



Strategic supplierbuyer relationships: A marriage of convenience

> Nadine M.C. Joubert February 2009

Strategic supplier-buyer relationships: A marriage of convenience

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A thesis in fulfilment of the requirements for the degree of

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Management Summary

The management of the Purchasing department of Surface Radar at Thales Hengelo commissioned this research assignment, with the aim to improve their management of strategic supplier-buyer relationships and fill Thales' knowledge gap on this subject. The objective of this study was to develop a conceptual decision support model that addresses the selection of appropriate strategic partners, the content, development, and support of strategic supplier-buyer relationships. The main research question is:

What should a conceptual decision support model be like to improve the selection, content, development, and support of Thales Hengelo's strategic supplier-buyer relationships in a modular sourcing context?

A modular sourcing context refers to the part of the upstream supply chain that consists of Thales Hengelo's suppliers of modules and the second and third tier suppliers in this chain.

The conceptual decision support model is depicted on the next page. This model provides common language to discuss issues related to strategic supplier-buyer relationships, guidelines for decision making, and structured knowledge to fill Thales' knowledge gap on strategic supplier-buyer relationships. Furthermore, our study shows that the model leads to an improvement of Thales' procedures. We demonstrated that the model tackles the discrepancies between Thales' current procedures and literature. Furthermore, the participants of a conference room test and the members of a test panel perceived the model as useful. Therefore we recommend Thales Hengelo to adopt this model.

The model consists of four building blocks: the selection, content, development, and support building blocks. The model shows the life cycle stages of a strategic supplier buyer-relationship using marriage as a metaphor. Furthermore, it contains the learning cycles the partners go through as they move towards a higher level of maturity. The midlife crisis stage is depicted at the end to reflect the life cycle approach, though this point can be reached in each stage of the life cycle.

The model building blocks selection and content are part of the selection and courtship stage. The selection building block uses portfolio models to select potential strategic partners. The content building block provides a checklist of possibilities for content and a technique to support potential strategic partners in their discussion of what activities should be included in the collaboration. The development building block indicates the important characteristics, business and relationships activities, and role of the relationship manager for each stage. Finally, the support building block consists of the critical success factors and the recommended support activities for each stage.

A conference room test, interviews with the members of a test panel, and evaluation of the model based on several criteria showed that the model can be improved by:

- 1. Increasing the prescriptive extent of the model;
- 2. Developing tools to increase its practical usefulness.

Further academic research could support the increase of the prescriptive extent of the model, though one should keep in mind that strategic supplier-buyer relationships is a complex subject. It requires an extensive strategic analysis taking into account the unique features and context of a relationship. There are so many possible courses of action that it is difficult for researchers to be prescriptive on which exact course an organization should take.

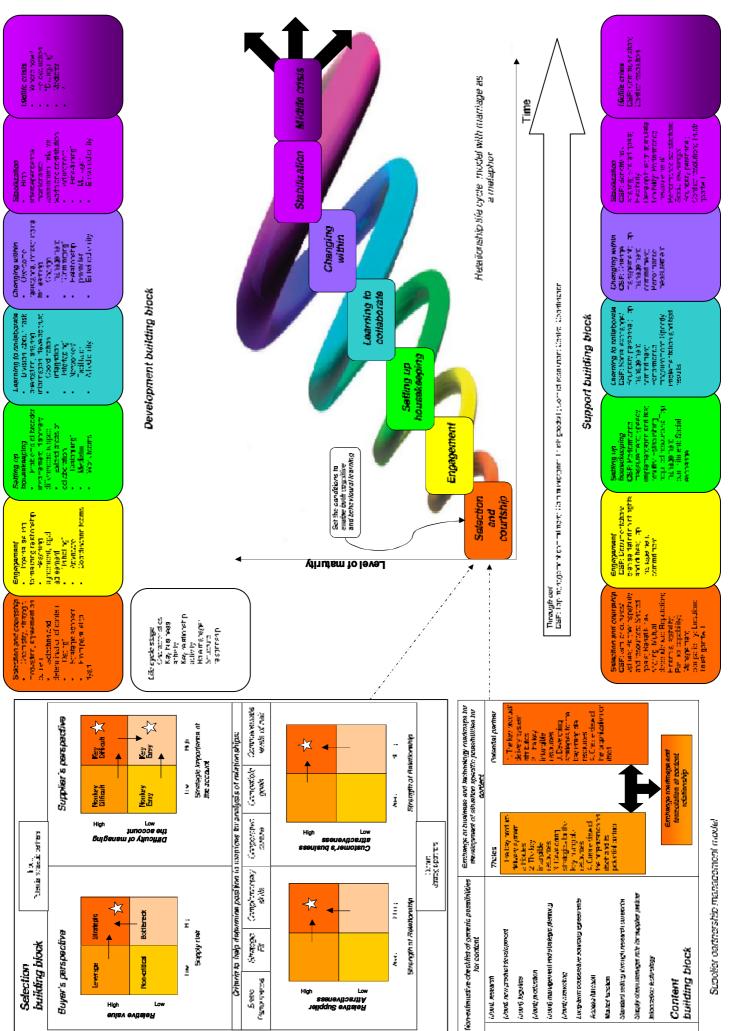
Appendix 5, 6, 7, 9, and 11 provide some tools that can serve as a starting point for the development of practical tools. We recommend Thales to further develop these tools to get the model embedded in their organization.

The implementation of the model implies a change that needs to be managed. We concluded that the personnel involved in strategic supplier-buyer relationships needs to be able to deal with the complexity and level of abstraction related to the subject of strategic supplier-buyer relationships. We proposed the creation of a strategic purchasing function with academic skills and competences. This function could among other thing be made responsible for the implementation of the model and the management of strategic supplier-buyer relationships.

This organizational change may lead to resistance, for it involves a conflict of interest for the tactical purchasers as it affects their hierarchical position in the organization. Therefore, we advice Thales to involve the tactical purchasers in an early phase.

As for the implementation of the model, we advise Thales to host training sessions to inform the tactical and operational purchasers about the use of the model. The model can be subdivided in more manageable units and presented in sessions dealing with each subunit separately. The model can first be used on one specific relationship as a test case and its development should be monitored. After a test period of about two years the management could evaluate if the model works for Thales and decide whether or not it should become a Thales best practice.

Finally, we recommend Thales to develop a strategy for strategic supplier-buyer relationships that fits their organization and market. Both our literature study as our field test taught us the importance of a strategy for strategic supplier-buyer relationships that fits the overall strategy of an organization. Furthermore, we advise Thales to investigate if there are appropriate suppliers willing to get engaged in such a close-knit relationship and what the implications of the purchasing volume are for the willingness of these suppliers to forge a strategic supplier-buyer relationship.



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Preface

In front of you lies my master thesis for the fulfilment of the last requirement for attainment of the degree of Master of Science in Industrial Engineering and Management. This is the fruit of six months of labour at Thales Hengelo. During this period I have studied the topic of strategic supplier-buyer relationships at the Purchasing department of Surface Radar. I also had the opportunity to observe the outsourcing of the Mechanical Parts Manufacturing department and the establishment of Norma MPM. This has been one of the most valuable experiences in the course of my graduation project.

I thank Ben Geertsema, my supervisor at Thales, and Merijn Linthorst and Fredo Schotanus, my supervisors from the University of Twente, for their constructive criticism. Their input and guidance has been essential to the successful execution of my graduation project. Furthermore, I thank my colleagues at Thales Hengelo for their contribution to this graduation project and to the pleasant work atmosphere. I also thank the members of my test panel, Arno van der Heijden, Gert Jager, Mark van Zutphen, and Fred Westerveld. I also render thanks to my parents, my sister, and other family members and friends for their support. Last but not least, I thank God for giving me the strength to persevere.

Hengelo, January 30, 2009 Nadine Joubert

Introduction

Modular sourcing is increasingly applied in purchasing by large OEMs, such as Thales. This sourcing policy has many advantages, though modular sourcing has also lead to an increased reliance on the supplier's component knowledge and an extended role for the first tier supplier as mediator between Thales and the second and third tier suppliers. As a result of modular sourcing supplier-buyer relationships have gained in importance.

Thales is aiming to improve its management of supplier-buyer relationships and has identified a number of strategic suppliers with whom they intent to develop a strategic supplier-buyer relationship. The management of the Purchasing department has come to the conclusion that Thales has a lack of knowledge of the management of strategic supplier-buyer relationships. This led to the initiation of this research assignment.

The objective of this study is to develop a conceptual decision support model for strategic supplier-buyer relationships in a modular sourcing context that addresses:

- the selection of appropriate strategic partners;
- the content of the strategic supplier-buyer relationships;
- the development of strategic supplier-buyer relationships;
- the support of strategic supplier-buyer relationships.

This thesis gives an account of this study. Chapter 1 gives a brief description of Thales. Chapter 2 discusses the formulation of the problem and Chapter 3 deals with the analysis of the problem. The results of our literature study to support the development of the model are reported in Chapter 4, 5, 6, and 7. Chapter 8 discusses the conceptual decision support model. Chapter 9 deals with how the conceptual decision support model functions in practice and Chapter 10 is dedicated to the evaluation of the model. Finally, Chapter 11 presents the conclusions and recommendations of this study.

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1 Company description

This chapter discusses the context of this study. The first paragraph gives a short introduction to the Thales Group. The following section will give an overview of Thales Nederland. Finally, we will zoom in on Thales Hengelo, the Purchasing department, and supplier-buyer relationship management at Thales Hengelo, which is the object of this study.

1.1 Thales Group

Thales group is world leader in mission-critical information systems for the markets Aerospace and Space, Defence, and Security. The company is domiciled in France and builds complex systems to meet the requirements of both civil and military customers in these markets. Thales Group is active in 50 countries and has 68,000 employees worldwide contributing to total revenues of € 12.3 billion in 2007. 25% of their business is dedicated to Aerospace and Space industry, 25% to Security, and 50% to Defence. Thales Group has a highly innovative profile, with a Research and Development (R&D) spending of € 2.2 billion (18% of total revenues), approximately 300 innovations annually, over 15,000 patents, and over 30 cooperation agreements with universities and public research facilities.

1.2 Thales Nederland

Thales group is also active in the Netherlands. Thales Nederland has operations at 4 locations: Hengelo, Huizen, Eindhoven, and Delft. The head office of Thales Nederland is located in Hengelo, accommodating the divisions Naval, Air Systems, and Security Solutions & Services. The division Land and Joint Systems has its operations in Huizen and Eindhoven. Part of Thales Nederland's R&D activities is conducted in Delft and the company has cooperative research projects with the universities of Delft and Twente. Appendix 1 shows the divisions and business units of Thales Nederland. Security Solutions & Services is depicted as D3S-Project in Appendix 1. In 2007 Thales Nederland had total sales of approximately € 450 million of which only 25% are domestic. It is the largest defence company in the Netherlands, employing 2,100 people. Furthermore, it is the main centre of excellence within the Thales Group for naval activities.

1.3 Thales Hengelo

As discussed above the operations of the divisions Naval, Air Systems, and Security Solutions & Services of Thales Nederland are performed in Hengelo. The Naval division develops and produces naval missile control systems, naval sensors, radars and infrared systems designed to defend a naval ship against air threats. Air Systems produces various types of ground-based systems that provide ground forces with the surveillance capabilities. Security Solutions & Services provides integrated support to customers using Thales Nederland's products. Furthermore, they offer ground transportation solutions, critical infrastructure security systems, and simulation solutions.

1.4 The Purchasing department

The Purchasing department in Hengelo handles the supply of Surface Radar NL a subdivision of the division Air Systems. The division Air Systems is active in both France and the Netherlands. The purchasing departments in the Netherlands and France collaborate intensively and have several suppliers in common.

The Purchasing department in Hengelo is segmented in primary process procurement and general expenses. Direct procurement is responsible for the supply of developments, goods and services for subdivision Surface Radar. Appendix 1 shows that the Purchasing department also indirectly supplies the business units Above Water systems, Naval Services,

and Industrial services. The business unit Above Water Systems handles its own primary purchasing, but uses consoles and sensors for command and control systems that the Purchasing department of Surface Radar provides. Naval Services and Industrial Services handle the procurement of the products that they sell directly to the customers. For their assembly activities they use printed circuit boards that are produced by Surface Radar. Concluding, Thales uses a combination of centralized and decentralized purchasing. The underlying argumentation is that the division Naval uses the production facilities of the division Air Systems, because it is too expensive to maintain two production departments for the same parts.

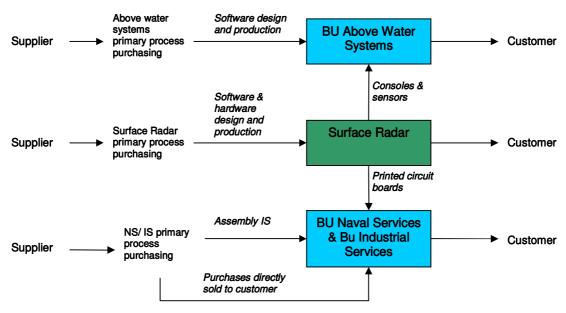


Figure 1. Purchasing Surface Radar activities for division Naval

The direct procurement segment is divided into the tactical purchasing group, responsible for the specification of the need, supplier selection, and contracting and the operational purchasing group, responsible for ordering, monitoring and after-care. This study limits itself to the direct purchasing part of the department and Figure 2 shows the organization chart of this segment.

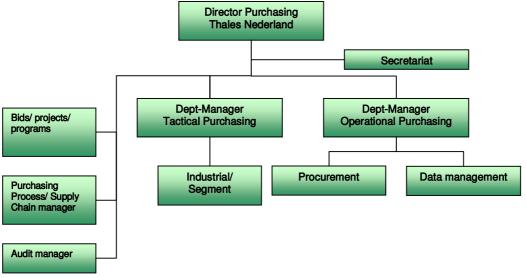


Figure 2. Organization chart Purchasing department

The commodities to be purchased are divided into article groups. A cross-functional team is responsible for each article group. This team consists of at least one tactical purchaser, an operational purchaser, and a technical specialist from the R&D department. Each team is responsible for the sourcing of the products in their article group.

The mission of the subdivision Surface Radar is to be a market driven supplier of radars and sensors to system integrators and end users in naval and ground fields. Therefore, the mission of their Purchasing department is to achieve the highest possible contribution to the optimisation of the results of Surface Radar, through an optimal purchasing of developments, products, goods and services, by means of a pro-active and customer-oriented attitude, based on professional knowledge and skills.

The department has formulated a number of objectives for 2008 in order to fulfil their mission:

- 1. Financial objectives
 - Improve competitiveness of key products;
 - Minimize total integral costs of the purchasing organization;
- 2. Logistics
 - Improve supplier delivery performance;
 - Improve customer product availability;
 - Contribute to lead time reduction:
- 3. Supplier management
 - Implement supplier partnerships;
 - Improve supplier management;
- 4. Quality
 - Improve usage of the best suppliers on the Approved Vendor List;
 - Supplier performance (vendor rating);
 - Implement qualitative vendor rating.
- 5. Organization, People & Management, Knowledge
 - Integration of purchasing in Surface Radar;
 - Develop people and skills;
 - Relocate work packages in relation to the outsourcing of certain production activities;
 - Sharing purchasing knowledge on a regular basis (website, sharing purchasing documents, purchasing convention, etc.).

This study deals with strategic supplier-buyer relationship management, which is related to the third objective of the Purchasing department. The following chapter discusses this topic in further detail.

2 Problem statement

This chapter is dedicated to the problem statement. The motivation and relevance of this study, the objectives and scope of this research, the research steps, the research questions, and the methodology are covered in the following paragraphs. The last paragraph gives an overview of the structure of this thesis.

2.1 Introduction

2.1.1 Increased application of modular sourcing

Thales Hengelo increasingly applies modular sourcing in purchasing and supply management. Modular sourcing in this study refers to the sourcing of modules. Many OEM are adopting modular strategies, but there is still confusion regarding what exactly constitutes a module (Doran, 2003). Thales Hengelo defines modules according to *functional* logic. This means that every element in the functional design has a role to play in the functionality of the total system. Another definition of a module is according to *physical* logic, where every element is part of the physical structure of the system (Ulrich, 1995). Thales distinguishes three levels in the functional design, system level, subsystem level, and module level, and five levels in the physical design as depicted in Figure 3. The system is composed of subsystems and subsystems are composed of modules. These modules are created through the combination of different components and/ or subassemblies and fulfil a specific function. Modules can be designed independently, but are still able to function as an integrated whole at system level (Baldwin and Clark, 1997).

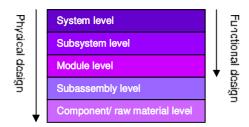


Figure 3. Levels of modularisation

There are certain advantages to modular sourcing that motivated Thales Hengelo to pursue this policy. Such advantages are increased focus on core competences, reduction of the supply base and therefore of supplier handling costs, and joint innovation through increased supplier-buyer interaction.

2.1.2 Increased importance of strategic supplier-buyer relationships

Due to the increasing use of modular sourcing, supplier-buyer relationships with Thales Hengelo's first tier suppliers have become more important. Thales Hengelo used to develop and build whole systems in-house and had extensive technical knowledge of all their systems. Since the introduction of modular sourcing Thales Hengelo has focused more on its role as system integrator and this has led to a decrease of component knowledge. The dependence on first tier suppliers' components knowledge has increased consequently. Another implicit implication of modular sourcing is the addition of second and third tier suppliers to the supply chain. As a result the first tier suppliers' role has expanded to include important supply chain management activities and serve as a mediator between Thales Hengelo and the second and third tier suppliers. Thales Hengelo is confronted by the consequences of systems sourcing and is seeking to improve the management of its supplier-buyer relationships.

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In the pursuit of improvement of the management of supplier-buyer relationships Thales Hengelo has categorized its suppliers through application of the Kraljic matrix (see Paragraph 3.1). They identified a number of strategic suppliers with whom they aim to develop a strategic supplier-buyer relationship. This is defined as the interaction between Thales Hengelo and those organizations that supply Thales Hengelo with strategic modules and with whom Thales Hengelo intents to intensify the collaboration to include other aspect such as joint R&D. Thales argues that close collaboration with these suppliers will allow them to make better use of the competences of strategic suppliers and so provide added value to their customers in terms of quality, logistics, innovation, and costs. Furthermore, it will enable Thales to reduce the risks resulting from high dependability on a supplier. Close collaboration with suppliers can be a means of fostering trust between the buyer and a supplier and trust is a mechanism to deal with risk. Trust can be defined as the belief that the other party will act in the firm's best interest in circumstances that the other party could take advantage or act opportunistically to gain at the firm's expense (McCutcheon and Stuart, 2000). Other methods to reduce risk can be through joint investments in innovation projects or by creating mutual dependence. Thales could do this by providing the supplier with capabilities or resources that can help the supplier develop a competitive advantage.

2.1.3 Practical relevance: A lack of knowledge on the management of strategic supplier-buyer relationships

The management of the Purchasing department of Thales Hengelo has identified a lack of knowledge of the management of strategic supplier-buyer relationships in a modular sourcing context. A modular sourcing context refers to the part of the upstream supply chain that consists of Thales Hengelo's suppliers of modules and the second and third tier suppliers in this chain. Among other things, the Purchasing handbook of the department does not contain guidelines on how strategic supplier-buyer relationships should be managed. To fill this knowledge gap Thales Hengelo has among other things approached scholars seeking to learn more on how to select appropriate partners, what partnership exactly means, and how to establish such a relationship in practice. The interaction has yet been without success. The persisting knowledge gap has lead to the formulation of this research assignment.

2.1.4 Academic relevance: A lack of knowledge on the management of strategic supplier-buyer relationships

The topic of supplier-buyer relationships in a modular sourcing context is also relevant from a theoretical point of view. According to Gadde and Jellbo (2002) big OEM-firms are increasingly applying modular sourcing. Therefore many OEM-firms face similar challenges as Thales in dealing with the consequences of modular sourcing for the management of supplier-buyer relationships. Gadde and Jellbo support the view that modular sourcing has implications for the management of supplier-buyer relationships and argue that appropriate buyer-supplier interfaces should be developed. Duran (2003) also agrees that modular sourcing "is likely to influence the nature of supplier-buyer relationships". Though these authors agree that modular sourcing affects the management of supplier-buyer relationships, they don't address the issue of what supplier-buyer relations is most appropriate in a modular sourcing context.

Saccani and Perona (2007) stress that no best kind of supplier-buyer relationship exists, but rather that a relationship should be consistent with the exchange context. Gadde and Snehota (2000), Olsen and Ellram (1997a), Bensaou (1999), and Kraljic (1983) also support that view. Given that the exchange context has changed due to modular sourcing, firms should evaluate their relationship to verify their consistency with the exchange context. Hsuan (1999) argues that many firms are dealing with the challenges of modularisation through strategic partnerships. We question whether a strategic partnership is always the most appropriate supplier-buyer relationship given the various exchange situations. Saccani and Perona (2007), Olsen and Ellram (1997a), Bensaou (1999) and Kraljic (1983) among

others have suggested models on how to shape supplier-buyer relationships based on the exchange context. These can be useful to study when a firm should opt for a strategic partnership to deal with the implications of modular sourcing.

If a firm chooses to pursue a strategic partnership, the next step would be to develop such a relationship. Saccani and Perona's (2007) future research suggestion is to investigate how relationships can be implemented. They argue that their model does not take into account all strategic and environmental variables that could influence the choice of a relationship, and future studies could investigate how these factors could be included in the implementation process. We propose the inclusion of these strategic and environmental variables in the model for choosing a certain relationship, for they can sometimes determine the choice for a relationship. For example if legislation does not permit export of knowledge to a certain country, it could limit the possibilities of a strategic partnership with an international supplier aimed primarily at joint R&D. We do agree though that it is important to study how relationships should be implemented. For we found that none of the previously mentioned authors, who formulated models for shaping supplier-buyer relationships, have studied how these relationships should be implemented.

Olsen and Ellram (1997b) reviewed articles on supplier-buyer relationships and found that literature on the characteristics, establishment, development and management of supplier-buyer relationships is primarily descriptive. They argue that business is an applied field. Therefore researchers should provide business people with tested, usable frameworks to apply to decision-making in order to improve desired outcomes of supplier-buyer relationships. We agree that business research should be both descriptive and normative. Applied research is aimed at problem solving and only describing the situation is not enough to solve problems. Managers need directives on how to act to solve the problems at hand. Therefore literature would benefit from a normative approach to the study of supplier-buyer relationships.

2.2 Research objectives

As stated previously, the increased use of modular sourcing has led to an increased importance of the relationships between Thales Hengelo and its first tier suppliers. Thales Hengelo is aiming at reducing time-to-market, risks and costs, and securing its supply by improving its management of strategic supplier-buyer relationships. To achieve this they need to fill the knowledge gap on the management of strategic supplier-buyer relationships in a modular sourcing context. Specifically they need answers to how to select appropriate partners, what partnership exactly means, and how to develop, and support such a relationship in practice. The management of the Purchasing department requires this knowledge to be presented in a structured and accessible manner, to facilitate the integration of the new insights in the work processes of the department. This study is therefore aimed at the development of a conceptual model to support decision-making concerning strategic supplier-buyer relationships.

The objective of this research is to develop a conceptual decision support model for strategic supplier-buyer relationships in a modular sourcing context that addresses:

- the selection of appropriate strategic partners;
- the content of the strategic supplier-buyer relationships;
- the development of strategic supplier-buyer relationships;
- the support of strategic supplier-buyer relationships.

This study limits itself to the suppliers of strategic modules. The conceptual decision support model should enable the choice of activities to be included in the scope of a strategic supplier-buyer relationship, referred to as the content. Managers should follow certain directives to develop a relationship given the content of a strategic supplier-buyer relationship. The model should indicate which directives are useful under what

circumstances. Finally, the support of strategic supplier-buyer relationships refers to the directives to be followed in order to consolidate a strategic supplier-buyer relationship. The model should indicate how managers could support strategic supplier-buyer relationships. For example the model has determined that a supplier is an appropriate partner and that the content of the relationship should be joint new product development. In this case the model could prescribe that managers should form an R&D team consisting of members of both the buyer and supplier firm to develop the relationship. Furthermore, to support the relationship the model could prescribe that top management of both companies should meet semi-annually to discuss technology roadmaps.

The development of a conceptual decision support model can be characterized as a design problem. Therefore some useful research steps originating from the design methodology shall be reviewed in the next paragraph, leading to the formulation of the research questions for this study.

2.3 Research steps

Figure 4 gives an overview of the steps involved in the design process.

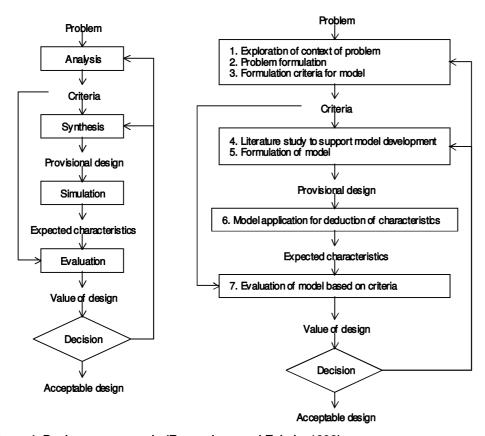


Figure 4. Design process cycle (Roozenburg and Eekels, 1998)

The design process cycle starts with a problem. In the analysis phase the designer formulates the problem statement and the criteria that will be used to evaluate the solution. A criterion expresses a certain standard the design should meet. The synthesis phase is used to formulate a provisional solution to the problem by the means of a design proposal. In the simulation phase the designer studies the expected characteristics of the design through reasoning or experiments. The characteristics are the distinguishing traits, qualities, or features (Merriam Webster Online Dictionary, 2005) of the design. The characteristics of a design determine how the design functions in practice. For example a characteristic of the

model could be that it is visually attractive and therefore the model is useful in practice as a tool to support communication about strategic supplier-buyer relationships. The evaluation phase serves to determine the value of the design by assessing to what extent the design meets previously formulated criteria. Based on the results of the evaluation phase a decision is made whether or not the design is acceptable (Roozenburg and Eekels, 1998).

The steps of the design process cycle can be used as a guide for the research steps necessary for the development of a conceptual decision support model. Figure 4 gives an overview of the seven research steps and how they relate to the steps of the design process cycle.

2.4 Research questions

In previous paragraph we presented the research steps for the design of a conceptual decision support model. Based on these research steps we formulated the sub questions that will serve to answer the main question of this study, which is:

What should a conceptual decision support model be like to improve the selection, content, development, and support of Thales Hengelo's strategic supplier-buyer relationships in a modular sourcing context?

The following sub questions have been formulated for each of the previously discussed design steps:

1. Analysis

- a. How does Thales Hengelo currently deal with the selection, content, development, and support of strategic supplier-buyer relationships?
- b. What are the criteria for evaluation of the conceptual decision support model?

2. Synthesis

- a. How should Thales Hengelo deal with the selection, content, development, and support of strategic supplier-buyer relationships according to literature?
- b. What is the discrepancy between how Thales Hengelo currently deals with the selection, content, development, and support of strategic supplier-buyer relationships and how Thales Hengelo should deal with this according to literature?
- c. What should a conceptual decision support model be like to tackle this discrepancy?
- 3. Simulation
 - a. How does the conceptual decision support model function in practice?
- 4. Evaluation
 - a. To what extent does the conceptual decision support model meet the criteria for evaluation?

Sub question 1a is related to the research steps (1) exploration of the context of the problem and (2) problem formulation. Sub question 1b is concerned with step (3) formulation criteria for evaluation of the model. Research step (4) literature study to support model development links to sub question 2a. Research step (5) formulation of the model is related to sub questions 2b and 2c. Sub question 3a is associated with step (6) model application for deduction of characteristics. Finally, research step (7) evaluation of the model based on criteria is linked to sub question 4a.

2.5 Methodology

This paragraph discusses the methods used for this study. Each subparagraph corresponds with one of the design steps discussed in Paragraph 2.3 and explains how this study intents to answer the corresponding research questions.

2.5.1 Analysis

The analysis phase contains the research steps (1) exploration of the context of the problem, (2) the problem formulation, and (3) the formulation of criteria for evaluation of the model.

For (1) the exploration of the context of the problem, we studied documents containing information on the organization of Thales Group and Thales Nederland, and procedures and processes of the Purchasing department. Furthermore, several interviews with experts of the Purchasing department revealed what the current working standards, goals, and problems are. Appendix 2 contains a function description of the experts and the questionnaire used for the interviews. This information led to (2) the formulation of the problem statement that can be found in Paragraph 2.1 and will be used to answer the first sub question: How does Thales Hengelo currently deal with the selection, content, development, and support of these relationships?

For (3) the formulation of the criteria we will use the guidelines presented by Roozenburg and Eekels (1998). Criteria should comply with the following rules:

- a. they should be valid separately;
- b. all criteria together should cover the objectives of the study;
- c. they should be operational:
- d. they should be non-redundant;
- e. the list of criteria should be as short as possible.

We will follow a three-step procedure to answer the question: What are the criteria for evaluation of the conceptual decision support model? The first step is dedicated to the collection of what the critical stakeholders perceive as relevant criteria. To do so we will need to identify who the critical stakeholders are. Therefore we will perform a stakeholder analysis using the actors-listing framework proposed by Groote et al. (2001). First we will name all the actors and group them based on the part they play in this research project. Following, we will determine the degree of involvement of the actors by placing them in one of the three categories: directly involved, visibly involved, or invisibly involved. Finally, we will draw up the framework listing the actors based on their role and degree of involvement.

To determine the critical stakeholders for this research project, we will use a matrix based on the dimensions *interest in the project* and *influence on the project* (Groote et al., 2001). The critical stakeholders are those who take great interest in the project and have a lot of influence on the project. Actors who are not interested in the project and who are able to influence the outcome should also be taken into consideration. For the collection of the criteria we will host brainstorm sessions and invite the critical stakeholders. When a group of stakeholders is too large we will only invite a number of representatives of that group. The criteria collected during the first stage reflect Thales Hengelo's view on how they should deal with the selection, content, development, and support of strategic-supplier buyer relationships.

The second step is concerned with the analysis of the criteria and the adjustment of the criteria to comply with the rules discussed before. If the list does not cover all the objectives of this study, we will add the criteria we perceive are indispensable. The third step is dedicated to answering the second sub research question through the final formulation of the criteria, as they will be used for evaluation of the model. We will also present this final list of criteria to the critical stakeholders for a final approval. All the criteria on the final list are considered equally important.

2.5.2 Synthesis

The synthesis phase is dedicated to the research steps (4) the literature study to support the formulation of the model, and (5) the formulation of the model itself.

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The literature study tackles the following sub research question: How should Thales Hengelo deal with the selection, content, development, and support of strategic supplier-buyer relationships according to literature? For the literature study we will follow the steps for literature search suggested by Cooper and Schindler (2003):

- 1. Consult encyclopaedias, dictionaries, handbooks, and textbooks to identify key terms, people, or events relevant to the management question;
- 2. Apply these key terms, people, or events in searching indexes, bibliographies, and the Web to identify secondary sources;
- 3. Locate and review specific secondary sources for relevance;
- 4. Evaluate the value of each source and its content.

Given the limited resources available for this study we will restrict the scope of the search using some guidelines. We will only consult the scientific journals on the list of renowned journals composed by Finn Wynstra, Professor in purchasing management at the Erasmus University of Rotterdam. Appendix 3 gives an overview of this list. Furthermore, we will limit ourselves to the publications from 1980 to the present day, for we argue that publications before 1980 can be regarded as out-dated. We will use the search engine Scopus and only search the journals on the list in Appendix 2 that are available through Scopus. We will search for articles that contain following search terms in their title, abstract, and/or keywords: supplier partner; strategic supplier partnership; buyer-supplier relationship; buyer seller relationship; supplier partner; strategic partnership; supply chain partnership; strategic alliance; purchasing portfolio models; selection partner; modular sourcing; modularisation; development partnership; success factors partnership. The results will be assessed on relevance based on the abstracts. The following criteria will be used to determine the relevance of an article:

- a. The authors should use a similar definition of strategic supplier-buyer relationships as used in this study. Paragraph 4.1 contains our definition.
- b. Articles should provide guidelines, frameworks and/ or models to support the selection, content, development, and support of strategic supplier-buyer relationships.

If a search yields more than 100 results, we will only study the abstracts of those articles that were cited more than 10 times by other authors. The articles we find relevant will be studied. Using the knowledge we acquired we will conduct an expert search to collect about 10 more articles and/ or books on subjects that the previously collected articles paid too little attention to.

We will list the current working methods and the methods found in literature for the selection, content, development, and support in a table. This will serve to identify the differences and similarities. This analysis provides an answer to the sub research question: What is the discrepancy between how Thales Hengelo currently deals with the selection, content, development, and support of strategic supplier-buyer relationships and how Thales Hengelo should deal with this according to literature?

Following, we will proceed with the formulation of a conceptual decision support model that can tackle the discrepancy between how Thales Hengelo currently deals with the selection, content, development, and support of strategic supplier-buyer relationships and how Thales Hengelo should deal with this according to literature. This will provide an answer to sub research question 2c.

The final design will consist of four building blocks, those being the selection of appropriate strategic partners, the content, development, and the support of strategic supplier-buyer relationships (see Figure 5). For each building block we will collect models from literature and/or develop these model elements based on literature. If necessary we will adjust the models from literature to the context of Thales Hengelo. We will approach the "Purchasing Process and Supply Chain manager" (PP/ SCM) and the "Department Manager Tactical

Purchasing" (TPM) for advice on if and how the models should be adapted to fit the Thales situation. The PP/ SCM and TPM have the best understanding of what is needed to close the knowledge gap on strategic supplier-buyer relationships. We will compare their opinion with our own perspective on the matter to draw conclusions on how the models should be adjusted. In case there are several alternative models we will choose those models that best fit the Thales context.

