that the above mentioned constraints can be judged objectively.

To judge and select the optimal alternative, based on preference, by multiple stakeholders of the organization in relation to organizational goals and organizational performance the following criteria should be taken in mind when designing the alternatives:

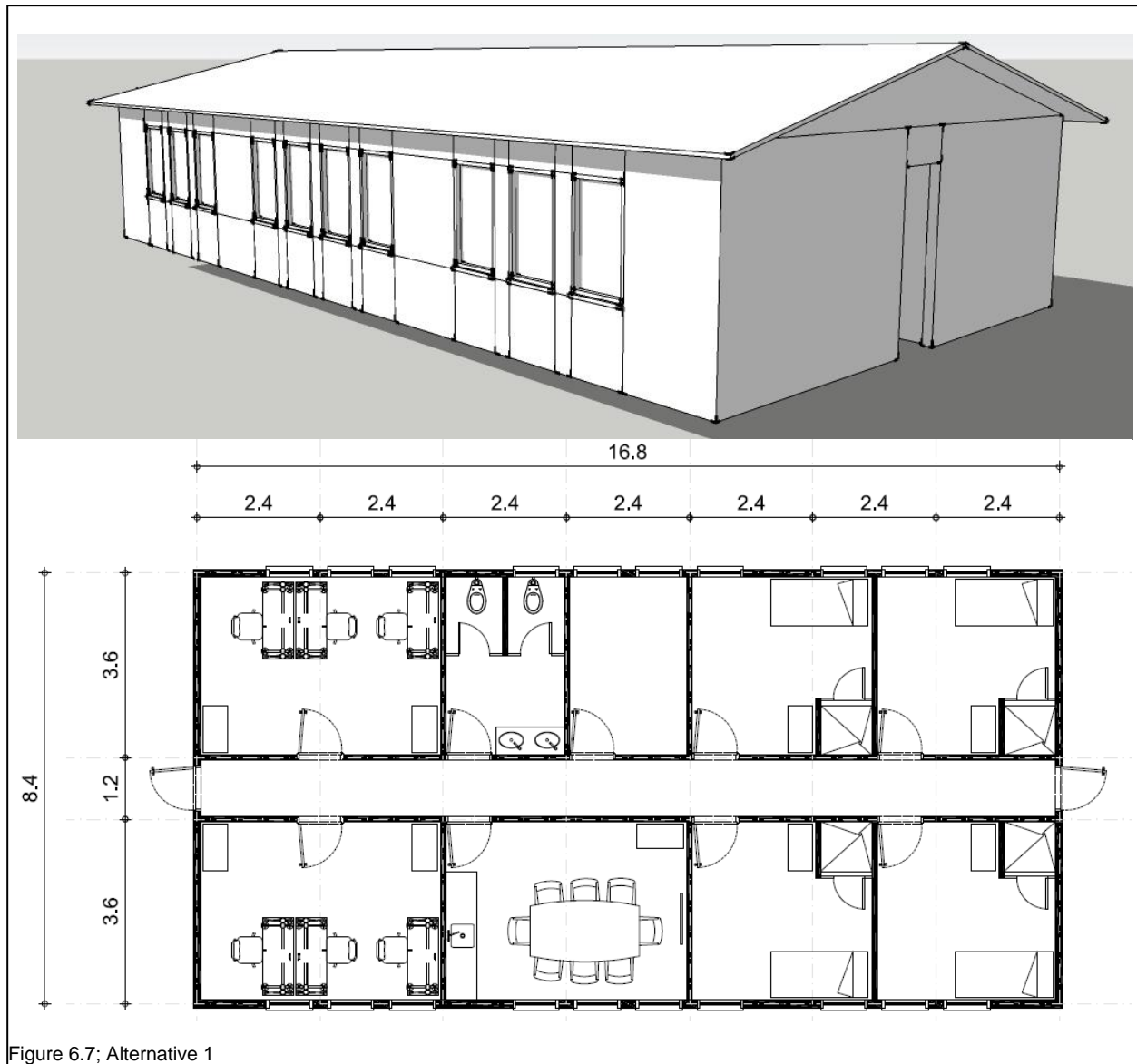
- Workplace, design and floor, lay-out, m²;
- Costs effectiveness;
- Energy label;
- Technical condition;
- Building, representativeness.

6.2.10 Matching demand and supply

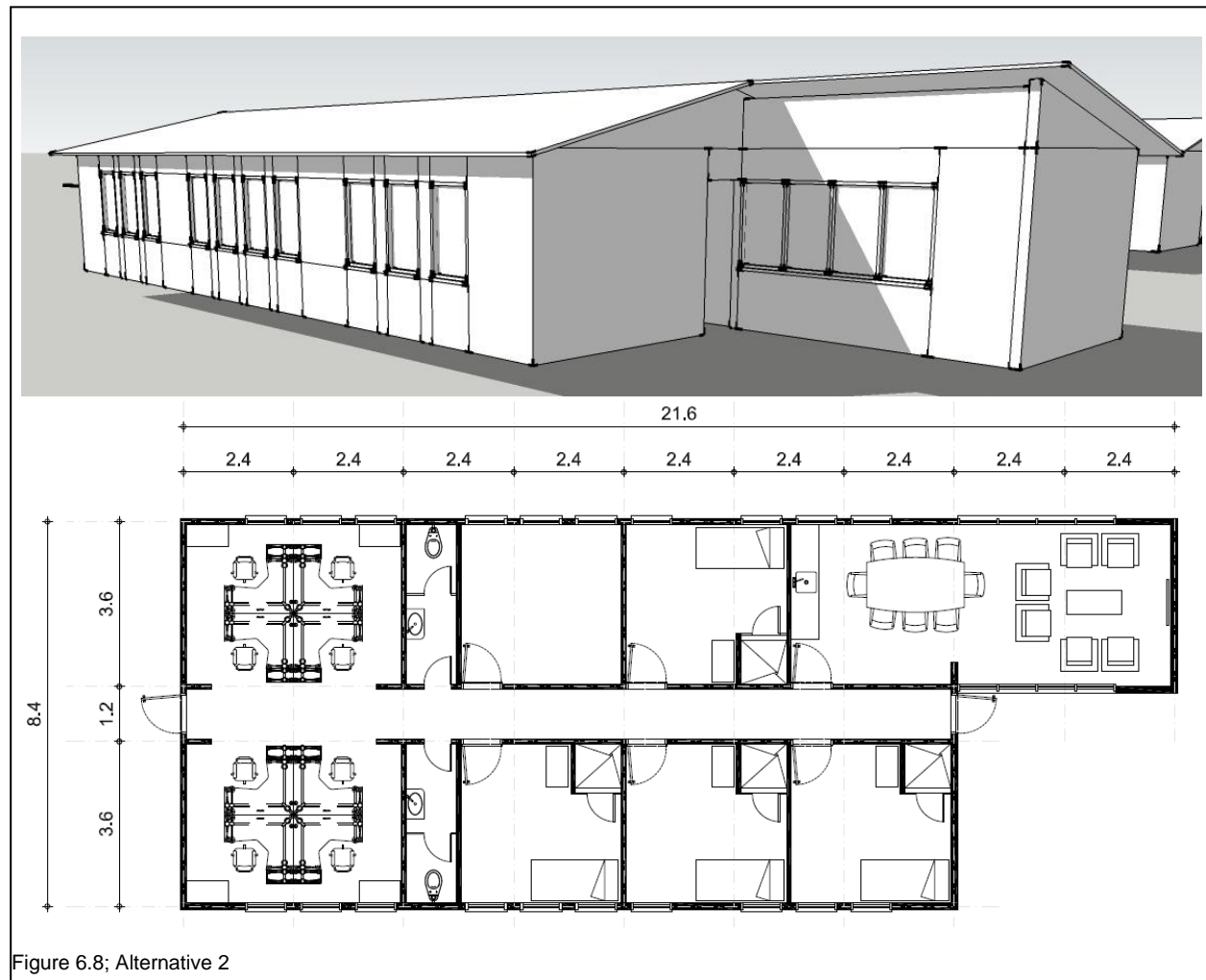
The current supply is matched with the defined demand. Interventions are needed to overcome the shortcomings. Interventions that are related to the criterion conform legislation are calculated on €55000. This amount of investment is obligatory no matter what. Other interventions are considered, based on the norms, and worked out into three alternatives. All three alternatives meet the defined norms.

6.2.11 Alternatives

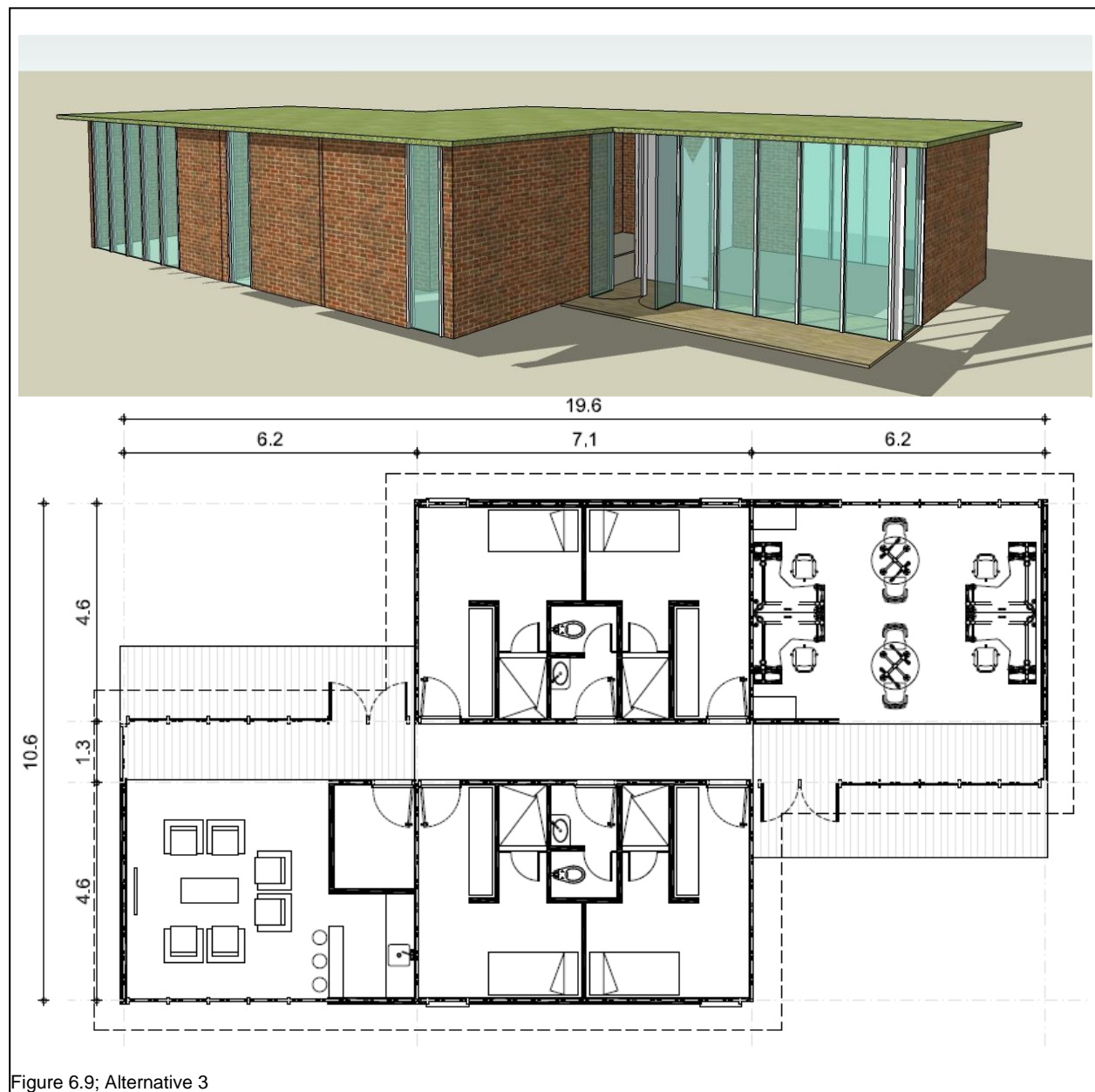
Alternative 1 is shown in figure 6.7. The building is partly refurbished and reconstructed. It has a GFA of 142m² and a group office concept. The multifunctional room is smaller than the existing one. When alternative 1 is realized it has a technical condition level 3 and an energy label D. The investment costs are determined on €150000. The exploitation costs per year over a period for fifteen years are determined €24750 per year.



Alternative 2 is shown in figure 6.8. The building is partly refurbished, reconstructed and expanded. It has a GFA of 159m² and an open office concept. It is expanded to ensure a similar multifunctional room as the existing one. When alternative 2 is realized it has a technical condition level 2 and an energy label C. The investment costs are determined on €190 000. The exploitation costs per year over a period for fifteen years are determined on €23100 per year.



Alternative 3 is shown in figure 6.9 and is a new building. It has a GFA of 151m² and a combi office concept. The multifunctional room is similar to the existing one. When alternative 3 is realized it has a technical condition level 1 and an energy label of A+ because of the use of innovative technologies. The investment costs are determined on €250 000. The exploitation costs per year over a period for fifteen years are determined on €19750 per year.



6.2.12 Multi criteria decision making

To demonstrate the multi criteria decision analysis (MCDA) with the involvement of preference measurement the Tetra single decision making software is used. In the case of single decision making, a single decision maker (stakeholder) enters his or her ratings for each alternative with respect to each criterion. In the case of group decision making the procedure for each decision maker (stakeholder) is identical to the single decision making.

Figure 6.10 shows the MCDA model related to the 'Alignment' instrument involving the aligned criteria from the organizational goals of the organization.

Stakeholders	Weights		Criteria	Ratings	Alternatives		
					A1	A2	A3
S1	W1	100	C1 Workplace design and office lay-out,m2	rating	0	100	70
	W2	90	C2 Costs effectiveness	years	18,0	19,5	19,0
	W3	80	C3 Energy label	rating	100	0	33
	W4	70	C4 Technical condition	label	D	C	A+
	W5	60	C5 Building representativeness	rating	0	25	100
				level	3	2	1
				rating	0	50	100
				rating	0	30	100

Figure 6.10; MCDA model Alignment instrument

solution	39,661	48,877	84,793
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The elements to perform the MCDA are: alternatives (A); criteria (C); stakeholders as decision makers (S); weights (W) to order the criteria and an algorithm to solve the problem. The three designed alternatives are subsequently represented as A1, A2 and A3. The criteria are described in the models. The single decision maker in this example is defined as a real estate manager who has a good feeling for the interests of the different stakeholders involved. The weights are relatively assigned by the single decision maker to the criteria based on the order of determined real estate goals. 'The weights are relatively, so the method works by setting one criterion as a standard against which the importance of another one is specified' (Tetra 2010). This is visually explained in figure 6.11. The ratings for each of the three alternatives are based on preferences with respect to each criterion. The least preferred alternative is rated 0 and the highest preferred alternative is rated 100. The models are solved by computing their overall scores.

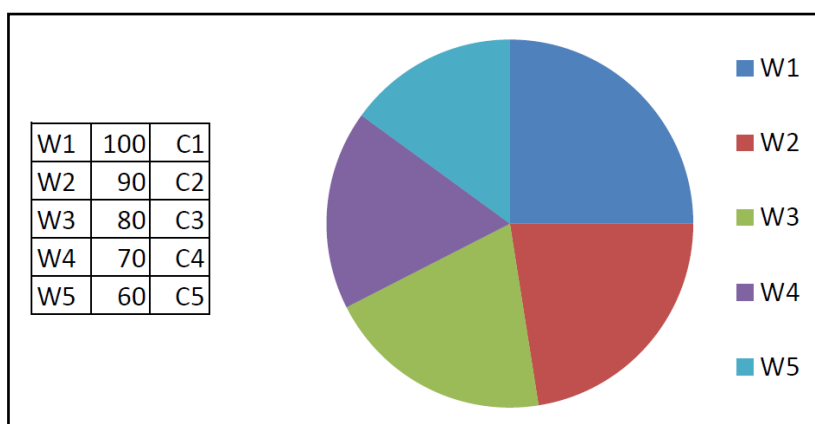


Figure 6.11; Weights relatively assigned to criteria

The best alternative calculated by the MCDA model Alignment instrument is A3 with a score of 84,793. The second best alternative is A2 with a score of 48,877. The third is A1 with a score of 39,661.

The model and decision making software show that one or more stakeholders can fill in their weights and ratings for particular multiple criteria. In this way the instrument allows stakeholders of an organization to influence the achievement of their goals in a clear and transparent way and thereby the improvement of the organizational performance as a whole.

6.3 Conclusion

To find out if the two established instruments Alignment instrument and Tetra decision making software are useful in the practice of accommodation strategy design a demonstration is performed with an example. It concerned an example wherein a piece of real estate of the Dutch Ministry of Defence is brought in line with the achievement of organizational goals to improve the organizational performance as a whole.

This demonstration showed that the two instruments are useful in the practice of accommodation strategy design and can help to improve the NTA 8021. It showed that organizational goals can be aligned towards criteria based on theoretical and empirical relationships to judge and select the optimal alternative. It further showed that the decision making software allows stakeholders of an organization to influence the achievement of their goals in a clear and transparent way and with it the improvement of the organizational performance as a whole

6.4 References

Tetra, available at <http://scientificmetrics.com>. Accessed on 20 August 2010.

7 IMPLEMENTATION OF INSTRUMENTS

7.1 Introduction

The previous chapter demonstrated that the 'Alignment' instrument and 'Tetra decision making software' are useful in the practice of accommodation strategy design to determine the optimal real estate alternative.

The objective of the draft method 'NTA 8021 Performance measurement of real estate' (NTA 8021) is to offer a tool to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand with real estate supply. To achieve this objective the established instruments are integrated into the NTA 8021.

