Strategic alliances & culture

the effect of national, corporate and professional culture on R&D alliance success

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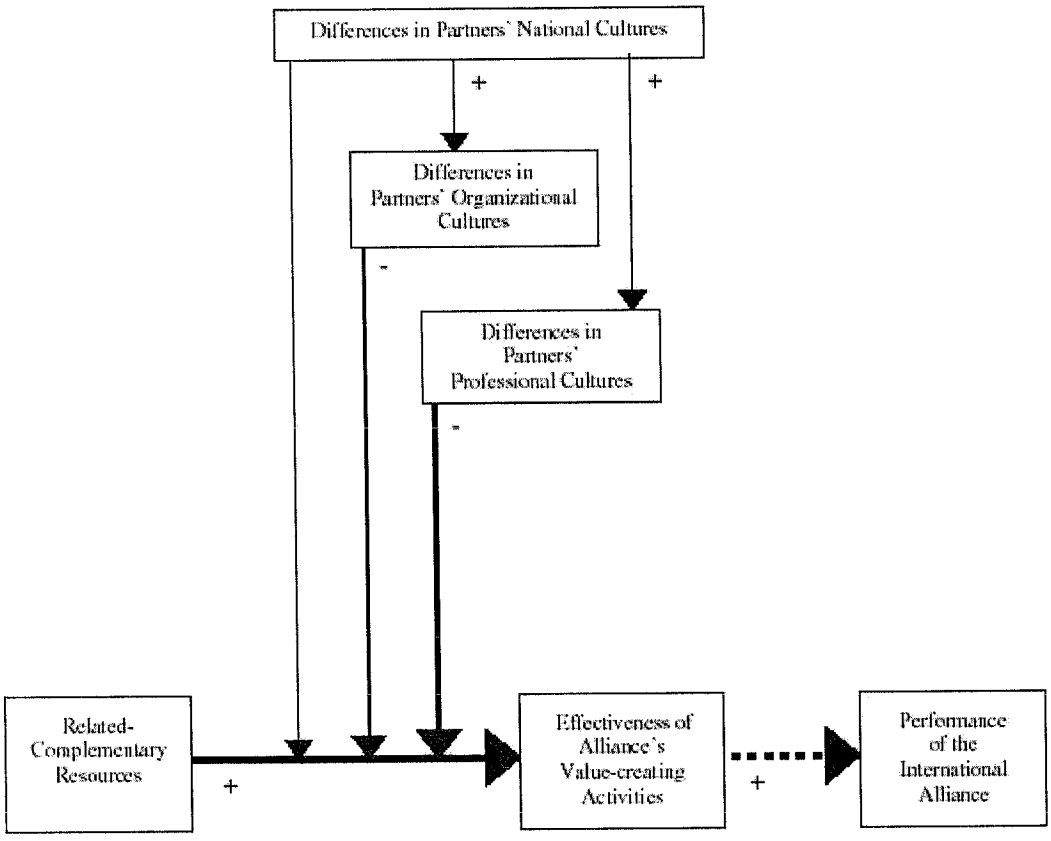
Abstract

The objective of this study is to get an insight into the effects of culture on strategic alliance performance. Culture can be split up into three levels: national culture, corporate culture and professional culture. The central hypothesis is that the fit between the professional cultures of the employees of the participating organizations in a strategic pre-competitive R&D alliance is the most critical cultural factor of alliance success. To study the effects of culture on strategic alliance performance both theoretical and practical sources have been used. In an extensive literature review the influence of the three levels of culture on the success of strategic alliances has been investigated from the theoretical part. A pilot study, using the Delphi Method, has been performed to get a practical view on the influence of the cultural levels on strategic alliance success.

Executive Summary

Strategic R&D alliances are very important nowadays. In these times of open innovation organizations cannot support their R&D activities on their own anymore. Despite the importance of the R&D alliances many of them end in a failure. It is suggested that cultural misfits are an important cause for these failures. In this study the influence of three cultural levels, professional, corporate and national culture, on pre-competitive strategic R&D alliances has been researched. It is important to distinguish these different levels of culture because they have a different impact on strategic alliance performance. The influence of these three levels of culture on strategic alliance performance has been studied through a literature survey and a pilot study. In the literature a model from Sirmon and Lane (2004) (see figure below) was found which suggested that the professional culture is the most important cultural level to determine strategic R&D alliance success. However there was no empirical support for this model. In this study new and better supported model has been developed. The practical importance of this study is that managers need to know to which cultural problems they need to give the first and/or the most attention to in order to solve their problems.