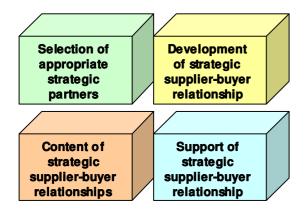


Figure 5. Building blocks conceptual decision support model

2.5.3 Simulation

The simulation phase deals with research step (6) model application for deduction of characteristics. The design will be subjected to a practical test. We will use a two-staged test. The first stage is reserved for the so-called conference room test and will serve to determine the usefulness of the model from Thales' perspective. The second stage is referred to as the field test and will serve to test the usefulness of the model from the supplier's perspective.

The best way to test the model is by practical application of the model to strategic supplier-buyer relationships. This is not feasible for this would require studying the effects of the model on the relationship for a long period of time, yet the time available for this study is limited. Furthermore, application of the model may have negative consequences that cannot be foreseen. For these reasons we choose to test the model in a controlled environment, with negligible risks of hampering the relationships with the suppliers. At Thales Hengelo we will let the critical stakeholders apply the model on a relationship without involving the supplier during a pilot test. We will determine the supplier perspective on the usefulness of the model by requesting the supplier for feedback on the model.

In the first stage, we will host a session in a conference room, hence the term conference room test, and invite the critical stakeholders from Thales. During the session the participants will use the model to select appropriate strategic partners and to define what the content of the relationships should be. For the selection of appropriate partners we will choose from the pool of active suppliers of strategic modules. During this session the model will also be used to define how Thales Hengelo can develop and support a strategic relationship with the potential partners. Furthermore, we will ask the participants to give feedback on the usefulness of the model. The session will result in a list of proposed possibilities for improvement of the model. We will evaluate the results of the session to determine if these proposed adaptations will lead to actual improvements. We can improve the model, based on the findings of this analysis and draw conclusions on the usefulness of the model in practice from Thales' perspective.

The second stage involves the participation of suppliers. The choice of suppliers for the field test is restricted by Thales Hengelo. Due to limited financial resources we are not able to visit all potential strategic partners for the field test, for such a visit would require multiple trips

abroad. Furthermore, we are also not allowed to involve other non-strategic local suppliers of Thales in our field test, for Thales is afraid that these suppliers would interpret this as a signal that Thales perceives them as potential strategic partners.

To be able to test the usefulness of the model from the supplier's perspective in spite of these limitations, we will use a test panel. The test panel consists of a company not related to Thales that has experience with strategic supplier-buyer relationships in a supplier role, an association promoting strategic supplier-buyer relationships through the value sourcing model, and the only local potential strategic partner of Thales. We will present the model to these suppliers and conduct interviews to determine their opinion on the usefulness of the model. The information collected will be compared with the results of the conference room test. This will support the identification of the differences and similarities between a supplier's and Thales' perspective. The model can be adjusted to be useful from both Thales' and the suppliers' perspective. This two-staged test will serve to determine if the model is of practical value and to answer the question: How does the conceptual decision support model function in practice?

2.5.4 Evaluation

The evaluation phase addresses research step (7) evaluation of the model based on criteria. The criteria that we formulated in the analysis phase will be used to answer the last question: To what extent does the conceptual decision support model meet the criteria for evaluation? For the evaluation we will present the model and an extensive explanation of how the model works in practice to the critical stakeholders. Following, these stakeholders will fill out evaluation forms. The respondent is asked to evaluate whether the model meets the criteria using Likert scales.

Cooper and Schindler (2003) identify three types of measurement scales: rating, ranking, and categorization. Rating scales are used when the respondent judges an object in absolute terms against certain specified criteria. Ranking methods are used to make relative comparisons against other similar objects. Finally, categorization asks respondents to put an object in groups or categories. A rating scale would be most suitable for our purpose, for the stakeholders at Thales will be judging the conceptual decision support model based on the criteria formulated during the analysis phase. According to Cooper and Schindler the Likert scale is the most frequently used summated rating scale, probably because it is easy and quick to construct and provides reliable results. A summated rating scale consists of statements that express either a favourable or unfavourable attitude towards the object of interest. In this case a statement could be: the model is visually attractive. The respondent can choose to strongly agree, agree, neither agree or disagree, disagree, or strongly disagree. The scores on the statements can be totalled to measure the attitude of the respondent towards the object. Therefore Likert scales are very appropriate to measure to what extent the stakeholders think the model meets the criteria. We will analyse the evaluation forms and compare them to our scores on the criteria to answer the last sub research question.

2.6 The structure of the thesis

Table 1 shows the structure of this thesis. Chapters 1, 2, and 3 deal with the analysis step. Chapters 4, 5, 6, 7, and 8 are dedicated to the synthesis phase. Chapter 9 tackles the simulation phase and Chapter 10 addresses the evaluation. Finally, Chapter 11 presents the conclusions and recommendations of this study.

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Design Steps	Research steps	Research questions	Chapters
Analysis	Exploration of the context of the problem Problem formulation Formulation criteria for evaluation of the model	 How does Thales Hengelo currently deal with the selection, content, development, and support of strategic supplier-buyer relationships? What are the criteria for evaluation of the conceptual decision support model? 	Company description Problem statement Problem Analysis
Synthesis	Literature study to support model development	 How should Thales Hengelo deal with the selection of strategic supplier-buyer relationships according to literature? How should Thales Hengelo deal with the content of strategic supplier-buyer relationships according to literature? How should Thales Hengelo deal with the development of strategic supplier-buyer relationships according to literature? How should Thales Hengelo deal with the support of strategic supplier-buyer relationships according to literature? 	4. Selection of strategic supplier-buyer relationships 5. Content of strategic supplier-buyer relationships 6. Development of strategic supplier-buyer relationships 7. Support of strategic supplier-buyer relationships
	5. Formulation model	 What is the discrepancy between how Thales Hengelo currently deals with the selection, content, development, and support of strategic supplier-buyer relationships and how Thales Hengelo should deal with this according to literature? What should a conceptual decision support model be like to tackle this discrepancy? 	The conceptual decision support model
Simulation	Model application for deduction of characteristics	How does the conceptual decision support model function in practice?	9. Testing the model
Evaluation	7. Evaluation of the model based on criteria	To what extent does the conceptual decision support model meet the criteria for evaluation?	10. Evaluation
Decision	8. Decision	What should a conceptual decision support model be like to improve the selection, content, development, and support of Thales Hengelo's strategic supplier-buyer relationships in a modular sourcing context?	11. Conclusions and recommendations

Table 1. Overview of the structure of this thesis

3 Problem Analysis

This chapter deals with the sub question: How does Thales Hengelo currently deal with the selection, content, development, and support of strategic supplier-buyer relationships? Therefore we zoom in on the suppliers with whom Thales Hengelo is in the process of developing a strategic partnership. The last paragraph answers the question: What are the criteria for evaluation of the conceptual decision support model?

3.1 Current policy on strategic supplier-buyer relationship

The Purchasing department uses Kraljic's matrix and a variation on the Boston Consultancy Group matrix (BCG matrix) to select potential strategic partners (see Figure 6). First the supplier is assigned to a segment of Kraljic's matrix based on the strategic importance of the purchase and the complexity of the market, constructing the buyer's perspective. Following the supplier's perspective is formed based on the importance of Thales Hengelo's purchase for the supplier and the attractiveness of Thales as a customer. If the supplier perceives Thales as core and Thales perceives the supplier as strategic, the supplier is appointed as a potential strategic partner. Furthermore, Thales makes rudimentary use of the Demand Chain Navigator@ developed by the consultancy firm Berenschot.

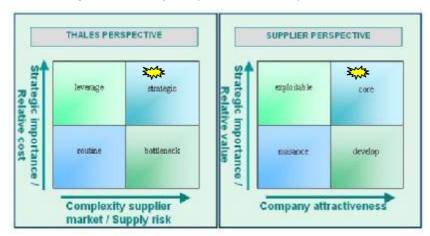


Figure 6. Kraljic's matrix and BCG matrix

Thales Hengelo has appointed three suppliers as potential strategic partners: Supplier A, Supplier B and Supplier C. The following paragraph will elaborate on these suppliers and their relationship with Thales Hengelo.

According to Thales Hengelo a strategic supplier-buyer partnership should include:

- · A long term and trust based relationship;
- Mutual benefits and business opportunities;
- Reduction of total cost of ownership and supply chain risks;
- Sharing of skills, competences, knowledge, and information;
- Early involvement and information exchange on business and technology roadmaps;
- Joint capture and execution of innovative work;
- Joint engagement in relationships with the scientific world.

As for the development of strategic partnerships with suppliers Thales Hengelo believes that to make the relationship really beneficial Thales needs to establish cross-functional relationships with suppliers on three levels, those being:

1. The strategic interface level;

On this level the strategy direction on innovation and technology, price, performance, quality, and time-to-market should be specified.

- 2. The tactical interface level;
 - This level is concerned with the management of performance, risk, incentives, forecasts, technology roadmap exchange, information, and new product and process development.
- 3. The operational interface level;
 - This level handles the steering and control of timely and adequately performance of supply chain processes, including the monitoring of costs and dealing with exceptions and non-conformances.

Thales Hengelo developed a demand organization and coordination model that should help structure the management of strategic supplier-buyer relationships. Figure 7 depicts this model. Demand organization and coordination refer to the bundling of the requirements of the Thales organization and presenting them in a coordinated manner to the strategic supplier. The need for bundling requirements originates from the combination of centralized and decentralized purchasing Thales uses (see Figure 1). The exact content of the elements of the model have yet to be developed and policy on the support of strategic supplier-buyer relationships is also still in the making. Since May 2007 Thales has implemented a steering committee that is responsible for the supply chain cooperation with very strategic suppliers and the potential strategic partners. The steering committee is depicted as demand management assembly in Figure 7.

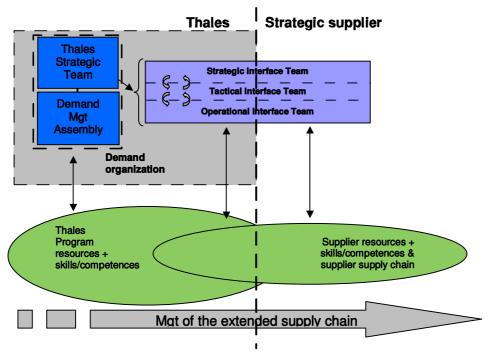


Figure 7. Demand organization and coordination model

3.2 Potential strategic supplier-buyer relationships

To gain more understanding of how Thales Hengelo currently deals with strategic supplierbuyer relationships, we will briefly discuss how they deal with the selection, content, development, and support of the relationships with their potential partners.

Table 2 gives an overview of the conclusions of our analysis of how Thales Hengelo currently deals with the selection, content, development, and support of strategic supplier-buyer relationships. The following paragraphs will discuss these conclusions in further detail.

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	Supplier A	Supplier C	Supplier B	Conclusions
Selection	Kraljic matrix and BCG matrix	Kraljic matrix and BCG matrix	Kraljic matrix and BCG matrix	Measurement issues; no movement between quadrants of matrices
Content	Joint R&D mediating role supplier	Mediating role supplier; cooperative purchasing	Not clear yet	Ad hoc; no clear structured approach to determine content
Development	Formal negotiations exploring possibilities relationship	Interface teams to structure collaboration process	New contact person	No official policy available
Support	No strategic supplier- buyer relationship to support yet	No strategic supplier- buyer relationship to support yet	No strategic supplier- buyer relationship to support yet	No official policy available

Table 2. How Thales Hengelo currently deals with strategic supplier-buyer relationships

3.2.1 Selection

Thales uses the Kraljic and BCG matrix for the selection of potential strategic partners. The models are applied quite consistent, but the meaning of the dimensions and the measurement of the score on each dimension are subject to interpretation. Furthermore, Thales does not consider strategic actions to move between quadrants of the matrices. Thales has reached a consensus on the position of Supplier A and Supplier C in the Kraljic and BCG matrix and of Supplier B in the Kraljic matrix. There is a lot of discussion though on the strategic importance of Thales to Supplier B and whether Thales should appoint Supplier B as a potential partner.

3.2.2 Content

The content of the relationship with Supplier A is primarily joint R&D. Furthermore, Thales wants to give Supplier A a mediating role between Thales and second and third tier component suppliers. Supplier C will also be fulfilling such a role. Thales is looking into the possibilities of cooperative purchasing with Supplier C. It is not clear what the content of the relationship with Supplier B could be. Thales Hengelo currently determines the content of a relationship in an ad hoc manner.

3.2.3 Development and support

Thales Hengelo has no clear policy on the development and support of strategic supplier-buyer relationships. They have conducted formal negotiations with Supplier A to discuss the possibilities of developing a strategic supplier-buyer relationship. In the case of Supplier C Thales will be using interface teams to give structure to the collaboration process. Finally, Supplier B is again a source of concern, for the contact person of Thales at Supplier B has been replaced hampering the development of a strategic supplier-buyer relationship. As for the support of strategic supplier-buyer relationships, Thales Hengelo has not established such a relationship yet so up till now there has been no need for support of these relationships.

3.3 Criteria for evaluation of conceptual decision support model

Previous paragraph has discussed how Thales Hengelo deals with the selection, content, development, and support of strategic supplier-buyer relationships in a modular sourcing context. The aim of this study is to develop a conceptual decision support model to improve the management of these relationships. Therefore we developed criteria that this model should comply with in collaboration with the critical stakeholders following the procedures discussed in 2.5.1.

Figure 8 and 9 show the results of the stakeholder analysis. The most critical stakeholders are those in the upper right segment of the matrix. The stakeholder analysis identified the following critical stakeholders from Thales: the steering committee, the management of

Purchasing Surface Radar NL, the PP/ SCM and the tactical purchasers managing strategic accounts. The brainstorm sessions with these stakeholders yielded a list of criteria. After analysing these criteria, we found that the criteria could be segmented in two categories: criteria related to the substance of the model and criteria related to the form of the model. Furthermore, the criteria related to the substance of the model can be related to the research objectives, being that the model should address the selection of appropriate strategic partners, the content, the development, and support of strategic supplier-buyer relationships.

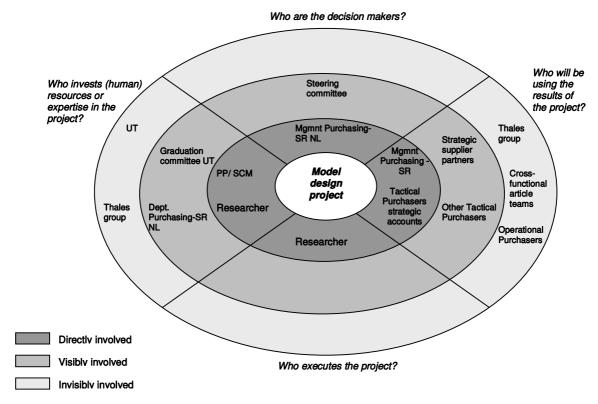


Figure 8. Actors-listing framework

Great interest in project	Mgmnt Purchasing-SR FR	Steering committee Mgmnt Purchasing-SR NL PP/SCM Graduation Committee UT Tactical Purchasers on strategic accounts Researcher
Limited interest in project	Thales Group UT Other Tactical Purchasers Operational Purchasers Cross-functional article teams Strategic supplier partners	
	Limited influence on project	Great influence on project

Figure 9. Determination of critical stakeholders

Table 3 gives an overview of the criteria the critical stakeholders consider useful.

Criteria related to the form

- The model should be accessible and simple enough to be employed by users with a bachelor education level:
- The model should provide visual support to internal and inter-firm communication;
- The model should be unambiguous;

Criteria related to the substance

Selection of appropriate strategic partners

- The model should measure the attractiveness of the potential partner from the buyer point of view;
- The model should measure the attractiveness of the buyer from the supplier point of view;
- The model should measure the compatibility with the potential partner;
- The model should include an assessment of the complementary skills of the potential partner;
- The model should be able to determine unambiguously whether a supplier is an appropriate strategic partner;

Content of strategic supplier-buyer relationships

- The model should include a list of standard possibilities to give content to strategic supplier-buyer relationships;
- The model should include tools to find creative possibilities to give content to strategic supplier-buyer relationships;

Development of strategic supplier-buver relationships

- The model should be able to identify the competences required to develop a strategic supplier-buyer relationship;
- The model should include a generic method to develop strategic supplier-buyer relationships that can be adapted to specific situations;
- The model should measure how the quality of the relationship with the strategic partner changes over time from the buyer's point of view;
- The model should measure how the quality of the relationship with the strategic partner changes over time from the supplier's point of view;

Support of strategic supplier-buyer relationships

- The model should be able to identify the competences required to support a strategic supplier-buyer relationship;
- The model should support the choice of conflict resolution techniques;
- The model should include tools to measure results related to the content of the strategic supplier-buyer relationship;

Table 3. Criteria the conceptual decision support model should comply with

4 Selection of strategic supplier-buyer relationships

This chapter addresses the findings of the literature study on the selection of strategic supplier-buyer relationships. Many strategic alliances are considered unsuccessful. Several authors agree these failures are among other things caused by poor partner selection (Bierly and Gallagher, 2007; Medcof, 1997). We address the selection of a strategic partner using theory from purchasing literature, marketing literature, and strategic management literature.

The approach to selection of strategic supplier-buyer relationships presented in this chapter is based on the use of purchasing portfolio models and guidelines to overcome the limitations of these models. First, Paragraph 4.1 presents our definition of strategic supplier-buyer relationships. Following, Paragraph 4.2 gives an overview of the purchasing portfolio models. Paragraph 4.3 presents the critique on purchasing portfolio models and the favourable characteristics of these models that led to their widespread adoption by purchasing professionals. Paragraph 4.4 addresses the proposed approach to selection of strategic supplier-buyer relationships and how to deal with the critique discussed in Paragraph 4.3. Finally, Paragraph 4.5 presents our conclusions and answers the question: How should Thales Hengelo deal with the selection of strategic supplier-buyer relationships according to literature?

The procedure for literature search described in Paragraph 2.5.2 and the keywords purchasing portfolio models, buyer seller relationship, selection partner, strategic supplier partnership, buyer-supplier relationship, and strategic alliance resulted in thirteen relevant articles. We used three articles found through the expert search. Table 4 gives an overview of these results and the main contributions of the authors.

Author(s)	Contribution
Sako, 1992 (expert search)	Key attributes strategic supplier-buyer relationship:
	 Technology transfer and training;
	 Increased communication channels;
	Risk sharing.
Mohr and Spekman, 1994 (expert search)	Definition strategic supplier-buyer relationship: purposive strategic relationships between independent firms who share compatible goals, strive for mutual benefits, and acknowledge a high level of mutual interdependence.
Maloni and Benton, 1997	Definition strategic supplier-buyer relationship: a relationship formed between two independent entities in supply channels to achieve specific objectives and benefits
McCutcheon and Stuart, 2000	Definition strategic supplier-buyer relationship: long-term buyer-supplier relationships that offer sustained competitive advantage for both firms through benefit sharing and joint problems solving and are characterized by technology transfer and training, multiple information channels, and risk sharing.
Kraljic, 1983 (expert search)	Portfolio matrix for the analysis of the buyer's perspective on the supplier- buyer relationship (see Paragraph 4.2)
Saccani and Perona, 2007	Overview portfolio models; contingency model for supplier-buyer relationships
Caniëls and Gelderman, 2007	Relationship between power and dependence in purchasing portfolio models
Dubois and Pedersen, 2002	Critique purchasing portfolio models (see Paragraph 4.3)
Gelderman and Van Weele, 2005	Critique and support purchasing portfolio models (see Paragraph 4.3)
Gelderman and Van Weele, 2003	How to handle measurement issues in purchasing portfolio models
Wagner and Johnson, 2004	Importance of interdependencies between relationships when selecting strategic supplier-buyer relationship; supplier portfolio management
Olsen and Ellram (1997a)	Importance of interdependencies between relationships; Three step approach to shaping supplier-buyer relationships
Fiocca, 1982	Portfolio model matrix for the analysis of the supplier's perspective on the supplier-buyer relationship

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Bierly and Gallagher, 2007	Strategic fit as criterion for selection of partner
Medcof, 1997	Important criteria for selection of partner are: Strategic fit, Complementary
	skills, Cooperative culture, Compatible goals, Commensurate levels of
	risk criteria for selection of partner
Brouthers et al., 1995	Important criteria for selection of partner are: Complementary skills,
	Cooperative culture, Compatible goals, Commensurate levels of risk
	criteria for selection of partner

Table 4. Overview of literature search results

4.1 Definition of strategic supplier-buyer relationships

As stated in Paragraph 2.1.2, Thales Hengelo defines strategic supplier-buyer relationships as the interaction between Thales Hengelo and those organizations that supply Thales Hengelo with strategic products and with whom Thales Hengelo intents to intensify the collaboration to include other aspects such as joint R&D. In literature there are many different perspectives on the exact definition of a strategic supplier-buyer relationship, supplier alliance or supplier partnership (McCutcheon and Stuart, 2000; Wahyuni, 2003). For this study we use a definition that is in line with the definition of Thales Hengelo. A strategic supplier-buyer relationship is:

A long-term cooperative relationship between an independent buyer and an independent supplier who share compatible goals, strive for mutual benefits, and acknowledge a high level of mutual interdependence. This relationship offers sustained competitive advantage for both firms and is characterized by technology transfer and training, multiple information channels, and risk sharing (Sako, 1992; Mohr and Spekman, 1994; Maloni and Benton, 1997; McCutcheon and Stuart, 2000).

4.2 Purchasing portfolio models

Purchasing portfolio models help determine which supplier-buyer relationship is the most appropriate for a particular exchange context (Saccani and Perona, 2007). These models can therefore be used to determine the exchange context for which a strategic supplier-buyer relationship is desirable and shed some light on the selection process of an appropriate strategic partner.

Kraljic's (1983) matrix has become the standard in the field of purchasing portfolio models (Saccani and Perona, 2007). His model places a commodity in a certain quadrant based on the profit impact (in terms of the volume purchased, percentage of total purchase cost, or impact on product quality or business growth) and supply risk (including availability and number of suppliers, competitive demand, make-or-buy opportunities, storage risks, and substitution possibilities) and gives recommendations on how to deal with each commodity type (see Figure 10).

Some authors have introduced variations to the Kraljic matrix (Van Stekelenborg and Kornelius, 1994; Olsen and Ellram, 1997a; Bensaou, 1999; Gelderman and Van Weele, 2000; Van Weele, 2002; Saccani and Perona, 2007). Appendix 4 gives an overview of these purchasing portfolio models.

Gelderman and Van Weele (2005) argue that most portfolio models show more similarities than differences to the original Kraljic matrix. The models of Kraljic, Van Stekelenborg and Kornelius, Olsen and Ellram, and Van Weele are based on one external and one internal dimension. The models of Bensaou, Gelderman and Van Weele and Saccani and Perona are related to the power-dependence argument. Dubois and Pedersen (2002) reason that though the models based on one internal and external dimension do not explicitly deal with dependency, there is a common view on the power-dependence argument at the core of the models. The power-dependence argument refers to the relative power of one organization over the other, which is the result of the net dependence of the one on the other (Caniëls and

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Gelderman, 2007). The recommendations of the portfolio models are aimed at reducing or balancing dependence on suppliers and exploiting power over suppliers. Therefore, we conclude that the portfolio models in Appendix 5 do not differ fundamentally.

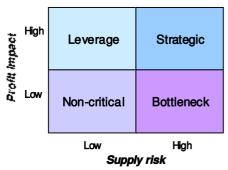


Figure 10. Classifying purchasing materials requirements (Kraljic, 1983)

4.3 Criticism and support purchasing portfolio models

According to Gelderman and Van Weele (2005) portfolio models have been subject to critique for a number of reasons. These models are questioned due to issues related to measurement (Day, 1986):

- The selection of variables is complex (Nellore and Söderquist, 2000);
- The supplier side is disregarded (Homburg 1995; Kamann, 2000);
- The lack of procedures for operationalization of dimensions (Ramsay, 1996);
- The weighting of each factors for measurement of the variables is very subjective (Olsen and Ellram, 1997a);
- The lines of demarcation between a high or low score on the variables are unclear (Homburg, 1995).

Furthermore, Dubois and Pederson (2002) argue that portfolio models oversimplify reality and question whether strategies could be developed from an analysis based on only two dimensions. They object to the fact that purchasing portfolio models take into account the importance of a "given" purchase, for they argue that through interaction the parties involved are able to identify and develop further potential that may result in increasing importance of the relationship. They also point out that these models focus on a single relationship and do not take a network perspective, therefore ignoring the interdependencies between relationships. Olsen and Ellram (1997a) also support this last argument. Gelderman and Van Weele discuss Coate's (1983) argument that portfolio models indeed have the tendency to ignore interdependencies, which results in strategies that are independent from each other. Finally, Cox' (1997) criticism is of another nature, for he argues that portfolio models do not provide proactive thinking about how to change the power and dependency structures in the supply chain (Gelderman and Van Weele, 2005).

There are also arguments supporting the adoption of purchasing portfolio models. Gelderman and Van Weele (2005) discuss that some case studies have reported positive effects as a result of application of purchasing portfolio models. These authors found that the models are useful for:

- The coordination of sourcing patterns of fairly independent strategic business units within corporations (Carter, 1997; Van Weele, 2002);
- The differentiation of purchasing strategies, with strategies fit for each different type of supplier (Lilliecreutz and Ydreskog, 1999);
- The discussion, visualization and illustration of the possibilities for development of different purchasing strategies (Gelderman and van Weele, 2002);
- The configuration and management of supplier relationships (Wagner and Johnson, 2004).

Saccani and Perona (2007) argue that a classification of exchange situations will help derive the requirements of interaction and cooperation. Portfolio models are also useful for the allocation of resources to relationships (Olsen and Ellram, 1997a). Gelderman and Van Weele (2005) report Elliott-Shircore and Steele's (1985) findings that purchasing portfolio models can elevate the purchasing function into a strategic role and Carter's (1997) argument that these models can help convince top management of the contributions the purchasing function can make to company success. Gelderman and Van Weele's (2005) finding that purchasing sophistication is positively related to the use of portfolio models, support this argument.

Gelderman and Van Weele (2005) reported that the arguments supporting portfolio models are derived from qualitative case studies, while counter-arguments are based on theoretical and conceptual research. Though the reasoning presented by the authors criticizing purchasing portfolio models is legitimate, we argue that management literature would benefit from an applied research approach studying the limitations of these models. Research on how purchasing professionals deal with these limitations, could provide suggestions for adaptation of purchasing portfolio models.

4.4 Approach for selection of strategic supplier-buyer relationships

Previous discussion has revealed that purchasing portfolio models are very popular in practice, and that they possess many useful attributes. Their application however is accompanied by some challenges. Gelderman and Van Weele (2003) concluded that there is no simple, standardized blue print for the application of portfolio analysis. Nevertheless, we propose the use of purchasing portfolio models for the selection of strategic supplier-buyer relationships. This is mainly due to the previously discussed useful attributes of these models. As for the critique on purchasing portfolio models, we found that literature provides several methods to deal with these limitations. The Paragraphs 4.4.1 to 4.4.5 discuss the proposed approach to selection of strategic supplier-buyer relationships by tackling the problematic issues point by point. Finally, Paragraph 4.4.6 will combine these proposed methods to overcome limitations of purchasing portfolio models in a structured approach to selection of strategic supplier-buyer relationships.

4.4.1 Buyer's perspective

Paragraph 4.2 discussed several variations to the Kraljic model, though none of the authors proposing alternatives provided hard evidence of the superiority of their model. Therefore, we added the issue of which model to use for the buyer's perspective to this discussion.

We propose the Kraljic matrix for the formulation of the buyer's perspective on the relationship. We recommend the Kraljic matrix for a number of reasons. First of all Thales Hengelo is already familiar with this model, which facilitates the adoption of this approach. Secondly, the Kraljic market is considered the standard in purchasing portfolio models. Finally, the variations to Kraljic's matrix do not differ fundamentally from the original matrix, as discussed previously.

4.4.2 Measurement issues

There are a number of ways to deal with the measurement issues discussed in Paragraph 4.3. Gelderman and Van Weele (2003) report three methods as a result of their case studies: (a) the consensus method; (b) the one-by-one method; (c) the weighted factor method.

According to these authors the consensus method is based on the process of reasoning and discussing to reach consensus on the position in the portfolio matrix. They argue that the advantage of this method is that it facilitates strategic discussions related to purchasing. A drawback is that it does not offer directions as to how to overcome deadlocks.

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According to Gelderman and Van Weele the one-by-one method uses the objective dimensions as factors. As a result, positions in the matrix can be determined in a quick and unambiguous manner. This method requires limited information and allows comparison of different matrices. Moreover, it allows identifying to what extent products can shift to another quadrant. These advantages contribute to the popularity of this model with purchasing professionals. On the other hand, each dimension is based on only one factor excluding other possibly important factors.

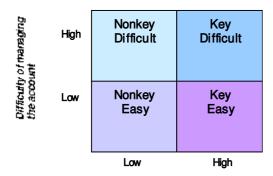
According to Gelderman and Van Weele the weighted factor method includes a number of factors for each dimension. Total scores per dimension are calculated in an additive model. Through the multiplication of scores and weights, the sub scores are added to a single value. The method can be customized to the needs of the organization, which is the main advantage of this method. The method is compensatory, but it is questionable if this assumption is acceptable for all factors. Other drawbacks are that the method requires a large number of quantitative data and that it is difficult to see the big picture when working with many constituent factors.

Based on Gelderman and Van Weele's guidelines to choose among the methods, we found that the weighted factor method is not appropriate for Thales. It requires a lot of time and quantitative data, which are both not available. The one-to-one method is not appropriate for each dimension is based on one factor and the required number of factors at Thales is higher than one. We propose the consensus method, for this method can handle numerous key factors. Furthermore, it stimulates discussion on strategic issues related to purchasing. Thales should decide in advance how to solve deadlocks, for example by majority vote.

4.4.3 Supplier's perspective

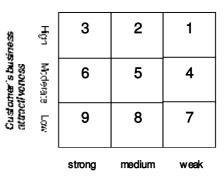
Portfolio models are criticized for not taking into account the supplier's perspective. The supplier's perspective is indeed important, for a relationship is a two-way stream. Both the supplier and the buyer should be willing to forge a strategic supplier-buyer relationship. Gelderman and Van Weele found that in practice purchasing professionals included the performance capacities and intentions of individual suppliers in their portfolio analysis, but the authors were not explicit about how this is done.

We propose the use of marketing portfolio models to gain insight into the supplier's perspective. We suggest the portfolio model proposed by Fiocca (1982). This model takes into account the interdependence between relationships and therefore gives a better representation of the supplier's considerations in deciding which customers they perceive as strategic. In Paragraph 4.4.5 we will return to the issue of interdependencies between relationships. Figure 11 and 12 depict Fiocca's models.



Strategic importance of the account

Figure 11. Portfolio model (Fiocca, 1982)



Relative buyer/seller relationship

Figure 12. Analysis of relationships (Fiocca, 1982)

4.4.4 Proactive thinking

Portfolio models are also criticized for not providing proactive thinking about how to change the power and dependency structures in the supply chain. Gelderman and Van Weele (2003) distinguished strategic directions for each quadrant. These strategic directions are aimed at maintaining the current position in the matrix or at changing the position in the matrix. Figure 13 shows the 9 actions proposed by these authors and we added action number 10.

We proposed this addition, for we argue that as an exception it is sometimes favourable to move from the bottleneck segment to the strategic segment. Through the development of a strategic partnership characterized by mutual trust a firm can cope with the high supply risk. A firm can develop a strategic partnership with a technologically advanced supplier that is willing to forge such a relationship. By increasing the importance of the purchase by for example moving from component sourcing to modular sourcing the firm can shift to the strategic segment.

We argue that Thales Hengelo should consider these proposed possibilities for movements in the Kraljic matrix, when selecting strategic supplier-buyer relationships. It may be interesting to forge a strategic supplier-buyer relationship with a supplier that is not yet in the strategic segment. It is also possible to attempt to change the supplier perception of Thales through movement in Fiocca's matrix.

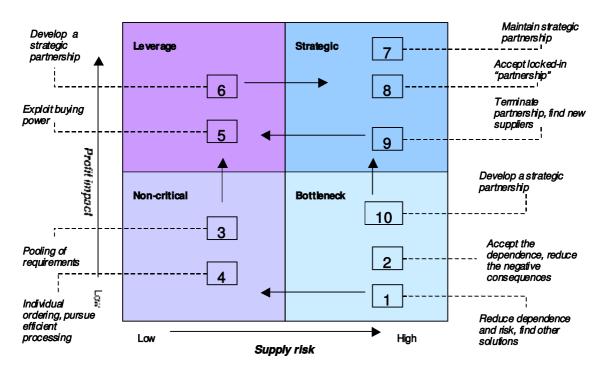


Figure 13. Overview of strategic directions for all categories (adjusted figure from Gelderman and Van Weele, 2003)

4.4.5 Interdependencies between relationships

Finally, we will deal with the critique that portfolio models do not take into account the interdependencies between relationships and the claim that they oversimplify reality. Wagner and Johnson (2004) suggest the introduction of *strategic supplier portfolio management* to tackle these limitations. *Strategic supplier portfolio management* is the management of an array of supplier relationships, each having various characteristics and each serving the firm in different ways. The firm manages its suppliers not only individually, but also as a set. This allows the firm to take into account interdependencies among

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relationships with its suppliers, and trade-offs in terms of risks, capabilities, and other characteristics. Wagner and Johnson developed a framework for configuration and management of strategic supplier portfolios. We will only focus on one step of the framework, since our aim is to develop guidelines for the selection of an appropriate partner. The step we refer to is *planning*. The planning activities they distinguished are: which suppliers to include in the supplier base and the optimal strategy for each individual relationship. For the creation of the supplier base firms look at existing or future supplier strengths and their own requirements. They also take into account overall business strategy and situations on supply markets (Gelderman and van Weele, 2003). To answer the question how the firm should work with its suppliers in the future, firms identify the type and configuration of each relationship. Based on long-term goals for a relationship and the configuration of other relationships in the portfolio they define the relationships for the future. The framework of Wagner and Johnson (2004) does not provide tools to conduct these planning activities though.