To show how the 'Alignment' instrument and 'Tetra' decision making instrument can be integrated in the NTA 8021 its procedure is slightly adjusted and adapted. First the initial NTA 8021 procedure is shown. Then the suggested procedure of the NTA 8021 with the integrated instruments is shown and described.

To determine if the NTA 8021 is improved with these instruments the initial classification of its position within the whole picture of accommodation strategy design is compared with the position of suggested NTA 8021.

This chapter ends with a conclusion if the suggested NTA 8021 is improved in comparison with the initial NTA 8021.



7.2 Integration

7.2.1 Initial NTA 8021 procedure

The initial performance analysis consists of matching the demand side (organizational goals) with the supply side (real estate) according to the following steps:

1. Establish a usage profile through translating organizational goals into real estate demand by using a questionnaire containing questions with six point scales;
2. Establish a real estate profile by performing a site survey on the demanded criteria mentioned in the usage profile;
3. Match the usage profile with the real estate profile by showing the deviations between the two profiles;
4. Prioritize performance aspects on importance;
5. Define interventions and alternatives to align the real estate profile towards the usage profile expressed into costs (intervention costs + exploitation costs after the interventions);
6. Compare the alternatives (solutions) to the organizational goals and make a choice for implementation. In the case of choosing an existing (already built) alternative the optimum is to be achieved in the large vertical rectangle of the matching step. In the case of a new (to be build) alternative the optimum is to be achieved in the smaller vertical dashed rectangle of the matching step.

7.2.2 Suggested NTA 8021 procedure

The performance analysis of real estate connects the organizations strategic level with the operational level. It enables matching the organizational demand side with the real estate supply side. It enables selecting the optimal real estate alternative for improving organizational performance. The suggested procedure for the NTA 8021 consist of the following steps:

1. Perform a stakeholder analysis to determine the stakeholders that have an interest in the accommodation design process.
2. Establish a user profile by defining the functional demand for the operational level.

The functional demand for the operational level is defined by (a) representative(s) of the tactical/operational level and (a) real estate specialist(s). The current and (near)future demand (0-5 years) is defined through determining the applicable objective criteria mentioned in the list of themes, subthemes and criteria for a certain real estate scale level for the current and (near)future (0-5 years) situation.

The initial (still to be further elaborated) NTA 8021 questionnaire uses ordinal six point scales for every criterion. This methodology of measuring criteria is subjective. The applicable criteria and their norms compose the constraints for the users profile. To ensure consistent reliable outcomes of the matching process, the real estate supply and alternatives should be judged solely on facts. In other words, judged on criteria that apply objective measurement. Different objective measurement scales are allowed in the matching process.

The initial NTA 8021 contains a large amount of criteria that are systematically divided from a list of six themes to subthemes and criteria. Instead of the questionnaire, this list can be used as a checklist for establishing the functional current and (near)future demand (0-5 years) for a certain real estate scale level (area, complex, building, unit) for the operational level of the organization. If an objective criteria is applicable its norm should be determined in the current and (near)future situation. It is assumed that the representative(s) of the tactical/operational level has insight in the applicable (near)future developments concerning the operational level of the organization. Examples for near future developments are: decrease or increase of production; expected reorganization; new machines or production line; new way of working.

3. Establish an organization profile by defining the demand for the tactical level.

The demand for the strategic/tactical level is defined by (a) representative(s) of the strategic/tactical level and (a) real estate specialist(s). The current and (far)future demand (0-10 years) are defined through aligning organizational goals towards a limited amount of real estate criteria to judge and select real estate supply that contributes to the organizational performance. To support establishing criteria of the (far)future demand the 'Scenario planning' proposed by Dewulf, G., Den Heijer, A., et al. (1999 cited in De Jonge et al., 2009) can be used. The 'Alignment instrument' enables the alignment of organizational goals towards real estate goals, a real estate strategy and real estate criteria. These criteria are allowed to be subjective because they are used as input for a multi criteria decision analysis involving preference measurement.

4. Establish a real estate profile by performing a site survey on the demanded criteria mentioned in the users profile.
5. Match the user profile with the real estate profile by showing the deviations between the two profiles.
6. Define interventions and design alternatives, based on the user profile criteria norms and take into account the organization profile selection criteria, to align the real estate profile towards the user- and organization profile.
7. Select the optimal alternative using the 'Tetra' decision making software. Multiple stakeholders of an organization can select the optimal alternative based on their preference towards selection criteria by using multi criteria decision making involving preference measurement.

7.3 Classification initial- and suggested NTA 8021

Initial NTA 8021

Approaches

		Intended situation	
		Weak	Strong
Continued existence	Strong	Strategic variable 1	Stakeholders 2
	Weak	Societal need 4	Strategic gap 3

Suggested NTA 8021

Approaches

		Intended situation	
		Weak	Strong
Continued existence	Strong	Strategic variable 1	Stakeholders 2
	Weak	Societal need 4	Strategic gap 3

Approaches

The initial method NTA 8021, performance measurement of real estate focuses primarily on bridging the mismatch between demand and supply. This refers to the strategic gap approach.

The suggested NTA 8021 contains the Alignment instrument. This instrument applies the strategic variable approach in order to determine the organizations driving force. To allow multiple stakeholders to judge and select the optimal alternative a stakeholders approach is necessary.

Views

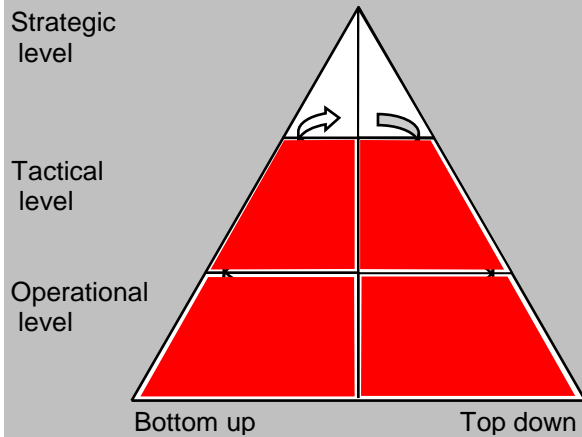
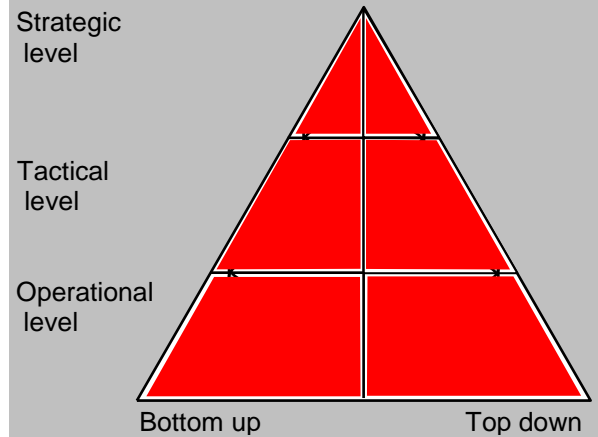
		Goal orientation (what)	
		Strong	Weak
Process orientation (how)	Strong	Logical Incrementalism Judgement Strategy 'Judging'	Guided Learning Compromise Strategy 'Negotiating'
	Weak	Rational Planning Computational Strategy 'Analysing'	Emergent Strategy Inspirational Strategy 'Gambling'

Views

		Goal orientation (what)	
		Strong	Weak
Process orientation (how)	Strong	Logical Incrementalism Judgement Strategy 'Judging'	Guided Learning Compromise Strategy 'Negotiating'
	Weak	Rational Planning Computational Strategy 'Analysing'	Emergent Strategy Inspirational Strategy 'Gambling'

Views

The objective of the initial- and suggested NTA 8021 is not changed. The intended result of both methods remains also unchanged. The process of the initial NTA 8021 is defined rational and analytical. The suggested NTA 8021 has become on the one hand more analytical because of the integrated instruments. On the other hand the process is extended because of added elements and applicable instruments. Therefore the suggested NTA 8021 can be seen as logical incrementalism.

Initial NTA 8021**Alignment****Suggested NTA 8021****Alignment****Alignment**

The initial NTA 8021 aligns the tactical level and operational level from a top down approach. A bottom up approach is assumed from the operational level to the tactical level with the determination of the usage profile.

The suggested NTA 8021 aligns all organizational levels from a top down approach with the determination of the organization- and users profile. A bottom up approach is established through the participation of representatives of all organizational levels

7.4 Conclusion

The 'Alignment instrument' and 'Tetra decision making software' are integrated in the NTA 8021. Therefore its initial procedure is slightly adjusted, adapted and extended. The result is shown and described in the suggested NTA 8021.

The classification of the suggested NTA 8021 shows that it is improved compared to the initial NTA 8021. It is improved because it addresses more approaches, focuses on process and goals and aligns all organizational levels. As a tool it supports the accommodation strategy design process.

7.5 References

Anon., 2009. *Draft NTA 8021 Performance measurement of real estate*. Delft: NEN.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

The Workgroup NTA 8021 of the NEN is momentarily awaiting evaluations of the draft method 'NTA 8021 Performance measurement of real estate' (NTA 8021). They like to know if the method provides the information and instruments to fulfil its higher aim of optimizing the match of real estate supply and demand to achieve organizational goals to improve its overall performance. The evaluations should provide information about its usefulness and where necessary proposals for further improvement towards a NEN (Dutch standard).

The three difficulties related to the optimization are concerned with the process of choice making in accommodation strategy design. These are:

1. A choice is based on at least one criterion. This raises the question: how to align (translate and order) organizational goals towards criteria.
2. Multiple designs can fit into one intended purpose. This raises the question: how to choose between multiple alternatives that match a common purpose?
3. A multitude of decision makers have a say in the design process. This raises the question: how to cope with multiple stakeholders that have conflicting interests in achieving organizational goals?

These three difficulties compose a decision making problem as problem statement which was: how can stakeholders of an organization (demand) select the optimal real estate alternative (supply) taking into account the properties of each alternative?

The outcome of the summative evaluation showed that the NTA 8021 is not able to support stakeholders of an organization (demand) to select the optimal real estate alternative (supply) taking into account the properties of each alternative. First, because the NTA 8021 does not provide generic organizational goals to align them towards defined real estate criteria. To improve organizational performance, guarantee steering control and prevent exhaustive exercises stakeholders have to determine a limited amount of criteria that are explicitly related to organizational goals and –performance aspects. Second, because the NTA 8021 is not able to properly cope with multiple stakeholders that have conflicting interests in achieving their organizational goals. The measurement methodology provided by the NTA 8021 is unreliable to use as input for multi criteria decision making. Proper preference measurement scales are needed to use the criteria as input for a multi criteria decision making methodology which allows mathematical operations of addition and multiplication to determine the optimal real estate alternative.

To provide proposals for improvement a formative evaluation of the NTA 8021 is conducted. A toolset is created and a sample of accommodation strategy design methods is assembled. The toolset represents the whole picture of accommodation strategy design. In the course of its creation is explained what would be the ideal classification profile. The method that meets this profile is considered ideal. The evaluation made clear that none of the evaluated methods, including the NTA 8021, met this ideal profile. Second the evaluation made clear that the meaning of the NTA 8021 towards accommodation strategy design is considered not a method but a tool to support the process of accommodation strategy design. It is considered a tool because its product/result is an interim product within the process. Third it made clear that the sample of methods in relation to the defined ideal accommodation strategy design profile lacks two necessary instruments. It lacks an instrument that enables the alignment of organizational goals towards criteria and an instrument that enables multi criteria decision making involving proper preference measurement.

Two necessary instruments are established. First the 'Alignment instrument' and second the 'Tetra decision making software'. To find out if the two established instruments are useful in the practice of accommodation strategy design a demonstration is performed with an example. It concerned an example wherein a piece of real estate of the Dutch Ministry of Defence is brought in line with the achievement of organizational goals to improve the organizational performance as a whole.

Problem formulation	Conceptualization	Analysis and synthesis	Utilization	Implementation	Conclusion
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This demonstration showed that the two instruments are useful in the practice of accommodation strategy design and can help to improve the NTA 8021. It showed that organizational goals can be aligned towards criteria based on theoretical and empirical relationships to judge and select the optimal alternative. It further showed that the decision making software allows stakeholders of an organization to influence the achievement of their goals in a clear and transparent way and with it the improvement of the organizational performance as a whole

To improve the NTA 8021 as a tool for supporting the accommodation strategy design process the two established instruments are integrated within its procedure. Therefore its procedure is slightly adjusted, adapted and extended. Classification of the suggested NTA 8021 showed that it is improved compared to the initial NTA 8021. It is improved because it addresses more approaches, focuses on process, goals and aligns all organizational levels compared to the ideal profile. But still it does not cover the entire accommodation process. It supports the accommodation strategy design process.

The suggested procedure of the 'NTA 8021 Performance measurement of real estate' allows multiple stakeholders of an organization (demand) to select the optimal real estate alternative (supply) taking into account the properties of each alternative which contribute in achieving organizational goals and improve organizational performance.

8.2 Recommendations

To improve the draft method 'NTA 8021 Performance measurement of real estate' and contribute to its development towards a Dutch standard (NEN) it is recommended:

1. To implement the method Scenario planning (Dewulf et al., 1999 cited in De Jonge et al., 2009) and the established instruments 'Alignment instrument' and 'Tetra decision making software';
2. According to the suggested procedure 'NTA 8021 Performance measurement of real estate'.

The NTA 8021 is still informative and some elements like the questionnaire need further elaboration before they can be actually used. Nevertheless an attempt is made to improve the NTA 8021 further in becoming a NEN. Practical research has to be performed to find out if the suggested NTA 8021 procedure and its containing instruments will finally work

The suggested NTA 8021 is improved compared to the ideal profile. But still it does not cover the entire accommodation process. It supports the accommodation strategy design process. If the workgroup NTA 8021 desires to meet this ideal profile and cover the whole accommodation strategy design process it should add and deal with the societal need approach and determine how exactly a selected alternative is to implemented and controlled.

8.3 Reflection

Looking back on this research it seemed more difficult then I initially imagined. The amount of literature available for designing accommodation strategies provided less concrete information then I wished for. Further the complexity of the subject made it difficult to focus. A pluralistic approach seems the only way to understand and see the complete picture. By finding and visualizing other perspectives towards accommodation strategy design I made an attempt in the direction of seeing this complete picture. To bring theory into practical procedures was another difficult item to establish. Uncertainties like the future and unknown effects of certain decisions still make it difficult to establish a right direction.

APPENDIX I, CLASSIFYING THE METHODS

M1 Scenario planning

The method 'Scenario planning' is principally based on Dewulf, G., Den Heijer, A., et al. (1999) Managing real estate within a public organization. The essence of this method is described by De Jonge et al. (2009) to identify its contribution within the broader context of accommodation strategy design theory. It is therefore appropriate to serve as basis to classify this method on the established toolset. It consists of excerpts of the original text of Dewulf et al. (1999) and is on several parts adjusted and edited by De Jonge et al. to ensure a coherent story.

Essence

The essence of the method of Scenario planning is described by De Jonge et al. (2009, pp.52-55) as follows. 'In the portfolio management for building owners or end-users, there are two crucial problems. Firstly, there is uncertainty about current demands and aspirations regarding the accommodation. However, since accommodation is not only required to fulfil the current demands and aspirations, but also needs to fulfil these requirements in the future. Three basic responses exist in coping with these two types of uncertainty:

- Strategic planning in a context of uncertainty is impossible;
- Create organisational, financial and/or technical flexibility;
- Adopt planning techniques to anticipate future developments.

The latter can be achieved through incremental planning, which allows changes to be implemented step-by-step. Moreover, discussions and interview sessions with various stakeholders can be conducted to improve insight in future developments. One can also adopt scenario techniques based on presenting plausible future perspectives as a test environment for considered strategies. Strategic planning with the use of scenario techniques are explicitly not intended to forecast the most likely future, but employed to increase the level of insight in the range of potential futures in order to enable oneself to anticipate these potential events.'

'Dewulf et al. (1999) have introduced a method, strongly influenced by the techniques of scenario planning. The method typically involves four subsequent phases:

- Phase 1 Identify the organisation's needs by translating the mission into objectives and making a stakeholder analysis;
- Phase 2 Formulate portfolio ⁷ strategies by identifying long-term uncertainties, translating organisational strategy into accommodation strategy and determining the consequences of future scenarios;
- Phase 3 Determine the desired portfolio based on the consequences of future scenarios;
- Phase 4 Prepare an object policy plan containing the possible strategies per object and a phased plan to realise the desired portfolio.'

'Since scenario planning has strongly influenced the step-by-step planning tool, the tool is named after the scenario planning technique and the technique also receives full attention in the further explanation of the method. Scenario planning basically consists of three main steps:

- a. Formulating possible portfolio strategies, based on discussions about strategic choices;
- b. Formulating potential futures by drafting various scenarios;
- c. Assessing the consequences of the different strategies by confronting these strategies with the various scenarios.'

'Through this procedure, the bandwidth of consequences for each strategy becomes apparent and a basis for comparison is created.'

'Step A Strategic choices are evaluated on the basis of (a) opportunities to steer en (b) level of impact. This assessment is visualised through a 2-axis chart type, presenting matrix with each criterion on either one of the axes (figure A1.1 and A1.2). Strategic choices with little opportunity for steering are adopted in the scenarios.'

⁷ Portfolio in this thesis is synonym for accommodation.