To deal with the issue of interdependencies between relationships, we propose the use of the approach developed by Olsen and Ellram (1997a). Several authors criticize purchasing portfolio models for not taking into account these interdependencies between relationships (Olson and Ellram, 1997a; Dubois and Pedersen, 2002; Wagner and Johnson, 2004). With the exception of Olsen and Ellram, none of these authors suggest useful tools to shape supplier-buyer relationships while taking into account these interdependencies. Wagner and Johnson state that "the "how-to" question has been widely neglected". Therefore, we will use the three-step approach discussed by Olsen and Ellram.

The steps are (1) analysis of purchase, (2) analysis of supplier relationships, and (3) development of action plans. For (1) the analysis of the company's purchase Olsen and Ellram use the portfolio model depicted in figure 14. For (2) the analysis of supplier relationships, the authors developed a second model (see Figure 15). They argue that this second model takes into account the interdependencies among relationships, for the current supplier is compared to alternative suppliers to determine its attractiveness. Olsen and Ellram proposed a model based on the dimensions relative supplier attractiveness and strength of the relationship. Appendix 5 gives an overview of the factors influencing these dimensions. For (3) the development of action plans Olsen and Ellram formulate recommendations on how to deal with supplier-buyer relationships based on the two models.

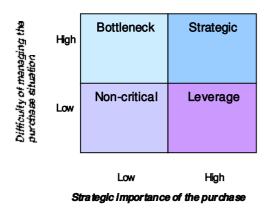
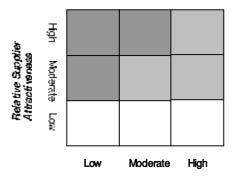


Figure 14. Portfolio model (Olsen and Ellram, 1997a)



Strength of Relationship

Figure 15. Analysis of supplier relationships (Olsen and Ellram, 1997a)

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4.4.6 Our three-step approach for selection of strategic supplier-buyer relationships

Finally, this section combines the methods proposed in previous paragraphs in a structured approach to selection of strategic supplier-buyer relationships. As discussed in Paragraph 4.4.5, this will be based on Olsen and Ellram's three-step approach.

4.4.6.1 Step 1: Analysis of exchange context

Olsen and Ellram refer to this step as the analysis of the purchase. We changed the name, since this step also includes the supplier's perspective on the supplier-buyer relationship. We will study the exchange context using portfolio models. The input for this analysis is a number of suppliers for whom Thales wants to study their prospects for becoming a partner.

Paragraph 4.4.1 proposed the use of the Kraljic matrix to determine the Thales' perspective on the supplier-buyer relationship. Following we use the models proposed by Fiocca as discussed in Paragraph 4.4.3 to formulate the supplier's perspective. To tackle the measurement issues of these portfolio models Paragraph 4.4.2 proposed the consensus method and the majority vote to overcome deadlocks.

The Thales' perspective and the supplier's perspective should be compared to evaluate if the views are compatible. That is if both the supplier and Thales perceive each other as potential strategic partners. If the views are not compatible, the possibilities for movements to another quadrant proposed in Paragraph 4.4.4 should be analysed. Finally, the analysis will yield a number of potential strategic supplier-buyer relationships.

4.4.6.2 Step 2: Analysis of supplier relationships

We previously argued that the interdependencies among relationships could not be ignored. Therefore we will study the potential strategic supplier-buyer relationships and the implications of developing such a relationship for the relationships with other suppliers. The model for analysis of supplier relationships proposed by Olsen and Ellram (1997a) that is depicted in Figure 15 is a useful tool for step 2. The reasoning is that a company has a limited number of resources and should choose among the potential strategic supplier-buyer relationships to which relationships it will allocate what resources. As a result of the analysis the number of potential supplier-buyer relationships will probably be reduced.

4.4.6.3 Step 3: Selection strategic supplier-buyer relationship

Olsen and Ellram dedicate this step to the development of action plans (see Paragraph 4.4.5). We will limit this step to the selection of strategic supplier-buyer relationships, since the aim of this chapter is to determine how Thales Hengelo should deal with the selection of supplier-buyer relationships. For this last step we propose the use of selection criteria for alliance partners found in strategic management literature. These criteria for alliance partner selection are:

- Strategic fit (Bierly and Gallagher, 2007; Medcof, 1997).
 According to the strategic fit rationale, partner selection is choosing to ally with someone who has the resources you need and whom you can induce, via your own stock of resources to collaborate with you (Bierly and Gallagher, 2007). So when assessing the strategic fit the complementarities of strengths and weaknesses are evaluated (Medcof, 1997).
- 2. Complementary skills (Brouthers et al., 1995; Medcof, 1997).

 Complementary skills refer to the alliance partner producing something specific that the searching company knows it needs. Furthermore, the company should consider the potential partner's experience, capabilities, and potential to make a real contribution (Brouthers et al., 1995).

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- 3. Cooperative culture (Brouthers et al., 1995; Medcof, 1997).

 A cooperative culture is related to symmetry between partners. Alliance partners should possess symmetry in management styles, size, and a mutual sense of trust. Furthermore, a cooperative culture depends also on the national and company culture of the organizations (Brouthers et al., 1995).
- 4. Compatible goals (Brouthers et al., 1995; Medcof, 1997). It is important to assess the goal of the alliance when searching for a partner. Goals are compatible when strategic goals converge and competitive goals diverge (Brouthers et al., 1995).
- 5. Commensurate levels of risk (Brouthers et al., 1995; Medcof, 1997).
 When selecting partners a company should consider the risks involved. It is important that these risks are balanced between the partners (Brouthers et al., 1995).

Based on these criteria we evaluate each potential partner and finally select appropriate partners for strategic supplier-buyer relationships. Appendix 6 presents a number of tools for the evaluation of the potential partners on these criteria.

4.5 Dealing with selection of strategic supplier-buyer relationships

This paragraph summarizes our findings on how Thales Hengelo should deal with the selection of strategic supplier-buyer relationships. Table 5 presents our conclusions.

According to our literature findings, Thales Hengelo should select strategic supplier-buyer relationships through a three-step approach. Step 1 is dedicated to the analysis of the exchange context, which is aimed at determining if Thales and the supplier perceive each other as potential strategic partners. Step 2 compares the relationship with a potential partner to the relationship with other suppliers by applying Olsen and Ellram's model to the relationship. The aim of step 2 is to determine if the limited resources should be allocated to the relationship under study or to other more promising relationships. Finally, step 3 is dedicated to the selection of strategic supplier-buyer relationships based on the criteria strategic fit, complementary skills, cooperative culture, compatible goals, and commensurate levels of risk.

How should Thales Hengelo deal with the selection of strategic supplier-buyer relationships according to literature?

Step 1: Analysis of exchange context

- Input step 1: number of suppliers for whom Thales wants to determine if they are appropriate strategic partners
- Thales' perspective: portfolio model e.g. Kraljic matrix
- Supplier's perspective: portfolio models e.g. Fiocca's
- · Guidelines for movement between quadrants of portfolio models
- Cope with measurement issues through use of consensus method
- Output step 1: a number of potential strategic supplier-buyer relationships

Step 2: Analysis of supplier relationships

- Input step 2: a number of potential strategic supplier-buyer relationships
- Analyse potential strategic supplier-buyer relationships taking into account interdependencies by using portfolio model of Olsen and Ellram's model
- Output step 2: a reduced number of potential strategic supplier-buyer relationships

Step 3: Selection strategic supplier-buyer relationship

- Input step 3: a reduced number of potential strategic supplier-buyer relationships
- Criteria for selection strategic supplier-buyer relationships:
 - 1. Strategic fit
 - 2. Complementary skills
 - 3. Cooperative culture
 - 4. Compatible goals
 - 5. Commensurate levels of risk
- Output step 3: strategic supplier-buyer relationships

Table 5. Conclusions on selection strategic supplier-buyer relationships

5 Content of strategic supplier-buyer relationships

This chapter addresses the question: How should Thales Hengelo deal with the content of strategic supplier-buyer relationships according to literature? To do so we studied the results of our literature search. For this search we used the keywords strategic supplier partnership, buyer-supplier relationship, buyer seller relationship, strategic alliance, strategic partnership, and modularisation, which resulted in six articles discussing the content of strategic supplier-buyer relationship. Additionally, we used one article found through expert search. Paragraph 5.1 presents our findings and provides a list of possibilities for the content of strategic supplier-buyer relationships. Paragraph 5.2 considers a technique for developing the content of a strategic supplier-buyer relationship. Finally, Paragraph 5.3 summarizes our findings.

5.1 Checklist for the content of strategic supplier-buyer relationships

After studying the articles on the content of strategic supplier-buyer relationships, we found that we could formulate a list of possibilities for content and that the content could be related to the benefits of the relationship. Table 6 presents this list of possibilities for content and the related benefits, we constructed based on our literature findings.

Author(s)	Content	Definition	Benefits
Monczka et al., 1998; Walter et al., 2001	Joint R&D	Research and development together with the supplier to improve the value of the supplier's products to Thales and/ or of Thales products to its customers (based on Walter et al., 2001)	 Increased access to technology/ information Reduced time-to-market Reduced cost Improved quality Joint investments
Saccani and Perona, 2007; McCutcheon and Stuart, 2000; Monczka et al., 1998; Meade et al., 1997; Walter et al., 2001	Joint new product development	Development of product or process innovations together with the supplier to improve the value of the supplier's products to Thales and/ or of Thales products to its customers and to create new markets (based on Walter et al., 2001)	 Increased access to technology/ information Reduced time-to-market Reduced cost Improved quality Joint investments Gain new product market share
Saccani and Perona, 2007; McCutcheon and Stuart, 2000; Meade et al., 1997	Joint logistics	Planning, implementing, and controlling an efficient, effective flow and storage of goods and services together with the supplier from the point of external origin to one's firm and from this firm to the point of consumption as JIT programmes, Vendor Managed Inventories etc. (based on Lummus et al., 2001)	 Improved customer service Increased quality Reduced costs Reduced risks Reduced delivery time
Saccani and Perona, 2007; McCutcheon and Stuart, 2000; Monczka et al., 1998; Meade et al., 1997	Joint production	Arrangement of those resources which are dedicated to make products and services together with the supplier such as exchange of production personnel, joint ownership of production line etc. (based on Slack et al., 2001)	 Increased quality Reduced costs Increased flexibility Reduced risk Reduced lead time
Saccani and Perona, 2007; McCutcheon and Stuart, 2000;	Joint management and strategic planning	Management and determination of future vision of organizations and necessary procedures and operations to achieve this vision together with the supplier such as exchange of mangers to develop certain capabilities, joint decision making etc. (based on Goodstein et al, 1993)	 Reduced costs Increased customer/ supplier loyalty Focus on core competencies and capabilities Longer horizon planning of investment

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Doran, 2003	Supply chain manager role for supplier partner	The supplier is responsible for the specifications for second and third tier suppliers and the management of this part of the supply chain (based on Doran, 2003)	Buyer has access to component knowledge through supplier Reduced costs Supplier has improved competences and knowledge
Walter et al., 2001	Market function	Referrals and/ or recommendations from supplier/ Thales to support entry into a new market and establish commercial relationships (based on Walter et al., 2001)	 Increased number of customers for supplier through referrals and recommendations Increased number of customers buyer through strong brand name of their supplier's products
Walter et al., 2001	Access function	Access to supplier's/ Thales' third party contacts such as official authorities, banks and/ or trade organizations, research institutes, universities etc. (based on Walter et al., 2001)	 Reduction of time consumed by negotiations with third parties, such as trade associations Reduction of costs consumed by negotiations with third parties, such as trade associations
Monczka et al., 1998	Long-term sourcing agreements	Cooperative purchasing agreements between supplier and buyer cooperating in one or more steps of the purchasing process by pooling their purchasing volumes, information and/ or resources to improve their performances such as F1-teams, Hitchhiking etc. (see Appendix 12) (Based on Schotanus and Telgen, 2006)	 Reduced risks Reduced costs
Monczka et al., 1998	Standard setting through research consortia	OEM and multiple suppliers join in a research consortium to seek a common solution that can become an industry standard to reduce uncertainties for both the buyer as the supplier (based on Narayana, 2001)	 Reduced costs Joint investments Reduced costs
McCutcheon and Stuart, 2000; Monczka et al., 1998; Meade et al., 1997; Walter et al., 2001	Joint marketing	The process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, services together with the supplier to improve the value of the supplier's products and/ or of Thales products to its customers and to create new markets (based on Walter et al., 2001 and Kotler, 2000)	 Improved customer service Gaining market advantage Securing stable or growth markets Access to market development information

Table 6. List of possibilities for content and related benefits of strategic supplier-buyer relationships

The terms for the possibilities we chose for the presentation of our findings emphasizes the dyadic nature of strategic supplier-buyer relationship and that these relationships are based on mutual benefits. Some of these authors also discuss limiting conditions to achieving these benefits or potential pitfalls of strategic supplier-buyer relationships. McCutcheon and Stuart (2000) stress the importance of selecting the appropriate partner to achieve the benefits of strategic supplier-buyer relationships. Meade et al. (1997) emphasize that alliance formation should be strategy driven. These preconditions are addressed in Chapter 4 in our discussion of the selection of strategic supplier-buyer relationships. Walter et al. (2001) remark that the importance of the value creating possibilities for content they identified may depend on the size of a company, for their study might suffer from company size clustering bias. Furthermore, these authors argue that it is important to study the preconditions for

developing relationships with certain content in order to reap the corresponding benefits. They expect variables such as trust, commitment, and partner-specific adaptations to be key determinants for the successful development and maintenance of strategic supplier-buyer relationships. Saccani and Perona (2007) take a negative perspective to the key success factors and warn for potential pitfalls. We will discuss the key success factors of strategic supplier-buyer relationships in Chapter 7 in our discussion of the support of these relationships.

As a practical application of our findings, we propose to use the list presented in Table 6 as a checklist. Parties aiming at developing a strategic supplier-buyer relationship could use this list, to ensure that they are exhaustive when discussing the possibilities for content. Based on the benefits the partnering organizations want to achieve and the checklist of possibilities, the parties involved can determine together what the content of the strategic supplier-buyer relationship will be.

We propose the use of the checklist during a meeting to discuss the content of strategic supplier-buyer relationship. Thales Hengelo and the potential strategic partner discuss each possibility for content and its benefits and determine if this possibility is appropriate to meet their goals. Therefore it is important that both Thales and the supplier have a clear view of what the benefits are they want to achieve through the strategic supplier-buyer relationship. The discussion will result in the actual content for the strategic supplier-buyer relationship that will serve the objectives of both Thales and the supplier.

5.2 Technique for developing the content of strategic supplierbuyer relationships

Hall and Andriani (1999) developed a joint partnership planning technique. They argue that the key advantage of their approach in the context of partnership is that it concentrates on each company's strengths. As a result companies are willing to share information and use the analysis as a basis for joint strategy development.

We propose this approach to complement the checklist discussed in Paragraph 5.1, for other than the checklist it stimulates creative thinking about the content of strategic supplier-buyer relationships. Furthermore, this approach places more emphasis on combining both the supplier and Thales' view to determine a content that creates mutual benefits. Finally, the possibilities on the checklist are generic, whereas this approach may result in situation specific possibilities for content.

Hall and Andriani's approach starts by analysing the intangible resources. Each party identifies its strengths in terms of key product/ delivery system attributes, which is discussed in Paragraph 5.2.1. Paragraph 5.2.2 addresses the intangible resources that produce these attributes and the development of strategies for each key intangible resource. Each partner performs this analysis on its own organization and on its partner to be. Finally, in the perceptual synthesis phase the parties check the congruence, or dissonance, of their views and establish what they want, or do not want, from the relationship. This last step is discussed in Paragraph 5.2.3

5.2.1 The key product/ delivery system attributes

During this stage the goal is to identify what the customers currently value. An example of a key product attribute is *image of product*. Hall and Andriani provide a checklist of possible attributes to guide the identification of key product/ delivery systems attributes. Appendix 7, Table A7.1 gives an overview of this list. Following, the key attributes are given importance weights as show in Appendix 7, Table A7.2. The strength and sustainability of an advantage compared to the competition can also be determined by using the tool depicted in Appendix 7. Figure A7.1.

5.2.2 The key intangible resources

Having identified the key attributes it is necessary to determine the intangible resources that produce these advantages. Hall and Andriani propose the use of the four capabilities framework, for this framework ensures that the full spectrum of resources is considered.

The four types of capabilities are: regulatory assets, positional assets, functional resources, and cultural resources. Appendix 7, Figure A7.2 depicts this framework. Appendix 7, Table A7.3 is useful for determining the intangible resources, related to the key attributes, through placement of each attribute in the appropriate capability column(s).

Following, strategic scenarios for the intangible resources can be developed. It is important to consider the protection, sustenance, enhancement and exploitation of each key intangible resource. This can be summarized using the Table A7.4 included in Appendix 7 as suggested by Hall and Andriani.

5.2.3 Perceptual synthesis

During the perceptual synthesis organizations share their independently generated perceptions of each other's strengths and their views regarding the future. Hall and Andriani found that the use of the previously discussed approach provided participating managers with a new perspective and language to communicate that perspective. According to the authors the approach did not necessarily identify new knowledge but it did facilitate the codification of tacit knowledge. Based on the perceptual synthesis the companies can establish what future capabilities they want to develop together through the partnership and in this way develop the content of the strategic supplier-buyer relationship.

5.3 Dealing with content of strategic supplier-buyer relationships

This paragraph summarizes our findings regarding the content of strategic supplier-buyer relationship. Table 7 gives an overview of our conclusions.

Thales Hengelo can use the checklist when determining the content of strategic supplier-buyer relationship. In collaboration with the potential strategic partner they can evaluate each possibility for content and determine if this possibility is appropriate to meet their goals. The definitions and benefits listed in Table 6 should be leading in determining if a possibility for content is appropriate to meet the goals of the partnering organizations. Furthermore, Thales Hengelo and the potential strategic partner can use the proposed technique to determine situation specific possibilities for content of the strategic supplier-buyer relationship as a complementary tool to determine creative new possibilities for content.

How should Thales Hengelo deal with the content of strategic supplier-buyer relationships according to literature?

Checklist of generic possibilities for content:

- Joint R&D
- Joint new product development
- Joint logistics
- Joint production
- Joint management and strategic planning
- Joint marketing
- Standard setting through research consortia
- Long term cooperative sourcing agreements
- Access function
- Market function
- Supply chain manager role for supplier partner

Technique for determining situation specific possibilities for content:

- Step 1: Determine the key product/ delivery system attributes
- Step 2: Determine the key intangible resources for these attributes
- Step 3: Create view of Thales and the partner organization
- Step 4: Perceptual synthesis and formulation of content

Table 7. Conclusions on content of strategic supplier-buyer relationships

6 Development of strategic supplier-buyer relationships

This chapter addresses the question: How should Thales Hengelo deal with the development of strategic supplier-buyer relationships according to literature? Our literature search using the keywords buyer-supplier relationship, strategic alliance, and strategic partnership resulted in five articles that address issues related to the development of strategic supplier-buyer relationships and seven articles were the result of our expert search. Table 8 gives an overview of these articles and their main contributions to this study.

Author(s)	Contribution
De Rond and Bouchikhi, 2004	Developmental theories applied to alliances providing basic
	assumptions about the development process of strategic
	supplier-buyer relationships
Van de Ven and Poole's, 1995 (expert search)	Classification of developmental theories
Das and Teng, 2000 (expert search)	Dialectical approach
Bell et al., 2006 (expert search)	Importance of creating common paradigmatic beliefs in the
	dynamics of cooperation literature
Ring and van de Ven, 1994 (expert search)	Teleological approach applied to cooperative inter-
	organizational relationships; Recurring stages of negotiation,
	commitment, and execution
Doz, 1996 (expert search)	Teleological approach applied to alliances; Recurring stages of
	learning, re-evaluation, and readjustment; Importance of initial
	conditions and middle management to learning
Ariño and de la Torre, 1998 (expert search)	Teleological approach applied to alliances; Merger of model
	Ring and van de Ven (1994) and Doz (1996); Importance of
	procedures for conflict resolution to learning cycles
Kanter, 1994 (expert search)	Life cycle stages; Marriage metaphor
Muray and Mahon, 1993	Life cycle stages in relation to resource commitment
Spekman et al., 1996	Life cycle stages; Key issues and role of the manager in each
	stage
Johnston et al., 2004	Importance of trust in strategic supplier-buyer relationships
Christopher and Jūttner, 2000	Importance of determining the right interface structure, of
	information sharing and change management for the
	development of strategic supplier-buyer relationships

Table 8. Overview of literature search results

The first paragraph discusses the developmental theories useful for understanding alliance development processes. The second paragraph addresses the teleological approach in further detail. Following, Paragraph 6.3 elaborates on the life cycle approach. Finally, Paragraph 6.4 summarizes the findings on the development of strategic supplier-buyer relationships.

6.1 Developmental theories

De Rond and Bouchikhi (2004) used Van de Ven and Poole's (1995) typology of process theories to classify theoretical contributions on alliance dynamics and processes in one of the following categories: life cycle, teleology, evolution, and dialectics. In following paragraphs we will discuss the development of alliances from each theoretical perspective and we will choose a theoretical approach for this study.

6.1.1 Life cycle approach

The life cycle approach views change and development as a process of organic growth. The organizations proceed through a sequence of stages from a formative stage to a stage of maturity. Each stage contributes to the final goal. The sequence is irreversible, cumulative, linear, and predictable (Van de Ven and Poole's, 1995; De Rond and Bouchikhi, 2004).

Life cycle models commonly assume that effective strategic alliances move from one stage to the next, as a function of rational planning and execution by those in charge. According to these models management plays a central role in the development of strategic alliances, which explains why this approach is so popular with managers and consultants (De Rond and Bouchikhi, 2004).

6.1.2 Teleological approach

The teleological approach views development and change from an Aristotelian perspective on process as caused by their *telos*, their purpose. Organizations are assumed to be purposeful and alert but able to learn and adapt to changing circumstances (De Rond and Bouchikhi, 2004). Van de Ven and Poole's (1995) state that a process is viewed as: "a repetitive sequence of goal formulation, implementation, evaluation, and modification of goals based on what was learned or intended by the entity".

From a teleological perspective effective alliances, are those where managers constantly monitor changes, exercise their authority to adapt their design and governance, and drive them to either higher levels of efficiency or terminate them when rational calculations require it (De Rond and Bouchikhi, 2004).

6.1.3 Evolutionary approach

The evolutionary approach views organizations as constantly competing for survival, given limited resource availability and a series of blind variations. The environment is the principal source of change and development.

This approach assumes that the diffusion of alliances across sectors, their competition for scarce resources, and collective learning by organizations from previous experiences result in more sophisticated, fitter alliances. Managers cannot control the evolutionary processes at the population level, though they should align their alliances with the "prevailing blueprint" (De Rond and Bouchikhi, 2004).

6.1.4 Dialectical approach

According to the dialectical approach dialectic forces compete for scarce resources and management attention, which leads to conflict and the emergence of organizational arrangements. Change and development are thus a result of these dialectic forces.

There are limited studies of alliances from the dialectical perspective. This approach views alliances as complex social phenomena that evolve as a consequence of multiple dialectic forces. Das and Teng (2000) argue that partners should balance contradictory forces to assure the stability of the alliance and attain the alliance goals. De Rond and Bouchikhi disagree as they argue that stability cannot be equated to alliance success. According to these authors alliance performance should be viewed as the state of a social phenomenon, of which different actors can hold different perceptions. Furthermore, they argue that a dialectical perspective is incompatible with normative assumptions, for one cannot state in advance which state of a social phenomenon is more desirable.

6.1.5 Analysis of developmental theories

Contrary to the life cycle and teleological approaches, the evolutionary and dialectical approaches do not produce managerial prescription that lead to successful alliances. Therefore, the evolutionary and dialectical models are not useful for the purpose of this study as our aim is to develop a model that supports decision-making regarding strategic supplier-buyer relationship. For such a model we need managerial prescriptions on how to deal with the development of strategic supplier-buyer relationships.

As discussed in previous paragraphs, both the life cycle approach and teleological approach have a sense of purpose. This corresponds with the assumptions of this study that strategic supplier-buyer relationships are aimed at achieving certain goals through the content of the relationship. Other than teleology, the life cycle approach assumes a uniform and predictable sequence of stages. De Rond and Bouchikhi mention this as a limitation of the life cycle approach, though this characteristic of the life cycle approach makes it useful for the purpose of our study. The assumption of the life cycle approach that through proper planning the alliance moves from one stage to another is inline with our aim to support decision making during the development of strategic supplier-buyer relationships. The life cycle approach identifies for each stage what the important issues are that the management needs to decide upon and our model is aimed at supporting these decisions.

In contrast to the life cycle approach, the teleological approach assumes the development of alliances to be a cyclical process. These two views seem irreconcilable for they are based on different basic assumptions. Bell et al. (2006) argue that some consensus on paradigmatic beliefs is required for theoretical progress in the literature on dynamics of cooperation. For the existing literature explains only part of the puzzle of the dynamics of cooperation. Due to the partial theoretical explanations, scattered findings, and non-comparable results of studies, no common ground has been created. In our study we attempt to add to the creation of common ground by merging the life cycle and teleological approach. We propose a combination of the life cycle and teleological approach to deal with the development of strategic supplier-buyer relationships at Thales Hengelo.

The teleological approach assumes that after each learning cycle the partnership moves into a higher state of efficiency and equity. The life cycle approach makes a similar assumption that after each stage the partnership moves to a higher state of maturity. We therefore make the following proposition:

Each stage of the partnership life cycle contains a teleological cycle of learning, re-evaluation, and negotiation and commitment (see Figure 16), after which it moves to a higher state of efficiency, equity and maturity.

6.2 The teleological approach to relationships

Ring and Van de Ven (1994) developed a framework where alliance development is viewed as a repetitive sequence of negotiation, commitment, and execution stages, each of which is assessed in terms of efficiency and equity. Doz (1996) introduced a learning element and argued that alliances evolve through a sequence of learning, re-evaluation, and readjustment. Ariño and de la Torre (1998) combined these two views into the model depicted in Figure 16.

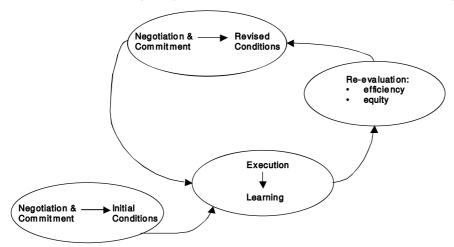


Figure 16. Strategic partnership evolution according to teleological approach

The preliminary negotiation and commitment stages lead to the initial conditions. These initial conditions are accepted by the partnering organizations if they satisfy their objectives in an efficient and equitable manner. The execution of commitments lead to learning processes and as a result of these learning processes the initial conditions are re-evaluated. This leads to a new sequence of negotiation and commitment. Environmental changes can also initiate a similar cycle (Ariño and de la Torre, 1998). The management plays a key role in enabling the learning process and driving the alliances to higher levels of efficiency as discussed in Paragraph 6.1.2. For our decision support model we can use the managerial prescriptions on how to enable the learning process and so develop successful strategic supplier-buyer relationships.

6.2.1 Managerial prescriptions

Doz (1996) found that the initial conditions (set in terms of task definition, partners' organizational routines, interface structure and partners' expectations) play a key role in fostering or hampering learning. Appendix 8 shows Doz' findings on conditions blocking and fostering learning. Furthermore, the author found that initial conditions could stimulate cognitive learning (what the managers understand of how the relationship the relationship should be handled) but block behavioural learning (what managers can do to better manage the relationship). The initial conditions should therefore be viewed in terms of dynamic learning. They must allow partners to learn how to improve their alliance and provide the flexibility for improvement. Doz' study reports that middle managers play an important role, for how they interacted with people at other levels of their organization and across organizational boundaries was found to be a key feature of alliance development.

Ariño and de la Torre (1998) argue that Doz' emphasis on the initial conditions underestimates the impact of external changes. These external changes can alter the partners' perception of efficiency and equity, which lead them to modify their behaviour unilaterally or engage in renegotiation of the conditions. These authors conclude that the existence of procedural solutions for conflict resolution from the start leads to a climate for positive reinforcement and building of mutual trust and goodwill.

Ring and Van de Ven (1994) explain how cooperative inter-organizational relationships emerge, evolve, and dissolve through a number of propositions. These propositions imply that managers should balance the formal and informal processes related to alliance development.

6.3 The life cycle approach to relationships

Nooteboom (1998) supports the life cycle approach and compares the life cycle stages to the phases of marriage: engagement, married life, and divorce. Kanter (1994) also uses this marriage metaphor and found five stages: partner selection and courtship, engagement, setting up housekeeping, learning to collaborate, and internal change. Muray and Mahon (1993) also use five stages in their model of strategic alliances and show the evolution of resource commitment over time.

Spekman et al. (1996) identified seven stages and the characteristics and managerial skills needed for each stage. The stages are: anticipation, engagement, valuation, coordination, investment, stabilization, and decision.

The proposed analogy with marriage seems useful. Marriage is a concept we all are familiar with. The analogy helps us to better understand the meaning and dynamics of strategic supplier-buyer relationships. Therefore, we used this analogy and the relationship life cycle stages identified by Kanter (1994). Additionally, we use the findings of Spekman et al. and Muray and Mohan to discuss the key issues affecting the development of strategic supplier-

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buyer relationships in each stage. Figure 17 shows the life cycle model of Muray and Mahon with the stages identified by Kanter and the extra stages derived from Spekman et al. We added the stage stabilization, for we argue that during its life cycle a relationship reaches a point of maturity. Furthermore, we also included the stage decision, which represents the partners questioning whether they should continue or exit the alliance, broaden or narrow the scope of the partnership. This point is placed after stabilization to reflect the life-cycle approach, but it can be reached at any stage of the life cycle (Spekman et al., 1996). Kanter does not include these stages in her model and therefore we used those identified by Spekman et al.

The following paragraphs will discuss each stage in further detail and the key issues for the development of strategic supplier-buyer relationships. Table 9 gives an overview of these key issues for each stage. In Appendix 9 we zoom in on two of these key issues, respectively the role of the strategic supplier-buyer relationship manager and the structure of the strategic supplier-buyer relationship. Appendix 9 presents a model that is useful to determine the role of the strategic supplier-buyer relationship manager and a framework to determine the structure of the relationship.

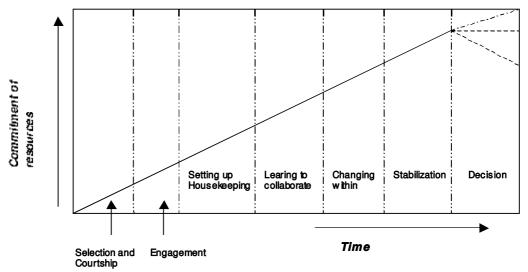


Figure 17. Life cycle model of strategic alliances (adapted from Muray and Mahon, 1993; Kanter, 1994; Spekman et al., 1996)

	Selection and courtship	Engagement	Setting up Housekeeping	Learning to collaborate	Changing within	Stabilization	Decision
Characteristics	Chemistry; strategic motivation; agreement on content	Internal selling; formalizing relationship	Problems of broader involvement; discovery differences; respect and appreciation	Division of labour; task orientation; sharing information; developing trust	Overcome resistance, infrastructure for learning	High inter- dependence; maintenance; assessment of relative worth and contribution	Where now?
Key business activity	Selection and determining content	Negotiation; drawing up legal agreement	Extend areas collaboration	Coordination ; integration	Change management programme	Adjustment	Re- evaluation
Key relationship activity	"Dating"	Initiating	Dialoguing	Interfacing	Committing	Fine-tuning	Dialoguing
Role of the relationship manager	Strategic sponsor	Advocate	Mediator	Networker and Facilitator	Relationship promoter	Manager	Mediator
Structure relationship	From parallel to dyad	Coordination teams	Work teams	Allied entity	Entwined entity	Entwined entity	?

Table 9. Key issues for each relationship life cycle stage (adapted from Spekman et al., 1996 and Kanter, 1994)

6.3.1 Selection and courtship

The selection and courtship stage is useful to explore the possibilities for partnering. Chapter 4 already discussed how Thales Hengelo should deal with the selection of strategic supplier-buyer relationships and Chapter 5 addressed the determination of the content of a strategic supplier-buyer relationship. It is possible that parties cannot reach an agreement on the content of their relationship, which leads to them "breaking up". If the parties do agree on the content, they enter the engagement phase.

In this selection and courtship stage the strategic supplier-buyer relationship manager is a *strategic sponsor*, which is a combination of visionary and emissary. A senior manager typically fulfils this role (Spekman et al., 1996).

6.3.2 Engagement

Usually senior executives are the ones involved in the formation of strategic supplier-relationships. In the engagement stage it is time to "meet the family". Other stakeholders get involved in the relationship. To create support for the plans forged in the previous stage the supplier-buyer relationship manager fulfils the role of *advocate*. Furthermore, in this stage third party professionals draw up the agreement for the strategic supplier-buyer relationship (Kanter, 1994; Spekman et al., 1996).

6.3.3 Setting up housekeeping

In this stage partners start to work together on a daily base and "the romance of courtship quickly gives way to day-to-day reality as partners begin to live together" (Kanter, 1994). People at all level of the company need to work together to make the strategic supplier-buyer relationship a success. The broader involvement can lead to some problems such as employees in other positions not perceiving the partner as attractive as the senior executives did. Other complications are the result of operational and cultural differences that are discovered after initiation of collaborative activities. People will only take the time to work through the differences if they feel respected and valued (Kanter, 1994).

The strategic supplier-buyer relationship manager fulfils a *mediator* role in dealing with these problems. This manager attempts to resolve these issues through dialoguing and balancing all parties' interests (Spekman et al., 1996).

6.3.4 Learning to collaborate

The companies need to develop governance structures in which the integration points, processes, and the division of labour between the partners is established to collaborate (Spekman et al., 1996). Kanter found that multiple levels of ties ensure communication, coordination, and control and that the most productive relationships reach five levels of integration: strategic integration, tactical integration, operational integration, interpersonal integration, and cultural integration.

According to Carter and Ellram (1994) the quality of a relationship is strongly influenced by the infrastructure, which has been set up to manage it. Therefore, it is important to choose the right infrastructure to manage strategic supplier-buyer relationships. Appendix 9 provides a framework to determine the interface structure.

To cooperate among firms, these companies need to improve the information exchange between partners. The most important issue to address is the definition of the scope for mutual information system development (Christopher and Jüttner, 2000). This is determined by the content of the strategic supplier-buyer relationship. Sharing information requires trust and openness. Johnston et al. (2004) found that trust is an important concern in managing supplier-buyer relationships.

In this stage the relationship manager is a *networker* who coordinates activities and a *facilitator* who links functions, areas, people and partners in such a manner as to enhance, manage, and direct the flow of information in the company (Spekman et al., 1996).

6.3.5 Changing within

As married couples companies discover that they need to change internally to accommodate to the ongoing collaboration (Kanter, 1994). According to Boddy et al. (2000) the gains of supply chain partnering can only be achieved if the companies involved also initiate supporting changes within the respective organizations. Christopher and Jüttner suggest a change management programme to tackle the implementation of strategic supplier-buyer relationships.

Christopher and Jüttner also advocate the assignment of a relationship promoter to overcome the resistance to change and to support the learning process essential for successful relationship development. This learning process should also be supported by the development of an infrastructure for learning such as cross-functional teamwork and exchange of ideas (Kanter, 1994). The relationship manager could fulfil the function of relationship promoter.

6.3.6 Stabilization

As in a marriage the "love" will die if the partners do not support the relationship and adjust to changing circumstances. During this stage managers focus on staying on course and adapting the direction of the strategic supplier-buyer relationship to internal and external pressures. Spekman et al. stress that it is important to conduct periodic reviews to examine the state of the relationship. The role of the relationship manager in this stage is above all that of a *manager* who shoulders the responsibility of the business of the strategic supplier-buyer relationship and must assure the relationship stays on track to meet its goals and objectives (Spekman et al., 1996). Chapter 7 will discuss how to support the strategic supplier-buyer relationships in greater detail.

6.3.7 Decision

The decision stage represents the point at which partners determine whether to re-define the relationship in its current form. This point can be the result of the partnership performing poorly on the periodic reviews to examine the state of the relationship. Changing environmental factors can also induce partners to re-evaluate the relationship. This stage deals with issues ranging from critical questions whether to continue or end the partnership, to less critical questions of broadening or narrowing the scope of the partnership. In this stage the role of the relationship manager is that of a mediator. As previously mentioned this stage is depicted after the stabilization stage in line with the life cycle approach. This point can be reached at each stage of the life cycle though (Spekman et al., 1996).

6.4 Dealing with the development of strategic supplier-buyer relationships

This paragraph summarizes the literature findings discussed in Paragraph 6.1, 6.2 and 6.3 to answer the question: *How should Thales Hengelo deal with the development of strategic supplier-buyer relationships?* Table 10 gives an overview of our conclusions.

According to literature, Thales Hengelo should adopt a life cycle approach with learning cycles in each stage, to the development of strategic supplier-buyer relationships. Table 9 shows the stages of the strategic supplier-buyer relationship life cycle and the key issues that need to be addressed for each stage. To successfully complete the stages Thales Hengelo needs to appoint a relationship manager responsible for the execution of the key activities. Furthermore, Thales should set the initial conditions of the strategic supplier-buyer

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relationship in a way that enables both cognitive and behavioural learning. Procedural solutions for conflict resolution are an important initial condition that leads to constructive learning cycles. The middle management plays a key role in enabling the learning process and driving the alliances to higher levels of efficiency.

How should Thales Hengelo deal with the development of strategic supplier-buyer relationships according to literature?

Life cycle approach with marriage metaphor:

Selection and courtship

Chemistry; strategic motivation; agreement on content Characteristics

Key business activity Selection and determination content

Key relationship activity "Dating"

Role of the relationship manager Strategic sponsor From parallel to dyad Structure strategic supplier-buyer relationship

Engagement

Internal selling; formalizing relationship Characteristics Key business activity Negotiation; drawing up legal agreement

Key relationship activity Initiating Advocate Role of the relationship manager

Coordination teams Structure strategic supplier-buyer relationship

Setting up housekeeping

Characteristics Problems of broader involvement; discovery differences; respect and

appreciation to overcome problems

Extend areas collaboration Key business activity

Dialoguing Key relationship activity Role of the relationship manager Structure strategic supplier-buyer relationship Mediator Work teams

Learning to collaborate Division of labour; task orientation; sharing information; developing trust Characteristics

Coordination; integration Key business activity

Key relationship activity Interfacing

Networker and Facilitator Role of the relationship manager

Structure strategic supplier-buyer relationship Allied entity

Changing within

Characteristics Overcome resistance, infrastructure for learning

Key business activity Change management programme

Kev relationship activity Committing

Relationship promoter Role of the relationship manager Entwined entity

Structure strategic supplier-buyer relationship Stabilization

Characteristics High inter-dependence; maintenance; assessment of relative worth and

contribution Adjustment Kev business activity Key relationship activity Fine-tuning

Role of the relationship manager Manager Entwined entity Structure strategic supplier-buyer relationship

Decision Where now? Characteristics

Key business activity Re-evaluation Dialoguing Key relationship activity

Mediator Role of the relationship manager Structure strategic supplier-buyer relationship

Learning cycle in each stage of the life cycle:

Set the initial conditions (in terms of task definition, partners' organizational routines, interface structure and partners' expectations) to foster both cognitive and behavioural learning;

Procedural solutions for conflict resolution from the start lead to a climate for positive reinforcement and building of mutual trust and goodwill:

Middle management should interact with people at other levels of the organization and across organizational boundaries to gain better understanding of the alliance development process;

Managers should balance the formal and informal processes related to alliance development.

Table 10. Conclusions on development of strategic supplier-buyer relationships

7 Support of strategic supplier-buyer relationships

This chapter deals with the literature findings on the support of strategic supplier-buyer relationships. Our literature search using the keywords *purchasing portfolio models, selection partner, buyer seller relationship, strategic supplier partnership, buyer-supplier relationship, modular sourcing, supply chain partnership, development partnership, and success factors partnership produced thirteen articles related to this subject. We supplemented these findings with three articles and a book found through our expert search. Table 11 gives an overview of these articles and their contribution to this study.*

Author(s)	Contributions
Maloni and Benton, 1997	Critical success factors: similar cultures/ values; shared goals; benefit/ risk sharing; communication; change management; financial stability; partner capability; management compatibility; location; social exchange; central coordination; documentation; top management commitment; trust/ goodwill; flexibility; conflict resolution; boundary personnel; performance measurement; establishing required resources
Stuart and McCutcheon, 2000	Critical success factors: trust/ goodwill; similar cultures/ values; top management commitment; shared goals; mutual dependence; performance satisfaction; reputation; social exchange; boundary personnel; partner resources
Ploetner and Ehret, 2006	Critical success factors: trust/ goodwill; similar cultures/ values; shared goals; benefit/ risk sharing; mutual dependence; communication; social exchange; boundary personnel
Saccani and Perona, 2007	Critical success factors: trust/ goodwill; similar cultures/ values; top management commitment; shared goals; partner resources; mutual dependence; communication; benefit/ risk sharing
Niederkofler, 1991 (expert	Critical success factors: trust/ goodwill; top management commitment; shared
search)	goals; social exchange; documentation; flexibility; conflict resolution; boundary personnel
Hoffmann and Schlosser, 2001	Critical success factors: trust/ goodwill; complementary resources; deriving alliance objectives from business strategy; establishing required resources; awareness of time requirements; benefit/risk sharing; partner capability and resources; speedy implementation and fast results; documentation/ precise definition of rights and duties;
Monczka et al., 1998 (expert search)	Importance of commitment, communication, conflict resolution
Kanter, 1994	Importance of top management commitment
Mohr and Spekman, 1994 (expert search)	Importance of communication
Daft, 2000 (expert search)	Importance of change management
Caniëls and Gelderman, 2007	Importance of mutual dependence
Gadde and Snehota, 2000	The relation of conflict to level of involvement in supplier-buyer relationship
Christopher and Jüttner, 2004	Importance of social exchange and boundary personnel, performance measurement
Johnston et al., 2004	Importance of flexibility, trust/ goodwill
Bierly and Gallagher, 2007	Importance of trust/ goodwill
Lamming et al., 1996	Tool for performance measurement
O'Toole and Donaldson	Tool for performance measurement

Table 11. Overview of literature search results

These articles discuss, among other things the critical success factors for the implementation of supplier partnerships. These critical success factors are useful to identify the issues Thales Hengelo should be focussing on to support strategic supplier-buyer relationships. Following the example of Maloni and Benton (1997) and Hoffmann and Schlosser (2001), we can relate the critical success factors to the life cycle stages (see Paragraph 7.1). Paragraph 7.2 presents our literature findings on how to deal with these critical issues to support strategic supplier-buyer relationships. Finally, Paragraph 7.3 presents our conclusions on how Thales Hengelo should deal with the support of strategic supplier-buyer relationships.

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7.1 Critical success factors for each relationship stage

Table 12 gives an overview of the stages and the corresponding critical success factors.

Life cycle stage	Critical success factors	Classification into stages according to
Pre-partnership strategic	Awareness of time requirements	Hoffmann and Schlosser, 2001
analysis stage	Deriving alliance objectives from	Hoffmann and Schlosser, 2001
	business strategy	
	Partner capability and resources	Hoffmann and Schlosser, 2001
	Complementary resources	Hoffmann and Schlosser, 2001
	Change management	Maloni and Benton, 1997
1. Selection and courtship	Similar cultures/ values	Maloni and Benton, 1997/ Hoffmann and Schlosser, 2001
	Partner capability and resources	Maloni and Benton, 1997/ Hoffmann and Schlosser, 2001
	Shared goals	Hoffmann and Schlosser, 2001
	Benefit/ risk sharing	Maloni and Benton, 1997/ Hoffmann and Schlosser, 2001
	Mutual dependence	Based on Caniëls and Gelderman, 2007
	Reputation	Based on Bierly and Gallagher, 2007
	Financial stability	Maloni and Benton, 1997
	Management compatibility	Maloni and Benton, 1997
	Location	Maloni and Benton, 1997
	Trust/ goodwill	Hoffmann and Schlosser, 2001
2. Engagement	Documentation/ precise definition	Maloni and Benton, 1997/ Hoffmann and
	of rights and duties	Schlosser, 2001
	Top management commitment	Hoffmann and Schlosser, 2001
3. Setting up housekeeping	Establishing required resources	Hoffmann and Schlosser, 2001/ Maloni and Benton, 1997
	Speedy implementation and fast results	Hoffmann and Schlosser, 2001
	Social exchange	Based on Kanter, 1994 and Spekman et al., 1996
	Top management commitment	Hoffmann and Schlosser, 2001
	Performance measurement	Hoffmann and Schlosser, 2001
4. Learning to collaborate	Social exchange	Based on Kanter, 1994 and Spekman et al., 1996
	Speedy implementation and fast results	Hoffmann and Schlosser, 2001
	Boundary personnel	Based on Kanter, 1994 and Spekman et al., 1996
	Top management commitment	Hoffmann and Schlosser, 2001
	Performance measurement	Hoffmann and Schlosser, 2001
5. Changing within	Change management	Based on Kanter, 1994
	Top management commitment	Hoffmann and Schlosser, 2001
	Performance measurement	Hoffmann and Schlosser, 2001
6. Stabilization	Benefit/ risk sharing	Based on Spekman et al., 1996
	Shared goals	Based on Spekman et al., 1996
	Performance measurement/	Maloni and Benton, 1997/ Hoffmann and
	Performance satisfaction	Schlosser, 2001
	Flexibility	Maloni and Benton, 1997
	Social exchange	Maloni and Benton, 1997
	Boundary personnel	Maloni and Benton, 1997
	Conflict resolution	Maloni and Benton, 1997
	Trust/ goodwill	Maloni and Benton, 1997
7. Decision	Communication	Based on Spekman et al., 1996
, , Decision	Conflict resolution	Based on Spekman et al., 1996
Throughout	Central Coordination	
Throughout		Maloni and Benton, 1997
	Top management commitment	Maloni and Benton, 1997
	Communication	Maloni and Benton, 1997
	Trust/ goodwill	Based on Ariño and de la Torre, 1998
	Conflict resolution	Based on Ariño and de la Torre, 1998

Table 12. Critical success factors for the stages of the relationship life cycle (adapted from Niederkofler, 1991; Maloni and Benton, 1997; Stuart and McCutcheon, 2000; Hoffmann and Schlosser, 2001; Ploetner and Ehret, 2006; Saccani and Perona, 2007)

Some critical success factors are listed as both important throughout the relationship as in a particular stage. This is because we wanted to make clear that the classification of different authors varies for some critical success factors.

Maloni and Benton (1997) and Hoffmann and Schlosser (2001) classified critical success factors into the development stages of a strategic partnership. We used their classification as indicated in Table 11. Furthermore, we added a number of critical success factors to some stages based on the insights gained during our literature study.

We related the critical success factor mutual dependence to the selection and courtship stage. As discussed in Paragraph 4.2 the recommendations of Kraljic's portfolio matrix for the strategic segment are aimed at balancing dependence on the supplier. This matrix is used for the selection of suppliers, so a firm aims at attaining mutual dependence when selecting its supplier partners.

Reputation was classified into the selection and courtship stage. Reputation is an antecedent of trust as we can learn from Appendix 10. We argue that firms depend more on reputation to evaluate the trustworthiness of their partner in the early stages, for they have no or few common experiences. As the collaboration intensifies firms can assess their partner's trustworthiness based on their past experiences with this partner.

As reported in Paragraph 6.3.3 partners should try to remedy the problems related to the involvement of all layers of the organization in the partnership through social exchange. These problems are typical of the setting up housekeeping stage.

Social exchange and the boundary personnel are important factors for the learning to collaborate stage, as discussed in Paragraph 6.3.4. In this stage partners develop governance structures in which processes and the division of labour between the partners is established. The social exchange between the boundary personnel is a means of fostering collaboration.

The essence of the changing within stage as stated in Paragraph 6.3.5 is to change the partnering organizations to accommodate to the collaboration. Change management is therefore a critical success factor for this stage.

Paragraph 6.3.6 addresses the stabilization stage. This paragraph stresses the importance of monitoring if the relationship is on track to meet the shared goals and if benefits and risks are shared in a fair manner. We therefore related the critical success factors shared goals and benefit/ risk sharing to this stage.

In the decision stage partners question the continuity of the relationship or whether they should expand or narrow the scope of partnership (see Paragraph 6.3.7). It is important in this stage to communicate with the partner and solve conflicts when partners do not agree on the future of the partnership. Therefore, we argue that communication and conflict resolution are critical success factors in this stage.

Finally, in Paragraph 6.2.1 we addressed the findings of Ariño and de la Torre (1998). These authors stress the importance of procedures for conflict resolution and trust/goodwill to constructive learning cycles. Therefore we included conflict resolution as critical success factors throughout the development of the strategic supplier-buyer relationship. According to Hoffmann and Schlosser (2001) trust/ goodwill is important to avoid opportunistic behaviour of partners in the design stages of the relationship at least till the set-up of safeguard against this kind of behaviour. Ariño and de la Torre argue that constructive learning cycles can build a reserve of trust/ goodwill that can help withstand severe setbacks in the course of the relationship. Trust/goodwill is thus both important in the initial stages as during the course of

the relationship. Therefore we added trust/goodwill as critical success factors throughout the development of the strategic supplier-buyer relationship.

7.2 Critical success factors related to support of relationship

The pre-partnership strategic analysis phase addresses the analysis that leads to the decision to extend the collaboration with suppliers to achieve certain strategic objectives. The selection and courtship life cycle stage deals with the selection and content of strategic supplier-buyer relationship. We will not discuss the critical success factors for these stages in further detail for a number of reasons. First, as a result of the strategic analysis prepartnership stage Thales decided to implement strategic partnerships with suppliers, which lead to this study. Therefore this stage is beyond the scope of this study. Second, the Chapters 4 and 5 already discussed the selection and content of strategic supplier-buyer relationships and therefore the key issues related to the selection and courtship stage. Third, these stages precede the actual establishment of the relationship and therefore there is no strategic supplier-buyer relationship yet requiring support.

The following sections address the critical success factors: central coordination, top management commitment, communication, documentation/ precise definition of rights and duties, establishment requires resources, speedy implementation and fast results, change management, benefit/ risk sharing, mutual dependence, shared goals, conflict resolution, social exchange, boundary personnel, flexibility, trust/ goodwill, performance measurement, and performance satisfaction. We will discuss how to deal with these factors to support strategic supplier-buyer relationships.

7.2.1 Central coordination

Spekman et al. (1996) attribute this central coordination role to the strategic supplier-buyer relationship manager. The relationship manager is responsible for carrying the relationship forward at each stage in its life cycle. This person is also the key representative of his/ her firm on the alliance management team.

7.2.2 Top management commitment

Top management commitment refers to the willingness of the management of the partner organizations to exert effort on behalf of the relationship. This commitment is usually demonstrated by committing resources to the relationship, in the form of for example money, time, and facilities (Monczka et al., 1998).

7.2.3 Communication

Information sharing, the level of information quality, and participation determine the extent to which communication behaviour is effective in a strategic supplier-buyer relationship (Monczka et al., 1998). Paragraph 6.3.4 already discussed the exchange of information. Participation refers to the extent to which partners engage in joint planning and goal setting. This requires management to develop communication skills and to learn to modify its traditional concern for decision autonomy (Mohr and Spekman, 1994).

7.2.4 Documentation/ precise definition of rights and duties

Third party professional such as lawyers are responsible for the documentation of the strategic supplier-buyer relationship agreement. This agreement should among other things include the joint activities, a commitment to expand collaboration, and secure the independence of the parties (Kanter, 1994).

7.2.5 Establishing required resources

The partnering organizations need to establish which resources are required to reach the objectives of the partnership. These are the tangible and intangible assets, employees and

financial investments required. Furthermore, the partners need to agree on whether these resources remain property of each company or become mutually owned (Hoffmann and Schlosser, 2001).

7.2.6 Speedy implementation and fast results

After the structure for the partnership is in place, an initial project or task must be undertaken so the partners get used to working together and see the partnership become a reality. Fast measurable results of this project or task form the foundation for a successful partnership (Hoffmann and Schlosser, 2001).

7.2.7 Change management

Employees affected by change often seem to resist change. To effectively manage the implementation of strategic supplier-buyer relationship, managers should be aware of the reasons for employee resistance to change. Overcoming resistance usually involves the analysis of resistance and the use of implementation tactics (Daft, 2000). As discussed in Paragraph 6.3.5 assigning a relationship promoter could be useful in overcoming the problems related to the implementation of strategic supplier-buyer relationships.

7.2.8 Benefit/ risk sharing and shared goals

The selection and content determination of strategic supplier-buyer relationships involved determining how the risks and benefits could be shared through the relationship. Furthermore, previous to the establishment of the relationship the partners formulated the shared goals. As discussed in Paragraph 6.3.6 it is important to assess if the relationship is still moving in the direction of the shared goals and if the risks and benefits are divided in a fair manner. The strategic supplier-buyer relationship is responsible for this task.

7.2.9 Conflict resolution

In inter-organizational relationships conflict is almost inevitable. According to Monczka et al. (1998) the manner in which conflict is resolved has direct implications for the success and continuity of the relationship. They found that constructive problem resolution is to be preferred to other techniques. Constructive conflict resolution techniques are aimed at joint problem solving or persuasion.

Furthermore, Gadde and Snehota (2000) found that high involvement relationships tend to involve more conflict than low involvement relationships. As the involvement in the relationship increases, the more pronounced becomes the potential for conflicting interests. Therefore, the importance of conflict resolution techniques increases as the strategic supplier-buyer relationship grows and relationship involvement increases.

7.2.10 Social exchange and boundary personnel

Relationship promoters can be assigned as boundary personnel, who are among other things responsible for the social exchange and managing problems that arise during the implementation of the strategic supplier-buyer relationship (Christopher and Jüttner, 2004). Walter (1999) identified social competence, network knowledge, and a portfolio of good interpersonal relationships as crucial attributes of successful relationship managers.

Boundary personnel specifically involved in the joint activities should at least possess the social competence to create trust and commitment to facilitate these activities. For all employees operating on the interface between partners determine the success of a strategic supplier-buyer relationship.

7.2.11 Flexibility

Flexibility relates to the willingness to vary from fixed contractual terms as conditions change (Johnston et al., 2004). These authors found that the supplier's level of trust in the buyer is positively related to the supplier's flexibility in arrangement. Therefore, we conclude that by increasing its trustworthiness a company can induce its supplier to be flexible.

7.2.12 Trust/ goodwill

Trust can be defined as the belief that the other party will act in the firm's best interest in circumstances where that other party could take advantage or act opportunistically to gain at the firm's expense (McCutcheon and Stuart, 2000). Most definitions also contain a "goodwill" component (Bierly and Gallagher, 2007; McCutcheon and Stuart, 2000; Sako, 1990; Johnston et al., 2004). Research has show that trust has a number of sources. Bierly and Gallagher (2007) summarize the antecedents of trust found in literature (see Appendix 10). A company can influence some of these antecedents of trust to increase its trustworthiness.

Trust can replace formal control mechanisms, reduce transaction costs, facilitate conflict resolution, and allow more flexibility in alliance arrangements (Bierly and Gallagher, 2007). Furthermore, trust has a positive influence on cooperative behaviours and these behaviours positively influence the relationship performance from the buyer's perspective (Monczka et al., 1998). Therefore trust is important for developing and supporting strategic supplier-buyer relationships.

7.2.13 Performance measurement and satisfaction

Performance satisfaction and performance measurement are strongly related. A company cannot determine if it is satisfied with the relationship performance, before measuring this performance. Therefore we address both issues in this paragraph.

Performance measurement in strategic supplier-buyer relationships is referred to as relationship monitoring by Christopher and Jüttner (2000). They define relationship monitoring as the procedures employed to evaluate whether the relationship meets the specifications agreed upon. The authors stress that this monitoring should include joint negotiation and performance control activities. Therefore, we conclude that the performance of a strategic supplier-buyer relationship should be measured from both the buyer and supplier's perspective. Lamming et al. (1996) and O'Toole and Donaldson (2000) agree with this statement. Appendix 11 includes two possible tools for relationship performance measurement. It is also useful to measure the performance on the critical success factors discussed in Paragraph 7.2.1 till 7.2.12. This will support the identification of potential pitfalls and enable partnering organizations to execute corrective actions.

7.3 Dealing with support of strategic supplier-buyer relationships

This paragraph summarizes our literature findings regarding the support of strategic supplier-buyer relationships. The critical success factors presented in Table 11 serve to identify the important issues affecting the support of strategic supplier-buyer relationships. Paragraph 7.2 discussed how to deal with these issues to support the relationship. Table 12 gives an overview of our conclusions and answers the question: *How should Thales Hengelo deal with the support of strategic supplier-buyer relationships according to literature?*

Thales Hengelo should perform different activities to support the strategic supplier-buyer relationship in each stage. The critical success factors indicate which issues should be tackled for each stage. Thales Hengelo could use the list presented in Table 12 as a checklist to make sure non of these critical success factors are overlooked and that they are performing the necessary support activities.

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How should Thales Hengelo deal with the support of strategic supplier-buyer relationships according to literature?

Life cycle stage	Critical success factors	Support of relationship
Pre-partnership	Awareness of time requirements	Not applicable
strategic analysis stage	Deriving alliance objectives from business strategy Partner capability and resources	
	Complementary resources	
	Change management	
1. Selection and courtship	Similar cultures/ values Partner capability and resources Shared goals Benefit/ risk sharing Mutual dependence Reputation Financial stability Partner capability Management compatibility	Not applicable
0 Engagoment	Location Documentation/ precise definition	Third party professionals draw up agreements
2. Engagement	of rights and duties	Third party professionals draw up agreements
3. Setting up housekeeping	Establishing required resources	Determine which resources; separate or joint ownership resources
	Performance measurement	Implement performance measurement/ relationship monitoring systems
	Speedy implementation and fast results Social exchange	Initial project or task with quick measurable results to stimulate relationship Relationship promoters responsible for social exchange;
	occidi oxonago	development social competence boundary personnel
4. Learning to collaborate	Social exchange Boundary personnel	See social exchange
	Speedy implementation and fast results	See speedy implementation and fast results
	Performance measurement	Implement performance measurement/ relationship monitoring systems
5. Changing within	Change management	Assign relationship promoter responsible for analysis of resistance to change and tactics to overcome resistance
	Performance measurement	See performance measurement
6. Stabilization	Benefit/ risk sharing	Relationship manager monitors if relationship is benefits and risks are shared in a fair manner
	Shared goals	Relationship manager monitors if relationship is still on
	Performance measurement/ Performance satisfaction	track to reach shared goals See performance measurement
	Flexibility	Develop trust to stimulate flexibility
	Social exchange	See social exchange
	Boundary personnel	
7. Decision		
Throughout	Top management commitment	Commitment resources; development good interpersonal relationships between top managers
	Communication	Development communication skills; determine scope information exchange; develop trust and openness for information sharing; frequent face-to-face meetings; interface for learning; joint decision making
	Trust/ goodwill	Develop trust through collaboration and by influencing antecedents of trust
	Conflict resolution	Constructive conflict resolution techniques
	Central Coordination	Coordination by relationship manager fulfilling different roles in each stage

Table 13. Conclusions on support of strategic supplier-buyer relationships

8 The conceptual decision support model

This chapter presents the conceptual decision support model for selection, content, development, and support of strategic supplier-buyer relationships. Paragraph 8.1 addresses the question: What is the discrepancy between how Thales Hengelo currently deals with the selection, content, development, and support of strategic supplier-buyer relationships and how Thales Hengelo should deal with this according to literature? Paragraph 8.2 answers the question: What should a conceptual decision support model be like to tackle this discrepancy?

8.1 The discrepancy between current situation and literature

The following paragraphs deal separately with the discrepancies between the current situation at Thales Hengelo and literature regarding the selection, content, development and support of strategic supplier-buyer relationships.

8.1.1 Selection

Paragraph 3.2 reported that Thales Hengelo uses the Kraljic matrix and a variation on the BCG matrix for the choice of potential strategic partners. The meaning of the dimensions and the measurement of the score on each dimension were identified as problematic issues. Furthermore, Thales Hengelo has a static approach to the use of these portfolio models.

We compared our literature findings presented in Chapter 4 with how Thales Hengelo currently deals with the selection of strategic supplier-buyer relationships. We found that Thales Hengelo could improve its selection of strategic supplier-buyer relationships by taking into account the interdependencies between relationships for the determination of Thales' and the supplier's perspective on the relationships. Furthermore, according to literature Thales should consider possibilities for strategic action to move between the quadrants of the portfolio models and choose a method to deal with the measurement issues of these models. Finally, Thales could also better its selection method by using the criteria for selection suggested by literature: strategic fit, complementary skills, cooperative culture, compatible goals, and commensurate levels of risk.

8.1.2 Content

Previously we found that Thales Hengelo had no clear method to determine the content of strategic supplier-buyer relationships. The possibilities for content, joint R&D, supply chain manager role supplier, and cooperative purchasing were identified rather ad hoc.

Chapter 5 presented the list of possibilities for content we formulated based on our literature study. Furthermore, this chapter discussed a method for the formulation of new possibilities for content.

We analysed how Thales Hengelo currently deals with the content of strategic supplier-buyer relationships and how this should be done according to literature. We found that there are more possibilities for content than those identified by Thales Hengelo. Thales would also benefit from methods to develop the content, for a structured method would reduce the risk of Thales overlooking fruitful ways to collaborate with partners. Paragraph 5.1 proposes the use of a checklist of possibilities for content and Paragraph 5.2 presents a technique for determining possibilities for content to complement the checklist.

8.1.3 Development

As discussed in Paragraph 3.2, Thales Hengelo has no clear policy on the development of strategic supplier-buyer relationships. Figure 7 in Paragraph 3.1 gives a sketch of Thales

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Hengelo's views on the organization of strategic supplier-buyer relationships. The steering committee, depicted as demand management assembly in Figure 7, is responsible for the supply chain cooperation with very strategic suppliers and the potential strategic partners. Furthermore, Thales intends to implement a multi-level interface structure consisting of a strategic interface team, a tactical interface team, and an operational interface team.

Our literature findings presented in Chapter 6 support a life cycle approach with learning cycles in each stage for the development of strategic supplier-buyer relationships and marriage as metaphor to explain the stages. Furthermore, we identified the characteristics, the key business activities, and the key relationship activities for each stage of the relationship. We found that strategic supplier-buyer relationship managers fulfil a different role in each stage of the strategic supplier-buyer relationships. Finally, we discovered that the structure of the relationship also changes over time.

We compared our literature findings with how Thales Hengelo currently deals with the development of strategic supplier-buyer relationships. Our analysis revealed that Thales Hengelo should adopt a life cycle approach with learning cycles in each stage to the development of strategic supplier-buyer relationships. Furthermore, Thales could benefit from a policy on how to set conditions to foster constructive learning cycles. According to literature, Thales should also identify what the characteristics, key activities, the role of strategic supplier-buyer relationship manager, and the structure of the relationship are for each stage. Following the guidelines from literature leads to the execution of all necessary steps for the development of the relationships, but also avoids that redundant actions are taken.

8.1.4 Support

As Paragraph 3.2 reported, Thales Hengelo has no policy on the support of strategic supplier-buyer relationships. Thales does not have any strategic supplier-buyer relationships yet requiring support. Therefore they had no reason to develop a policy on the support of these relationships until recently. Their goal to develop strategic supplier-buyer relationships created the urgency to develop a policy for support of these relationships. Chapter 7 gives suggestions on how to tackle the support of these relationships.

We analysed the current approach, the suggestions from Chapter 7, and the discrepancies between them. The analysis shows that Thales should adopt these suggestions on how to support the relationship in each life cycle stage. According to literature, they also should appoint a relationship manager responsible for the fulfilment of the relationship supporting functions in each stage. We advise the adoption of the suggestions from Chapter 7, for these are based on the critical success factors for each stage and how to deal with these factors. Not dealing with these issues in an appropriate manner may lead to an unsuccessful strategic supplier-buyer relationship.

8.2 The model

This paragraph presents our conceptual decision support model. First, we discuss the building blocks, selection, content, development, and support. For each building block we determine which discrepancies Thales wants to tackle with the model and how the models and guidelines from literature can be adapted into a model suitable for Thales. Following, we give an overview of the conceptual decision support model as a whole. Finally, we evaluate if our models serve to tackle the discrepancies.

8.2.1 Selection

According to the "Purchasing process and supply chain manager" (PP/ SCM), the model for selection for Thales Hengelo should tackle the lack of possibilities for movement between the quadrants of the portfolio matrices and the measurement issues of these models.

Furthermore, it should take into account the interdependencies between relationships, but only between the relationships with the most important suppliers. He found it less important to explicitly take into account the criteria strategic fit, complementary skills, cooperative culture, compatible goals, and commensurate levels of risk when selecting strategic partners. He argued that through the use of portfolio models these criteria are implicitly already taken into account.

8.2.1.1 Adaptations to literature findings

Paragraph 4.4.6 discusses the three-step approach for selection of strategic partners we developed based on the literature findings. We presented these findings to the PP/ SCM and the "Department Manager Tactical Purchasing" (TPM). They proposed a number of adaptations to the three-step approach.

First, they found the three step approach to be confusing and argued that merging step 1 and 2 would make the approach to partner selection simpler. The buyer and supplier's perspective on the relationship would then be mirror images. Second, the managers argued that the criteria for selection used in step 3 partly overlap with the analysis in step 1 and 2. For example the buyer will perceive the supplier as more attractive if the supplier possesses complementary skills and vice versa. They proposed to use these criteria to determine the relative supplier and customer's attractiveness. Third, the managers argued that the matrices for analysis of the supplier relationships and the customer relationships would be easier to use in practice if they were reduced to two-by-two matrices instead of three-by-three matrices. These models are subject to the measurement issues of portfolio models as discussed in Paragraph 4.3. It would be easier to reach consensus on the position of a potential partner in a two-by-two matrix. On the other hand this adaptation would lead to a reduced accuracy.

We evaluated the proposed adaptations and found them not to be of a fundamental nature. Therefore we include these adaptations in our model building block for selection.

8.2.1.2 The model building block for selection

Figure 18 depicts this building block, which is based on the literature findings presented in Paragraph 4.4.6 and the adaptations proposed by the PP/ SCM and the TPM. The model includes the buyer and supplier's perspective on the potential strategic supplier-buyer relationship. For the buyer's perspective we use Kraljic's matrix and Olsen and Ellram's (1997a) model for analysis of supplier relationships. As proposed by the PP/ SCM and the TPM we reduced Olsen and Ellram's model to a two-by-two matrix. For the supplier's perspective we use Fiocca's (1982) models. The model for analysis of customer relationships was also adapted to a two-by-two matrix. In the building block for selection depicted in Figure 18 we indicated the possible strategic actions to move into a quadrant that leads to a potential strategic partner status. The criteria for selection strategic fit, complementary skills, cooperative culture, compatible goals, and commensurate levels of risk will support the determination of the position in the matrices for analysis of the relationships. Both the buyer and supplier should perceive each other as a potential partner, which is indicated by the star positions in Figure 18, to develop a strategic supplier-buyer relationship. If this is not the case the buyer and/ or supplier could try to change the positioning in the matrices through strategic actions.

8.2.2 Content

The PP/SCM indicated that the model for the content of strategic supplier-buyer relationships needs to tackle the absence of a structured method to develop the content of strategic supplier-buyer relationships.

8.2.2.1 Adaptations to literature findings

Paragraph 5.3 gives an overview of our literature findings on how to deal with the content of strategic supplier-buyer relationships. The PP/ SCM and the TPM reviewed these findings. In their opinion the model for content should emphasize that the checklist is not exhaustive. Furthermore, they required a list of definitions of the possibilities for content. The managers also find it important that the terms used in the model reflect an atmosphere of collaboration. For example we should avoid terms like supplier-buyer relationship and use potential partners instead.

We evaluated these adaptations and concluded that they do not affect the content of the model. We therefore include these minor alliterations in the model building block for content.