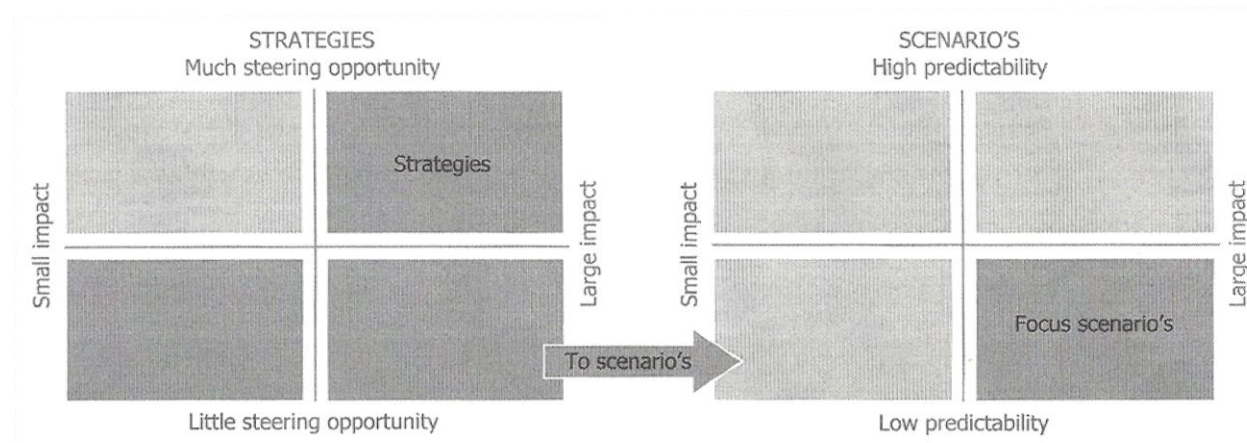


Figure A1.1;
Source; De Jonge et al. (2009)

'Step B Basic analysis of current and past events delivers a model that indicates which developments are (or have been) of great influence on the composition of the portfolio. This analysis is subject of discussion among the various stakeholders. Subsequently, an assessment takes place regarding which trends can be discerned in order to deduce a reference scenario. On the basis of this reference scenario, various potential futures are designed. Key issue in these scenarios is the level of predictability of events. Scenarios involving a major impact and a low level of predictability, are the scenarios that scenario planning should be emphatically focused on. The scenarios need to be consistent, can be potentially contrasting, and can involve a number of developments that are accurate to predict.'

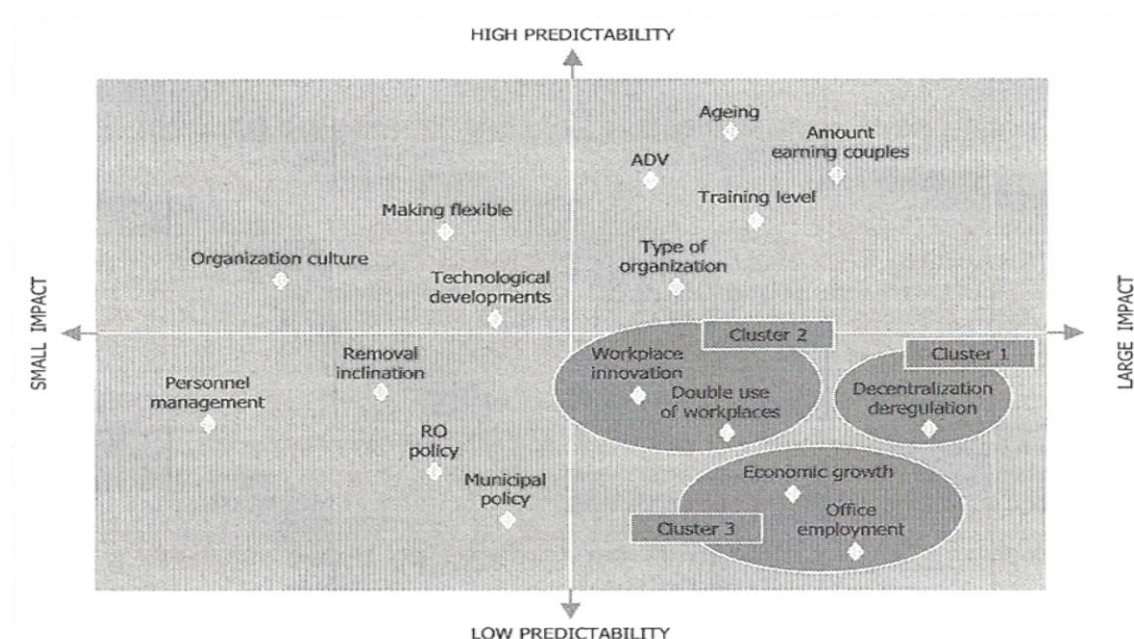


Figure A1.2;
Source; De Jonge et al. (2009)

'Step C Assessment of the ideal portfolio composition, based on the evaluation of each combination between a specific strategy and the various scenarios. On the basis of the differences between current and future portfolio, a process of mutation is simulated. The simulation provides the necessary information to assess the performance of the strategy in terms of e.g. finance, usability, and social impact.'

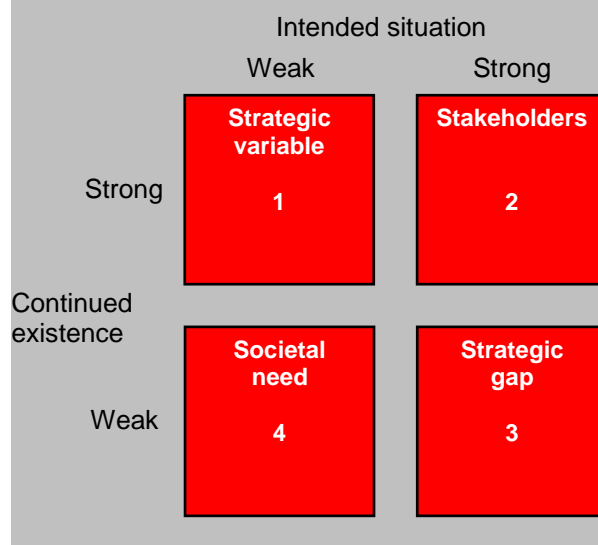
'The scenario planning technique provides insight in potential strategies and their consequences. This approach should result in a portfolio strategy. One can opt for one of the suggested strategies, but can also choose to combine two or more suggested strategies. The strategy needs to be specific and should be able to use as a guideline for making decisions on specific objects, because objects constitute the portfolio.'

Classification M1 Scenario planning

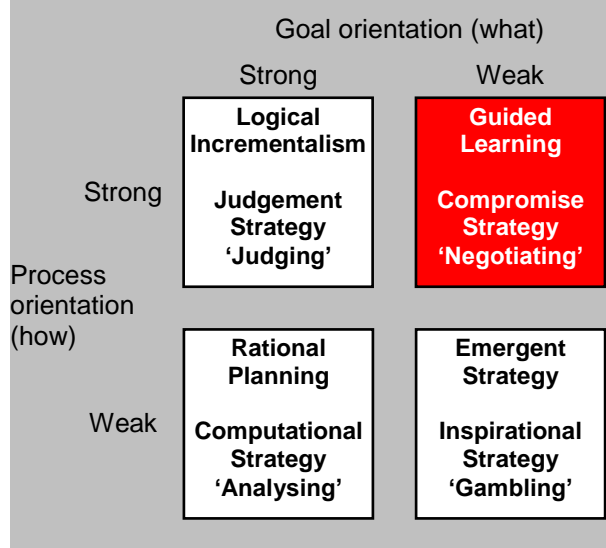
Approaches

The method Scenario planning mentions all four approaches towards the accommodation strategy design process. The strategic variable approach forms a part of the method because of its basic analysis of the current and past events that are or have been of great influence on the composition of the portfolio. This is in other words an analysis of factors for success or failure of the organization towards its accommodation. The stakeholders approach is present due to the discussions and interview sessions with various stakeholders to gain insight in future developments and possible future portfolio strategies to deduce a reference scenario. The strategic gap approach is found back in the determination of the desired (future) portfolio based on the consequences of future scenarios established through scenario planning. An object policy plan is to be prepared to realize the desired future portfolio based on the current portfolio. The societal need approach is affected through simulating the mutation towards the ideal portfolio composition and provides information about performance of the strategy in terms of finance, usability and its impact on society.

Approaches



Views



Views

The objective of the method is to enable decision makers to design an accommodation strategy that is specific and able to use as a guideline for decisions on specific objects, in other words an object intervention plan.

The intended result of the method is a specific object policy plan in terms like m^2 , €, goals and containing a phased planning for realisation. It is based on developed main strategies and their consequences on developed future scenarios. Although the object policy plan is mentioned it is not further elaborated.

Identified stakeholder's discuss and determine strategic choices to formulate accommodation strategies and draft various scenarios concerning a possible future. An evaluation determines which accommodation strategy or combination is the best, based on the consequences of various scenarios. The best strategy then needs to be translated into guidelines and criteria for making decisions on objects. This procedure implies that decisions are made by a group of stakeholders based on negotiations and compromises.

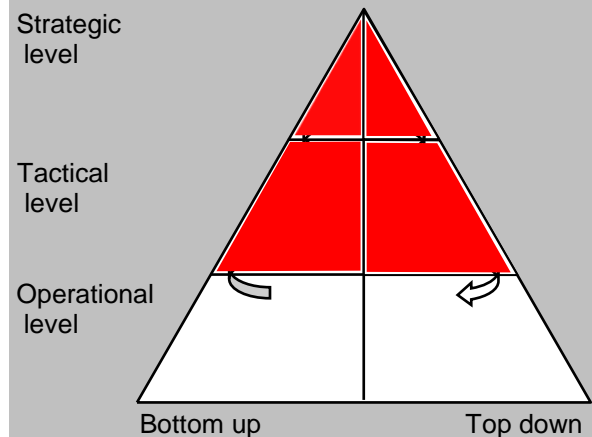
The scenario planning method is strongly process orientated due to its guidance procedures of scenario design. The view that represents this is guided learning.

Alignment

The method of Scenario planning focuses on aligning the organizational levels top down. It mentions that once the accommodation strategy is formulated it needs to be made operational by translating it into guidelines and subsequently into measurable criteria as quality, quantity, costs and form of funding. Unfortunately this latter translation part of the procedure is not further explained. The alignment of this method is hence limited to the strategic and tactical level.

Bottom up alignment is assumed in the form of the participation and discussions with the various stakeholders. Like the top down alignment it is mentioned but not further explained. It is assumed that at least the stakeholders of the strategic and tactical level participate in the process.

Alignment



Summary

The objective of the method Scenario planning is to enable decision makers to design an accommodation strategy that is specific and able to use as a guideline for decisions on specific objects. The intended result of the method is a specific developed object policy plan containing a phased realisation planning. The method addresses all approaches towards accommodation strategy design. It makes use of the techniques/instruments analysis, interviewing and scenario planning. The method describes the process of establishing an accommodation strategy based on developed future scenarios that is specific and able to use as a guideline for decisions on specific objects. The described procedure implies that decisions are made by a group of stakeholders based on negotiations and compromises. Its strong focus on process and way of decision making is related to guided learning. The method describes and explains the top down alignment of the strategic level, the organizational strategy with the tactical level, the accommodation strategy. It is assumed that the methods aligns the tactical level with the strategic level from a bottom up approach by the participation of stakeholders from these levels.

M2 Generic strategies and context analysis

The method 'Generic strategies and context analysis' is principally based on O'Mara (1999) Strategy and Place: Managing Corporate Real Estate and Facilities for Competitive Advantage. The essence of this method is, as well as the previous method, later described by De Jonge et al. (2009) to identify its contribution within the broader context of accommodation strategy design theory. It also serves as basis to classify this method on the established toolset. It consists of excerpts of the original text of O'Mara (1999) and is on several parts adjusted and edited by De Jonge et al. to ensure a coherent story.

Essence

The essence of the method of Generic strategies and context analysis is described by De Jonge et al. (2009, pp.56-58) as follows. 'In the highly competitive environments companies must operate today are at odds with their need to make real estate commitments, which often require physical and financial obligations far into the future. The level of confidence the company has in forecasting its future business situation - its competitive environment and strategies needed to thrive in that world - best explains how companies approach real estate decisions: strategic uncertainty drives corporate real estate decision making.'

'Real estate and facilities are both logistical tools that support the tasks of the organisation and visual symbolic representation of the organisation and its values. This results in two views on actions in the organisation:

- Rational instrumental, facilities are designed to house an organisational structure which best serves the production technologies, available resources, and the demands of its external environment; highest value output is sought at the lowest investment cost and;
- Valuational-symbolic, the facility serves as a symbol of the organisation's values and culture; real estate reflects the management style, the hierarchy, and the status and power of the organisation's members.'

'Each level of uncertainty - whether highly uncertain, moderately uncertain or fairly certain - corresponds with the different approaches to real estate decision making:

- Incrementalism in a highly uncertain strategic environment;
- Standardisation in a relatively certain and stable strategic environment;
- Value-based in moderately uncertain strategic environments.'

'A further look into the typology of these three approaches provides the following:

- An incremental strategy is a sensible response to a highly uncertain strategic environment. Companies using this strategy are unable, or unwilling, to confidently forecast their future needs. A company with high uncertainty will only acquire more space when the need is acute and the shortage of space is critical. When applied to corporate real estate decision making, incremental strategy includes taking short-term leases on space, not committing to space until current working conditions become unbearable, substituting lower cost materials for typical office furnishing, and making use of alternatives for office space.
- A standardisation strategy attempts to control and coordinate facility design and real estate across the entire organisation. Standards are set centrally and applied throughout the company. Standards may also be used to control administrative processes which direct the allocation, development, and administration of real estate and facilities. Standards usually are established as written policy and integrated into formal management within the organisation. In order to standardise real estate and facilities decision making, a company must be able to make some confident predictions about its future requirements.
- A value based strategy deliberately expresses the values and strategic direction of the company in the real estate decision-making process. It uses place as an enabler of competitive strategy. The work environment has meaning for the company in non-economic terms: the organisation's identity and mission, its history and future direction, the company values and corporate culture are symbolised. A value-based approach to making corporate real estate decisions can help a company position itself for future success. A value-based strategy enhance the culture and reinforces the vision of the organisation as it moves forward, it can mediate the pressures for incremental and standardised solutions.'

'Factors that influence uncertainty, such as growth or contraction of the business, new markets or competitors, mergers or acquisitions, or changes in the use of technology, will trigger a shift in how real estate and facility decisions are made. Greater uncertainty is accompanied by a more incremental decision making. Certainty fosters standardisation. Value-based decisions enable longer-term commitments when strategic uncertainty makes long range forecasting difficult. Different parts of a company may require different approaches to real estate and facility decision making.'

'In addition to a classification of generic strategies, O'Mara provides an analytical framework to gain an insight into the strategic context.'

'Corporate real estate strategy is a response to two sets of demands: those imposed by the external strategic environment of the company, and those which serve the internal structure and culture of the company. Each of these can be broken down into two components. The external strategic environment is composed of the competitive environment in which the company operates within its industry and of other environmental pressures which directly relate to the physical setting. Internally generated demands are both structural and cultural: they relate to the processes by which the company and its workforce do business, and they respond to the unique personality and behaviours that have evolved within the organisation over time.'

'Singer (2005 cited in De Jonge et al. 2009, p.58) conducted a graduation research on the Dutch market as to the accommodation strategies of ten major multinationals. In this research Singer explicitly links O'Mara's analytical framework to the generic strategies. These corporate strategies are categorised on the basis of the generic strategies of O'Mara (1999). Since a categorisation is used, it may well be that the organisations themselves refer to their accommodation strategy differently. In addition, it has turned out that some organisations have more than one strategy. This practical research among global corporations in the Netherlands based on O'Mara's insights has shown that a number of forces within this context can be decisive for choosing one generic strategy over another.'

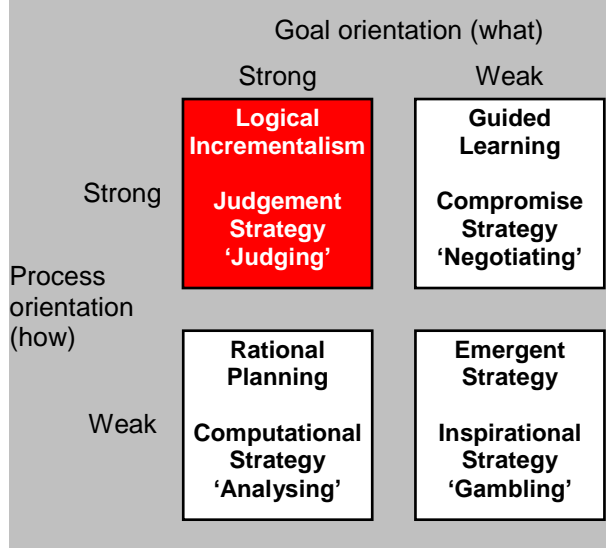
'The purpose of analysing the influencing forces in the context of strategic corporate real estate decision making, is to determine which generic strategy is favourable to choose for (a segment of) the portfolio compared to the other generic strategies. In the first place, real estate is at the service of the business strategy and on a higher level of the corporate strategy. Therefore corporate- and business strategy is considered limiting conditions in the context of real estate decision making. In the second place, the external forces influencing strategic positioning are (a) strategic uncertainty, (b) stage of industry growth, (c) technological dynamism, and (d) financial resources. In the third place, the internal forces influencing strategic positioning are (a) organisational growth stage, (b) business processes, (c) perspective on organisational action and (d) senior management preferences.' (Singer 2005 cited in De Jonge et al. 2009, p.58)

Classification M2 Generic strategies and context analysis

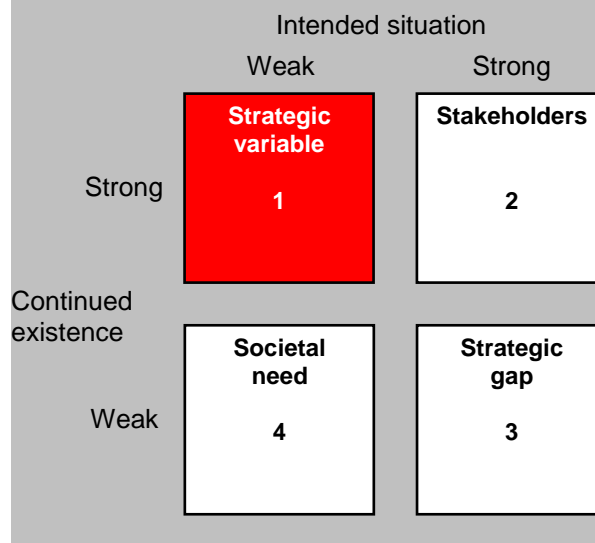
Approaches

The method Generic strategies focuses on the position of the organization in the contextual environment by determining the strategic variables and success factors for continued existence. The provided analytical framework gains insight into the organizational context for determining these variables and factors. The approach of the method is therefore related to the strategic variable approach.

Views



Approaches



Views

The objective of the method is to provide guidance to better align real estate and facilities to the needs of the organization.

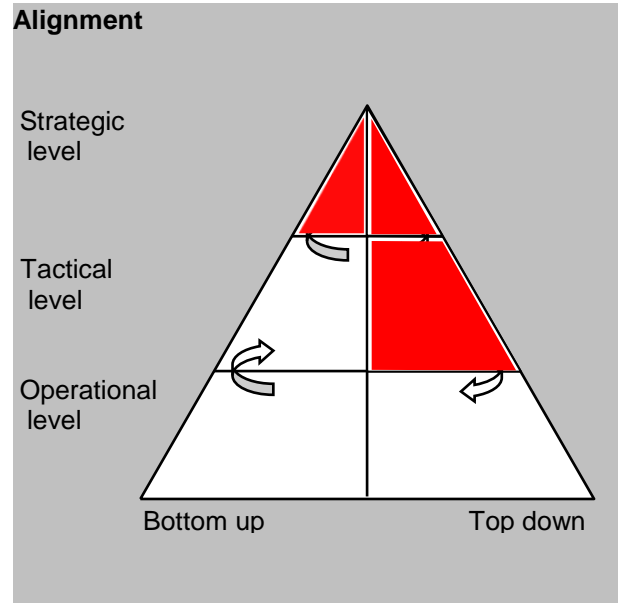
The method is both focussed on process and product. The process is forthcoming through establishing the applicable strategic variables and factors by using the analytical framework. Strategic uncertainty and the tasks of real estate, supporting core business and representing the organizational identity determine which generic strategy fits the best for a particular part of the organization. The result of the method can be one or more prescribed generic strategies. Further development into object intervention plans is not mentioned.

As mentioned the method orientates both on process as well as on product although it does not makes clear how these two are exactly related. Singer (2005) has developed several connections to link the generic strategies and certain elements of the analytical framework together.

The way of strategy development of this method mostly applies to logical instrumentalism and a judging kind of decision making by senior management.

Alignment

The method focuses on aligning the strategic level with the tactical level from a top down approach based on senior management preferences on generic strategies which are to be translated into clear policy.

**Summary**

The objective of the method Generic strategies and context analysis is to provide guidance to better align real estate and facilities to the needs of the organization. The result of the method can be one or more prescribed generic strategies. It solely addresses the strategic variable approach. The method uses an analytical framework with strategic variables and important factors as instrument to judge which of the three predetermined generic accommodation strategies are applicable for execution. This way of strategy development applies to logical instrumentalism and a judging kind of decision making by senior management. It aligns from a top down approach the strategic level, the organizational strategy with the tactical level, the accommodation strategy.

M3 Accommodation functionality

The method 'Accommodation functionality' is based on Vijverberg (2000) and described in Vijverberg (2000) Accommodation functionality assessment in office buildings. The summary consists of excerpts from the original text. The essential information is presented as much as possible in its original context. Despite this attempt some text is slightly edited to ensure a coherent readable story.

Essence

Carrying out maintenance work makes it possible to preserve real estate and its technical installations for the length of its functional life span. However, despite such maintenance, there comes a point when this functional lifespan comes to an end: this is the point when the quality of an office building ceases to meet with the acceptance of the owners and its occupants. The reason for this is that demands made by the organization occupying a given building with regard to the building itself will grow over time. Therefore the preservation of functionality ought not to be carried out blindly, since this can lead to capital loss. An exclusively technical approach to managing the maintenance of real estate has become superseded because a variety of non-technical aspects are becoming increasingly important. Therefore maintenance and investments in buildings should be based on an integrated view of the desired level of function fulfilment in the building and in all the future building stock. This can be drawn up in a long-range maintenance policy plan.

In accommodation policy at the individual level, this view or vision is expressed in scenarios (in order to avoid confusion about the term 'scenario' it is referred to as possible solution). The model of accommodation policy, shown in figure A1.3, distinguishes between six alternative solutions: consolidation; expansion; conversion; redeployment; sale and; demolition.

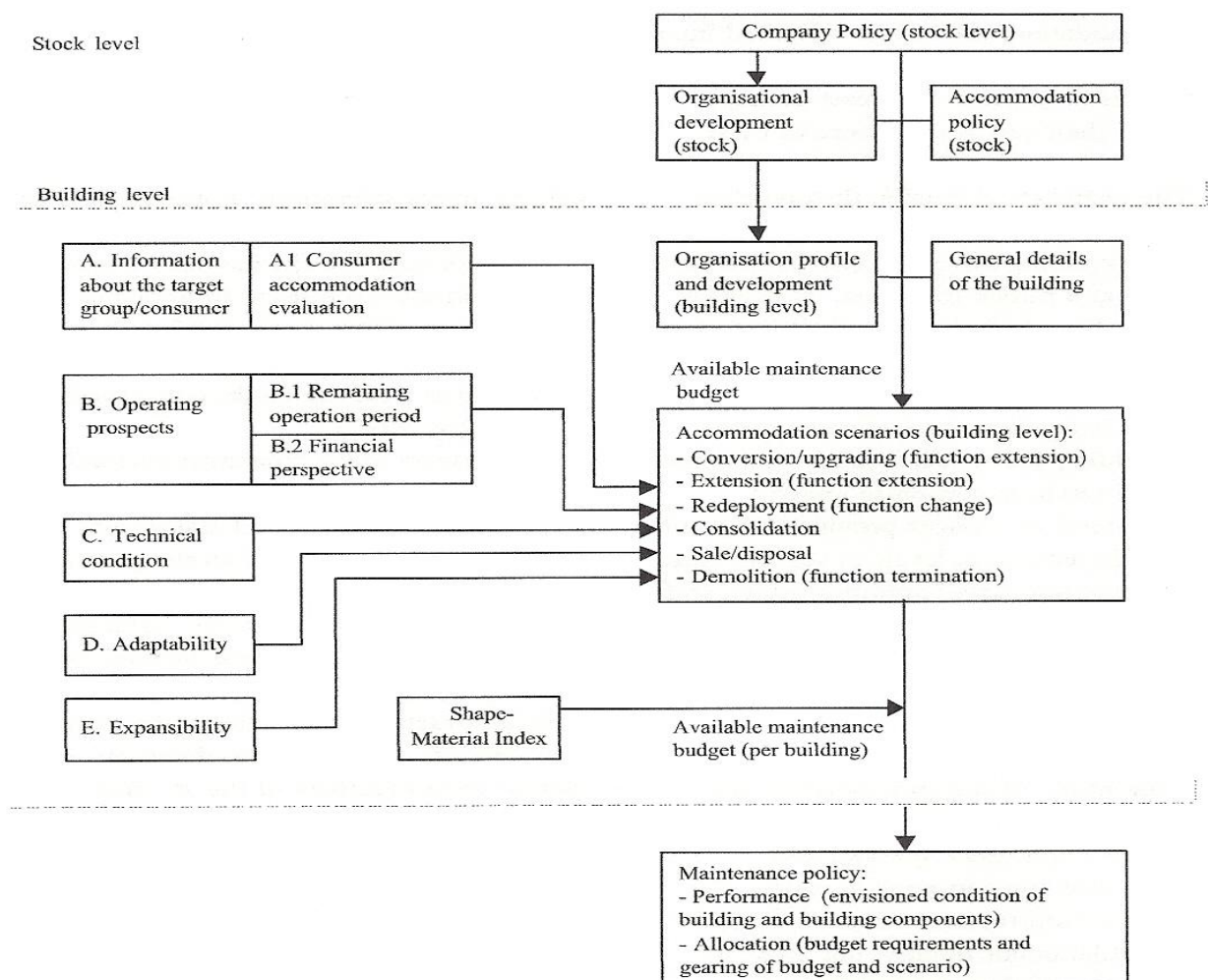


Figure A1.3; Accommodation policy
Source; Vijverberg (2000) in Vijverberg (2002)

The evaluation of the buildings plays a vital role in determining the favoured choice of accommodation scenario. Two kinds of information must be gathered: Information concerning the organisation accommodated by the building (consumer's evaluation) and; Information concerning the operating prospects for the building itself.

The model takes as its points of departure office organizations owning their own property: consumer's evaluation here concerns the reasons for a building's popularity amongst parts of the organization or indeed the consumer's reason for wanting to move out of it. From the point of view of the decision making process the most important of these reasons to defend are the building's location, its representativeness, the level of services it provides, its practical utility and that of the spaces it contains, and finally its indoor building climate. The operating prospects are determined by two underlying categories: the remaining operating period (building component assessments) and; the financial prospects (book value, running costs per m² of gross floor area and the cost/quality ratio.

Aspects and parameters are assessed according to a five-point scale. From most aspects involved, the reference is used in terms of 1=very good, 2=good and so on to 5=very bad. Practical experiences have indicated that the evaluation figures cannot be employed dogmatically, but nevertheless provide useful guidelines towards the ultimate choice of the most appropriate accommodation scenario. At the same time, despite its coarse-grained character, the system clearly and accurately points out the stronger and weaker aspects of a building, its installations, its location, and its services and facilities.

From a top-down approach the management has to establish the minimal acceptable evaluation for the various parameters on consumer evaluation, remaining operating period, financial perspective, technical condition, building adaptability and building expansibility as they apply to each building in the portfolio to determine one of the six prescribed alternative solutions. The weighing of these various parameters has also to be set, for it may be desired to attribute more importance to certain aspects and/or parameters than to others.

From a bottom-up approach a long-range maintenance expectation is made for each building. The long-range expectation assumes at first the consolidation alternative solution for all buildings; maintenance measures are assigned on the basis of technical necessity. The maintenance condition and the technical urgency determine the short term and medium term maintenance activities. Follow up activities in the medium and long term are automatically linked by follow up maintenance cycles. If the accommodation policy for a certain office building is not consolidation but one of the other alternative solutions than the maintenance policy or object intervention plan should be adjusted accordingly.

When in the end the long term maintenance programmes for the various buildings are determined it may turn out that a sufficient maintenance budget is still not being made available to carry out all the maintenance activities predicted by this long-range programme. Maintenance jobs can be postponed or priorities can be reset but the program will remain its operability.

Classification M3 Accommodation functionality

Approaches

The method Accommodation functionality is mainly focussed on the strategic gap approach. The organizational management determines a minimal acceptable evaluation for the various parameters as they apply to each building. From this minimum a long-range maintenance expectation is made for each building based on consumer evaluation and operating prospects.

Approaches

		Intended situation	
		Weak	Strong
Continued existence	Strong	Strategic variable 1	Stakeholders 2
	Weak	Societal need 4	Strategic gap 3

Views

		Goal orientation (what)	
		Strong	Weak
Process orientation (how)	Strong	Logical Incrementalism Judgement Strategy 'Judging'	Guided Learning Compromise Strategy 'Negotiating'
	Weak	Rational Planning Computational Strategy 'Analysing'	Emergent Strategy Inspirational Strategy 'Gambling'

Views

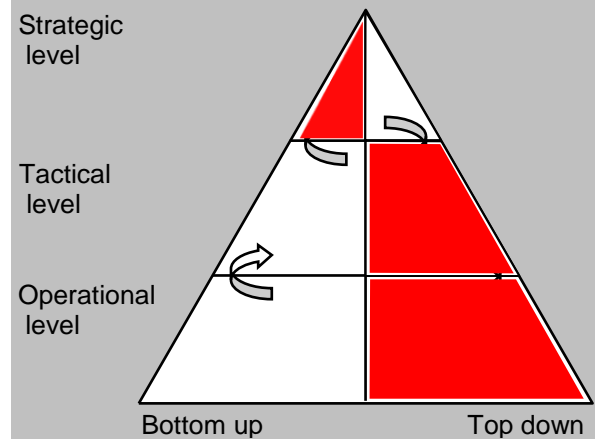
The objective of this method is to operationalize accommodation policy.

The method describes a process but is focussed on product. The management has to determine the minimal acceptable valuation for the various parameters on company policy (stock level). The average of the valuations determine the possible solution for each building. The evaluation process is a formal procedure based on rational and analytical considerations for optimal solutions on defined problems. These are analytically reduced to one of the six prescribed alternative solutions which subsequently should lead to clear object intervention plans. Measuring is knowing, the process is highly systematic and therefore related to the view of rational planning.

Alignment

The method Accommodation functionality focuses on aligning the company's policy on stock level (tactical level) with the maintenance or intervention policy on building level (operational level) from a top down approach.

The management has to determine the minimal acceptable evaluation. It is assumed that other levels are not actively involved in determining the minimal evaluation.

Alignment**Summary**

The objective of the method Accommodation functionality is to make an accommodation policy operational. The result of the method per building consists of one of the six prescribed alternative solutions which subsequently should lead to clear object intervention plans. It addresses solely the strategic gap approach towards accommodation strategy design. The method uses the evaluation instrument/technique to determine prescribed possible solutions for buildings of an organization. The process is highly systematic wherein the organizational management (strategic level) determines a minimal acceptable evaluation for the various parameters as they apply to each building. The latter is related to the view of rational planning. The method aligns from a top down approach the tactical and operational level.

M4 Aligning corporate real property with corporate strategy

The method 'Aligning corporate real property with corporate strategy' is principally based on Nourse and Roulac (1993) and Roulac (2001). The summary consists of excerpts from the original text and from the description of the essence of the method by De Jonge et al. (1999). To ensure a coherent story several parts are edited.

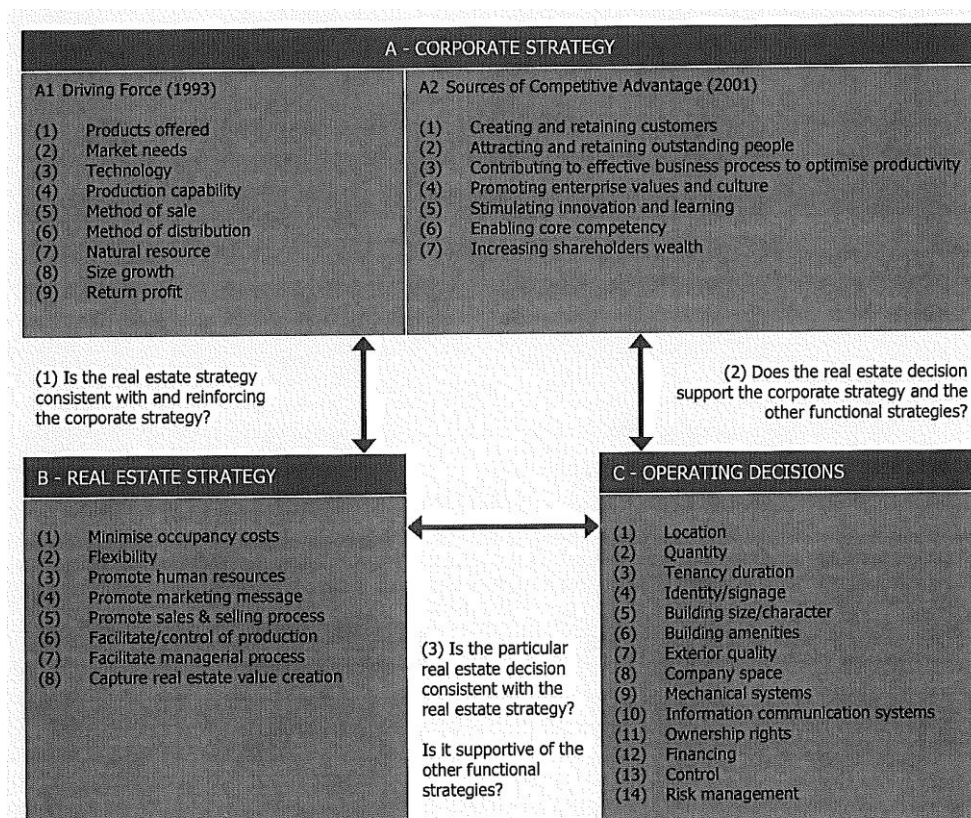
Essence

'It is widely recognized that every business employs an overall strategy. A corporate business strategy addresses critical elements such as customers, employees and processes. These elements are profoundly impacted by the environments in which the corporation does business, interacts with customers, houses its people and supports its processes. These are elements of corporate property/real estate strategy' (Roulac 2001, p.129).

'A superior corporate real property strategy impacts and produces positive outcomes in employee satisfaction, production factor economics, business opportunities realized and forgone, risk management considerations, and other impacts on enterprise value. These consequences enhance or detract from business outcomes, specifically management's ability to add value to increase shareholder wealth' (Roulac 2001, pp.129-130).

'A minority of enterprises can be viewed as having corporate real property strategies. Among the most common to be characterizable are: minimize occupancy cost; increase flexibility; promote human resources objectives; promote marketing message; promote sales and selling process; facilitate production, operations services and delivery; facilitate managerial process; and capture real estate value creation of business' (Roulac 2001, pp.132-134).