8.2.2.2 The model building block for content

Figure 18 depicts the model building block for content with the minor adaptations proposed by the PP/ SCM and the TPM. The model consists of a checklist of generic possibilities for content of strategic supplier-buyer relationships. This list is based on our literature findings discussed in Paragraph 5.1. Table 6 provides the definitions for the possibilities for content and related benefits. Parties aiming at developing a strategic supplier-buyer relationship could use this list, to assure that they do not overlook some possibilities for content.

The second part of the model is a technique for determining the content of the strategic supplier-buyer relationships. The technique identifies the key attributes, analyses the intangible resources that produce these attributes, and develops strategies for each key intangible resource. Each party performs the analysis on its own organization and on its potential partner's organization. In the perceptual synthesis phase the parties establish if their views match and which possibilities for content this analysis yields.

8.2.3 Development

As discussed previously, Thales Hengelo does not make distinction between the several stages of the relationship life cycle. According to literature, they should identify what the characteristics, key activities, the role of strategic supplier-buyer relationship manager, and the structure of the relationship should be in each stage. Furthermore, they could adopt a policy on how to set the conditions to foster constructive learning cycles. The PP/ SCM expressed the wish to tackle all the discrepancies with literature.

8.2.3.1 Adaptations to literature findings

The PP/ SCM and the TPM evaluated the literature findings presented in Paragraph 6.3. They suggested a number of small adaptations. They preferred a figure that depicted the development of the level of maturity to time instead of the resource commitment to time, for they called the development of the resource commitment to time as depicted in Figure 17 into question. According to them the amount of resources committed to the relationship declines after the relationship reaches maturity. Furthermore, instead of the term *negotiation* in the engagement stage they preferred the term *reaching an agreement*, for they had a negative association with the term negotiation. They also proposed to change the name of the last stage from *decision* to *midlife crisis* for this term is inline with the marriage analogy.

We analysed the proposed adaptations and they are not of consequence. We therefore include these adaptations in the model building block for development.

8.2.3.2 The model building block for development

Figure 18 shows the building block model for development of strategic supplier-buyer relationships. This model is based on the literature findings presented in Paragraph 6.2, 6.3 and 6.4 and the small improvement suggestions proposed by the PP/ SCM and the TPM. This model's objective is to tackle the discrepancies addressed in Paragraph 8.1.3. The

model shows the stages of the relationship life cycle and a learning cycle for each stage. Furthermore, it includes the characteristics, key business activities, key relationship activities, the role of the relationship manager, and the structure of the relationship for each stage. Finally, it depicts that after a midlife crisis partners can choose to broaden or narrow the scope of the relationship, continue or terminate the relationship.

8.2.4 Support model

The PP/ SCM wants to follow the suggestions from literature on how to support the relationship in each life cycle stage and therefore implicitly tackle all the discrepancies.

8.2.4.1 Adaptations to the literature findings

Paragraph 7.3 presents the results of our literature study on how Thales Hengelo should deal with the support of strategic supplier-buyer relationships. According to the PP/ SCM and the TPM the argument that there was no relationship to support in the selection and courtship stage was valid, but not sufficient to omit the critical success factors for this stage. The critical success factors in this stage were necessary to create favourable conditions for the partnerships and were perceived to be essential information. Furthermore, they expressed the wish to model the support activities as a checklist for each stage of the life cycle.

These proposed adaptations are of little account for the content of the model. Therefore we include these minor adaptations in the model building block for support.

8.2.4.2 The model building block for support

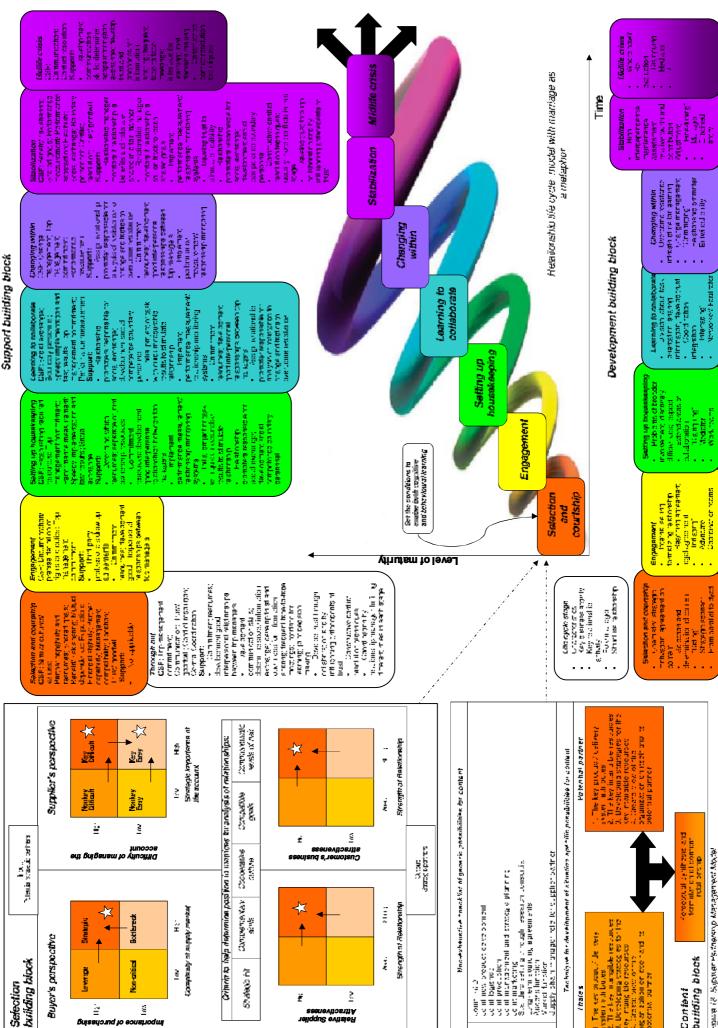
The support building block is based on the literature findings presented in Paragraph 7.3 and adaptations proposed by the PP/ SCM and the TPM. This model can be used to evaluate if all the important issues in each stage are being dealt with in an appropriate manner. As discussed in Chapter 7 we identified the critical success factors for each stage. Furthermore, we studied how these factors could best be dealt with according to literature. The critical success factors and guidelines as to how to support the relationship are included in the development model as checklists for each stage. Figure 18 gives an overview of this building block.

8.2.5 The overall model

Figure 18 depicts the conceptual decision support model, which is based on the model building block for development we designed based on our literature findings discussed in Paragraph 6.2 and 6.3 and the small adaptations proposed by the PP/ SCM and the TPM.

The conceptual decision support model shows the life cycle stages of a strategic supplier buyer-relationship using marriage as a metaphor to describe the stages. Furthermore, it includes the learning cycles the partners go through as they move towards a higher level of maturity, efficiency and equity. The midlife crisis stage is depicted at the end to reflect the life cycle approach, though this point can be reached in each stage of the life cycle.

The model building blocks selection and content are part of the selection and courtship stage. The support building block consists of the critical success factors and the recommended support activities for each stage.



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8.2.7 Verification of the model

We studied if the model presented in Figure 18 tackles the discrepancies. We found that there is one issue the models do not completely address. The model for selection of strategic supplier-buyer relationship does not fully tackle the measurement issues at Thales Hengelo. Prior to implementing the model for selection Thales should determine how to deal with these issues. We suggested a consensus method, with a majority vote to solve deadlocks. We discussed this with the PP/ SCM and the TPM and they indicated that at least the managers of the purchasing and technical departments should reach consensus on a supplier being a potential strategic partner.

9 Testing the model

This chapter discusses the results of the conference room test and the field test. Paragraph 2.5.3 gives an overview of how we planned to execute these tests. Paragraph 9.1 discusses the findings of the conference room test. Following, Paragraph 9.2 presents the results of the field test. Paragraph 9.3 compares the findings of the conference room test and the field test and answers the research question: *How does the conceptual decision support model function in practice?*

9.1 The conference room test

The aim of the conference room test was to determine the usefulness of the model from Thales' perspective. We hosted a discussion session and invited the decision makers and users we identified as critical stakeholders in Paragraph 3.3. The original intention was to apply the model to all potential strategic supplier-buyer relationships. In practice it was difficult to plan a date and time when all participants were available, so we only had ninety minutes for the conference room test. Due to the limited time we choose to apply the selection building block to Supplier A, the content model building block to Supplier B, and the development and support building blocks to Supplier C. We came to this decision together with the PP/ SCM. Appendix 13 contains the documentation used for the conference room test.

On other occasions we applied the whole model to the relationship with Supplier A and the relationship with Supplier B in collaboration with the tactical purchasers responsible for these supplier accounts. We used these findings on the usefulness of the model to complement the results of the conference room test.

In the following paragraphs we discuss the results of the conference room test. We verified these findings with the PP/ SCM and two tactical purchasers. Based on these results we draw conclusions on how the model functions in practice and how it could be improved to enhance its usefulness to Thales.

9.1.1 Results conference room test

The participants of the conference room test were all able to understand and use the model and generally they perceived the model as useful. The application of the selection building block resulted in the identification of Supplier A as a potential strategic partner. Using the checklist for content (see Table 6) the participants identified a number of possibilities for content of the relationship with Supplier B. The development and support building block require more long term action, therefore it was difficult to simulate the use of these building blocks in a conference room. Though the participants did discuss in which life cycle stage the relationship with Supplier C was and the role of the relationship promoter in this stage.

The feedback on the model was primarily focussed on what the participants perceived as the shortcomings of the model. In the following paragraphs we will address the issues the participants identified for respectively the selection building block, the content building block, and the development and support building blocks.

9.1.2 Selection

9.1.2.1 Issues for the selection building block

Applying the selection building block to the Supplier A case identified a number of problems. The first one was that some of the participants did not recognize the Kraljic matrix as such,

for we used the dimensions *importance of purchasing* and *complexity of the supply market*. These participants were used to the dimensions *relative value* and *supply risk*.

The second issue concerned the factors influencing the dimensions supplier attractiveness, customer business' attractiveness, and strength of the relationship. As a guideline we provided a list of factors to give the participants an idea of what could be relevant factors influencing these dimensions (see Appendix 13). The participants expressed that the list was incomplete in their opinion. Furthermore, they had difficulty to weigh the factors for measurement of each dimension. In their opinion the importance of a certain factor depends on the supplier relationship being evaluated.

The third issue is partly related to the previous problem. This is a finding of the additional session with the tactical purchaser managing the Supplier B account. He argued that along with the criteria strategic fit, complementary skill, compatible goals, cooperative cultures, and commensurate levels of risk, the basic performance of the suppliers was also very important to determine the attractiveness of the supplier. Therefore this criterion should be mentioned with these other criteria in the model.

The fourth issue was that the participants found it difficult to compare relationships to determine the relative attractiveness of a supplier. They agreed that there were interdependencies between relationships. Though they argued that Thales had certain needs for which there was only one supplier on the market. Therefore they needed to manage the risks associated with high dependency on these suppliers through a strategic supplier-buyer relationship. In their opinion it was not useful to compare such a relationship with a single source to the relationship with a supplier of a completely different module.

The fifth issue was that the Director purchasing of Thales Nederland expressed the wish to be able to use the model to select a partner that was not already a Thales supplier. The model limits itself to the selection of potential partners among Thales' suppliers of modules.

Finally, overall the participants were not completely convinced that the new model for selection was superior than the one currently used by Thales. This is related to the previously discussed issue, that the matrix with the dimensions *relative supplier attractiveness* and *strength of relationship* was not considered useful.

In the following paragraph we analyse these findings and give suggestions on how to improve the practical usefulness of the selection building block.

9.1.2.2 Analysis of the issues for the selection building block

Table 14 summarizes the conclusions of our analysis of the results, the identified potential for improvement and the limitations of the model for the selection building block.

Issues identified during conference room test	Potential for improvement	Limitation of model
The choice of dimensions of the Kraljic matrix	Change dimensions to the dimensions Thales has reached consensus on	No
The determination of factors influencing the dimensions supplier attractiveness, customer business' attractiveness, strength of the relationship	Thales could use the consensus method to determine the factors, score on factors, and position in the matrices	Yes
The criterion basic performance should be included along with the other criteria for selection	Include the criterion basic performance in the model	No
Perceived usefulness of determining relative attractiveness supplier	Convince participants of usefulness or omit this element	Possible

Ability of model to select a partner that was not	Further research necessary	Yes
already a Thales supplier		
Participants not convinced the model is an	Convince participants of usefulness or omit	Possible
improvement to current methods	this element	

Table 14. Identified improvement potential for selection building block

The first issue discussed in the previous paragraph is concerned with the dimensions of the Kraljic matrix. We argue that this is not a major limitation of the selection building block. For as discussed in Paragraph 4.2 the variations to the Kraljic matrix do not differ fundamentally from the Kraljic matrix. There should though be consensus on the dimensions Thales uses. In Paragraph 4.4.1 we argued that Thales could use the Kraljic matrix, because among other things they are already familiar with this model. We failed to actually copy the exact dimensions Thales has reached a consensus on *relative value* and *supply risk*. An improvement to the model would therefore be to use these dimensions.

The second issue is related to the factors influencing the dimensions supplier attractiveness, customer business' attractiveness, and strength of the relationship. The list we presented was never intended to be a complete list fit for adoption by Thales. We argue that as discussed in Paragraph 4.4.2 Thales could use the consensus method to deal with the measurement issues discussed in previous paragraph. They could reach a consensus on which factors they want to use to measure the dimensions supplier attractiveness, customer business' attractiveness, and strength of the relationship. Furthermore the determination of sub scores, and aggregation of sub scores to determine the position in the matrix could also be consensus based. The weighing of the factors is done implicitly. Even if the consensus method were used, it would be difficult to determine the factors, scores on the sub factors and position in the matrices. The discussion during the conference room test about the factors reflects how difficult it is to use the consensus method to determine these factors. The measurement issues are therefore a limitation of the selection building block.

The third issue was that the criterion basic performance should be included along with the criteria strategic fit, complementary skill, compatible goals, cooperative cultures, and commensurate levels of risk. Many authors as for example Ellram (1991) stress the need to consider not only the traditional criteria such as price and quality when selecting strategic supplier partners but also the long term and qualitative criteria. We have focused solely on the long term and qualitative criteria for selection and ignored the criteria that evaluate the basic performance. The performance on basic criteria is also important, for a supplier who is always late to deliver and whose quality is very poor is not an attractive potential strategic partner. Therefore we can improve the model by including the criterion basic performance.

As for the fourth issue, we agree that it is difficult to compare relationships to determine the relative attractiveness, for each supplier may be perceived as attractive for different reasons. Determining the factors influencing the dimension supplier attractiveness will facilitate the comparison of relationships. We do not agree though with the statement that it is not useful to compare suppliers from different modules. Thales has limited resources available to invest in strategic supplier-buyer relationships and is not able to manage all its suppliers for whom there are no alternatives through a strategic supplier-buyer relationship. We advise Thales to allocate its resources to the most promising relationships and develop other strategic plans to deal with the high dependency on the other single sources. An alternative strategic plan, suggested by a tactical purchaser, is to develop a second source. This requires a lot of time and effort though. Thales could evaluate for each specific situation if they should accept the high dependency or develop a second source.

As stated before when discussing the fifth issue, this research was aimed at developing a model for the selection of potential partners among Thales' suppliers of modules. We recommend further research to determine if and how the building block for selection should

be adapted to be useful for selection of a partner that was not already a Thales supplier and so comply with the wishes of the Purchasing director of Thales Nederland.

Finally, since not all participants were convinced that the new model for selection was an improvement to Thales' previous model we compared the two models using a subset of the criteria for evaluation discussed in Paragraph 3.3. We limited ourselves to the criteria related to form and criteria related to the substance of the selection building block. Table 15 shows the results of our analysis.

Criteria for evaluation	Thales' current model	Selection building block
The model should be accessible and simple enough to be employed by users with a bachelor education level	+	+
The model should provide visual support to internal and inter-firm communication	+	+
The model should be unambiguous	+/-	+/-
The model should measure the attractiveness of the potential partner from the buyer point of view	•	+
The model should measure the attractiveness of the buyer from the supplier point of view	+	+
The model should measure the compatibility with the potential partner	-	-
The model should include an assessment of the complementary skills of the potential partner	-	-
The model should be able to determine unambiguously whether a supplier is an appropriate strategic partner	+/-	+/-

Table 15. Comparing the current and new method for selection

The models score comparable on almost all the criteria for evaluation. We found that the only difference is that selection building block measures the attractiveness of the supplier from the buyer's perspective and Thales current model does not. Furthermore, our model does address the compatibility with the potential partner and the complementary skills of the potential partner. We mention these criteria as important criteria to determine the attractiveness of a supplier, though our model does not actually measure the compatibility, nor assess the complementary skills. Appendix 6 provides some tools that could support these activities. The Demand Chain Navigator® does measure the score on these criteria though. This implies that if Thales intends to further develop the use of this tool, the current methods would score positively on the criteria measure the compatibility with the potential partner and include an assessment of the complementary skills of the potential partner.

We conclude that based on the criteria for evaluation and the assumption that all criteria are equally important, our selection building block is an improvement to Thales' current model. From a theoretical perspective we can also conclude that our model is an improvement to Thales' current model. For it addresses most of the discrepancies between Thales' current methods for selection and how Thales should deal with the selection of strategic supplier-buyer relationships according to literature (see Table 18).

As discussed in Paragraph 9.1.1.1 the participants were not convinced that the selection building block is an improvement to the current method, because they did not perceive the matrix with the dimensions *relative supplier attractiveness* and *strength of relationship* as useful. We argue that the participants oppose this matrix for it is not a standard tool used by purchasing professionals to select strategic partners. Persuading them of the usefulness of this matrix would require a lot of effort. We would need to convince the decision makers with practical examples that our argumentation holds. We also should educate the users about the logic behind the model through training programmes. We question whether the gains that could be achieved through the implementation of the selection building block, are worth the effort involved in changing the methods for selection.

9.1.3 Content

The content building block was applied to Supplier B during the conference room test. We used the checklist to determine possibilities for content for the strategic supplier-buyer relationship between Supplier B and Thales. We were not able to test the technique for determining possibilities for content, for this technique requires an extensive strategic analysis of the Thales organization and in this case Supplier B. As stated previously the time available was limited so we chose to omit this part of the model when testing the selection building block. We also didn't address the technique for determining possibilities for content when testing the model in the sessions with the tactical purchasers, for the technique required knowledge of strategic roadmaps, which the tactical purchasers did not fully possess. We advise Thales to test this technique in the future to determine the usefulness of this element of the content building block.

9.1.3.1 Issues for the content building block

The participants of the conference room test found the checklist to be too compact. They mentioned three issues that would improve the usefulness of the checklist in their opinion. In the first place, the terms used on the checklist were collective terms for a number of activities in a certain field and the participants preferred each activity to be mentioned separately. Secondly, the terms used on the checklist emphasized a joint activity, though it is also possible to perform an activity for your partner in exchange for something else. For example we could perform marketing activities for Supplier X and in return Supplier X could provide Thales with access to the universities they are affiliated with. Finally, the participants expressed that the list was not complete, for they missed possibilities for content such as sharing information and information technology.

9.1.3.2 Analysis of the results for the content building block

Table 16 gives an overview of the conclusions of our analysis of the results for the content building block. Furthermore, it includes the identified potential for improvement and what identified issues are limitations of the model.

Issues identified during conference room test	Potential for improvement	Limitation of model
Checklist of possibilities for content was too compact	Mention each activity separately, currently represented with a collective term	No
·	Reduce the emphasis on joint activities by mentioning both the possibility to perform a certain activity for a partner as together with ones partner	No
	Extend the list by adding sharing information and information technology	No
	Extend the list through further research and practical experience	No

Table 16. Identified improvement potential for content building block

As stated previously the users found that the checklist of possibilities for content was too compact. After an extensive discussion during the conference room test, it still did not become clear what the ideal length of such a list is. To enhance the acceptance of the model we will adopt the participants' suggestions for improvement. Firstly, we mention each activity, currently represented with a collective term, separately. Secondly, we reduce the emphasis on joint activities by mentioning both the possibility to perform a certain activity for a partner as together with ones partner. Finally, we are aware that the list is not exhaustive. Further research and practical experience with supplier-buyer relationships can support the extension of the checklist. We include the suggestions of the participants mentioned in Paragraph 9.1.1.2 in the list, though the exact benefits related to these possibilities for content should also be subject of further study.

We do argue though that such a list can become too long, for the list is aimed at determining the content together with the supplier. If the list is too long the partnering parties cannot use the list during a meeting to evaluate if they are not overlooking some generic possibility for content. Furthermore, the list may become confusing and therefore no longer fit to support decision-making regarding the content of strategic supplier-buyer relationship together with a partner. Further experience with the use of the checklist could help to determine what the length of the list should be.

9.1.4 Development and support

9.1.4.1 Results for development and support building blocks

The development and support building blocks were applied to Supplier C. The participants identified a limited number of issues that could be improved for the development and support building blocks in their opinion. For the development building block, they expressed the wish to relate the content of the relationship to a specific interface structure. Furthermore, some participants wanted to know what the implications of the past experiences with a supplier were for the development life cycle of the relationship.

As for the support building block, the participants argued that someone should be made responsible for monitoring the development of the relationship in all stages. In the support building block these monitoring activities are limited to the stabilization stage.

9.1.4.2 Analysis of the results for development and support building blocks

The conclusions of the analysis of our results, the identified potential for improvement, and the identified limitations of the model are recapitulated in Table 17.

Issues identified during conference room test	Potential for improvement	Limitations of model
Framework for determination of interface structure is not related to content	Further research necessary	Yes
The implications of the past experience with a supplier for the development life cycle of the relationship	Further research necessary	Yes
Someone should be made responsible for monitoring the development of the relationship in all stages	Add this to the checklist of support activities valid throughout the relationship	No

Table 17. Identified improvement potential for development and support building blocks

As stated the participants wished for a tool that would support the determination of the interface structure based on the content of the strategic supplier-buyer relationship. The framework we proposed did not relate the possibilities for content to a specific structure (see Appendix 13). The framework user should assess the strategic importance and value creation related to the content of the relationship and determine which generic interface structure corresponds with this level of strategic importance and value creation. Further research is necessary to relate the possibilities for content on the checklist to a specific interface structure.

It is not clear what the implications of the past experiences with a supplier are for the development life cycle of the relationship. It would require further research to determine what these implications are.

Finally, the participants found that someone should be made responsible for monitoring the development of the relationship in all stages. We agree with this statement, for not monitoring the development may lead to deterioration of the relationship and even to a crisis situation where partners call the continuity of the relationship into question. We perceive this as part of the central coordination function that should be performed throughout all stages of

the relationship life cycle. We do agree that this is not emphasized enough and add this support activity to the checklist of support activities valid throughout the relationship.

9.1.5 Conclusions conference room test

Overall the participants perceived the model and building blocks as useful. The model provides a common language to discuss issues related to strategic supplier-buyer relationships. Furthermore it provides guidelines to support decision-making. Finally, it is a start point to fill the knowledge gap on strategic supplier-buyer relationship. As Thales gains more experience in this field the model can be adapted to include new insights.

The participants found that the most important limitation of the model is that it is too abstract to be self-sufficient. The model requires someone to monitor if its recommendations are followed and make sure it is adapted based on new insight. Paragraph 9.1.2 through 9.1.4 addressed the issues for the selection, content, development, and support building blocks that the participants identified. These paragraphs also show that most of these issues can be refuted through a more in-depth discussion of the literature used to formulate the model. We ague that the complexity and level of abstraction of the model made it impossible to discuss all aspects of the model during the conference room test, which lead to the identification of some issues that are not actual shortcomings of the model.

9.2 The field test

The aim of the field test was to determine the usefulness of the model from the supplier's perspective. We conducted interviews with the members of our test panel to gather their opinion on the model.

Appendix 14 contains the interview questions for the field test. In the following paragraph we give an overview of the results of the field test. Paragraph 9.2.2 deals with the analysis of these findings.

9.2.1 Results of field test

All the interviewees found the selection building block to be useful. Though, one of the interviewees found only the use of the Kraljic matrix useful and another perceived the selection building block as more appropriate for large OEMs.

The interviewees found the checklist of possibilities for content useful. One of them argued that the list was extensive enough, though another one argued that the extensiveness of the list was of minor importance. A panel member argued that only the activities that lead to clearly identifiable wins for both parties should be included in the list. Furthermore, one of the respondents was of the opinion that a certain threshold purchasing volume was required to justify the involvement in such an extensive collaboration.

One of the interviewees proposed to name the technique for new possibilities for content, exchange of business and technology roadmaps. The others agreed for in their experience the exchange of roadmaps was common in practice. Two panel members did argue though that it is difficult for the relatively small suppliers of large OEMs to develop their perceptive on the roadmaps of these large OEMs.

All but one panel member found the development building block useful. One of the interviewees argued that stages of the life cycle are sometimes skipped, that the sequence of development activities is altered and that some relationships never reach maturity. Another panel member supported this view that the development of partnerships is an iterative process and argued that the distinction between the stages is not as clear as depicted in the model. Two interviewees stressed the importance of boundary personnel for the

development of a relationship. Furthermore, one of the panel members was of the opinion that the model lacked someone to lead the learning process.

Three out of four panel members found the support building block useful. Two interviewees argued that the click between top management is a critical success factor that was lacking in our model. In the opinion of another panel member the model lacked the critical success factor commitment of employees at tactical and operational level.

Overall three out of four panel members found the model useful. The panel member, who did not perceive the model as useful, found it too abstract and complex for implementation. The others agreed that the model was abstract and complex, but also supported the view that the development of practical tools could support the implementation of the model.

9.2.2 Analysis results field test

This paragraph deals with the analysis of the results of the field test. Based on this analysis we draw conclusions on the usefulness of the model in practice from a supplier's perspective. For the negative results we discuss the issues identified by the interviewees, the identified potential for improvement, and whether or not these issues are a limitation of the model.

9.2.2.1 Selection

Table 18 summarizes the findings of our analysis for the selection building block.

Negative Results	Issues identified during field test	Potential for improvement	Limitations of model
Only the Kraljic matrix is useful	A buyer does not select its strategic partners based on the relative attractiveness of a supplier as implied by the matrix with the dimensions relative supplier attractiveness and strength of the relationship	-	No
Building block for selection is useful	Building block for selection is very	-	No
for large OEMs	extensive compared to the tools used		
	in practice by small suppliers		

Table 18. Analysis of the results of the field test for the selection building block

One of the respondents argued that a buyer does not select its strategic partners based on the relative attractiveness of a supplier as implied by the matrix with the dimensions *relative* supplier attractiveness and strength of the relationship. The selection of strategic partners is based on the impact they have on the total costs, technology ownership, supply market risk, and supply continuity risk. Therefore, he found only the Kraljic matrix useful, and not the whole selection building block. We argue that the Kraljic matrix takes into account the supply risks and that the dimension *relative supplier attractiveness* can include factors as impact of supplier on total costs, impact of supplier on technology ownership, and other factors the buyer perceives as important (see Appendix 5). Therefore, we conclude that the whole selection building block is useful and that this issue is not a limitation of the model.

A panel member pointed out that the building block for selection of strategic suppliers is very extensive compared to the tools used in practice by the relatively smaller suppliers of large OEMs. His organization did use a portfolio model for the selection of their strategic customers though. We argue that most of the suppliers of large OEM suppliers are not strategic. Large OEMs are often system integrators buying modules and subsystems, contrary to their suppliers who buy components to produce these modules and subsystems. The value of these modules and subsystems and the supply risk on the market for these products is greater than in the case of components. Therefore large OEMs have relatively more strategic suppliers than their smaller suppliers and require more extensive tools for the selection of their strategic supplier partners. We therefore conclude that the building block for

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selection is useful for a large OEM selecting a strategic supplier and a relatively smaller supplier selecting a strategic customer and that the model is less relevant for this supplier when selecting a strategic supplier. This is not a limitation of the model, for the model was developed for Thales, a large OEM and its suppliers.

9.2.2.2 Content

Table 19 gives an overview of the conclusions of our analysis for the content building block.

Negative Results	Issues identified during field test	Potential for improvement	Limitations of model
Name technique for new possibilities for content, exchange of technology and business roadmaps	Users are more familiar with term exchange of business and technology	Change the name of the technique	No
The technique for new possibilities for content is only partly useful	The relatively smaller suppliers of large OEMs do not have the capabilities to develop roadmaps for these OEMs	Omit the development of the supplier's perception of what the roadmaps of their partner look like from the model	No "
Only the items on the checklist that lead to clearly identifiable wins for both parties are useful	The basic assumption that supplier partners are willing to perform certain activities for their strategic customers in return for other value adding activities performed by their partner does not hold	Further research necessary	Possible
In practice, no examples of such extensive collaborations between suppliers and buyers as suggested by the checklist	Our concept of strategic supplier- buyer relationships and some of the possibilities for content may not be feasible	Further research necessary	No
There is a certain threshold purchasing volume to justify effort for some activities on checklist	The basic assumption that supplier partners are willing to perform certain activities for their strategic customers in return for other value adding activities performed by their partner does only holds if threshold purchasing volume is met	Further research necessary	Possible

Table 19. Analysis of the results of the field test for the content building block

One of the panel members suggested we name the technique for development of new possibilities for content the exchange of technology and business roadmaps. Though the technique for new possibilities for content does not only include the exchange of roadmaps but also the development of one's perception of what the roadmaps of one's partner look like, we agree that this would lead to an improvement of the model for a number of reason. First, users in practice are more familiar with this jargon as the respondents indicated. Second, the development of the OEM supplier's perception of what the roadmaps of their partner look like seems not to be feasible in practice. This is related to the issue addressed by two respondents that the relatively smaller suppliers of large OEMs do not have the capabilities to develop their views on the roadmaps of these OEMs. We perceive this as a convincing argument, for as some tactical purchasers reported even large OEMs sometimes have difficulty with the development of their business and technology roadmaps. We therefore exclude this element from the technique. As a result the exchange of business and technology roadmaps becomes a more appropriate name for the technique for development of new possibilities of content.

One of the respondents pointed out that only the items on the checklist that lead to clearly identifiable wins for both parties are useful. This in contradiction to the basic assumption for the use of the checklist, which is that supplier partners are willing to perform certain activities for their strategic customers that create value for their partner but not necessary direct wins for themselves and in return their partner performs other activities that create value for them. Another interviewee did agree with this assumption, though he argued that there is a certain threshold purchasing volume that induces the supplier to perform certain activities that

require a great deal of effort. Further research is necessary to determine which proposition is valid and show whether or not this issue is a limitation of the model.

A panel member pointed out that he does not know of any examples of such extensive collaborations between suppliers and buyers as suggested by the checklist. We argue that the lack of examples of such extensive collaborations between suppliers and buyers is not enough proof that the checklist is not useful, neither that our concept of strategic supplier-buyer relationship is not feasible. It may be an indication that our checklist contains ideas not yet explored in practice, on how supplier and buyers can collaborate. Further research is necessary to determine if our concept of strategic supplier-buyer relationship and the related possibilities for content work in practice.

9.2.2.3 Development

This paragraph discusses the analysis of the results of the field test for the development building block. Table 20 recapitulates the conclusions of our analysis.

Negative Results	Issues identified during field test	Potential for improvement	Limitations of model
Stages of the life cycle are sometimes skipped or the sequence of development activities is altered	Misconceptions on the fundamental assumptions of the life cycle approach	Inform users on the assumptions of the life cycle approach	No
Some relationships never reach maturity	Misconceptions on the fundamental assumptions of the life cycle approach	Inform users on the assumptions of the life cycle approach	No
Importance of boundary personnel for learning cycles and reaching higher levels of maturity	The boundary personnel influences how an organization gives content to the development building block	Further research of a more prescriptive nature	Yes
Model lacks someone to lead the learning process		Include someone lo lead the learning process in the checklist for support	No
Relationships do no go through a life cycle, nor do they reach a stabilization stage	Relationship development is perceived as a process of continuous improvement	Further research necessary	Possible
Building block for development of little practical relevance	QLTC model has proven to work in practice. Compare building block to QLTC to improve practical usefulness	-	No
In practice the distinction between the stages is not so clear as depicted in the model	Misconceptions on the fundamental assumptions of the life cycle approach	Inform users on the assumptions of the life cycle approach	No
In practice the development of partnerships is an iterative process	Misconceptions on the fundamental assumptions of the life cycle approach	Inform users on the assumptions of the life cycle approach	No

Table 20. Analysis of the results of the field test for the development building block

A number of the critique on the development building block has to do with misconceptions of the interviewees on the fundamental assumptions of the life cycle approach. This includes the findings that stages of the life cycle are sometimes skipped or the sequence of development activities is altered, some relationships never reach maturity, in practice the distinction between the stages is not as clear as depicted in the model, and the development of partnerships is an iterative process. These statements are all in line with recent insights on the life cycle approach (Spekman et al., 1998; Wahyuni, 2003). Therefore we argue that the basic assumptions of the life cycle approach are not a limitation of the model, as implied by some of the interviewees.

Two respondents emphasized the importance of the boundary personnel to the learning cycles and to reach higher levels of maturity. This implies that the boundary personnel influence how an organization gives content to the development building block. We argue that the development building block is subject to interpretation, partly because it is not prescriptive enough. Further research of a more prescriptive nature is necessary to reduce the ambiguity of this building block. Though, we argue that it is not possible to develop a

development building block that is completely objective. The development of strategic supplier-buyer relationships is a complex issue and the path to be followed depends on strategic considerations, which are a result of analyzing the specific relationship and its context.

As pointed out by one of the panel members the model lacks someone to lead the learning process. We agree that the model is not clear on who should perform this task. As discussed in Paragraph 9.1.3.2 someone should monitor the development of the relationship and this is added as a support activity for the critical success factor central coordination. As the learning cycles are part of the development of the relationship, leading the learning process can also be added as support activity for the critical success factor central coordination.

One of the interviewees argued that relationships do not go through a life cycle, nor do they reach a stabilization stage. He perceived relationship development as a process of continuous improvement supporting a teleological approach to alliance development (see Paragraph 6.2). As discussed in Paragraph 6.1.5 literature is not conclusive on which developmental literature is valid. Further empirical study is necessary to determine which assumptions are valid and show if this is a limitation of the model.