'Decisions by corporations concerning which real property strategies to employ and how to employ them, have profound implications for their overall business performance. These corporate real property strategies imply on their turn operating decisions and facilitate sources of competitive advantage' (Roulac 2001, p.142). The relations and supporting questions between these elements are depicted by Nourse and Roulac (1993 cited in De Jonge et al., p.67) in figure A1.4.



FigureA1.4; Business real estate decisions in a strategic management context
Source; Nourse and Roulac (1993) in De Jonge et al. (2009, p.67)

The alignment is supported by three cross tables concerning the relations between elements of corporate strategy, real estate strategy and operating decisions. The eight alternative real estate strategies can be addressed in terms of alternative choices that are consistent, reinforcing corporate driving forces and supporting sources of competitive advantage. First the eight strategies are intersected with nine driving forces. Then the real estate strategies are connected to particular operating decisions. Third the real estate strategies are related to concepts of spaces and places on their support concerning sources of competitive advantage.

To extract in this way the appropriate real estate strategy is a complex task. 'A conceptual linear programming approach is necessary to implement multiple complementary and competing strategic objectives in corporate property economics functions' (Roulac 2001, p.149).

Classification M4 Aligning corporate real property with corporate strategy

Approaches

The method Aligning corporate real property with corporate strategy focuses on determining the most important strategic variables of the corporation. These general identified variables are to be linked to eight established real estate strategies and fourteen established operating decisions through cross tables. Therefore the most applicable approach is the strategic variable approach.

Approaches

		Intended situation	
		Weak	Strong
Continued existence	Strong	Strategic variable 1	Stakeholders 2
	Weak	Societal need 4	Strategic gap 3

Views

		Goal orientation (what)	
		Strong	Weak
Process orientation (how)	Strong	Logical Incrementalism Judgement Strategy 'Judging'	Guided Learning Compromise Strategy 'Negotiating'
	Weak	Rational Planning Computational Strategy 'Analysing'	Emergent Strategy Inspirational Strategy 'Gambling'

Views

The objective of this method is to show the relations between real property strategies, space and place contributions and sources of competitive advantages for the corporation.

The result of this method is one or a combination of prescribed real property strategies that support the corporate strategy. The development of the actual real property strategy consists of intersecting predetermined driving forces, operating decisions and sources of competitive advantages to real property strategies based on three questions. The method is therefore mainly product focussed.

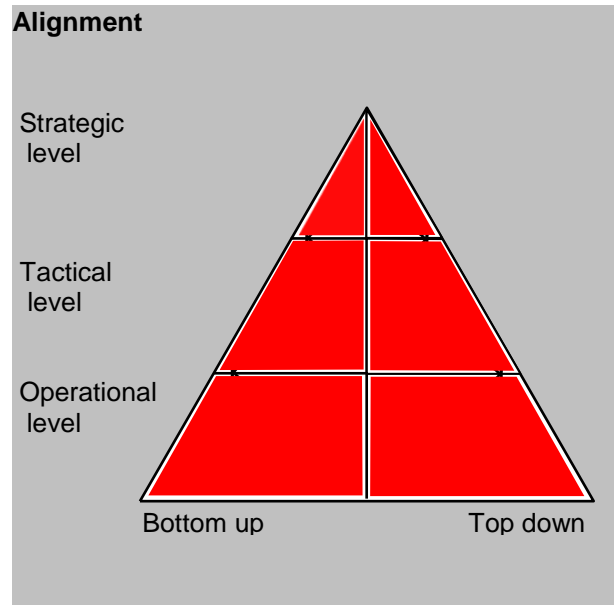
Through opting established relationships in three cross tables and conceptual linear programming the most applicable strategy is to be developed. A conceptual linear programming is necessary to provide the solution space of objectives. However this latter element is not further explained. It is assumed that multiple stakeholder are involved in the decision making process.

The method is rather formal and analytical. The aspects of opting and linear programming indicate this method as rational planning.

Alignment

The method Aligning corporate real property to corporate strategy aligns the strategic, tactical and operational level. The described and explained instrument of alignment is the cross table. It uses three cross tables to establish the top down alignment.

Multi stakeholder involvement is assumed and therefore expressed as a full bottom up alignment.



Summary

The objective of the method Aligning corporate real property with corporate strategy is to show the relations between real property strategies, space and place contributions and sources of competitive advantages for the corporation. The result of this method is one or a combination of prescribed real property strategies with operating decisions that support the corporate strategy. It addresses the strategic variable approach due to its elaboration of driving forces into operating decisions. The method uses the instrument of cross tables containing established relationships between explicit elements. Assumed multiple stakeholders should use linear programming to establish a solution space. The method is mainly product focussed due to its formal and analytical linking character. Together with the suggested linear programming approach this method is related to the rational planning view. The method enables alignment between the strategic, tactical and operational level from a top down approach. Assumed multiple stakeholders and the suggested decision making approach would establish a full bottom up alignment. Would because it is not quite clear how exactly this is performed.

M5 Strategy alignment model

The method 'Strategy alignment model' is described in Osgood (2004), Translating organizational strategy into real estate action: The strategy alignment model. The summary consists of excerpts from the original text. The essential information is presented as much as possible in its original context. Despite this attempt some text is slightly edited to ensure a coherent readable story.

Essence

The Strategy alignment model (figure A1.5) is a framework for directly linking real estate initiatives with core business strategy and for measuring results as organisational outcomes. It describes and measures real estate initiatives in the language that businesses use to construct their individual strategies. As organisations describe the key elements of their business, the model is used to develop portfolio, site/facility and workplace level concepts that align directly with the core business strategy. The end result is an aligned organisational real estate strategy mapped as a series of cause-and-effect relationships that describes the strategy that will drive competitive advantage for each company, in every specific situation.



Figure A1.5; The Strategy alignment model
Source; Osgood (2004, p.108)

The heart of the model is the Strategy alignment map (figure A1.6). It is structured to display, visually and directly, organisational- and real estate strategies and measures as a series of cause-and-effect relationships. The organizational strategy is described upon the following elements: mission for today and vision for the future; customers and markets served; product and service offerings; distinct competencies or skills unique to each company; and values and culture that serve as the foundation for any organisation.

These elements are to be translated into corresponding space related aspects of real estate supporting the core business strategy. These are: quality of space; costs of space; quantity of space; location of space; technology of space; practices for providing space.

The theoretical basis for the strategy alignment model constitutes of three issues. The first concerns the idea that real estate strategy must be framed in the language and tools of business, rather than in architect and broker-speak. The real estate response is made only after senior management has described the core business strategy. Furthermore, each element of the real estate strategy is measured by its ability to satisfy metrics established for the core business, rather than merely tracking indices specific to land and buildings.

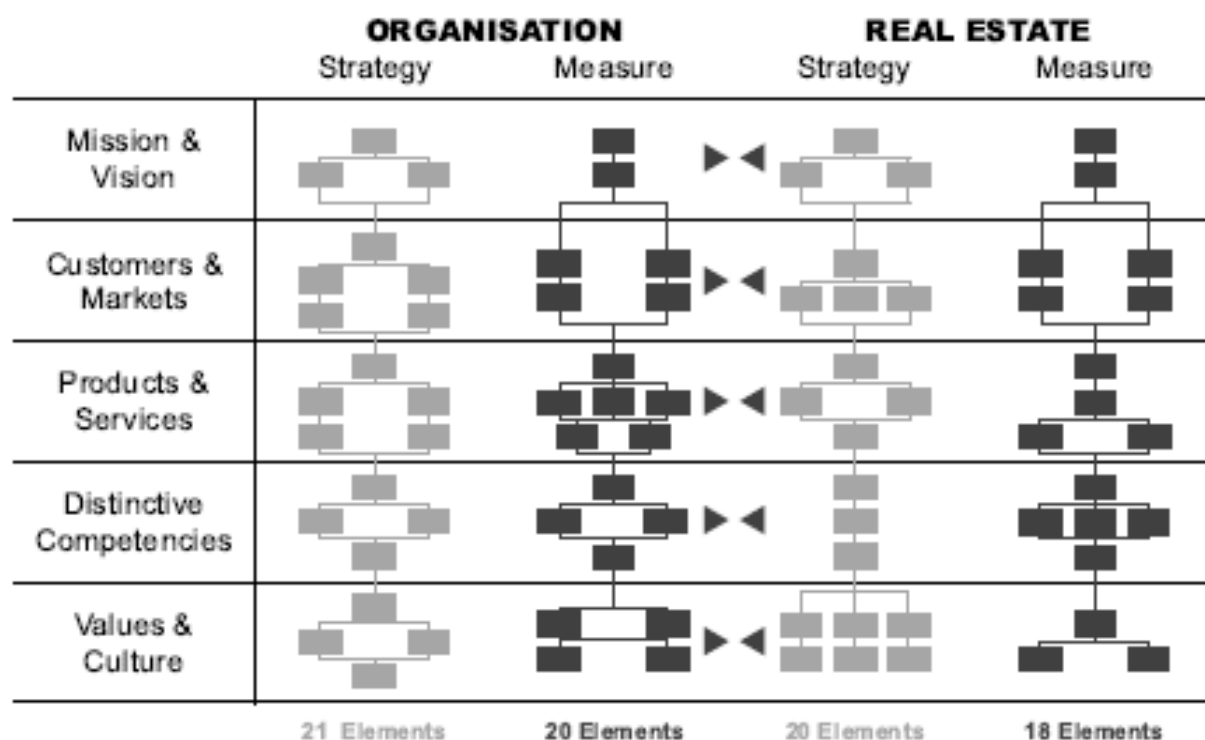


Figure A1.6; The Strategy alignment map
Source; Osgood (2004, p.110)

The second problem identified is the range of different strategy models - typically broken into between three and nine schools - that are applied to core business strategy. Although each school offers a different perspective about the critical drivers of strategy, there are several overlaps in thinking. As such, it really makes sense to think about three broad schools, which are:

- The Empiricists, who can best be described as people primarily focused on operational efficiency as the path to strategic success;
- The Rationalists, who, though rather diverse in opinion, emphasise organisational learning and development as the key to success;
- The Instrumentalists are systems thinkers who integrate the ideas from the Empiricists and the Rationalists into a framework that describes a holistic strategy.

The third problem is the difference between strategy (what needs to happen) and planning (how it should happen). Strategy is not just a phase in a project; it is a way of thinking about every situation. This means that every assignment, regardless of how tactical or strategic it might appear, has a moment or series of moments when the 'what' - the strategic objectives - must be so defined as to set up the 'how', the plan of action.

The application of the strategy alignment model throughout a company is described as follows:

- Develop an overall real estate strategy concept to the company strategy focussing on physical environment and service processes;
- Design real estate strategy maps that incorporates group- and individual level requirements for each business unit and department;
- Define projects that will support these real estate strategy maps;
- Measure and adjust the strategy maps towards the company strategy.

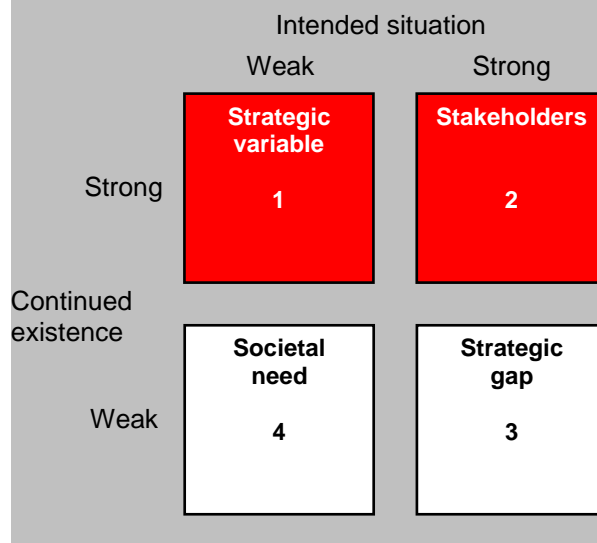
Classification M5 Strategy alignment model

Approaches

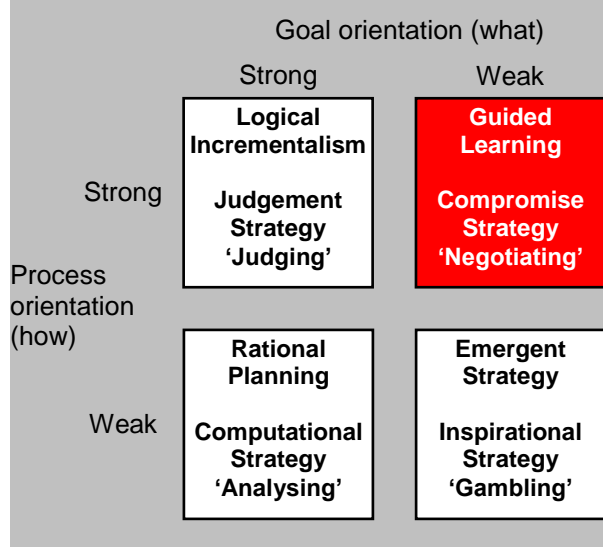
The method Strategy alignment model addresses the strategic variable- and stakeholders approach. The strategic variables of the corporation are derived from the five elements of corporate business strategy. The variables are to be translated into measures corresponding predetermined space related aspects of real estate supporting the core business strategy.

Stakeholders are involved from different levels and with different backgrounds to create a comprehensive change management framework that describes how the strategy will be developed, implemented and managed. They also work together to define who will be involved, why, when, where, how and for what purpose.

Approaches



Views



Views

The objective of this method is to link real estate initiatives with core business strategy and for measuring results as organisational outcomes.

The result of this method is a set of linked spatial related real estate aspects (strategy) supporting the elements of corporate business strategy. The process consists of linking corporate strategy elements to spatial real estate aspects that are to be translated into the language that businesses use to construct their individual strategies. How this set is then translated into an object intervention plan is not defined. The instruments used are an alignment model and alignment map.

The method is process orientated due to the search for cause-and-effect relationships between defined elements of corporate strategy and real estate initiatives in order to support the core business strategy. Predetermined accommodation strategies are not provided.

Osgood advocates working with stakeholders on every assignment to establish alignment throughout the organization but emphasizes the involvement of the highest manager in charge, the CEO or a representative. The CEO has to make the most important decisions to ensure the effectiveness of the real estate strategy.

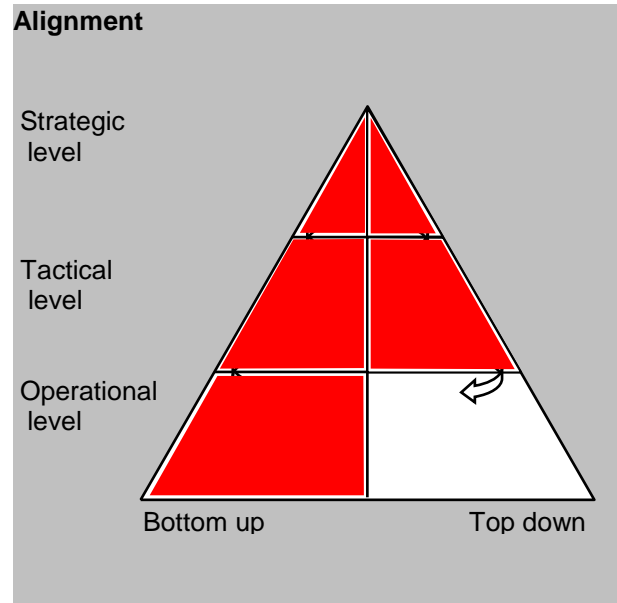
This process orientated and stakeholder involvement way of strategy development refers to guided learning.

Alignment

The method Strategy alignment model focuses on aligning the strategic level with the tactical level by connecting objectives. Osgood describes that different levels participate by offering ideas and concepts but that the strategic level decides.

From a top down approach the method aligns the strategic with the tactical level. It does not provide explicit information on how this is translated towards the operational level.

The participation of different organizational levels establishes a full bottom up alignment.

**Summary**

The objective of the method Strategy alignment model is to link real estate initiatives with core business strategy and for measuring results as organisational outcomes. The result of this method is a set of linked spatial related real estate aspects (strategy) supporting the elements of corporate business strategy. It addresses the strategic variable- and stakeholders approach. It makes use of an alignment model and alignment map. The method is process orientated and advocates stakeholder participation which are aspects that relate the guided learning view. Due to its stakeholders approach it establishes a full bottom up alignment. From a top down approach the method aligns the strategic with the tactical level.

M6 Strategic real estate plan

The method 'Strategic real estate plan' is principally based on Fritzsche et al. (2004) Accommodation is strategic real estate, guide for real estate management in hospitals. The essence of this method is later described by De Jonge et al. (2009) to identify its contribution within the broader context of accommodation strategy design theory. It serves as basis to classify this method on the established classification set. It consists of excerpts of the original text and is on several parts adjusted and edited by De Jonge et al. to ensure a coherent story.

Essence

The essence of the method Strategic real estate plan (figure A1.7) is described by De Jonge et al. (2009, pp.76-79) as follows. 'The first step is the design of an accommodation strategy that originates from the strategic course of the organisation. Treacy and Wiersema (1995 cited in De Jonge et al 2009) state that successful corporations provide their customers with a so-called "value proposition". According to them, organizations are able to add value through three different modes (figure A1.8): having the best price-quality ratio (operational excellence), having the best service offerings to customers (customer intimacy), or delivering the best product (product leadership). The three different modes are distinguished in an external "customer" and "internal" organizational perspective.

For each of these modes, a minimum quality level should be taken into account in order to provide a competitive proposition compared to its peers. Subsequently, the "winning" corporations have all made a clear choice for a focus on one of the suggested modes.'

'The second step is to elaborate the real estate strategy to derive specific plans of approach for the various objects in the portfolio. This involves aligning the need for accommodation, the supply of real estate, and the financial opportunities. Also, the friction between the financial and functional value of the real estate portfolio should be taken into consideration.'

'The functional value relates to the effectiveness of use in the primary business process. The users not only entail employees, but also customers and visitors. Additionally, an analysis of the different functions of the organisation (in relation to accommodation requirements) is vital. Which functions can be accommodated in market standard office solutions, which functions need to be concentrated with other functions that might also be located elsewhere? Clustering of functions often enables effectiveness and flexibility. Certain functions can be employed better once clustered. For other functions, accessibility is vital and therefore a location spread is preferred. Once each function has been reviewed on the generic or specific characteristics of the accommodation requirements, an assessment can be made on the suitability of the current accommodation. In this context, flexibility offers the potential to ensure the functional value of the accommodation over a longer period of time, without having to heavily invest in real estate alterations.'

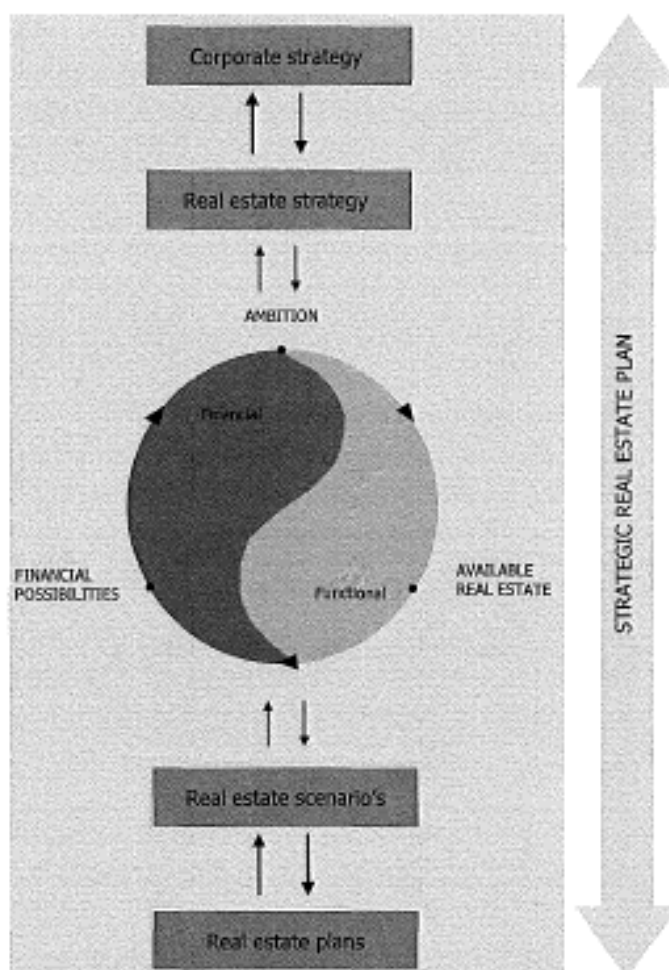


Figure A1.7; Development of a strategic real estate plan
Source; Fritzsche et al. (2004) in De Jonge et al. (2009, p.76)

'The financial value can be optimised on the short-, mid- and long term. Optimisation on the short term consists of reducing annual accommodation costs, with the main focus on "Total Cost of Ownership". The level of the accommodation costs to cover all expenses is determined by the initial investment, operational costs (including costs for large-scale maintenance) throughout the operational period, the estimated residual value and the cost of capital. Midterm optimisation is predominantly focused on optimising the allocation of capital to real estate related items. The ultimate approach to value thinking is to compare the rate of return on real estate investment to the rate of return on investments in the primary business process, with the objective to allocate capital to those investment opportunities that generate the highest rate of return. Finally, long term optimisation involves increasing the value of real estate assets. The value of real estate is determined by real estate market dynamics, specifically influenced by the immediate surroundings of the location, as well as the nature and size of the building. (Re)development opportunities play a crucial role in the value proposition.'

The entire process from corporate strategy to real estate plans is conducted by linking a distinguished corporate strategy with a real estate strategy through six management steering aspects (figure A2.8): culture; organizational skills; processes; management systems; infrastructure; and information and communication. The available real estate (current supply) is then functional- and financial analysed on generic and specific accommodation characteristics. The next step is to draft different scenarios (solutions). These are to be matched with the functional and financial strategic requirements (demand).

		Value Proposition	Product Leadership	Customer Focus	Operational Excellence
		Value Proposition	Product Leadership	Customer Focus	Operational Excellence
		Value Proposition	Product Leadership	Customer Focus	Operational Excellence
		Value Proposition	Product Leadership	Customer Focus	Operational Excellence
Steering Component	Real Estate Decision	For real estate components, see Infrastructure/Steering Component			
Culture	Culture involves the atmosphere, the way of organising, the type of social interaction, and the type of employee attracted	- location (residence, hinterland) - exterior appearance - interior appearance - accessibility	- create the future - individual 'heroes' - experiment - think 'out of the box'	- customer driven - variation - you-get-what-you-want mentality - 'empowered'-employees	- process driven - create-the-best mentality - disciplined teamwork
Organizational Skills	Where do you excel in as a company? (insourcing, collaboration (within and outside organisation))	- leasehold - freehold - insourcing - outsourcing	- flexible structure - aimed at recruitment and development of talent - can respond ad hoc	- entrepreneurship around customer - strong skills 'on the side' - self steering customer contact	- centralised functions - braintrust at head office - little self steering
Processes	Within the context of ways of working, process describes the need for fixed or flexible space, specific or market standard	- marketability - flexibility	- inventive - product development - market exploitation	- production of tailor-made solutions - flexible - added service through total solution - participation customer	- head-to-tail distribution - system efficiency - reliable and accessible service
Management Systems	How did sales price get determined? How is internal cost allocation arranged? This gives provides a framework for cost level assessment and internal cost allocation.	- cost level - internal cost allocation	- risk oriented - profit per product-lifecycle - reward individual for innovative behaviour	- growth driven - aimed at profit per customer - aimed at customer selection	- result per transaction - standard operational procedures - activity based costing
Infrastructure	What kind of infrastructure is required to facilitate the processes? Which building types fulfil the needs? Which speed is adequate?	- building typology - building size - building spread	- futuristic - diverse - adapted to 'heroes' - centrally organised	- personalised buildings (and/or its interior) - customer specific - proximity to customer	- standard buildings - standard aids - identical 'outlook' - central design
Information & Communication	How does communication take place in a technical sense, in terms of outward representation, levels of openness etc.	- exterior appearance - interior appearance - accessibility	- program management - low level of integration - communication systems for mutual interactions	- service delivery systems - integrated around the customer - linking front- and backoffice	- process automation - mobile and remote technology - the system is the process

Figure A1.8: Relationships between value proposition, steering components and real estate decisions
Source: Fritzsche et al. (2004) in De Jonge et al. (2009, p.77)

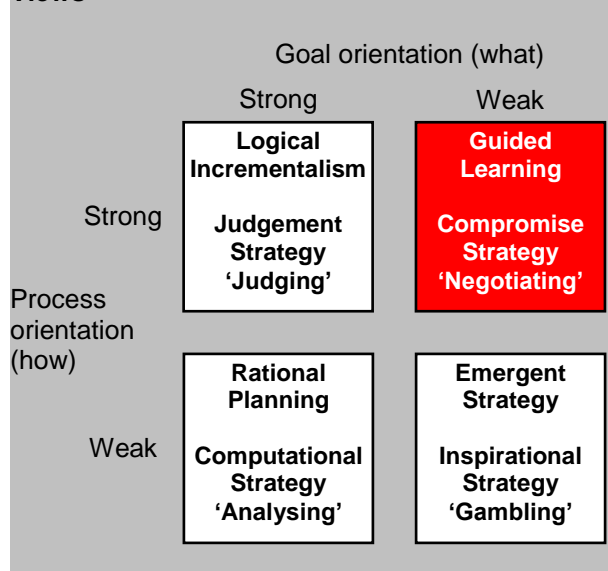
Classification M6 Strategic real estate plan

Approaches

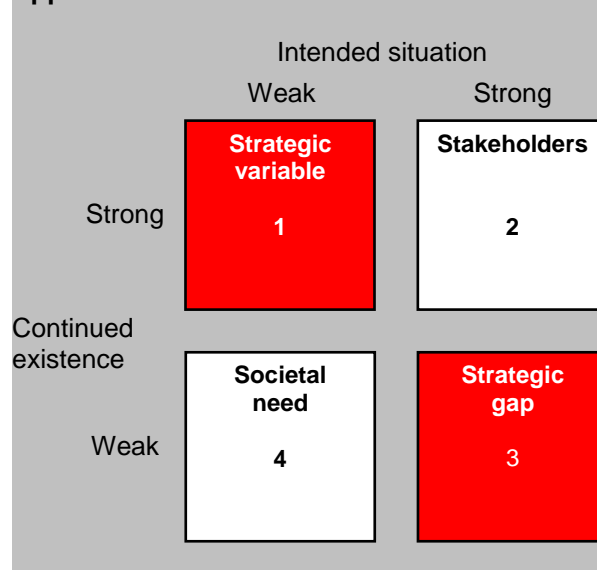
The method Strategic real estate plan focuses on determining the important functional and financial values of the real estate portfolio. The functional value relates to effectiveness of use in the primary business process. The financial value relates to real estate value optimization in the short, mid and long term. This approach is related to the strategic variable approach.

It addresses the strategic gap approach. It mentions the applicable elements of this approach but does not further elaborate on it.

Views



Approaches



Views

The objective of this method is to derive specific real estate plans of approach for the various objects in the portfolio.

The results of this method are real estate plans of approach per object. How these object plans are further elaborated and matched is not defined.

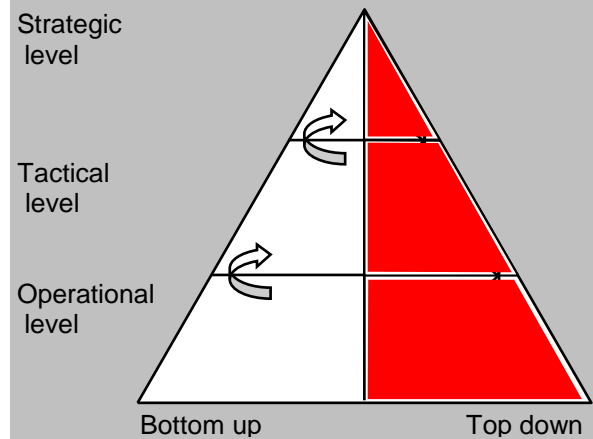
The process consists of linking corporate strategy to plans of approach per object based on management steering aspects, functional- and financial values and drafted alternative solutions.

The way criteria are determined using this method is not explained. Neither, if this is done individually or within a group. Different solutions are drafted and matched with determined criteria. The technique of multi criteria decision analysis (MCDA) is used to select the best applicable strategy.

The method is more process orientated due to the description of the different elements of strategy design and therefore related to the view guided learning. Although the decision making process refers to rational planning in the sense of MCDA it is not further elaborated. The elaborated way of strategy development refers to guided learning.

Alignment

The method Strategic real estate plan aligns all the organizational levels from a top down approach. Bottom up alignment is not mentioned or described.

Alignment**Summary**

The objective of the method Strategic real estate plan is to derive specific real estate plans of approach for the various objects in the portfolio. The results of this method are real estate plans of approach per object. How these object plans are further elaborated and matched is not defined. It addresses the strategic variable- and strategic gap approach. In the latter the elements are mentioned but not further explained. It makes use of a generic accommodation plan and a cross table. The method is more process orientated due to the description of the different elements of strategy design and therefore related to the view guided learning. Although the decision making process refers to rational planning in the sense of MCDA it is not further elaborated. The elaborated way of strategy development refers to guided learning. The method 'strategic real estate plan' aligns all the organizational levels from a top down approach. Bottom up alignment is not mentioned or described.

M7 Designing an Accommodation Strategy, (DAS) Framework

The method 'Designing an accommodation strategy' is principally based on De Jonge et al. (2009). The essence of this method consists of excerpts of the original text and is on several parts adjusted and edited to ensure a coherent story for classification.

Essence

The first chapter showed that strategic real estate management and real estate can contribute in achieving organizational objectives by supporting the primary process as a mean, by matching demand and supply, by connecting organizational levels, by bringing together stakeholder's interests and an effective organizational performance. Based on descriptions, practice, strategy design methods in the strategy design process De Jonge et al. (2009) developed an abstract model for designing an accommodation strategy (DAS) Framework. The choice for pluralism implies that more (parts of other) methods can be used for analysis and synthesis.

The method is described by De Jonge et al. (2009, pp.35-44) as an iterative process with four key steering events: (figure A1.9):

- What we need versus what we have: determine the mismatch between current demand and current supply;
- What we (might) need in the future versus what we have now: determine the mismatch between future demand and current supply;
- Alternatives of what we could have: design, evaluate and select alternatives to bridge the mismatch;
- Step by step plan to realize what we want to have in the future: design the transformation of current supply into selected future supply.

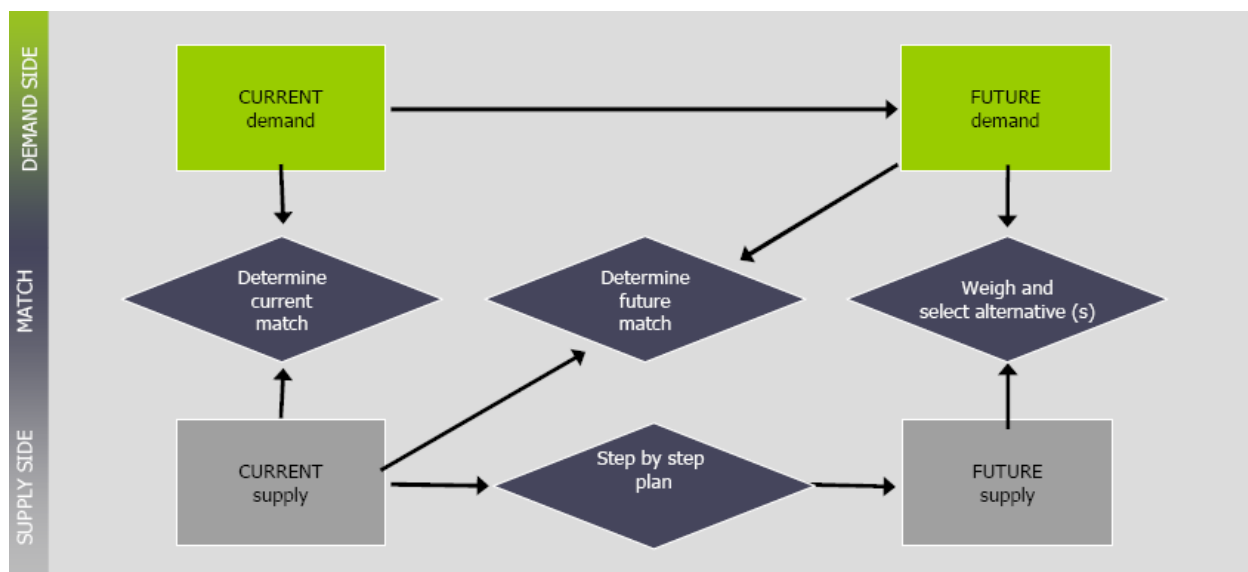


Figure A1.9; Designing an Accommodation Strategy, DAS Frame

Source; De Jonge, H. et al. (2009)

The framework can be used for simple and complex real estate decisions, it forces to think about objectives and resources, allows different input from different stakeholders, covers all types of real estate and multi-level decisions on real estate for different time frames. It describes demand, supply and the matching of both.

The proposed strategy design process in the DAS Framework consists of four phases (in miscellaneous order):

Phase, determine the (mis)match between current demand and current supply;

The main question to be answered is: what is the (mis)match between the current demand and the current supply? In this context, the following sub questions are relevant:

- a. What are the problems of the various stakeholders in the current situation?
- b. What is the current supply and current demand (in the same terms)?
- c. What is the mismatch, or rather: the problem statement?

The first step of the design process is to perform an analysis on:

- a. An inventory of the current space need and space use (current demand);
- b. The quality and quantity of the current supply at building and portfolio level;
- c. A comparison of both current supply and current demand to determine the (mis)match.

1 An inventory of the current space need and space use (current demand)

Start by making an inventory of the stakeholder problems (policy maker, user, controller and technical manager) based on Den Heijer (2006) cited in De Jonge et al., (2009, p.19) in the current situation - a subjective analysis – before making an objective supply and demand analysis. The objective of this step is to determine for all stakeholders which problem(s) they have and why.

2 The quality and quantity of the current supply

Describing current supply can result in a very detailed analysis of all kinds of aspects: technical state, m2, capacity, qualities, location, available services etc. It is important to limit this list of aspects and focus on aspects that will also be part of current or future demand: only aspects that are described both on supply and on demand side can be matched. Therefore, descriptions of merely quantities need to be completed with the qualities and the adjustability of the accommodation.

3 Mismatch (if applicable) as a problem statement

After collecting the same type of data on both demand and supply side (current demand and current supply), it is possible to compare data and draw objective conclusions. It is essential that some standards are available - for space use, occupancy cost etc. - to judge whether a price and/or space use is relatively high or low. Benchmark studies can be very useful. In the absence of reference, it is very difficult to formulate a problem statement.

Phase, determine (mis)match between future demand & current supply

The main question about the future of organisations in this phase is: how to cope with uncertainty? The sub questions that need to be answered in this context are:

- a. What is the future demand?
- b. What is the (mis)match between the future demand and the current supply?

1 Changes in space demand and strategic choice

The organisational objectives must be translated into changing space demand and changing strategic choices for real estate. All too often the strategic documents do not give many performance criteria or specific statements to hold on to. Designing an accommodation strategy can be a trigger to make statements more concrete. But organisations can also choose for standard strategies for their real estate portfolio, suitable with their overall strategy. In both ways, the various kinds of developments must be evaluated by posing two questions: what is the impact of this development on real estate and is it possible to influence this development? The answers to these questions can be used to distinguish strategic choices from scenario variables (see 'Scenario Planning' (Dewulf, Den Heijer et al. 1999: 49)). In the end, the only remaining question to answer is: (how) do all these developments impact m2, €, users and objectives on both supply and demand side?