In one of the panel member's opinion the building block for development is of little practical relevance. He argued that the QLTC model has proven itself in practice and suggested we compared our model to the QLTC model to determine how we could improve the usefulness of our model in practice. Based on a presentation of the QLTC model by the Procurement Director of ASML and a quick scan of documents containing information on this model, we identified three differences that may make the QLTC model less appropriate for Thales. First, the definition of strategic supplier-buyer relationships used by Thales (see Paragraph 2.1.2) implies a more extensive collaboration with the supplier than the definition employed by the QLTC model. Second, the QLTC model has proven to be successful for managing the strategic supplier-buyer relationships in a market presenting fluctuations in demand in line with economic trends and the buyer offering its supplier a large purchasing volume. In contrary, Thales' defense market is anti-cyclical and Thales has on average a smaller purchasing volume than ASML. Third, the emphasis of the QLTC model is on continuous improvement of performance on aspects of the flow of goods and Thales focuses more on the relationship. Therefore we conclude that adapting our model so it resembles the QLTC model is not necessarily an improvement in its practical usefulness for Thales and its suppliers.

9.2.2.4 **Support**

Table 21 summarizes the conclusions of our analysis of the results of the field test for the support building block.

Negative Results	Issues identified during field test	Potential for improvement	Limitations of model
The model lacks the critical success factor: commitment of employees at tactical and operational level	-	Further research necessary	No
The model lacks a questionnaire measuring on QLTC and soft aspects	-	Add tools for performance measurement on both hard and soft aspects	Yes
Building block for support is of little practical relevance	QLTC model has proven to work in practice. Compare building block to QLTC to improve practical usefulness		No
The click between top management is an important factor that is missing on our list	-	Further research necessary	No

Table 21. Analysis of the results of the field test for the support building block

According to one of the respondents the model lacks the critical success factor: *commitment of employees at tactical and operational level*. Two panel members miss the critical success factor: *the click between top management*. We argue that further research is necessary to explore if these factors are indeed critical to the success of an alliance. Our literature search showed that this is not the case. Furthermore, Hoffmann and Schlosser (2001) showed that there is a difference between the perceived critical success factors and the real critical success factors for alliance development.

The model lacks a questionnaire measuring the QLTC aspects and "soft aspects" of the relationship as one of the panel members pointed out. Appendix 11 suggests some tools for performance measurement, though further research is necessary to develop appropriate tools for performance measurement for Thales.

One of the respondents perceived the building block for support to be of little practical relevance and referred us to the QLTC model. The argumentation of Paragraph 9.2.2.3 also holds in this case, so we will not adapt the support building block.

9.2.3 Conclusions field test

The interviewees, with the exception of one, found the conceptual decision support model to be useful. This respondent perceived the model as too abstract and complex for implementation. The other interviewees agreed that implementation of the model would be difficult, though this could be eased through the use of practical tools. Paragraph 9.2.2 shows that most of the perceived shortcomings of the model are not actual limitations. This tendency has also presented itself during the conference room test and is discussed in Paragraph 9.1.4.

9.3 The model in practice

We compared the results of the conference room test and the field test to identify the differences and similarities between the supplier and Thales' perspective on the usefulness of the model in practice. Paragraph 9.3.1 deals with the similarities and differences. This comparison enables us to answer the question "how does the conceptual decision support model function in practice?" from both the Thales and the supplier's perspective. Paragraph 9.3.2 presents our conclusions.

9.3.1 Similarities and differences

We found that both the participants of the conference room test and the members of our test panel, with the exception of one interviewee, perceived the model as useful. They also agreed that it was difficult to implement and to get the model embedded in one's organization. The panel members suggested practical tools to support the model. The participants of the conference room test proposed to make someone responsible for monitoring the application of the model and for adjustments to the model based on new insights gained through practical experience with strategic supplier-buyer relationships.

Some issues were mentioned by the participants of the conference room test, though not by the interviewees and vice versa. This may be because some limitations only become clear when the model is actually used. The test panel only gave their opinion on the model whereas the participants of the field test applied the model to a case. Furthermore, the technique for determination of new possibilities for content was reviewed during the field test, but excluded from the conference room test due to resource constraints (see Paragraph 9.1.2).

Paragraph 9.1.4 and 9.2.3 conclude that most of the issues identified during the conference room test and the field test can be countered through a more extensive discussion of the literature findings, which served as basis for the formulation of model.

9.3.2 Conclusions

We found that the model was perceived as useful, for (1) it provides common language to discuss issues related to strategic supplier-buyer relationships, (2) it provides guidelines for decision making, (3) it contributes in filling Thales' knowledge gap on strategic supplier-buyer relationships, and (4) it gives a good representation of the relationship life cycle.

There are a number of limitations to the model, though. The most significant limitation is that the model was too complex and abstract, and lacked practical tools to support its implementation. Appendix 5, 6, 7, 9, and 11 provide some tools that can serve as a starting point for the development of these practical tools. The other limitations are: (1) the measurement issues related to the use of portfolio models (see Paragraph 4.4.2); (2) the ability of the model to select a partner that is not already a Thales supplier; (3) the model does not support the choice of an appropriate interface structure based on the content of the strategic supplier-buyer relationship; (4) the model does not consider implications of past experiences with a supplier for the development of a strategic supplier-buyer relationship; (5) the development building block is subject to interpretation of the boundary personnel. To deal with the measurement issues, we suggested the use of the consensus method as discussed in Paragraph 9.1.1.2. To deal with limitation 2 through 5 we recommended further research. Though, we argue that it is not possible to completely eliminate the ambiguity of the development building block (see Paragraph 9.2.2.3).

10 Evaluation

Chapter 10 deals with the last sub research question: To what extent does the conceptual decision support model meet the criteria for evaluation?

For the evaluation we used an evaluation form and followed the procedure described in Paragraph 2.5.4. Appendix 15 gives an overview of the evaluation form. The following paragraph deals with the results of the evaluation of the model by the critical stakeholders. Paragraph 10.2 compares our results with the findings of the critical stakeholders. Paragraph 10.3 draws conclusions as to what extent the model meets the criteria for evaluation.

10.1 Results of evaluation by critical stakeholders

Table 22 shows the result of the evaluation form filled out jointly by the "Director Purchasing of Thales Nederland", the "Purchasing Process and Supply Chain Manager", and the "Tactical Purchasing Manager". Table 22 also shows our scores on the criteria for evaluation. The results of the other critical stakeholders are presented in Appendix 15. The results of the managers are discussed in this paragraph, for the management of the Purchasing Department SR is the critical stakeholder with the greatest impact on this research project.

Criteria related to the form	Evaluation by management	Evaluation by this study
The model is accessible and simple enough to be employed by users with a bachelor education level;	Disagree	Disagree
The model provides visual support to internal and inter-firm communication;	Agree	Strongly agree
The model is unambiguous;	Disagree	Disagree
Criteria related to the substance		
Selection of appropriate strategic partners		
The model measures the attractiveness of the potential partner from the buyer point of view;	Neither agree nor disagree	Agree
The model measures the attractiveness of the buyer from the supplier point of view;	Neither agree nor disagree	Agree
The model measures the compatibility with the potential partner;	Neither agree nor disagree	Disagree
The model includes an assessment of the complementary skills of the potential partner;	Neither agree nor disagree	Disagree
The model is able to determine unambiguously whether a supplier is an appropriate strategic partner;	Strongly disagree	Strongly disagree
Content of strategic supplier-buyer relationships		
The model includes a list of standard possibilities to give content to strategic supplier-buyer relationships;	Strongly agree	Strongly agree
The model includes tools to find creative possibilities to give content to strategic supplier-buyer relationships;	Disagree	Strongly agree
Development of strategic supplier-buyer relationships		
The model is able to identify the competences required to develop a strategic supplier-buyer relationship;	Disagree	Disagree
The model includes a generic method to develop strategic supplier-buyer relationships that can be adapted to specific situations;	Agree	Strongly agree
The model measures how the quality of the relationship with the strategic partner changes over time from the buyer's point of view;	Agree	Disagree
The model measures how the quality of the relationship with the strategic partner changes over time from the supplier's point of view;	Agree	Disagree
Support of strategic supplier-buyer relationships		
The model is able to identify the competences required to support a strategic supplier-buyer relationship;	Neither agree nor disagree	Disagree
The model supports the choice of conflict resolution techniques;	Neither agree nor disagree	Strongly agree
The model includes tools to measure results related to the content of the strategic supplier-buyer relationship;	Disagree	Strongly disagree

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General statements about the model		
The model is useful in practice to support decision making regarding strategic supplier-buyer relationships;	Agree	-
The model would lead to an improvement of the procedures for selection, content determination, development and support of supplier-buyer relationships;	Agree	-
I would accept the model as a Thales procedure for the management of strategic supplier-buyer relationships;	Neither agree nor disagree	-

Table 22. Results of evaluation

10.2 Comparison of scores on the criteria

This paragraph deals with the most sticking similarities and differences between the evaluation scores of the managers of the Purchasing department and this study.

The managers found the model not to be simple and accessible enough, for the model required the user to shift between several perspectives. We agree, though we argue that this is the result of the extensive scope of this study. The model was ambiguous in opinion of both the management as this study, for there was a lot of room for interpretation by the users. The managers argued that this was a result of the fact that the model was a combination of several models. We argue that the ambiguity originates from the complexity of the subject strategic supplier-buyer relationships. Each specific relationship and its context influence the strategic issues to be considered and the resulting actions.

As for the ability of the model to measure the attractiveness of the potential partner from both the buyer and supplier's perspective, to measure the compatibility with the potential partner, and to assess the complementary skills of the potential partner, the managers neither agreed nor disagreed. The model did mention these issues as important, but lacked actual tools to measure them. On the other hand they argued that the selection of a strategic partner was a strategic decision, which required a thorough analysis but it is not an exact science. So it was difficult to actually measure these issues in an exact manner. Since the attractiveness from both the buyer and supplier's perspective can not be measured in an exact manner, we argue that the portfolio models depicted in Figure 18 are sufficient for measuring the attractiveness of the potential partner. As discussed in Paragraph 9.1.1.2 the model does not measure the compatibility with a potential partner, nor assess the complementary skills of the partner. The model only mentions these as criteria. Therefore this study disagrees with the criteria the model measures the compatibility with the potential partner, and assesses the complementary skills of the potential partner.

The managers agreed that the model contained a list of generic possibilities, but they did not agree the technique to determine content lead to creative ideas. We perceived the technique to develop new possibilities for content, as a tool that triggers creativity and the management did not. The use of the technique should show whether or not it results in creative new possibilities for content.

According to the managers the model did measure the quality of the relationship. They argued that the quality of the relationship is not a black or white issue. Therefore they perceived the qualitative approach of the model as sufficient in this matter. We agree that it is not possible to measure the quality of the relationship in the literal sense of the word measure, though we argue that the quality of the relationship could be assessed through a questionnaire as suggested by the results of the field test and the model lacks such tools.

The managers did not agree nor disagree that the model supported the choice of conflict resolution techniques. For the model does not support the choice of techniques, but did mention that constructive conflict resolution techniques were to be preferred. They questioned whether the model should be able to support the choice of conflict resolution

techniques at all, for the choice of a certain technique depends on the specific conflict situation. We found the fact that the model indicated that constructive conflict resolution techniques were to be preferred, enough for a positive score.

10.3 Extent to which model meets criteria for evaluation

This paragraph answers the question: to what extent does the conceptual decision support model meet the criteria for evaluation?

We compared our results with the results of the critical stakeholders and found that the extent of compliance with the criteria did not differ that much. We conclude that the model complies with about 60% of the criteria for evaluation. We point out that we considered all criteria equally important and the "Purchasing process and supply chain manager" called this assumption into question. Furthermore, since we used a 5 point Likert scale the scores may suffer from centrality bias. Finally, during the evaluation meeting with the managers it became clear that some of the criteria formulated at the initiation of this study were no longer perceived as relevant. It could be that as the managers gained more experience with strategic supplier-buyer relationships and learned more about the subject over time, their view of what are relevant criteria for a decision support model addressing strategic supplier-buyer relationships has changed.

11 Conclusions and recommendations

This chapter presents the conclusions and recommendations of this study. Paragraph 11.1 is dedicated to the conclusions and Paragraph 11.2 deals with the recommendations.

11.1 Conclusions

The objective of this study was to develop a conceptual decision support model for strategic supplier-buyer relationships in a modular sourcing context that addresses the selection of appropriate strategic partners, the content, development and support of strategic supplier-buyer relationships. The main research question was:

What should a conceptual decision support model be like to improve the selection, content, development, and support of Thales Hengelo's strategic supplier-buyer relationships?

To answer this question Paragraph 11.1 summarizes the responses to the sub research questions. Paragraph 11.1.2 deals with the main question.

11.1.1 Sub research questions

How does Thales Hengelo currently deal with the selection content, development and support of strategic supplier-buyer relationships?

Thales Hengelo uses the Kraljic and BCG matrix for selection. They have a static approach to the use of these models and no clear agreement on how to cope with the measurement issues of portfolio models. Thales has no clear structured approach to determine the content of a strategic supplier-buyer relationship and no policy available for the development and support of these relationships (see Paragraph 3.2).

What are the criteria for evaluation of the conceptual decision support model? Table 23 gives an overview of the criteria for evaluation.

Criteria related to the form

- The model should be accessible and simple enough to be employed by users with a bachelor education level:
- The model should provide visual support to internal and inter-firm communication;
- The model should be unambiguous;

Criteria related to the substance

Selection of appropriate strategic partners

- The model should measure the attractiveness of the potential partner from the buyer point of view;
- The model should measure the attractiveness of the buyer from the supplier point of view;
- The model should measure the compatibility with the potential partner;
- The model should include an assessment of the complementary skills of the potential partner;
- The model should be able to determine unambiguously whether a supplier is an appropriate strategic partner;

Content of strategic supplier-buyer relationships

- The model should include a list of standard possibilities to give content to strategic supplier-buyer relationships;
- The model should include tools to find creative possibilities to give content to strategic supplier-buyer relationships;

Development of strategic supplier-buyer relationships

- The model should be able to identify the competences required to develop a strategic supplier-buyer relationship;
- The model should include a generic method to develop strategic supplier-buyer relationships that can be adapted to specific situations;
- The model should measure how the quality of the relationship with the strategic partner changes over time from the buyer's point of view;
- The model should measure how the quality of the relationship with the strategic partner changes over time from the supplier's point of view;

Support of strategic supplier-buyer relationships

- The model should be able to identify the competences required to support a strategic supplier-buyer relationship;
- The model should support the choice of conflict resolution techniques;
- The model should include tools to measure results related to the content of the strategic supplier-buyer relationship;

Table 23. Criteria for evaluation

How should Thales Hengelo deal with the selection, content, development, and support of strategic supplier-buyer relationships according to literature?

Paragraph 4.5 presents the findings on how Thales should deal with the selection of these relationships according to literature. Thales should analyse the exchange context by using a portfolio model to determine if Thales and the supplier perceive each other as potential strategic partners. They should compare the relationship with the potential partner with other suppliers through the use of a portfolio model, to determine if they should allocate their limited resources to this relationship. Finally, Thales should use the criteria strategic fit, complementary skills, cooperative culture, compatible goals, and commensurate levels of risk to select a partner from the pool of potential partners.

Paragraph 5.3 discusses how Thales should deal with the content of strategic supplier-buyer relationship according to literature. We found that Thales would benefit from structured methods to develop possibilities for content.

Paragraph 6.4 gives an answer to how Thales should deal with the development of strategic supplier-buyer relationships according to literature. We concluded that Thales should adopt a life cycle approach with learning cycles in each stage. Furthermore, they should set conditions to foster learning, determine the important activities for each stage of the relationship, and appoint a relationship manager responsible for the execution of these activities.

Finally, paragraph 7.3 gives an overview of our literature findings regarding the support of strategic supplier-buyer relationships. We listed the critical success factors for each stage and the activities Thales could perform to support the relationship in each stage.

What is the discrepancy between how Thales Hengelo currently deals with the selection, content, development, and support of strategic supplier-buyer relationships and how Thales Hengelo should deal with this according to literature?

We found that Thales Hengelo does not take into account the interdependencies between relationships for the determination of Thales' and the supplier's perspective on the relationships. Furthermore, Thales does not consider possibilities for strategic action to move between the quadrants of the portfolio models and lacks a method to deal with the measurement issues of these models. Finally, Thales could also better its selection method by using the criteria for selection suggested by literature: strategic fit, complementary skills, cooperative culture, compatible goals, and commensurate levels of risk.

As for the content we found that there are more possibilities for content than those identified by Thales Hengelo. Thales would also benefit from methods to develop the content, for a structured method would reduce the risk of Thales overlooking fruitful ways to collaborate with partners.

For the development of strategic supplier-buyer relationships Thales Hengelo lacks a life cycle approach with learning cycles in each stage. Furthermore, Thales could benefit from a policy on how to set conditions to foster constructive learning cycles. Thales also does not identify what the characteristics, key activities, the role of strategic supplier-buyer relationship manager, and the structure of the relationship are for each stage.

Thales also lacks suggestions from literature on how to support the relationship in each life cycle stage. They could also benefit from the appointment of a relationship manager responsible for the fulfilment of the relationship supporting functions in each stage.

What should a conceptual decision support model be like to tackle this discrepancy? The conceptual decision support model to tackle these discrepancies consists of four building blocks and is depicted in Figure 18.

How does the conceptual decision support model function in practice?

We found that the model was perceived as useful. The model provides common language to discuss issues related to strategic supplier-buyer relationships, guidelines for decision making, structured knowledge to fill Thales' knowledge gap on strategic supplier-buyer relationships, and a good representation of the relationship life cycle.

The most significant limitation is that the model was too complex and abstract. It lacked tool to support implementation and required a person to support the further development of the model based on new insights. Appendix 5, 6, 7, 9, and 11 provide some tools that can serve as a starting point for the development of these practical tools.

To what extent does the conceptual decision support model meet the criteria for evaluation? We found that the model complies with about 60% of the criteria for evaluation. We also concluded that that some of the criteria formulated at the initiation of this study had become less relevant. As the managers gained more experience with strategic supplier-buyer relationships and learned more about the subject over time, their view of what are relevant criteria for a decision support model addressing strategic supplier-buyer relationships may have changed.

11.1.2 Main research question

This paragraph addresses the main research question. We found that according to literature the model depicted in Figure 19 is an improvement to how Thales Hengelo currently deals with the selection content and development of strategic supplier-buyer relationships (see Paragraph 8.2.3).

The basis of the conceptual decision support model is the development building block. The model shows the life cycle stages of a strategic supplier buyer-relationship using marriage as a metaphor. Furthermore, it contains the learning cycles the partners go through as they move towards a higher level of maturity. The midlife crisis stage is depicted at the end to reflect the life cycle approach, though this point can be reached in each stage of the life cycle.

The model building blocks selection and content are part of the selection and courtship stage. The selection building block uses portfolio models to select potential strategic partners. The content building block provides a checklist of possibilities for content and a technique to support potential strategic partners in their discussion of what activities should be included in the collaboration. The development building block indicates the important characteristics, business and relationships activities, and role of the relationship manager for each stage. Finally, the support building block consists of the critical success factors and the recommended support activities for each stage.

There are two issues that require our attention, though: (1) the model's level of abstractions and complexity and lack of practical tools to support its implementation and (2) the model's extent of compliance with the criteria for evaluation formulated by the critical stakeholders at Thales.

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- (1) The conference room test and the field test showed that the model is perceived as abstract and complex and lacking practical tools to support its implementation. Furthermore, the evaluation scores show that the model is not simple and accessible enough for users with a bachelor education. This can partly be explained by the extensive scope of this study. Due to scope addressing the selection as well as the content, development and support of strategic supplier-buyer relationships, we excluded the development of tools to support the implementation of the model from this study. Appendix 5, 6, 7, 9, and 11 contain some examples of these tools. The scope also explains why the model is composed of several building blocks, which adds to its complexity. Finally, the subject of strategic supplier-buyer relationship is of a complex nature. Each relationship has unique features and different strategic considerations may apply. Therefore, a model addressing strategic supplier-buyer relationships requires the user to shift between perspectives.
- (2) We found that the model complies with about 60% of the criteria for evaluation. We also concluded that some of the criteria formulated at the initiation of this study have become less relevant over time. So the score on compliance should be considered in this perspective. The scores on the criteria for evaluation show that the model mentions most important issues such as assessment of complementary skills, compatibility with one's partner, necessary competences for development and support of strategic supplier-buyer relationships, and assessment of the quality of the relationship. The model only states that managers should address these issues though and fails to prescribe how managers should deal with these issues. This is partly due to a lack of prescriptive research in the field of development and support of strategic-supplier buyer relationships. Olsen and Ellram (1997b) and Bell et al. (2006) also agree that literature on development and support of strategic-supplier buyer relationships would benefit from more normative studies. On the other hand it may not be feasible to comply with all the criteria simultaneously. Complying with all the criteria related to the substance (see Table 23) leads to a model that does not comply with the criteria the model should be simple and accessible enough for users with a bachelor education and the model should be unambiguous. As previously discussed, the amount of requirements adds to the complexity of the model.

We conclude that in spite of its complexity the model depicted in Figure 19 contributes in filling the knowledge gap on strategic supplier-buyer relationships of Thales Hengelo. Furthermore, we argue that a model that addresses the selection, content, development and support and support of strategic supplier-buyer relationships and complies with the criteria for evaluation can not be simple. Literature does not offer a ready-made model due to the nature of the subject. Strategic supplier-buyer relationships require the organizations involved to take the unique features and the context of the relationship into consideration.

11.2 Recommendations

This paragraph presents the recommendations we formulated based on the conclusions of this study.

11.2.1 Adopt the conceptual decision support model

We recommend the adoption of the conceptual decision support model for according to literature it is an improvement of how Thales Hengelo deals with strategic supplier-buyer relationships.

Change management

The implementation of the model implies a change in procedures that needs to be managed. In Paragraph 11.1 we concluded that strategic supplier-buyer relationships and the model require strategic thinking. The personnel involved in these relationships needs to be able to deal with the complexity and level of abstraction related to the subject of strategic supplier-buyer relationships. Therefore we propose the creation of a strategic purchasing function

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with academic skills and competences. This function could among other thing be made responsible for the implementation of the model and the management of strategic supplier-buyer relationships.

The strategic purchasing function could be a means of dealing with the implications of the increased application of modular sourcing from an organizational perspective. As discussed in Paragraph 2.1.2 this policy has lead to an increased importance of strategic supplier-buyer relationships. Furthermore, the increased application of modular sourcing is leading to a blurring demarcation line between the article teams. Paragraph 1.4 discusses the organization of the Purchasing department Surface Radar. The products to be purchased are divided into article groups with a cross-functional team responsible for the sourcing of the products in these article groups. A strategic purchasing function could be the link between the several article teams, overlooking the supply of a module instead of the subunits this module is composed of.

The creation of a new function leads to organizational change. From our assistance to the biweekly tactical purchasing group meeting we learned that the implementation of new procedures could lead to resistance. This specific change may also involve a conflict of interest as it may affect the hierarchical position of the tactical purchasers in the organization. Therefore, we advice Thales to involve the tactical purchasers in an early stage. They should be informed about the motivation to change and they may be given the opportunity to give input.

As for the implementation of the model it is important that the whole department is at least familiar with the concepts of the model and know what their role regarding strategic supplier-buyer relationships is. We advice Thales to host training sessions to inform the tactical and operational purchasers about the use of the model. The model can be subdivided in more manageable units and presented in sessions dealing with each subunit separately.

The model can first be used on one specific relationship as a test case and a strategic purchaser can monitor its development over time. Since strategic supplier-buyer relationships is a long term matter, the relationship and the effect of the model on the relationship should be monitored for at least two years to determine how the model functions in practice. After this test period the management could evaluate if the model works for Thales and decide whether or not it should become a Thales best practice.

Develop tools to get the model embedded in the Thales organization

To get the model embedded in the organization Thales could develop tools to support the model such as for example questionnaires for monitoring the relationship. The development of these tools requires time and effort. Especially tools for the development and support building block may require a lot of resources, due to the lack of prescriptive literature in this field.

Adopt current method for selection as selection building block with some minor adaptations

We recommend Thales Hengelo to use their selection method with some minor adaptations as selection building block. The analysis in Paragraph 9.1.1.2 showed that our selection building block is only a slight improvement on Thales' current methods. The users accept the current method and the minor adaptations can tackle some of the discrepancies between the current method and literature. As minor adaptations Thales could adopt a dynamic approach to the use of portfolio matrices and implement clear agreements on how they intend to deal with the measurement issues of these models.

Use development and support building block as a framework for common language

We recommend the application of the development and support building block not as methods to support decision-making, but as a framework that provides common language to discuss issues related to strategic supplier-buyer relationship. For we found that these building blocks are not prescriptive enough to function as decision support models.

11.2.2 Develop an appropriate strategy for strategic supplier-buyer relationships

Develop a strategy for strategic supplier-buyer relationships that fits Thales and the market

We learned that there is no ready-made model that addresses the selection, content, development and support of strategic supplier-buyer relationships and that is prescriptive enough for Thales Hengelo. Therefore it is important that Thales develops a strategy for strategic supplier-buyer relationships that fits their organization and market. Both our literature study as our field test taught us the importance of a strategy for strategic supplier-buyer relationship that fits the overall strategy of an organization. Our study showed that most critical success factors are to be considered in the design stages of the alliance (Hoffmann and Schlosser, 2001). Furthermore, successful strategic supplier-buyer relationships in practice such as between ASML and its strategic suppliers are build on a strategy that fits the partnering organizations and their market (see Paragraph 9.2.2.4).

Study the feasibility of Thales' partnership concept through use of the checklist for content

Paragraph 9.2 discussed that several test panel members called into question the feasibility of Thales' concept of strategic partnership. The checklist illustrates which activities Thales perceives as possibilities for content of a strategic supplier-buyer relationship and supports the communication with the supplier on this subject. We advise Thales to investigate if there are appropriate supplier partners willing to get engaged in such a close-knit relationship and what the implications of the purchasing volume are for the willingness of these suppliers to forge a strategic supplier-buyer relationship.

11.2.3 Further academic study

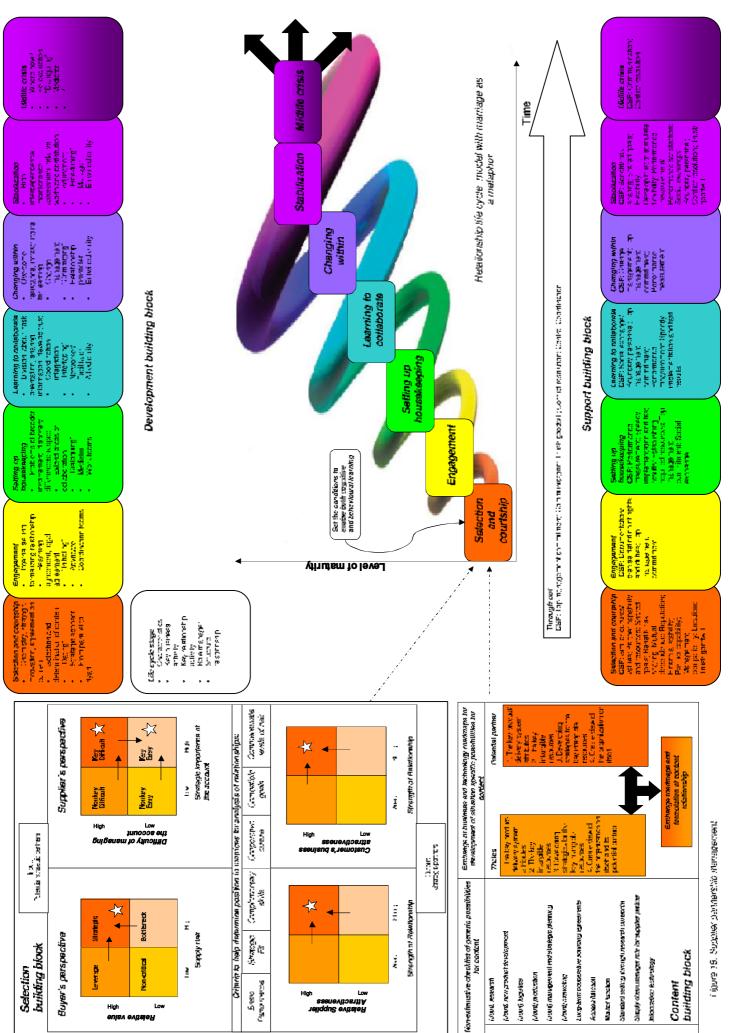
Perform more prescriptive research in the field of development and support of strategic supplier-buyer relationships

Paragraph 11.1.2 concludes that there is not one simple model that prescribes how one should develop and support a relationship given the circumstances. The support building block identifies the critical success factors for the development of strategic supplier-buyer relationships and the activities related to these critical success factors to support these relationships. The model does not address when an organization is performing sufficient on a critical success factor. The development building block provides the important characteristics, business and relationships activities, and role of the relationship manager for each stage. Though, it does not prescribe how to perform the activities, nor to fulfil the role of the relationships manager in an adequate manner. We recommend further research into these subjects.

Bell et al. (2006) claim that this lack of prescriptive research is due to a lack of common theoretical assumptions in the field of dynamics of inter-firm cooperation. According to them the field of dynamics of inter-firm cooperation suffers from non-comparable results of studies, due to the different paradigmatic belief of the researchers. If researchers would develop common theoretical beliefs, the results of studies would be comparable and it would be possible to perform cross-study analyzes to generate valid knowledge. Paragraph 6.1.5 presets our proposition that adds to the creation of a common ground, being: Each stage of the partnership life cycle contains a teleological cycle of learning, re-evaluation, and

negotiation and commitment, after which it moves to a higher state of efficiency, equity and maturity. Further empirical study should show if this proposition is valid. Several cases could be studied in retrospect to determine if the proposition holds. Furthermore, researcher could find companies willing to follow the directives of the life cycle and teleological approach to determine if these lead to more success partnerships, than in the case of no or other theoretical guidelines. It may be difficult though to find a large enough population of participating organizations.

Though, this lack of common ground may partially explain the lack of prescriptive research, another reason may be the complexity of the subject strategic supplier-buyer relationships. As discussed in Paragraph 11.1.2 strategic supplier-buyer relationships require an extensive strategic analysis taking into account the unique features and the context of a relationship. There are so many possible courses of action that it is difficult to be prescriptive on which exact course an organization should take. Further research could at least offer guidelines on what tools are most appropriate to support the strategic analysis given some general characteristics of the partnering organizations and their context.



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Appendix 1: The divisions of Thales Nederland

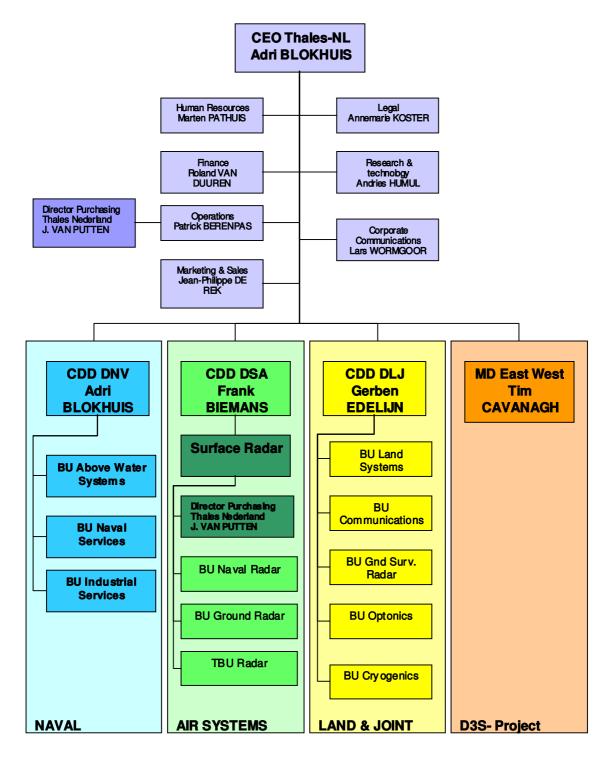


Figure A1.1. The divisions of Thales Nederland

Appendix 2: Interview with tactical purchasers

Job description tactical purchaser:

Article policy

- Develop the article policy and a purchasing plan aimed at the optimisation of the purchasing process.
- Measure supplier performance in order to assure a timely delivery in accordance to budget and quality requirements.

Purchasing contracts

 Negotiate competitive contracts in the context of the article policy in order to assure that quality requirements are met at the lowest possible cost.

After care

 Responsible for the after care of deliveries and suppliers to assure an optimal quality of deliveries.

Interview questions:

- 1. What kind of module does the potential strategic partner supply?
- 2. Describe the market for this module. Are there alternative sources of supply? Is Thales dependent on this supplier?
- 3. Which article team is responsible for this supplier?
- 4. Who are the members of this cross-functional team?
- 5. How long has Thales been purchasing from this supplier?
- 6. How has the supplier developed through the years? E.g. has the market share of the supplier grown?
- 7. Did Thales use to produce this module in-house? And if so, what were the reasons for outsourcing?
- 8. Why was this supplier chosen as a potential strategic partner?
- 9. How does the supplier perceive Thales? E.g. how dependent is the supplier on Thales? Why is Thales important to the supplier?
- 10. Who designed the module being purchased at this supplier?
- 11. What are the competences of this supplier?
- 12. Has the supplier been involved in new product development?
- 13. What does Thales know about the R&D activities of this supplier?
- 14. How does this supplier perform on vendor ratings?
- 15. Does Thales have any relationship with the 2nd and 3rd tier suppliers supplying this module supplier?
- 16. How can Thales best exploit the skills of these 2nd and 3rd tier suppliers?
- 17. What should the content of a strategic supplier-buyer relationship with this supplier be?
- 18. What would be the benefits of such a relationship for Thales and this supplier?
- 19. How do interpersonal relations influence the relationship with the supplier?
- 20. Does Purchasing Surface Radar France have a relationship with this supplier? If so, what is the role of Purchasing Surface Radar France in the development and support of a strategic supplier-buyer relationship with this supplier?