2 Strategic vision in key words

A strategic vision is like a dream: 'I had a dream: we were all accommodated in [...] Our offices are easily accessible by public and private transport. It is the best accommodation you can wish for.' Often this strategic vision is visionary and based on intuition, loosely using the developments as a context. Architects often use an analysis of comparable organisations as a starting point. A strategic vision can have a visual reference for the whole portfolio or for an individual building: a zoning plan or an artist's impression of strategic choices.

3 Future demands create a solution space

The strategic vision has an abstract, qualitative character. It is important to use quantitative analysis as well, even if it requires the CRE manager to make lots of assumptions due to the lack of available data. The current demand can be used as a starting point: is the future demand either the same, more or less than defined in the previous step? Or is it completely different?

4 Future mismatch (if applicable) as a problem statement

In this stage, the current problem statement can be updated for the future. Is the organisation facing the same problems, or are the problems increased? In some cases, problems might disappear over the course of time (a space shortage can be 'solved' if the organisational headcount decreases).

Phase, design, weigh and select alternatives to bridge the mismatch

In this phase, the alternatives are designed and weighed according to the strategic assumptions. The question that needs to be answered is: how does the future supply need to be defined in order to match the future demand through designing and evaluating alternatives for the future supply? Using the previous results as input, the following sub questions are relevant:

- a. What are possible solutions?
- b. How can they be evaluated by all stakeholders?

1 What are possible solutions?

As soon as the problem analysis is completed, alternative solutions are designed. A few examples are: moving the organisation to a larger building and selling the current one; reinvesting in the current building to make it suitable for the organisation and; reorganising the working processes to fit the current building.

Each alternative should be assessed in terms of costs and benefits as well as its contributions to the primary targets. These benefits include weighing the added value of alternatives to organisational or societal objectives, using reason and intuition. This process might make the user and the owner rethink their strategic objectives or ambitions and return to previous matches (iterative process). The process is further complicated by the uncertainties in demand: what is the risk of moving to a larger building when the organisation does not grow as fast as expected? If an alternative is selected, considering all costs, benefits and risks, it can be implemented in the next match.

2 How can they be evaluated by all stakeholders?

The result of the assessment process is 'the optimal future supply' for all stakeholders in the long term. This solution might make the stakeholders rethink their objectives or ambitions and go back, and repeat this match. This can take a few cycles. If - in the end - an alternative is selected, it can be specified and implemented. The criteria which are used to assess the solution are set when the stakeholders' demands are defined. Therefore, it is not possible to define a generic set of criteria, although some are often used.

Phase, Transformation of current supply into selected future supply

The questions to be answered are:

- a. How can the selected solution of the former phase be implemented;
- b. Does the specification in time and resources make the CRE manager rethink the solution and go back to alter the solution space and generate new solutions?

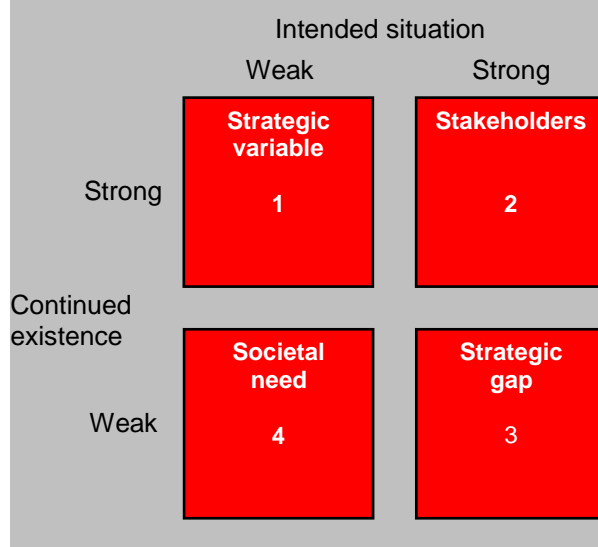
In this phase the transition of the current supply to the future supply is specified in a step by step plan. This plan describes the main changes to the portfolio and to the different buildings and is completed with a time schedule and a financial plan. During the process of transition, certain developments or sudden events can change demand, supply, objectives and the financial context.

Classification M7 Designing an accommodation strategy, (DAS) Framework

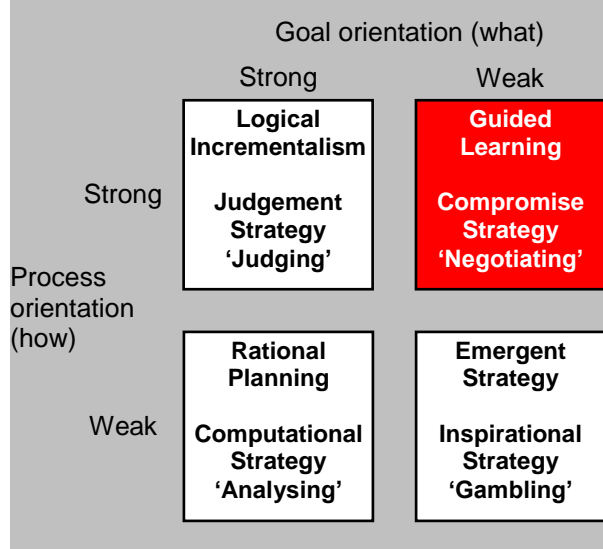
Approaches

The method Designing an accommodation strategy focuses on determining for all stakeholders which problem(s) they have and why. All means stakeholders in and outside the organization. The problems are expressed into variables related to real estate. This profound stakeholders approach includes in fact the strategic variable- and societal need approach. The method further focuses on bridging the strategic gap between future demand and current supply. This refers to the strategic gap approach.

Approaches



Views



Views

The objective of this method is to provide an analytical structure on the accommodation strategy design process.

The result of the method is to establish a future portfolio strategy which is to be achieved by a step by step plan on building level. The process consists of matching demand and supply by determining four key steering events in the DAS Frame.

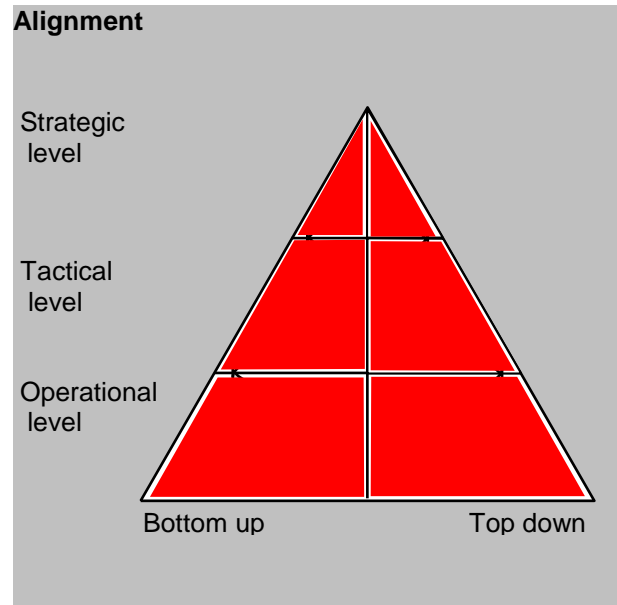
The instruments/techniques used for some steering events are based on existing methods and integrated into the model.

The decisions conducting this method are made by the designer(s). The (interim)results are to be reflected and assessed by the client.

The method is process orientated due to the description of the different elements of strategy design. By using other methods as tools to produce interim products the DAS Frame tends to incrementalism. If the latter two steering events had included clear explicit instruments or techniques that allow group decision making and that prescribed systematically, in steps, how the selected alternative should be implemented and controlled it would. Therefore the DAS Frame is currently viewed as guided learning

Alignment

The method Designing an accommodation strategy aligns all the organizational levels from both, top down and bottom up. This is established by interviewing various stakeholders, bridging the gap through designing a portfolio strategy and defining a step by step plan on building level.

**Summary**

The objective of the method DAS Frame (De Jonge et al. 2009) is to provide an analytical structure on the accommodation strategy design process. The result of the method is to establish a future portfolio strategy which is to be achieved by a step by step plan on building level. The process consists of matching demand and supply by determining four key steering events. It addresses all four approaches towards accommodation strategy design. The method makes use of the DAS Frame and instruments from existing methods to integrate them into the model. The method is process orientated due to the description of the different elements of the accommodation strategy design. By using other methods as tools to produce interim products the DAS Frame tends to incrementalism. If the latter two steering events had included clear explicit instruments or techniques that allow group decision making and that prescribed systematically, in steps, how the selected alternative should be implemented and controlled it would. Therefore the DAS Frame is currently viewed as guided learning. The decisions conducting this method are made by the designer(s). The (interim)results are to be reflected and assessed by the client. The method aligns all organizational levels from a top down and bottom up approach.

M8 Housing choice model

The method 'Housing choice model' is developed by Ikiz-Koppejan et al. (2009) of the Dutch Center for People and Buildings (CfPB). The essence of this method consists of excerpts of the working paper and is translated from Dutch to English. It is on several parts slightly adjusted and edited to ensure a coherent story for classification.

Essence

The CfPB is constantly working to develop and share the knowledge of the relations between buildings and people, focused on the working person. The housing choice model is a process model for accommodating organizations. The model aims to provide a clear generic structure with building blocks for the best possible accommodation and the process towards it, with more evidence based translation aspects from organization to accommodation. It is meant for a variety of target groups. The main question to be answered is; does our working environment (still) match our organization and working processes?

The method consists of four steps: a spindle, a pendulum and a playing field which together depict the organizational accommodation process (figure A1.10). In order to place the steps in the right way process choices are necessary. These choices form the pendulum. The questions to be answered are about steering, implementation, participation, decision making and communication which can be translated into the words: by whom, what, how, for whom and with what. In the middle there is the spindle from which everything turns around and forms the connection between the steps of constant review and coordination. The steps are placed on the playing field with players and their interests, the energy and attention for the process and their relations with other processes of change.

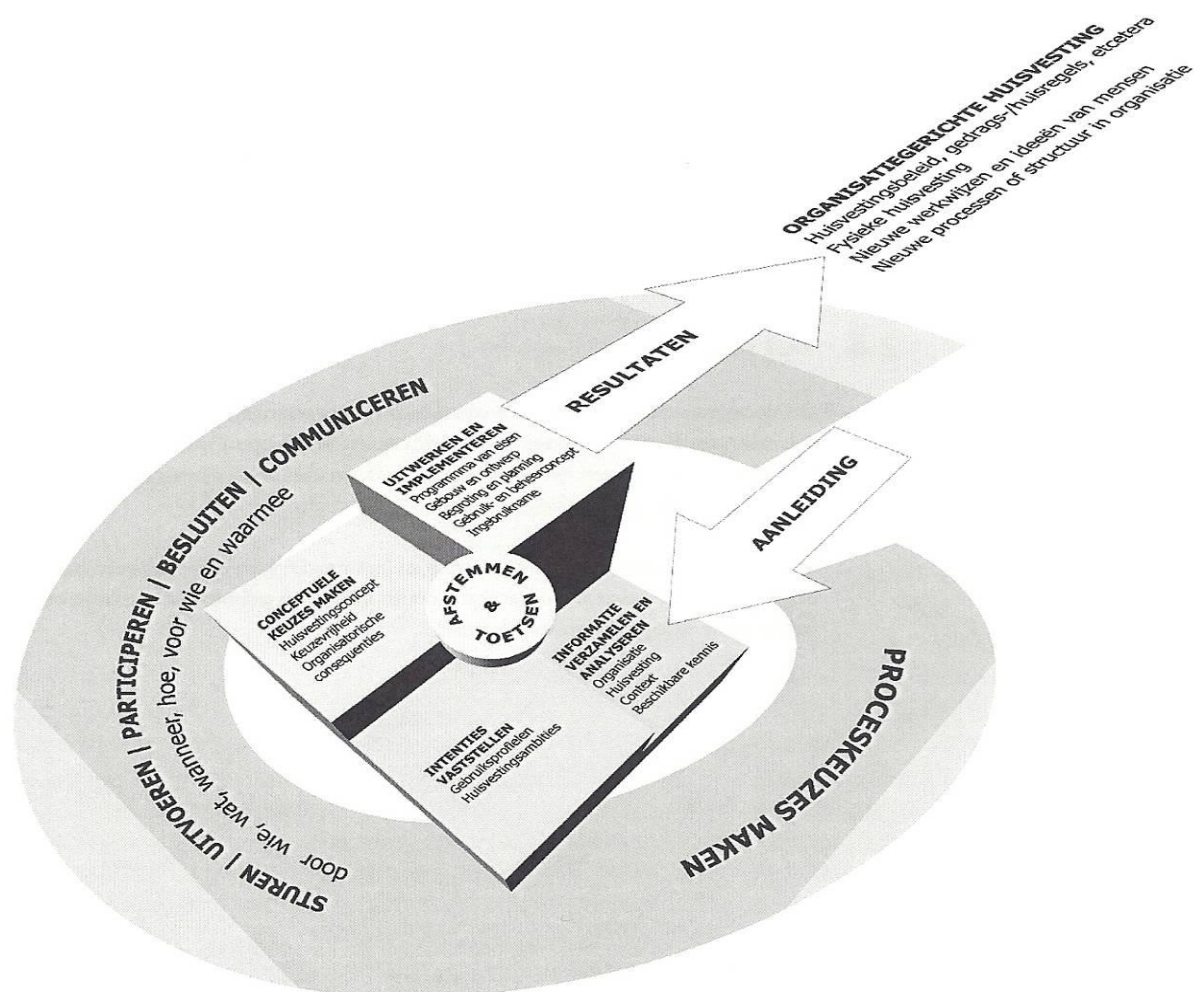


Figure A1.10; Housing choice model
Source: Ikiz-Koppejan et al. (2009,p.18)

Step 1 Information, collect information about the organization, the current accommodation, the context and conditions.

Relevant subjects of the organization are: vision; policy; structure; fte's; amount of employees; organization and; the processes. Relevant subjects of the current accommodation are: the building; the housing concept; employee satisfaction; accommodation management; surfaced problems; accommodation costs and exploitation of the accommodation (per workplace, per fte, per employee). The context is related to internal conditions like budget and external conditions like applicable legislation, trends and developments. The available scientific knowledge about people, work and workplace, and their decision making process helps with making choices and learning from others.

Step 2 Intentions, determine intentions of different stakeholders and their ambitions towards accommodation.

Ambitions can differ per organizational function group. Therefore it is essential that the different groups are distinguished that are important towards the accommodation strategy design process. This is about defining the target group that functions as the basis for determining the workplace concept. In the model this is called the user profile. Housing ambitions can differ per level and are distinguished as follows: employee productivity; innovation power; employee satisfaction; safety and health; cost reduction; risk management; efficiency; client satisfaction; flexibility; sustainability; image and; culture change. The list is assembled with most common ambitions but can be extended. Its purpose is to give some grip and structure in discussions about housing ambitions. Relevant in this matter is that certain ambitions can reinforce each other or can conflict with each other.

Step 3 Conceptual accommodation choices about workplace, provisions, services and means, ICT and esthetical- and technical quality.

The conceptual subjects of choice are elaborated into the eleven parts: 1.place of work (on route, office, home); 2.space of work (types and positioning 'lay-out' of workstations); 3.quantity/norms per workplace; 4.use of workstations (fixed or flexible, how to use); 5.provisions lay-out and quantity (meeting rooms, coffee rooms etc); 6.provisions placement (centralized or decentralised); 7.services and means (reception, catering, security, furniture etc.); 8.ICT (hard- software, internet, archiving etc.); 9.technical basic quality (climate, daylight, sound etc.); 10.esthetical quality (architectural design, interior design, detailing); 11.location of building (accessibility, parking , adjacent provisions). When the conceptual choices are made it is of importance to define fixed choices applicable to the entire organization and the flexible choices per organizational group. Fixed frameworks and certain freedom of choice help to clarify the playing field and the participation of employees. It supports the alignment of the design process. Adjustments and accommodation choices can have serious consequences on the ways of working. These consequences and their related follow up actions form the agenda for decision making in the next step.

Step 4 Making choices and implement into a program of requirements, a design and building choice, planning and budget, use and maintenance concept and a plan of action for use.

In the program of requirements the conceptual choices are translated into different demands on spatial-, functional- and technical aspects. Based on the program different designs are elaborated and assessed. During the elaboration budget, planning and facility management consequences become apparent and choices are to be made about use, movement and maintenance. The spindle forms the binding between the different steps and functions as the matching element in which choices and decisions are registered and where remarks and comment of employees are noted.

In order to match the different conceptual choices with the intentions of the different stakeholders a choice matrix is developed and used. The aim of the matrix is to offer a tool to translate the ambitions for an organization, target groups or user profiles into accommodation choices. This translation consists of matching ambitions, elements of accommodation concepts, certain freedom of choice and organizational consequences. Further it supports to prioritize ambitions.

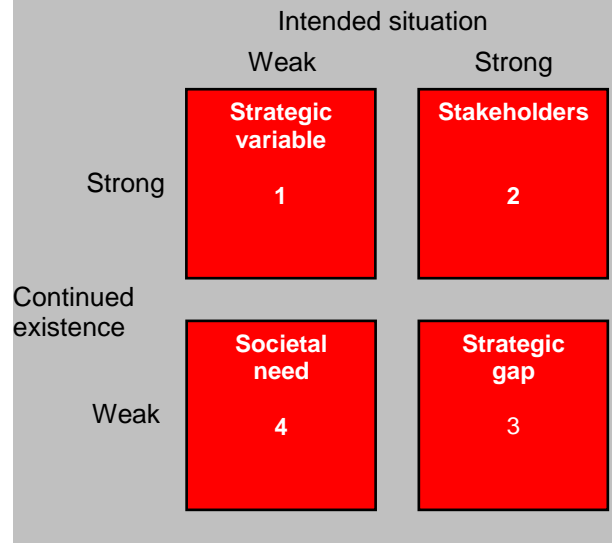
Besides the choice matrix and a checklist the housing choice model makes use of a wide range of instruments to collect data and support the decision making process.