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Appendix 3: List of renowned academic journals

Academy of Management Journal (AMJ)

Academy of Management Review (AMR)

Journal of the Academy of Marketing Science (AMSJ)

Annals of OR (AOR)

Administrative Science Quarterly (ASQ)

Computers & Industrial Engineering (CIE)

California Management Review (CMR)

Computers & Operations Research (COR)

Decision Sciences (DS)

European Journal of Operational Research (EJOR)

Harvard Business Review (HBR)

IEEE Transactions on Engineering Management (IEEE)

Interfaces (IF)

IIE Transactions (IIET)

International Journal of Operations & Production Management (IJOPM)

International Journal of Physical Distribution and Logistics Management (IJPDLM)

Int. Journal of Production Economics (IJPE)

Int. Journal of Production Research (IJPR)

Int. Journal of Research in Marketing (IJRM)

Industrial Marketing Management (IMM)

Journal of Business-to-Business Marketing (JBBM)

Journal of Business and Industrial Marketing (JBIM)

Journal of Business Research (JBR)

Journal of Management (JMAN)

Journal of Marketing (JMAR)

Journal of Marketing Research (JMR)

Journal of Management Studies (JMS)

Journal of Operations Management (JOM)

Journal of the Operational Research Society (JORS)

Journal of Purchasing and Supply Management (JPSM)

Journal of Supply Chain Management (JSCM)

Long Range Planning (LRP)

Omega (OMEGA)

Operations Research (OR)

Organization Science (OS)

Organization Studies (OST)

Production and Inventory Management Journal (PIMJ)

Production and Operations Management (POM)

Supply Chain Management: An International Journal (SCM)

Strategic Management Journal (SMJ)

Sloan Management Review (SMR)

Appendix 4: Purchasing portfolio models

Portfolio models	Classification dimensions	Categories	Action plans
Kraljic (1983)	Importance of purchasing	Materials/ components	Exploit
	Complexity of supply	Non-critical items	Balance
	market	Leverage items	Diversify
		Bottleneck items	
		Strategic items	
Van Stekelenborg and	Control need of the	Supply situations	Purchasing as effort
Kornelius (1994)	internal demand	Plain supply situations	manager
	Control need of the	Internally problematic	Purchasing as demand
	external demand	supply situation	manager
		Externally problematic	Purchasing as supply
		supply situation	manager
		Complicated supply	Purchasing as integrative
		situation	manager
Olsen and Ellram (1997a)	Difficulty of managing	Purchases	Strengthen relationship
	the purchase situation	Non-critical	Improve the supplier
	Strategic importance of	Leverage	attractiveness/
	purchase	Bottleneck	performance of the
		Strategic	relationship
			Reduce the resources
			allocated to the
			relationship
Bensaou (1999)	Buyer's specific	Relationship	
	investments	Market exchange	
	Supplier's specific	Captive buyer	
	investments	Captive supplier	
		Strategic partnership	
Gelderman and Van	Supplier's dependence	Supply strategies	
Weele (2000)	Buyer's dependence	Efficient processing	
		Exploit power	
		Volume insurance	
		Balances relationship	
Van Weele (2002)	Profit impact	Purchases	System contracting
	Supply risk	Non-critical	Exploitation of power
		Leverage	Assurance of supply
		Bottleneck	Partnership
		Strategic	
Saccani and Perona	Exchange criticality	Relationship	
(2007)	Operational impact	Evolved partnerships	
		Operational relationships	
		Project-based	
		_partnerships	
		Traditional relationships	

Figure A4.1. Purchasing portfolio models (adapted table Dubois and Pedersen, 2002)

Appendix 5: Supplier attractiveness and strength of relationship

Factors	influencing relative supplier attractiveness	Factors	influencing strength of relationship
Financia	al and economic factors	Econon	nic Factor
1.	The supplier's margins	1.	Volume or money value of purchase
2.	The supplier's financial stability	2.	Importance of the buyer to the supplier
3.	The supplier's scale and experience	3.	Exit costs
4.	Barriers to the supplier's entry and exit		
5.	Slack		
Perform	nance factors	Charac	ter of the exchange relationship
1.	Delivery	1.	Types of exchange
2.	Quality	2.	Level and number of personal contacts
3.	Price	3.	Number of other partners
		4.	Duration of the exchange relationship
Techno	logical factors	Cooper	ation between buyer and supplier
1.	The ability to cope with changes in technology	1.	Cooperation in development
2.	The types and depth of supplier's current and	2.	Technical cooperation
	future technological capabilities	3.	Integration in management
3.	The supplier's design capabilities		-
4.	The supplier's speed in development		
5.	The supplier's patent protection		
Organiz	rational, cultural, and strategic factors	Feeling	of trust in relation with the supplier
1.	Influence on the company's network position	1.	Social distance
2.	The internal and external integration of the	2.	Cultural distance
	supplier	3.	Technological distance
3.	The strategic fit between buyer and supplier	4.	Time distance
4.	Management attitude/ outlook for the future	5.	Geographic distance
5.	Top management capability		• .
6.	Compatibility across levels and functions of		
	buyer and supplier firm		
7.	General risk and uncertainty of dealing with		
	the supplier		
Other fa			
1.	Ability to cope with changes in the		
	environment		
2.	Safety record of the supplier		
	A5.1. Relative supplier attractiveness and Si	trenath c	of relationship

Appendix 6: The criteria for selection

Strategic fit

The strategic fit can be determined by performing a SWOT analysis for the organization and the potential partner organization. A SWOT analysis summarizes the key issues from the business environment (opportunities and treats) and the strategic capability of an organization (strengths and weaknesses) that are most likely to impact strategy development (Johnson et al., 2006). Comparing the SWOT of both organizations will reveal if the organizations compliment each other in terms of strengths and weaknesses.

Complementary skills

A way to identify if skills are complementary is to map the activities of the organization and the potential partner. An activity map tries to show how the different activities in the organization are linked together and supports the identification of resources and competences that underpin these activities (Johnson et al., 2006). The figure below shows part of an activity map. By comparing the skills managers can draw conclusion regarding the complementarities of these skills.

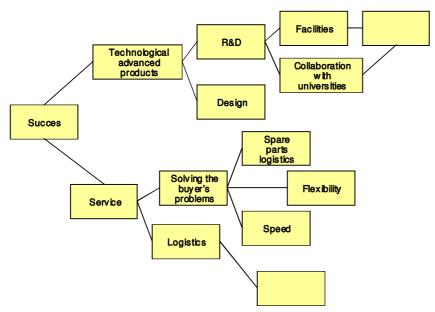


Figure A6.1.Example of part of an activity map

Cooperative culture

Managers should analyse if the potential partner has a similar organization structure and management style. These issues are affected by national and company culture. Furthermore, managers should determine if the cultures are compatible and lead to cooperative behaviour. The findings of Geert Hofstede are perceived to be very useful to understand how the national culture affects corporate culture and management (Schneider and Barsoux, 2003). Hofstede identified four dimensions of culture: uncertainty avoidance, power distance, individualism/ collectivism and masculinity/ femininity. Uncertainty avoidance refers to a society's discomfort with uncertainty, preferring predictability and stability. Power distance indicates the extent to which a society accepts the unequal distribution of power in institutions and organizations. Individualism/ collectivism reflect the extent to which people prefer to take care of themselves and their families, remaining emotionally independent from groups, organizations, and other collectivities. Finally, masculinity/ femininity refer to the cultural bias towards "masculine" values of assertiveness, competitiveness, and materialism,

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or towards "feminine" values of nurturing, and the quality of life and relationships (Schneider and Barsoux, 2003). Based on the power distance index and the uncertainty avoidance index Hofstede segmented countries and/ or regions into four organizational profiles (see figure below). Following pages give an overview of Hofstede's ranking, the country and region abbreviations used and the cultural profiles of organizations. These tools can be used to create awareness about cultural differences in international alliances.

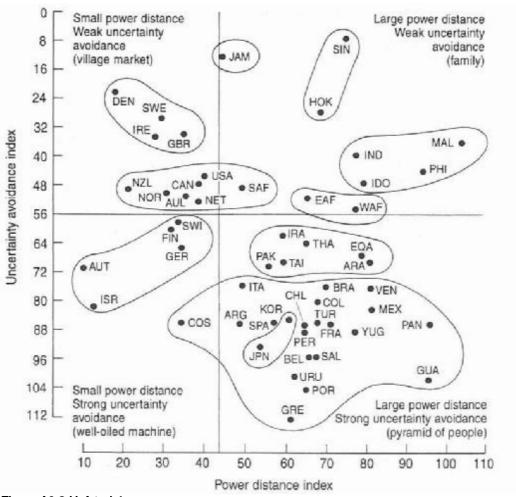


Figure A6.2.Hofstede's maps

Abbreviation	Country or region	Abbreviation	Country or region
ARA	Arabic speaking countries (Egypt,	ITA	Italy
	Iraq, Kuwait, Lebanon, Libya,	JAM	Jamaica
	Saudi Arabia, United Arab	JPN	Japan
	Emirates)	KOR	South Korea
ARG	Argentina	MAL	Malaysia
AUL	Australia	MEX	Mexico
AUT	Austria	NET	Netherlands
BEL	Belgium	NOR	Norway
BRA	Brazil	NZL	New Zealand
CAN	Canada	PAK	Pakistan
CHL	Chile	PAN	Panama
COL	Colombia	PER	Peru
COS	Costa Rica	PHI	Philippines
DEN	Denmark	POR	Portugal
EAF	East Africa (Ethiopia, Kenya,	SAF	South Africa
	Tanzania, Zambia)	SAL	Salvador
EQA	Ecuador	SIN	Singapore
FIN	Finland	SPA	Spain
FRA	France	SWE	Sweden
GBR	Great Britain	SWI	Switzerland
GER	Germany F.R.	TAI	Taiwan
GRE	Greece	THA	Thailand
GUA	Guatemala	TUR	Turkey
HOK	Hong Kong	URU	Uruguay
IDO	Indonesia	USA	United States
IND	India	VEN	Venezuela
IRA	Iran	WAF	West Africa (Ghana, Nigeria
IRE	Ireland (Republic of)		Sierra Leone)
ISR	Israel	YUG	Yugoslavia

Table A6.1.Abbreviations (Schneider and Barsoux, 2003)

Country	Power	distance	Individ	lualism	Maso	ulinity	Uncertaint	y avoidance
	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Argentina	49	35-6	46	22-3	56	20-1	86	10-15
Australia	36	41	90	2	61	16	51	37
Austria	11	53	55	18	79	2	70	24-5
Belgium	65	20	75	8	54	22	94	5-6
Brazil	69	14	38	26-7	49	27	76	21-2
Canada	39	39	80	4-5	52	24	48	41-2
Chile	63	24-5	23	38	28	46	86	ST 11. 200
Colombia	67	17	13	49	64	11-12	80	10-15
Costa Rica	35	42-4	15	46	21	48-9	86	
Denmark	18	51	74	9	16			10-15
Ecuador	78	8-9	8	52		50	23	51
Finland	33	46	63		63	13-14	67	28
T. D. Charles St.	68	15-16	100000000000000000000000000000000000000	17	26	47	59	31-2
France	1.020.00		71	10-11	43	35-6	86	10-15
Germany (FR)	35	42-4	67	15	66	9-10	65	29
Great Britain	35	42-4	89	3	66	9-10	35	47-8
Greece	60	27-8	35	30	57	18-19	112	1
Guatemala	95	2-3	6	53	37	43	101	3
Hong Kong	68	15-16	25	37	57	18-19	29	49-50
India	77	10-11	48	21	56	20-1	40	45
Indonesia	78	8-9	14	47-8	46	30-1	48	41-2
Iran	58	29-30	41	24	43	35-6	59	31-2
Ireland	28	49	70	12	68	7-8	35	47-8
Israel	13	52	54	19	47	29	81	19
Italy	50	34	76	7	70	4-5	75	23
Jamaica	45	37	39	25	68	7-8	13	52
Japan	54	33	46	22-3	95	1	92	7
Korea (S)	60	27-8	18	43	39	41	85	16-17
Malaysia	104	1	26	36	50	25-6	36	46
Mexico	81	5-6	30	32	69	6	82	18
Netherlands	38	40	80	4-5	14	51	53	35
New Zealand	22	50	79	6	58	17	49	39-40
Norway	31	47-8	69	13	8	52	50	38
Pakistan	55	32	14	47-8	50	25-6		
Panama	95	2-3	11	51	44	34	70	24-5
Peru	64	21-3	16	45			86	10-15
Philippines	94	4	100		42	37-8	87	9
Portugal	63	24-5	3.2 2.7	31 33–5	64	11-12	44	44
Salvador	66	18-19	19		31	45	104	2
Singapore	74	13	20	42 39-41	40	40	94	5-6
South Africa	49	35-6	1000		48	28	8	53
			65	16	63	13-14	49	39-40
Spain	57	31	51	20	42	37-8	86	10-15
Sweden	31	47-8	71	10-11	5	53	29	49-50
Switzerland	34	45	68	14	70	4-5	58	33
Taiwan	58	29-30	17	44	45	32-3	69	26
Thailand	64	21-3	20	39-41	34	44	64	30
Turkey	66	18-19	37	28	45	32-3	85	16-17
United States	40	38	91	1	62	15	46	43
Uruguay	61	26	36	29	38	42	100	4
Venezuela	81	5-6	12	50	73	3	76	21-2
Yugoslavia	76	12	27	33-5	21	48-9	88	8
Regions:				-85.00V	10000	- 1000	0.55	100
East Africa	64	21-3	27	33-5	41	20	**	24
West Africa	77	10-11	20	39-41	2000	39	52	36
Arab countries		7	38		46	30-1	54	34
Ago countile:	00	9 6	36	26-7	53	23	68	27

Table A6.2. Hofstede's rankings (Schneider and Barsoux, 2003)

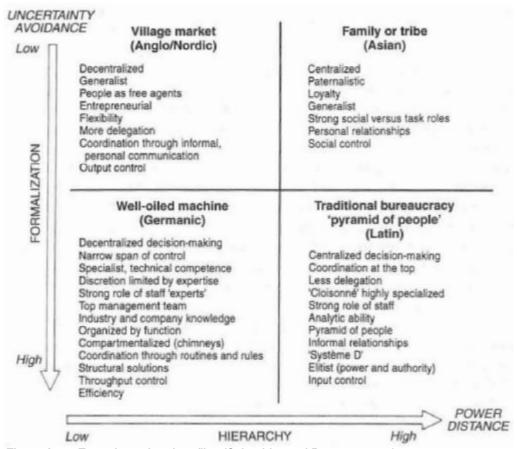


Figure A6.3. Emerging cultural profiles (Schneider and Barsoux, 2003)

Compatible goals

To determine if goals are compatible a thorough review of potential partner goals is needed. Management must look at past actions of potential strategic partners to find clues of what the actual goals of this organization are, rather than relying solely on what the potential partner says. Furthermore, they should review public documents and conduct discussions with customers and former employees of the potential partner to identify the actual goals of the potential partner (Brouthers et al., 1995). Finally, they should analyse their own goals and those of the potential partner to determine if they are compatible.

Commensurate levels of risk

As discussed in previous section the risks should be more or less equal for both parties involved in the strategic supplier-buyer relationship. Therefore it is useful to identify the risks of the partnership for both parties and determine if these are balanced between the partners. The risk matrix presented by Groote et al. (2000) is a useful tool to identify the risks. The figure below gives an overview of this risk matrix.

Per spectives	Stakehol ders	Risks strategic supplier-buyer relationship
Technical	Supplier	
	Buyer	
Financial	Supplier	
	Buyer	
Organizational	Supplier	
	Buyer	
Geographical	Supplier	
	Buyer	
Legal	Supplier	
	Buyer	
Political	Supplier	
	Buyer	
Societal	Supplier	
	Buyer	

Figure A6.4.Risk matrix

Appendix 7: Technique to develop possibilities for content

A checklist of product/ delivery system attributes which provide sales advantage

Image What is the image of your product range? Is it important?

User statement Does your product make the appropriate statement about the user

Price Is a low price a key buying criterion?

Value for money is the achievement of a certain ratio of specification/price crucial?

User friendliness Is it important for the product to be user friendly?

Availability Is product range availability crucial?

Rapid response to enquiry Is it important to produce design, quotations etc. very quickly?

Quick response to customer demand Will sale be lost to competition if they respond more quickly than you?

Achievement of advised delivery is it important to stick to the advised delivery dates?

Width of product range is it important to offer a wide range of products, and/or services to your customer?

New product to market time is it important to minimize the product development time?

Quality- the product's fitness for purpose Does the product, or service, deliver exactly the benefits, which the customers want?

Quality- the consistent achievement of defined specification is constant conformance to specification vital? Safety is safety in use a major concern?

Etc.

Table A7.1. Attributes that provide sales advantage (Hall and Andriani, 1999)

Key attributes	% Importance
Weighting	
_1.	
2.	
3.	
4.	
Total	100

Table A7.2. Weighting the importance of sales advantages (Hall and Andriani, 1999)

Advantage	Ranking (%)	Strength	Sustainability
		Wheth while thing beat, the	The letter the later than the later to the l
1. EASE OF USE	40		9
2. QUALITY	20		
3. IMAGE	10		
4. ETC	-		
	100		

Figure A7.1. Determining the strength and sustainability of advantages (adapted from Hall and Andriani, 1999)

Positional assets: assets that are not Regulatory assets: legal entries, often legal entities. Reputation of company and products, with property rights. value chain configuration, distribution Patents, trademarks, copyright, registered design, trade secrets, networks, unique access to raw materials, organisational networks, contracts, licenses, proprietary installed operating systems e.g. MRP, operating systems. EPOS etc., databases. Cultural resources: the characteristics Functional resources: individual or of the organization. team skills. Perception of high quality standards, Employee know-how, distributor knowthe organization's ability to: manage how, supplier know-how, and groupings change, innovate work as teams, of the above. respond to challenge, tradition of customer services etc.

Figure A7.2. The four capabilities framework (Hall and Andriani, 1999)

Key attribute	Regulatory capability	Positional capability	Functional capability	Cultural capability
1.				
2.				
3.				
1				
Table AS 3	The intendible rec	ourges (Hall and Andriani :	1000)	
Table A8.3. Key attribute	The intangible reso	ources (Hall and Andriani, a	1999) Enhancing	Exploiting
		·	•	Exploiting
Key attribute		·	•	Exploiting
		·	•	Exploiting

Table A7.4. Development of scenarios for key intangible resources (Hall and Andriani, 1999)

Appendix 8: Initial conditions for learning cycles

Inertial	Evolutionary
Task definition	•
Dense and tight systematic interdependencies in task	Modular task definition with clearly defined boundaries
structure	and task interfaces
Deeply differentiated skill bases, no overlaps between partners	Complementary and differentiated, but partly overlapping skill bases
Urgency, criticality and visibility of alliance results to top management	Internal autonomous 'championing' within each partner organization
Organizational routines	
Deeply differentiated routines (coevolved with skill base)	Compatible routines between partners, or exemption from existing routines
Organizational fragmentation (between levels, functions, locations)	Organizational integration, quality of internal communication, common ground
Clock-speed differences between partners	Similar pace and rhythm of issue resolution and decision making
Strongly embedded routines, defensive activation	Desire and ability to engage in joint search for new more effective routines
Interface	
Distant, narrow and formal or unstructured and open, designed at inception	Readiness to make breadth and nature of the interface evolve over time as a function of mutual understanding and trust
Discontinuous managerial involvement, expected changes in key personnel (e.g. as part of career development policies in partner firms) Expectations	Expected continuity of key interface and partnership managers
Optimistic and ambitious expectations set early	Realistic and flexible expectations
Conflicting frames of reference between partners	Similar or compatible frames of reference between partners
Concern for value appropriation	Concern for value creation and value appropriation
High ambiguity and information asymmetry	Limited ambiguity and information asymmetry

Figure A8.1. Inertial and evolutionary impact of initial conditions (Doz, 1996)

Appendix 9: Relationship manager and structure

Strategic supplier-buyer relationship managers

In Paragraph 6.2.1 to 6.2.6 we have discussed several roles the strategic supplier-buyer relationship managers fulfil in each stage of the relationship life cycle. Spekman et al. developed a model for the different role requirements depending on the state of the business and the relationship. The figure below depicts this model. Thales Hengelo can use this model to determine if the role of the relationship manager prescribed for each stage fits their specific situation.

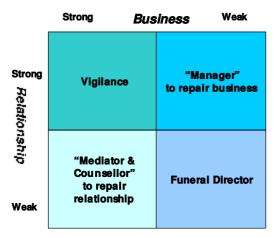


Figure A9.1. Managers the relationship may need (Spekman et al., 1996)

Strategic supplier-buyer relationship structures

The structure of the strategic supplier-buyer relationship changes over time. McDonald et al. (1996) identified four types of interfaces that are used in practice. We placed these four interface types in a framework that can serve as a guideline for selection of the appropriate interface structure for a strategic supplier-buyer relationship, based on the value creation and resource commitment characteristics of each interface type. The figure below depicts this framework. Thales Hengelo could use this framework to determine the appropriate interface structure for a strategic supplier-buyer relationship.

The first structure does not involve the strategic level in the relationship. In this situation the commercial deal is central and negotiations concentrate on price. The structure requires little resource commitment, and therefore the switching costs are low. Value creation is limited to the product value. The second structure represents an increasing resource commitment and value creation due to closer collaboration. The account manager and purchaser are supported by other functions in the organizations. The third structure represents a relationship between two organizations instead of a relationship between representatives of the marketing and purchasing department. Such a relationship demands substantial investments and therefore requires top management involvement. In the fourth structure companies' boundaries become blurred. Companies do not only cooperate on operational issues, but are also involved in joint projects to achieve strategic goals such as R&D projects (Christopher and Jüttner, 2000).

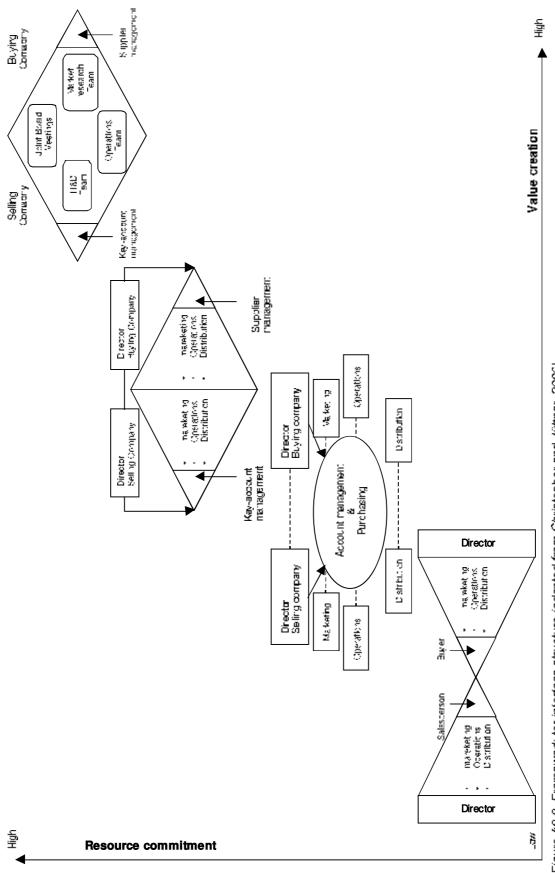


Figure A9.2. Framework for interface structure (adapted from Christopher and Jüttner, 2006)

Appendix 10: Antecedents to trust

Firm Le	Firm Level Individual Level				
Trustor		Trustor	:		
1.	trusting culture	1.	early life experiences		
2.	situational factors	2.	personality type		
3.	nation/ society that is more trust-based with a	3.	cultural background		
	long-term orientation, such as Japan	4.	general faith in humanity		
Trustee	:	Trustee) :		
1.	firm reputation	1.	reputation		
2.	legitimacy	2.	integrity		
3.	culture emphasizing trust and openness	3.	ability		
4.	social networks	4.	openness		
5.	social position	5.	consistency		
6.	history of past alliances	6.	professional credentials		
7.	a transformational leader that promotes	7.	past citizenship behaviour		
	ethical behaviour				
Firm-fir	m relationship:		ual-individual relationship:		
1.	existence of a previous alliance	1.	role clarity		
2.	socially and culturally similar	2.	cultural-ethnic similarity		
3.	societal institutions	3.	similar interpretive schemes		
4.	effective communication between firms	4.	value congruence		
5.	common partners	5.	frequent interaction		
6.	similar structures, size, and age	6.	successful previous exchanges		
7.	prior individual social ties between	7.	societal institutions		
_	researchers				
8.	common business understanding, including a				
	shared vision and clear mutually agreed upon				
	guidelines for the relationship				

Table A10.1. Antecedents to trust (Bierly and Gallagher, 2007)

Appendix 11: Relationship performance measurement

Relationship performance measurement

O'Toole and Donaldson (2000) studied relationship performance measurement and found that relationship performance has both financial and non-financial dimensions. Furthermore their study suggested that there might be important subgroups within these dimensions, but which dimensions should be included in performance assessment may also be dependent on the relationship type. The table below gives an overview of the non-financial and financial performance statements proposed by O'Toole and Donaldson. We propose the use of a subset of these statements to measure relationship performance. The choice of statements should be based on the specific content of a strategic supplier-buyer relationship. It may also be necessary to add performance statements to measure output related to the content of the strategic supplier-buyer relationship. The performance measurement statements presented by O'Toole and Donaldson only measure the output of the relationship. Several authors argue that relationship monitoring should include both process-related as output-related performance measurement (Christopher and Jüttner, 2004; Wagner and Johnson, 2004). We propose to measure the process-related aspects by using performance statements related to the critical success factors. The second table below gives an overview of useful performance statements to measure how the relationship performs on some of the critical success factors for support of the relationship.

Non-financial performance statements

"The overall benefits of the relationship are better in comparison to other relationships we are in"

- "The lead times for this supplier are shorter than others for others"
- "The speed of response to problems by this supplier is quicker than others"
- "We are happy with this relationship"
- "One of the main advantages of this relationship is its stability"
- "A lot of value that is difficult to quantify has been created in this relationship"
- "One of the main advantages of this relationship is its flexibility"
- "The quality of this supplier's product is higher than others"
- "We are constantly working on joint value added projects in the relationship"
- "The supplier is involved in the design of our products"

Financial performance statements

- "It would be difficult to switch to an alternative relationship"
- "The more interdependent we are in this relationship the better"
- "The relationship makes it easy for an abuse of confidence to happen" (reversed)
- "The relationship has meant we have to share a lot of information and knowledge that we would normally resist" (reversed)
- "The costs we have avoided in this relationship are less than in similar ones" (reversed)
- "The prices we pay in this relationship are less than in similar ones"
- "Return on investment is higher in this relationship than in others"
- "The long term profitability of this relationship is higher in comparison to alternatives"
- "The bought volume in this relationship is higher in comparison to alternatives"
- "More costs are shared equally in this relationship when compared to others"
- "The overall costs of running this relationship are lower in comparison to others"

Table A11.1. Output related performance measurement statements

Process related performance statements

Trust and goodwill

Interpersonal trust

- "My contact person has always been even handed in negotiations with me"
- "I know how my contact person is going to act. He/ she can always be counted on to act as expected"
- "My contact is trustworthy"
- "I have faith in my contact person to look out for my interests even when it is costly to do so"
- "I would feel a sense of betrayal if my contact person's performance was below my expectations"

Inter-organizational trust

- "Supplier x has always been even handed in its negotiations with us"
- "Supplier x may use opportunities that arise to profit at our expense" (reversed)

"Based on past experience, we cannot with complete confidence rely on Supplier x to keep promises mate to us" (reversed)

"We are hesitant to transact with supplier x when specifications are vague" (reversed)

"Supplier x is trustworthy" " (Zaheer et al., 1998)

Flexibility

"A characteristic of the relationship is flexibility in response to requests for changes"

"When some unexpected situation arises, the parties would rather work out a new deal than hold each other to the original terms"

"It is expected that parties will be open to modifying their agreements if unexpected events occur" (Johnston et al., 2004)

Conflict management skills

"Conflict is usually resolved by persuasive attempts by either party/ joint problem solving" (Monczka et al., 1998)

Boundary personnel and social exchange

"The relationship promoter is, for the employees of our company, the one contact in regard to partner-specific questions/ informs employees within his/ her own organization about the needs of the partner company"

"The relationship promoter actively seeks contact with employees of the partner company/ purposefully addresses specific employees from the partner organization to establish a collaboration"

"The relationship promoter coordinates the relevant relationship activities within and outside of the organization/makes sure that arrangements between the partners are kept"

"The relationship promoter works out compromises between the partner companies/ solves conflicts emerging between the partners"

"The relationship promoter possesses skills to create and shape positive relationships between the individuals involved/ to get along adaptively and professionally with the people involved"

"The relationship promoter possesses detailed knowledge about the own organization and about important third parties"

"The relationship promoter possesses skill to create and shape positive relationships between the individuals

"The relationship promoter possesses skill to create and shape positive relationships between the individuals involved/ to get along adaptively and professionally with the people involved"

"The relationship promoter possesses good personal relationships with important people in his/ her own company/ with people in the (potential) partner organization" (Walter, 1999)

Table A11.2. Process related performance statements

For the practical application of relationship performance measurement, we suggest an adaptation of traditional customer surveys and the introduction of supplier surveys. These questionnaires should include the chosen subset of statements to measure relationship performance. If necessary these statement should be adjusted to measure the supplier's perspective on the relationship performance. The study by O'Toole and Donaldson validated the use of a five point Likert scale to measure the factors composing the performance dimensions they proposed. Therefore, we suggest the use of this composite scale for the measurement of relationship performance through the questionnaires. Based on the results from both the buyer and supplier's perspective, the partners can jointly formulate corrective actions.

Relationship assessment programme

The relationship assessment programme (RAP) is aimed at the development of an assessment system that focuses on the relationship between buyers and suppliers. Lamming et al. (1996) developed a RAP model, which enables partners to develop a clearer understanding of the requirements of different relationships and they can use this knowledge to assure an appropriate allocation of resources to develop the relationship in the desired direction. The figure below gives an overview of the RAP model.

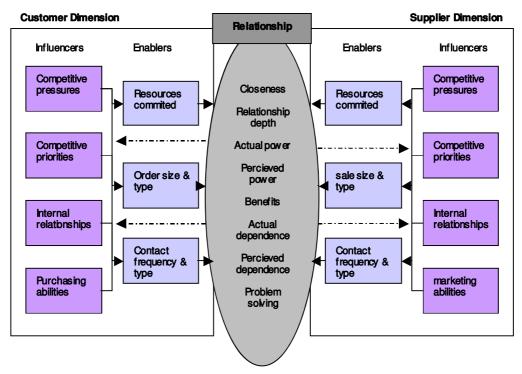


Figure A11.1. RAP model (@ Lamming et al., 1995)

The rational behind the RAP model is that both parties need to understand their competitive environment, and that of their partner, in order to establish competitive priorities in dealing with these pressures. Furthermore, companies should have appropriate organizational structures (internal relationships and purchasing/ marketing abilities) to develop and support relationships. The relationship is managed by influencing the relationship enablers, though Lamming et al. stress that no party can control the relationship on its own. Suppliers and customers can only influence the relationship together. The meaning of the relationship factors can be found in the table below.

Closeness	The result of the predictability of each party's actions.
Depth	The type, and number, of actions performed jointly.
Power	The result of the ability of each party to impose its will upon the other. This includes the actual and perceived power balance.
Dependence	The result of the reliance of each party upon the other. This includes the actual and perceived dependence situation.
Problem solving	The manner in which problems are handles and the conflict resolution techniques used.
Benefits	The benefits developed by the relationship.

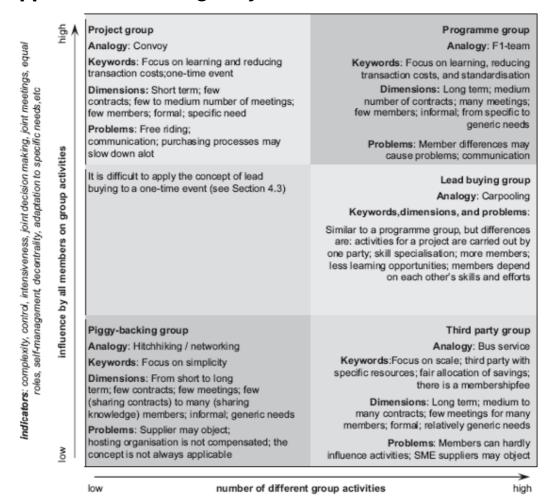
Table A11.3. Model facets of the relationship

The authors argue that the RAP approach helps firms to understand supplier-buyer relationships by:

- Identifying who influences and controls the relationship;
- Clarifying to themselves what benefits they feel they want from the relationship;
- Clarifying to themselves what benefits they feel they are actually getting from the relationship;
- Identifying mismatches between the desired state of the relationship and the perceptions of the actual state of the relationship.

The better understanding of the relationship will enable partners to address the mismatches, and develop solutions to support the strategic supplier-buyer relationships.

Appendix 12: The highway matrix



activities: specifying, selecting, contracting, evaluating, sharing information or knowledge, sharing personnel or other resources, shared policy and procedures, benchmarking,etc

Figure A12.1. A matrix for organizational forms of cooperative purchasing: Highway matrix (Schotanus and Telgen, 2007)

Appendix 13: Conference Room Test

Date : 18 November 2008 Our ref. : Afstudeeropdracht strategic

partnership

To :

Copy :

From : Nadine Joubert Tel. :

Subject : Introduction to the conference room test

Introduction

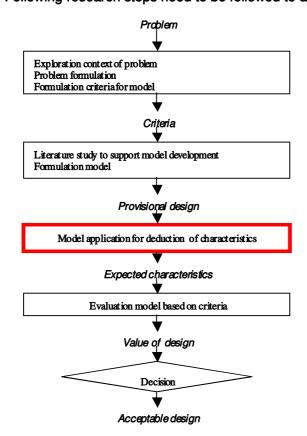
The objective of this research is to develop a conceptual decision support model for strategic supplier-buyer relationships in a modular sourcing context that addresses:

- the selection of appropriate strategic partners;
- the content of the strategic supplier-buyer relationships;
- the development of strategic supplier-buyer relationships;
- the support of strategic supplier-buyer relationships.