Classification M8 Housing choice model

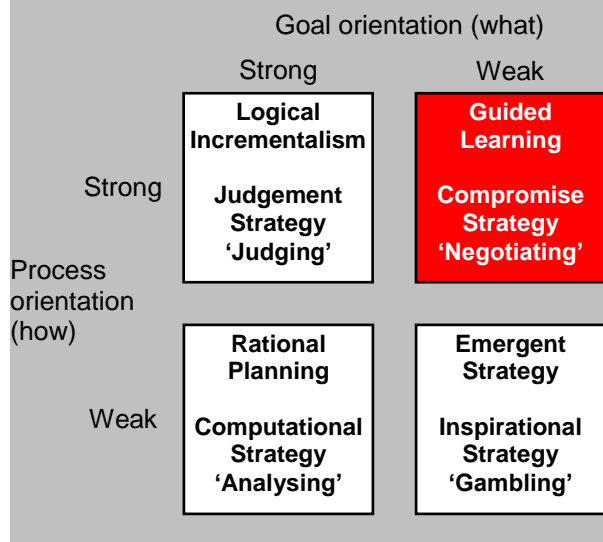
Approaches

The method Housing choice mode' mentions all four approaches towards the accommodation strategy design process. The strategic variable approach is applicable due to the collecting of specific data about the organization although not explicitly is sought for success or failure factors. The stakeholders approach is addressed by interview sessions, workshops and discussions with various stakeholders to gain insight in their ambitions, priorities and housing concepts. The strategic gap approach is applicable due to the collecting of information and satisfaction about the current accommodation in the first step and the realization of the desired accommodation in the fourth step. The societal need approach is taken into account by the recognition of the external- and internal contextual conditions.

Approaches



Views



Views

The objective of the model is to provide a clear generic structure with building blocks for the best possible office accommodation and the process towards it.

The result of the method is a full operational organization working within its adjusted or new building(s).

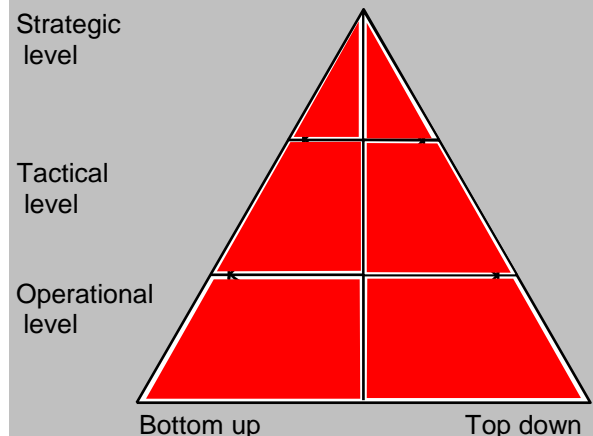
The processes consists of collecting and analysing information, determine intentions and ambitions, followed by making conceptual choices about accommodation, realized through elaboration and implementation.

The decision making process looks like group discussions wherein stakeholders debate and negotiate. Tools to support this process are the choice matrix and the checklist.

The method is process orientated due to the description of the different elements of strategy design and the decision making strategy. Despite concrete examples, concepts and a range of mentioned supportive tools/instruments they are not consequently used in every phase. Therefore this way of strategy development refers to guided learning.

Alignment

The method has the ability to align all the organizational levels from both, top down and bottom up.

Alignment**Summary**

The objective of the Housing choice model is to provide a clear generic structure with building blocks for the best possible office accommodation and the process towards it. The result of the method is a full operational organization working within its adjusted or new building(s). The processes consists of collecting and analysing information, determine intentions and ambitions, followed by making conceptual choices about accommodation, realized through elaboration and implementation. It addresses all four approaches towards accommodation strategy design. The method makes use of the housing choice model and refers to supportive tools/instruments to contribute in the accommodation strategy design process. But it does not use explicit instruments/technique in every phase and therefore refers to guided learning. The decision making strategy is based on group discussions, debates and negotiations. The method has the ability to align all organizational levels from a top down and bottom up approach.

M9 Draft NTA 8021 Performance measurement of real estate

The draft method 'NTA 8021 Performance measurement of real estate' (NTA 8021) finds its origin in the Dutch Ministry of Defence and is momentarily further developed by the Workgroup NTA 8021 towards a NEN (Dutch standard). The workgroup consists of members from public and non-public organizations. The essence of this method consists of excerpts of the NTA 8021 (2009) and is translated from Dutch to English. It is on several parts slightly adjusted and edited to ensure a coherent story for classification.

Essence

The objective of the NTA 8021 is to offer a tool to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand with real estate supply. Questions that need to be answered are: to what extent does the available real estate fits the new needs and; how can the current real estate be adapted or maintained in the optimal way to these new needs. The NTA 8021 reaches a hand in determining the accommodation strategy and the decision making process.

The NTA 8021 can be used to: define the organizational demand for real estate by establishing performance criteria, this is called the 'usage profile'; assess the current real estate supply on the established performance criteria, this is called the 'real estate profile'; match and analyse the organizational demand for real estate to the available real estate supply, this called the 'performance analysis'.

With the information several practises are possible:

- To establish and communicate specific needs of a stakeholder;
- To record specific needs of a stakeholder;
- To record specific performance of a building or portfolio;
- To benchmark different buildings;
- To develop accommodation scenarios (alternatives).

The target groups for the NTA 8021 are numerous. It ranges from big organizations with many buildings to organizations with a few buildings and from owners and users of real estate to architects, project developers and maintenance companies.

Real estate can be judged on many criteria which vary from aspects like accessibility to comfort. To ensure all possibilities the NTA 8021 makes use of six themes:

- User value, the degree in which real estate can be used for intended activities;
- Physical value, the degree in which is obliged to building legislation;
- Facilitating value, the degree in which support functions are available;
- Image value, the degree of desired appearance;
- Economical value, the financial value of real estate;
- Technical value, the degree of durability of real estate and its surroundings.

Each of the mentioned six themes consists of sub themes. They are on their turn subdivided into performance aspects for different spatial levels like area, complex, building and unit. The performance aspects are expressed into indicators (criteria) measured on six point scales.

The functional performance analysis is the result of a measurement. The result is an overview of deviations in terms of shortage points and plus points of the real estate profile in relation to the usage profile. With a (still to be further elaborated) questionnaire the usage profile is determined for different functions like office, living or education. The functions are translated into performance aspects and criteria. The criteria are expressed on a six point scale where 1 is excellent and 6 is very bad. In the usage profile is defined which performance aspects and criteria points are expected of the real estate.

The demands can vary in different performance aspects and range from absolutely necessary to nice to have. The stakeholders backgrounds and interests determine the choice for certain performance aspects and their value on importance. The importance is expressed into A, B or C, where A is of highest, B is of higher and C is of medium importance. The criteria, their points and importance rating, are used to establish a usage profile in an objective measurable order. The most important question for selecting in this case is: what is or are the organizational goal(s) a stakeholder wants to achieve based on which performance aspect and criteria points?

The real estate: area, complex, building and unit, are assessed through a survey on the spot based on the usage profile. This will generate a list with criteria and points per performance aspect of the actual appearance of the real estate.

Matching both profiles will generate an overview of deviations. The degree of deviations is measured with the real estate profile in relation to the usage profile. If this comparison is negative, the real estate supply doesn't fulfil the demanded performance criteria. In some circumstance the negative equation can be removed or overcome by technical interventions. If possible interventions on existing real estate do not bridge the gap new real estate is to be realized.

The NTA 8021 has in total almost 500 performance aspects, ranging from presence of applicable permits to the difficulty degree of demolition. Filling in all these aspects does not fulfil an effective way of establishing the profiles. In order to provide a quick scan the maximum amount of aspects should not transcend 25. A more thorough scan should not transcend the amount of 150. The selection is different per stakeholder and type of building. Therefore three kinds of methods are available to select the relevant performance aspects:

- A standard selection of performance aspects for predetermined use, for example only judging a housing complex with performance aspects relevant for living;
- The set up default performance aspects for predetermined use, for example office use with the performance levels already clear;
- To judge performance on a higher level by judging underlying items as a whole, this means not further elaborating in detail.

The performance measurement compares the usage profile to the real estate profile with deviations as a final result. The next thing is to generate possible interventions combined into different alternatives to align the real estate profile towards the user profile to reach the optimum. The possible alternatives are expressed into costs (intervention costs + exploitation costs after the interventions). When these latter costs are compared with renewal (investment costs + exploitation costs) the cost effectiveness can be determined. The cost effectiveness is expressed in the amount of years the investment is earned back by saving exploitation/operating costs. The amount of years the investment is earned back is determined by calculating (Δ investment costs/ Δ exploitation costs). The results per unit or building can be shown in a matrix in order to calculate the costs for the different alternatives. The alternatives are then compared to the organizational goals to make a final choice for implementation (the NTA 8021 does not provide clear information by whom, on what and how these alternatives are compared on the organizational goals).

The performance analysis consists of matching the demand side (organizational goals) with the supply side (real estate) according to the following steps: (figure A1.11)

1. Establish a usage profile through translating organizational goals into real estate demand by using a questionnaire containing questions with six point scales;
2. Establish a real estate profile by performing a site survey on the demanded criteria mentioned in the usage profile;
3. Match the usage profile with the real estate profile by showing the deviations between the two profiles;
4. Prioritize performance aspects on importance;
5. Define interventions and alternatives to align the real estate profile towards the usage profile expressed into costs (intervention costs + exploitation costs after the interventions);
6. Compare the alternatives (solutions) to the organizational goals and make a choice for implementation. In the case of choosing an existing (already built) alternative the optimum is to be achieved in the large vertical rectangle of the matching step. In the case of a new (to be build) alternative the optimum is to be achieved in the smaller vertical dashed rectangle of the matching step.

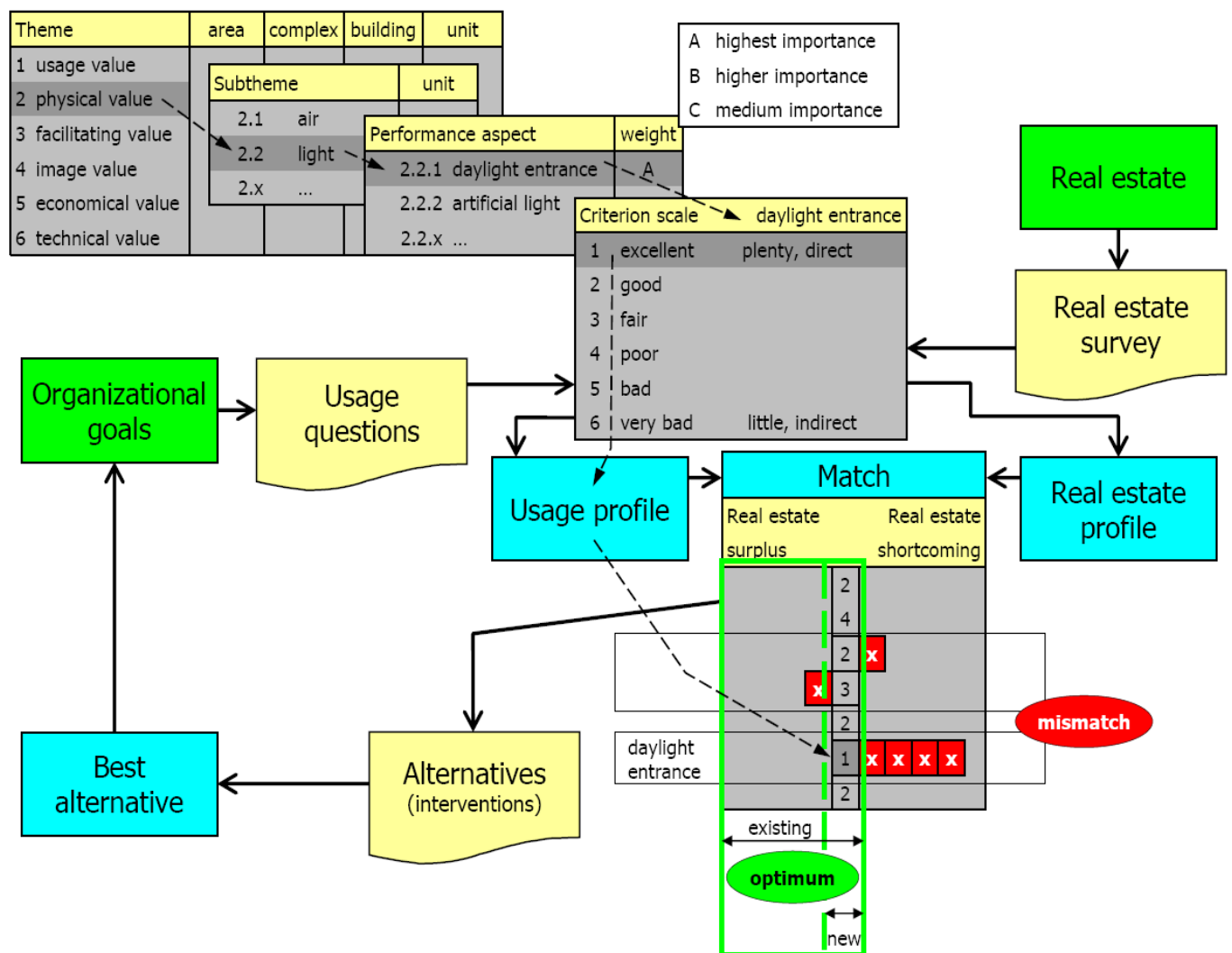


Figure A1.11; Performance analysis and process scheme

Source; Translated from NTA 8021, Performance measurement of real estate (2009) with addition of the steps 5 and 6

Classification M9 NTA 8021 Performance measurement of real estate

Approaches

The method NTA 8021, performance measurement of real estate focuses primarily on bridging the mismatch between demand and supply. This refers to the strategic gap approach.

Approaches

		Intended situation	
		Weak	Strong
Continued existence	Strong	Strategic variable 1	Stakeholders 2
	Weak	Societal need 4	Strategic gap 3

Views

		Goal orientation (what)	
		Strong	Weak
Process orientation (how)	Strong	Logical Incrementalism Judgement Strategy 'Judging'	Guided Learning Compromise Strategy 'Negotiating'
	Weak	Rational Planning Computational Strategy 'Analysing'	Emergent Strategy Inspirational Strategy 'Gambling'

Views

The objective of the NTA 8021 is to offer a tool to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand with real estate supply.

The result of the method is to establish accommodation scenarios (alternatives) expressed into object interventions and costs.

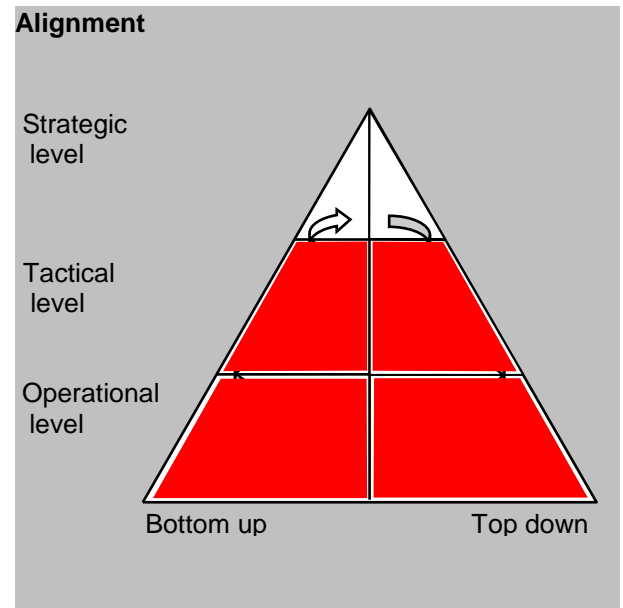
The method starts with establishing a usage profile based on a questionnaire to determine the minimal performance aspects of the portfolio demand. It continues with rational and analytical considerations for optimal attuning this demand with supply by designing various scenarios (alternatives) containing object interventions and costs.

The decision making process concerning the selection of the optimal alternative is based on the analysis of costs and contribution towards organizational goals.

The accommodation strategy design process and decision making process is analytic and systematic and therefore it relates to the view of rational planning.

Alignment

The method aligns the tactical level and operational level from a top down approach. A bottom up approach is assumed from the operational level to the tactical level with the determination of the usage profile.



Summary

The objective of the NTA 8021 Performance measurement of real estate is to offer a tool to improve organizational performance through achieving organizational goals by optimizing the match of real estate demand with real estate supply. The result of the method is to establish accommodation scenarios (alternatives) expressed into object interventions and costs. The method is focussed on the strategic gap approach. The instrument used is a questionnaire to establish the usage profile and determination of the real estate profile. The process starts with establishing a usage profile based on a questionnaire to determine the minimal performance aspects of the portfolio demand. It continues with rational and analytical considerations for optimal attuning this demand with supply by designing various scenarios (alternatives) containing object interventions and costs. The decision making process concerning the selection of the optimal alternative is based on the analysis of costs and contribution towards organizational goals. The accommodation strategy design process and decision making process is analytic and systematic and related to the view of rational planning. The method aligns the tactical level and operational level from a top down approach. A bottom up approach is assumed from the operational level to the tactical level with the determination of the usage profile.

APPENDIX II, DRAFT NTA 8021