The main research question is:

What should a conceptual decision support model be like to improve the selection, content, development, and support of Thales Hengelo's strategic supplier-buyer relationships in a modular sourcing context?

Following research steps need to be followed to answer this question:



The conference room test is part of the research step model application for deduction of the characteristics of the design.

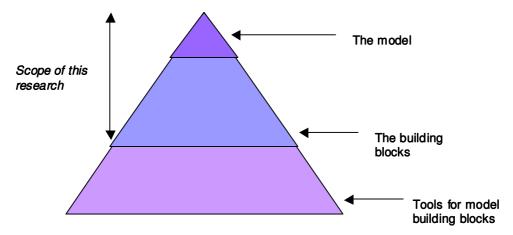
Purpose conference room test

The design for the conceptual decision support model for strategic partnerships is based on literature findings. The purpose of the conference room test is to study how the model functions in *practice* and provide participants with the opportunity to give *feedback* on the model.

The conceptual decision support model

Following sections will give an overview of the model. During the conference room test we will zoom in on some elements of the model.

The figure below explains the levels of detail of the conceptual decision support model for strategic partnership. This could be compared to a modular design with the model being the system, the building blocks are the modules and the tools are the components.



The model

The selection and courtship stage is useful to explore the possibilities for partnering. The building blocks **selection** and **content** are part of this stage. It is possible that parties cannot reach an agreement on the content of their relationship, which leads to them "breaking up". If the parties do agree on the content, they enter the engagement phase.

Usually senior executives are the ones involved in the formation of strategic supplier-relationships. In the *engagement* stage it is time to "meet the family". Other stakeholders get involved in the relationship.

In the setting up housekeeping stage partners start to work together on a daily bases and "the romance of courtship quickly gives way to day-to-day reality as partners begin to live together". People at all level of the company need to work together to make the strategic supplier-buyer relationship a success. The broader involvement can lead to some problems such as employees in other positions not perceiving the partner as attractive as the senior executives did. Other complications are the result of operational and cultural differences that are discovered after initiation of collaborative activities.

To *learn to collaborate* the companies need to develop governance structures in which the integration points, processes, and the division of labour between the partners is established. These companies need to improve the information exchange between partners.

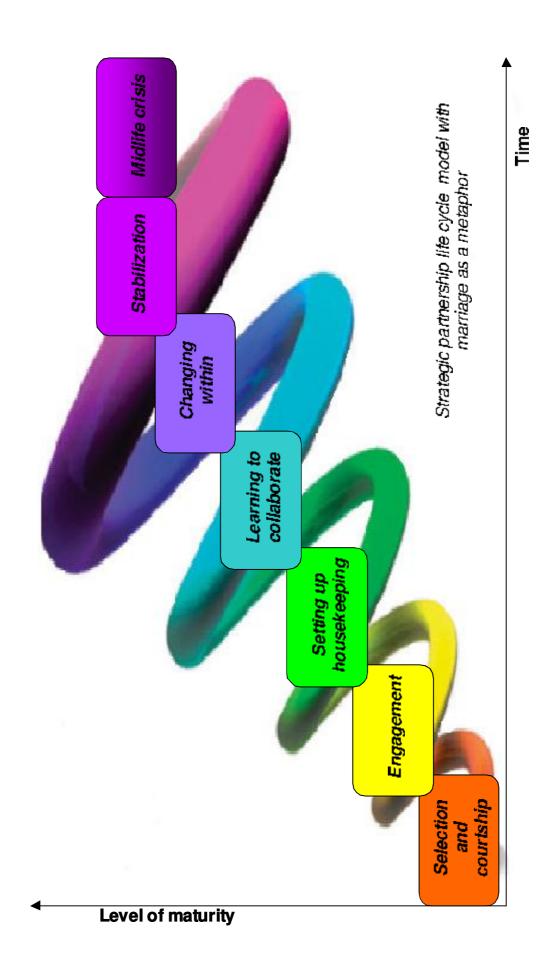
As married couples companies discover that they need to *change* internally to accommodate to the ongoing collaboration. The gains of supply chain partnering can only be achieved if the companies involved also initiate supporting changes within the respective organizations. A change

THALES

management programme is useful to tackle the implementation of strategic supplier-buyer relationships.

As in a marriage the "love" will die if the partners do not support the relationship and adjust to changing circumstances. During the *stabilization* stage managers focus on staying on course and adapting the direction of the strategic supplier-buyer relationship to internal and external pressures. The *midlife crisis* stage involves a revaluation of the relationship. The partners evaluate whether they should continue together or terminate the relationship or whether they should broaden the scope of the relationship.

The *development* building block is the bases of this model. The *support* building block provides guidelines on how to support each stage of the relationship.



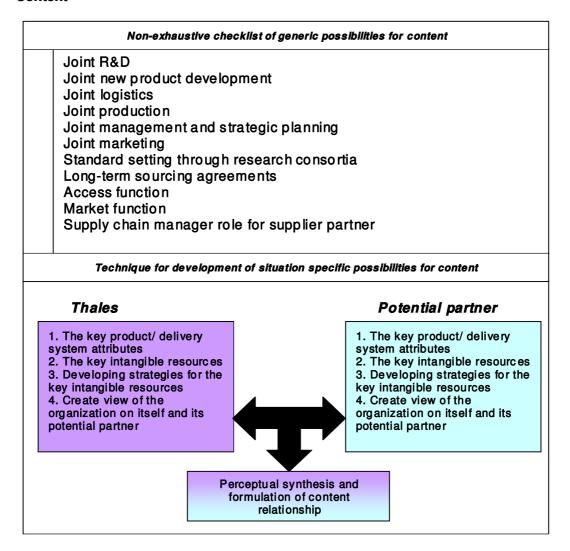
The building blocks selection, content, development, and support

Selection

Potetial strategic partners Thales' perspective Supplier's perspective Nonkey Difficult Key Difficult Difficulty of managing 턌 the account Le verage Strategic Ш importance of purchasing Nonkey g. Easy Non-critical **Bottleneck** 93 Hiah Low Hiah Strategic importance of the account Complexity of supply market Criteria to help determine position in matrices for analysis of relationships: Complementary Cooperative Compatible Commensurate Strategic Fit levels of risk skills culture goals attractiveness Customer's business Ę. Relative Supplier Attractiveness Ī g Strong Weak Strong Strength of Relationship Strength of Relationship Strategic partners

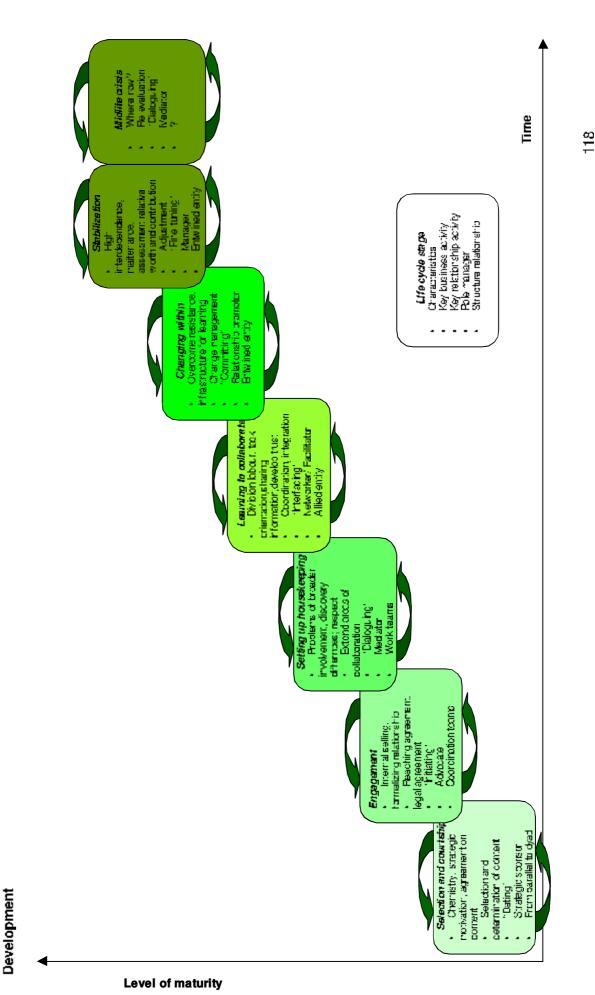
This model includes Thales and supplier's perspective on the potential strategic partner. In the figure above we indicated the possible strategic actions to move into a quadrant that leads to a potential strategic partner status. The criteria for selection strategic fit, complementary skills, cooperative culture, compatible goals, and commensurate levels of risk will support the determination of the position in the matrices for analysis of the relationships. Both the buyer and supplier should perceive each other as a potential partner, which is indicated by the star positions in the model, to develop a strategic supplier-buyer relationship.

Content



The model consists of a checklist of generic possibilities for content of strategic supplier-buyer relationship. This list is based on our literature findings and can be used to assure that one does not overlook some possibilities for content. The second part of the model is a technique for determining the content of the strategic supplier-buyer relationships. The technique identifies the key attributes, analyses the intangible resources that produce these attributes, and develops strategies for each key intangible resource. Each party performs the analysis on its own organization and on its potential partner's organization. In the perceptual synthesis phase the parties establish if their views match and which possibilities for content this analysis yields.

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This building block model for development of strategic supplier-buyer relationships is the basis of the conceptual decision support model. The model shows the stages of the relationship life cycle. Furthermore, it includes the characteristics, key business activity, key relationship activity, the role of the relationship manager, and the structure of the relationship for each stage.

Support

The literature study resulted in a number of recommendations on how to deal with the support of the strategic supplier-buyer relationship in each stage of the life cycle. This model can be used to evaluate if all the important issues in each stage are being dealt with in an appropriate manner. Therefore we suggest the use of a checklist to ensure that no important aspects are overlooked.

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Handout Conference Room Test

Selection of Supplier A as a strategic partner

Limitations to the models:

- No procedures for operationalization of dimensions:
- The weighting of each factor for measurement of the variables is very subjective;
- The lines of demarcation between a high or low score on the variables are unclear.

To deal with these measurement issues we will use a consensus method. The consensus method is based on the process of reasoning and discussing. The advantage of this method is that it facilitates strategic discussions related to purchasing. A drawback is that it does not offer directions as to how to overcome deadlocks. To select Supplier A as a strategic partner we should at least reach consensus among the managers of the several departments.

Thales' perspective

Central question: How does Supplier A score on relative attractiveness and strength of relationship?

Following table can be used as a guideline to determine the relative attractiveness and the strength of the relationships.

Factors influencing relative supplier attractiveness | Factors influencing strength of relationship

Financial and economic factors

- 6. The supplier's margins
 - 7. The supplier's financial stability
 - 8. The supplier's scale and experience
- 9. Barriers to the supplier's entry and exit

Performance factors

- 4. Delivery
- 5. Quality
- 6. Price

Technological factors

- 6. The ability to cope with changes in technology
- 7. The types and depth of supplier's current and future technological capabilities
- 8. The supplier's design capabilities
- 9. The supplier's speed in development
- 10. The supplier's patent protection

Organizational, cultural, and strategic factors

- 8. Influence on the company's network position
- 9. The internal and external integration of the supplier
- 10. The strategic fit between buyer and supplier
- 11. Management attitude/ outlook for the future
- 12. Top management capability
- 13. Compatibility across levels and functions of buyer and supplier firm
- 14. General risk and uncertainty of dealing with the supplier

Other factors

- 3. Ability to cope with changes in the environment
- 4. Compatibility of supplier's goal

Economic Factor

- 4. Volume or money value of purchase
- 5. Importance of the buyer to the supplier

Character of the exchange relationship

- 5. Types of exchange
- 6. Level and number of personal contacts
- 7. Number of other partners
- 8. Duration of the exchange relationship

Cooperation between buyer and supplier

- 4. Cooperation in development
- 5. Technical cooperation
- 6. Integration in management

Feeling of trust in relation with the supplier

- 6. Friendship
- Cultural distance
 Technological distance
 Time distance
- 10. Geographic distance

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Supplier A's perspective

Central question: How does Thales score on customer attractiveness and strength of relationship?

Following table is useful to determine the customer attractiveness and the strength of the relationships.

Factors influencing customer attractiveness	Factors influencing strength of relationship
Financial and economic factors	Economic Factor
1. The customer's margins	Volume or money value of sale
2. The customer's financial stability	2. Importance of the supplier to the buyer
3. The customer's scale and experience	• • • • • • • • • • • • • • • • • • • •
4. Barriers to the customer's entry and exit	
Market factors	Character of the exchange relationship
 Customer's share 	Types of exchange
Customer's growth rate	2. Level and number of personal contacts
Customer's influence on the	3. Number of other partners
market	4. Duration of the exchange relationship
Technological factors	Cooperation between buyer and supplier
1. The ability to cope with changes	Cooperation in development
in technology	2. Technical cooperation
2. The types and depth of	3. Integration in management
customer's current and future	
technological capabilities	
3. The customer's speed in	
development	
4. The customer's patent protection	
Organizational, cultural, and strategic factors	Feeling of trust in relation with the buyer
Influence on the company's network	1. Friendship
position	2. Cultural distance
2. The internal and external integration of	3. Technological distance
the customer	4. Time distance
The strategic fit between buyer and	5. Geographic distance
supplier	
Management attitude/ outlook for the	
future	
Top management capability	
Compatibility across levels and functions	
of buyer and supplier firm	
General risk and uncertainty of dealing	
with the customer	
Other factors	
Ability to cope with changes in the	
environment	
Compatibility of customer's goal	

Content of strategic partnership with Supplier B

To make the model easier to use in practice the definitions of the possibilities for content and benefits are included in the table below.

Content	Definitions	Benefits
Joint R&D	Research and development together with the supplier to improve the value of the supplier's products to Thales and/ or of Thales products to its customers	 Increased access to technology/ information Reduced time-to-market Reduced cost Improved quality Joint investments

THALES

Joint new product development	Development of product or process innovations together with the supplier to improve the value of the supplier's products to Thales and/ or of Thales products to its customers and to create new markets	 Increased access to technology/ information Reduced time-to-market Reduced cost Improved quality Joint investments Gain new product market share
Joint logistics	Planning and execution of logistic activities together with the supplier such as JIT programmes, Vendor Managed Inventories etc.	Improved customer service Increased quality Reduced costs Reduced risks Reduced delivery time
Joint production	Planning and execution of production activities together with the supplier such as exchange of production personnel, joint ownership of production line etc.	Increased quality Reduced costs Increased flexibility Reduced risk Reduced lead time
Joint management and strategic planning	Performing management and strategic planning together with the supplier such as exchange of mangers to develop certain capabilities, joint decision making etc.	 Reduced costs Increased customer/ supplier loyalty Focus on core competencies and capabilities Longer horizon planning of investment
Joint marketing	Performing market research, advertising, branding, and sales activities together with the supplier to improve the value of the supplier's products and/ or of Thales products to its customers and to create new markets	Improved customer service Gaining market advantage Securing stable or growth markets Access to market development information Reduced costs
Standard setting through research consortia	Thales and multiple suppliers join in a research consortium to seek a common solution that can become an industry standard	Joint investmentsReduced costs
Long-term sourcing agreements	Cooperative purchasing agreements such as F1-teams, hitchhiking etc. F1-teams requires intensive collaboration to determine specifications, supplier selection etc. Hitchhiking is when one organization enables piggy-backing	Reduced risksReduced costs
Access function	Access to supplier's/ Thales' third party contacts such as official authorities, banks and/ or trade organizations, research institutes, universities etc.	 Reduction of time consumed by negotiations with third parties, such as trade associations Reduction of costs consumed by negotiations with third parties, such as trade associations
Market function	Referrals and/ or recommendations from supplier/ Thales to support entry into a new market and establish commercial relationships	 Increased number of customers for supplier through referrals and recommendations Increased number of customers buyer through strong brand name of their supplier's products
Supply chain manager role for supplier partner	The supplier is responsible for the specifications for second and third tier suppliers and the management of this part of the supply chain	 Buyer has access to component knowledge through supplier Reduced costs Supplier has improved competences and knowledge

Development and support of the strategic partnership with Supplier C

Development

1. What should the interface structure be like in this stage?

The framework below can serve as a guideline to determine the interface structure.

2. Who should fulfil the relationship manager role? And why? Should it be one person or a group of persons?

Competences relationship manager should have:

"Unteachable competences"

Willing to change self to accommodate others Willing to consider other person's point of view Simultaneously consider multiple points of view Learn from past but are not constrained by it Willing to take losses in return for future gains

Virtual thinking
Optimistic
Clever and creative
Eager to embrace other cultures
Pragmatic
Vigilant
Questioning

"Teachable competences"

Functional

- Line skills
- Staff skills
- Educational background
- General business knowledge

Earned

- Credibility and respect
- Staff skills
- Extensive networks
- Organizational
- Alliance
- Industry

Interpersonal

- Social skills
- Process skills
- Tact/ sensitivity
- Cross-cultural awareness

Support

- 1. Who should be responsible for the support activities in this stage?
- 2. How should Thales/ Supplier C perform these activities?

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Appendix 14: Field test

Interview questions field test

Administrative questions

Name participant: Interviewer: Interview location: Interview circumstances:

Classification questions

Job description participant: Years of experience: Short description CV:

Target questions

Give a short introduction to explain the purpose of the study, the model and the purpose of the interview.

1. What is your definition of strategic supplier partnership/ strategic supplier-buyer relationship?

Presentation of model building block for *selection*.

- 2. Do you or your customers use similar tools for partner selection? If not, what tools do you/ your customers use? If so, how do your methods / your customer's methods differ from this model?
- 3. Which important elements does the model lack in your opinion? And why?
- 4. Which elements of the model are redundant in your opinion? And why?
- 5. Do you perceive the selection building block as useful? Why is it useful/ not useful?

Presentation of model building block for *content*.

- 6. How does your organization determine which activities to perform for/ with your partner in order to create a win-win situation?
- 7. Does the checklist of "possibilities for content" (= activities to be performed for or together with one strategic partner) contain activities that are redundant/ lack important activities?
- 8. What is your opinion of the technique for determining situation specific possibilities for content? Do you think this technique leads to creative new possibilities? Would this be a useful tool for your organization?
- 9. Are companies willing to discuss their key resources (= most important resources to create value for the customer) and strategies for these resources? Why/ why not?
- 10. Do you perceive the content building block as useful? Why is it useful/ not useful?

Presentation of model building block for *development & support*.

- 11. In your experience, do partnerships go through these stages?
- 12. Do you agree that partnerships go through learning cycles? And why do you agree/ disagree?
- 13. Are the identified "key relationship and business" activities also relevant in practice?
- 14. What important activities are lacking in this model?
- 15. In your experience, are the critical success factors identified by the model indeed critical to success?
- 16. Are there missing/redundant criteria on the list?

- 17. Do you perceive the development and support building blocks as useful? Why are they useful/ not useful?
- 18. Overall, do you have any suggestions for improvement of the model?

Appendix 15: Evaluation

Evaluation Form

Date	
Job description	

Criteria related to the form	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The model is accessible and simple enough to be employed by users with a bachelor education level;					
The model provides visual support to internal and inter-firm communication;					
The model is ambiguous; (reversed)					

Explanation of scores:

Criteria related to the substance

Selection of appropriate strategic partners	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The model measures the attractiveness of the potential partner from the buyer point of view;					
The model measures the attractiveness of the buyer from the supplier point of view;					
The model does not measure the compatibility with the potential partner; (reversed)					
The model includes an assessment of the complementary skills of the potential partner;					
The model is able to determine unambiguously whether a supplier is an appropriate strategic partner;					

Explanation of scores:

Content of strategic supplier-buyer relationships	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The model does not include a list of standard possibilities to give content to strategic supplier-buyer relationships; (reversed)					
The model includes tools to find creative possibilities to give content to strategic supplier-buyer relationships;					

Evn	Janati	an af	ecorpe:

Development of strategic supplier-buyer relationships	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The model is not able to identify the competences required to develop a strategic supplier-buyer relationship; (reversed)					
The model includes a generic method to develop strategic supplier-buyer relationships that can be adapted to specific situations;					
The model measures how the quality of the relationship with the strategic partner changes over time from the buyer's point of view;					
The model measures how the quality of the relationship with the strategic partner changes over time from the supplier's point of view;					

Explanation of scores:

Support of strategic supplier-buyer relationships	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The model is able to identify the competences required to support a strategic supplier-buyer relationship;					
The model supports the choice of conflict resolution techniques;					
The model includes tools to measure results related to the content of the strategic supplier-buyer relationship;					

Explanation of scores:

General statements about the model	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The model is useful in practice to support decision making regarding strategic supplier-buyer relationships;					
The model would not lead to an improvement of the procedures for selection, content determination, development and support of supplier-buyer relationships; (reversed)					
I would accept the model as a Thales procedure for the management of strategic supplier-buyer relationships;					

Explanation of scores:		
Opposed versandes and/or		
General remarks and/ or		
improvement suggestions		

Criteria related to the form	Scores Tactical purchaser 1	Scores member steering committee	
The model is accessible and simple enough to be employed by users with a bachelor education level;	Agree	Neither agree nor disagree	
The model provides visual support to internal and inter-firm communication;	Agree	Agree	
The model is unambiguous;	Strongly agree	Neither agree nor disagree	
Criteria related to the substance			
Selection of appropriate strategic partners			
The model measures the attractiveness of the potential partner from the buyer point of view;	Strongly agree	Agree	
The model measures the attractiveness of the buyer from the supplier point of view;	Strongly agree	Agree	
The model measures the compatibility with the potential partner;	Agree	Disagree	
The model includes an assessment of the complementary skills of the potential partner;	Strongly agree	Disagree	
The model is able to determine unambiguously whether a supplier is an appropriate strategic partner;	Strongly agree	Disagree	
Content of strategic supplier-buyer relationships			
The model includes a list of standard possibilities to give content to strategic supplier-buyer relationships;	Strongly agree	Agree	
The model includes tools to find creative possibilities to give content to strategic supplier-buyer relationships;	Agree	Agree	
Development of strategic supplier-buyer relationships			
The model is able to identify the competences required to develop a strategic supplier-buyer relationship;	Strongly agree	Agree	
The model includes a generic method to develop strategic supplier-buyer relationships that can be adapted to specific situations;	Agree	Agree	
The model measures how the quality of the relationship with the strategic partner changes over time from the buyer's point of view;	Agree	Disagree	
The model measures how the quality of the relationship with the strategic partner changes over time from the supplier's point of view;	Agree	Disagree	
Support of strategic supplier-buyer relationships			
The model is able to identify the competences required to support a strategic supplier-buyer relationship;	Strongly agree	Neither agree nor disagree	
The model supports the choice of conflict resolution techniques;	Neither agree nor disagree	Disagree	
The model includes tools to measure results related to the content of the strategic supplier-buyer relationship;	Agree	Disagree	

General statements about the model The model is useful in practice to support decision making regarding strategic Strongly agree Agree supplier-buyer relationships; The model would lead to an improvement of the procedures for selection, Neither agree Agree nor disagree content determination, development and support of supplier-buyer relationships; I would accept the model as a Thales procedure for the management of Strongly agree Agree strategic supplier-buyer relationships; Extent of compliance with criteria for evaluation 90% 59%

Table A16.1. Results evaluation form

Criteria related to the form	Scores Tactical purchaser 2	Scores Tactical purchaser 3
The model is accessible and simple enough to be employed by users with a bachelor education level;	Disagree	Neither agree nor disagree
The model provides visual support to internal and inter-firm communication;	Agree	Agree
The model is unambiguous;	Neither agree nor disagree	Disagree
Criteria related to the substance		
Selection of appropriate strategic partners		
The model measures the attractiveness of the potential partner from the buyer point of view;	Agree	Agree
The model measures the attractiveness of the buyer from the supplier point of view;	Disagree	Neither agree nor disagree
The model measures the compatibility with the potential partner;	Neither agree nor disagree	Agree
The model includes an assessment of the complementary skills of the potential partner;	Neither agree nor disagree	Neither agree nor disagree
The model is able to determine unambiguously whether a supplier is an appropriate strategic partner;	Neither agree nor disagree	Disagree
Content of strategic supplier-buyer relationships		
The model includes a list of standard possibilities to give content to strategic supplier-buyer relationships;	Agree	Agree
The model includes tools to find creative possibilities to give content to strategic supplier-buyer relationships;	Neither agree nor disagree	Strongly agree
Development of strategic supplier-buyer relationships	nor aleagree	
The model is able to identify the competences required to develop a strategic supplier-buyer relationship;	Agree	Agree
The model includes a generic method to develop strategic supplier-buyer relationships that can be adapted to specific situations;	Disagree	Agree
The model measures how the quality of the relationship with the strategic partner changes over time from the buyer's point of view;	Disagree	Agree
The model measures how the quality of the relationship with the strategic partner changes over time from the supplier's point of view;	Disagree	Neither agree nor disagree
Support of strategic supplier-buyer relationships	'	
The model is able to identify the competences required to support a strategic supplier-buyer relationship;	Disagree	Agree
The model supports the choice of conflict resolution techniques;	Disagree	Neither agree nor disagree
The model includes tools to measure results related to the content of the strategic supplier-buyer relationship;	Disagree	Agree
General statements about the model		
The model is useful in practice to support decision making regarding strategic supplier-buyer relationships;	Disagree	Agree
The model would lead to an improvement of the procedures for selection, content determination, development and support of supplier-buyer relationships;	Neither agree nor disagree	Agree
I would accept the model as a Thales procedure for the management of strategic supplier-buyer relationships;	Strongly disagree	Disagree
and and grade and provide and an arrange of the state of		71%

Table A16.2. Results Tactical purchaser

Appendix 16: The model building blocks

Building block for selection

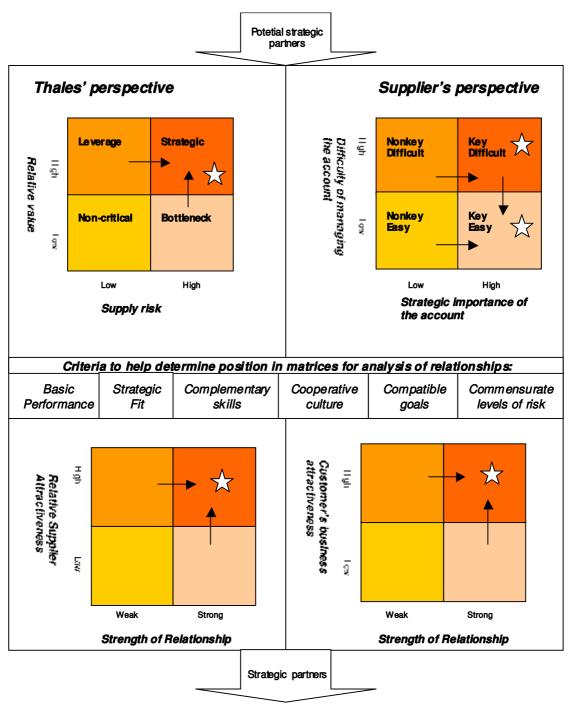


Figure A16.1. Selection building block

THALES

Building block for content

Non-exhaustive checklist of generic possibilities for content

(Joint) research

New product/ process technology

Share research costs

(Joint) new product development

Development of new products

Share product development cost

New product/ market combinations

Spin-offs

Supplier development programme

(Joint) logistics

(Share) distribution

(Share) service

JIT programme

Vendor Managed Inventories

Sharing forecast information

Supplier development programme

(Joint) production

Fill gaps in production line

Supplier development programme

Process cost improvement programme

Joint ownership production line

Exchange production personnel

(Joint) management and strategic planning

Advise, assistance and training

Joint decision-making

Exchange management personnel

Sharing business and technology information (roadmaps)

(Joint) marketing

New product market/combinations

Sharing information on market developments

Advertising, branding, and sales

Long-term cooperative sourcing agreements

Con voy

F1-team

Carpooling

Hitchhiking

Bus rides

Access function

Access to research institutes

Access to universities

Access to official authorities

Access to partners social network

Market function

Referrals to partner

Recommendations of partner

Standard setting through research consortia

Supply chain manager role for supplier partner

Information technology

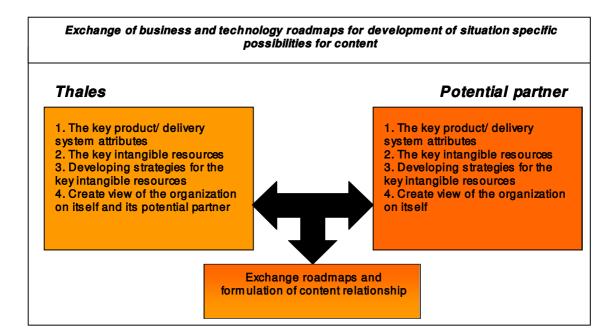


Figure A16.2. Content building block

THALES UNCLASSIFIED

Building block for development

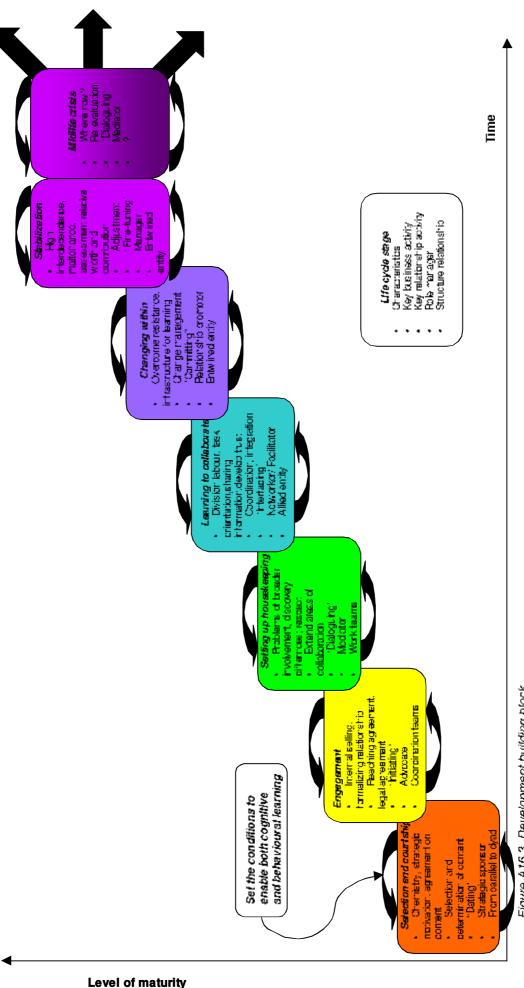


Figure A 16.3. Development building block

THALES UNCLASSIFIED

Building block for support

GSF Top rerragement commiment; Communication: Trust goodwil; Comfict resolution; Dentral Condination

Support

con nearthec squirs initially leads a setting and the control of t Commitment resources; development

cetamine soose nformation exchange; devalos trus; and openness for information Dave opment communications + Ills; sharing; frequent isse to take meatings.

Constructive conflict resolution techniques

Coordination or relationship manager fulfilling different roles in each stage

Person responsible for monitoring the relationship development and leading the ватгіпе ртэсвяв

resources; development Third pary ordessionals draw up Documentation! Commitment good interparsonal and duries; Too Engagement астепет 5 Support

Boundary personnel: Screed, results: Topinar ageneit commitment; Performance Leerning to colleborate implementation and fast CSF: Spoia exchange; 'Resourement

Assign relationship pramuer responsibility analysis of resistance to

measurement Pariorruma Pariorruma

Support:

Support: Pelationship promoters social competence councary axidharige) development responsible for social

Initial project or taskwith quick measurable results to stimulate relationship Jare or mai

relationships petween too

Implement.

DELTA PER

ceriprinarde

resources; development

Correitment

lenostratable popular

Implement performante reasurement/relationship monitoring systems

птотіватіне вувлентв

Commitment resources development good interpersonal relationships aegement dot neewed

Assign relationship promoter responsible for analysis of resistance to change and taptics to едне ары елголим

satisfaction: Pexicilly, occid CSF, Benefit/ risks rating; Shared goals; Performance modernoon?/Performance exchange; Boundary Frest goodwill Stephize for

пападатың соптиян

CSF: Change management; Too

Changing within

Development

Conflict resolution

Support:

Correntinication

Widiile crisis

personnel: Conflict resolution Ralationship manager Support

exchange; develop trust and operness

scope information

skils; determine

communication

Ratonship marager monitors if relationship is still beneits andrisks ara shared ranitors i relationshio is on track to reach shared ir afar manner geon

> chance and factics to evercomo resistance

raetings; ritatiace

a laaming; joint decsion making

sharing; frequent face to face

or information

Constructive

Implement performans measurement/relationship Develop flust to PRINTED SYSTEMS stirmlate flexibility

Relationship promoters social competence boundary memple/eb/egrerbxe responsible for social nessuranert relationship

resolution techniques; usually more conflicts in this stage Dave op rust through Constructive corrlict collaboration and by eulosieo

influencing anacedens of trust

Time

Figure A16.4. Selection building block

Relationship promoters Implement percrimano Initial project or askew quick measurable results to recources: Top managemen resources; secarate or joint Setting up housekeaping Commitment resource commitment; Performance reasonariert relatoristic interpersonal relations hise results; Social exchange imolementation and fast axdiange)deselgonent Establishing requ Detveer top managars neasurement: Speady **Determine which** responsible for social stimulate relationship Prohitoring systems desellapment good crecise definition of rights management commitment rtertage for kerming, joint decision making

• Develop met through collaboration and

ey influencing amacedems of trus:

relationships pewaen top CSF: Similar cultures/value Beneit/risk sharing; Muttal compatibility; Location; Trus Selection and countship stability; Partner resources: Sterad goals: dependence; Recutation; capacility; Manadement Partner capability and

Paragers. goodwill Support:

social compennes boundary

euuosieo

Not applicable