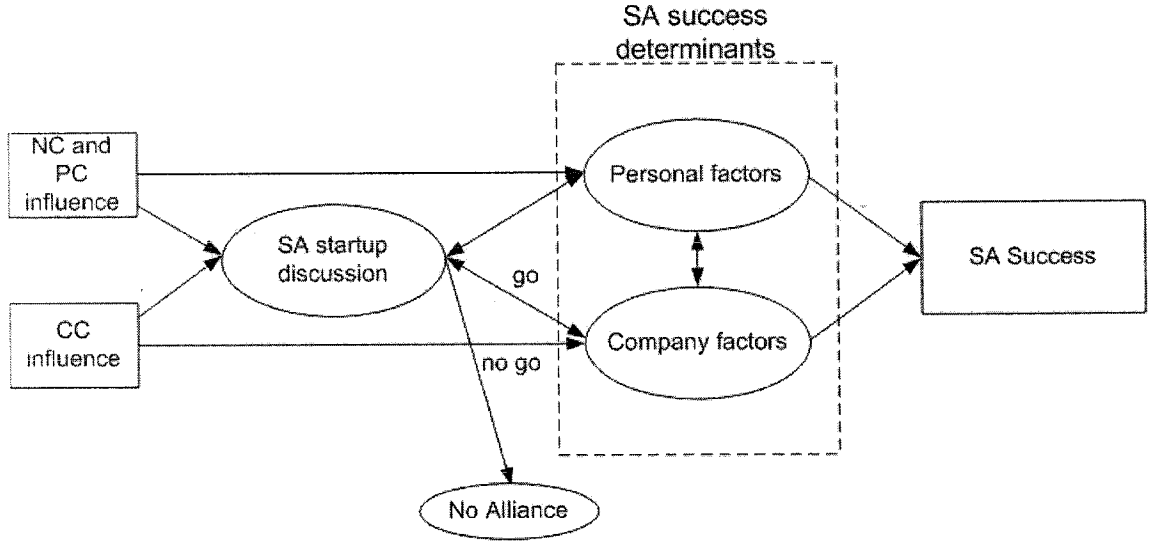
In the literature study of this report strategic alliances and culture have first been described to answer the research questions. There are different models to describe culture because people have a different perception of what culture exactly is. In general national cultures mainly differ in values, corporate cultures differ mainly in practices and professional cultures are in between. In order to be successful in a strategic alliance the organizations need to strive for a cultural fit, while cultural misfits cause several problems in an alliance. A third, but less important, factor is the innovativeness of a culture. Using 6 relevant academic articles in a literature comparison of the three cultural levels it has been suggested that the professional

culture is the most important level of culture. Professional cultures are seen as the most important level of culture because on this level the people work together and they speak the same 'language', furthermore this cultural level is the best predictor for the behaviour of the people. Corporate cultures are less important because people often switch jobs and don't identify themselves with their organization anymore. National cultures are not an important issue during work because people work together on their professional level. Moreover through the globalisation of the world, people travel much more and understand each others national cultures much better, this awareness also reduces national cultural problems.

In the literature study it has been suggested that the professional culture is the most important level of culture in determining strategic alliance performance. To research this in a pre-competitive R&D alliance setting the following hypothesis has been formulated:

> H: The fit between the professional cultures of the employees of the participating organizations in a strategic pre-competitive R&D alliance is the most critical cultural factor of alliance success.

The hypothesis has been researched using a Delphi Study in pre-competitive R&D alliances on the Philips R&D Campus in Eindhoven. The Delphi Study has been done in three rounds; a questionnaire, interviews for further argumentation on the questionnaire and a group discussion to discuss the results of the questionnaire and the interviews. From the data of the questionnaire results it has been empirically proven that the professional and the corporate culture are more important in determining alliance success than the national culture. This outcome confirmed the outcomes of the literature research. National cultures are not seen as a big issue because people are aware of these differences, moreover people communicate on the professional level and this is the same language all over the world. Another outcome from the questionnaire was that the influence of corporate cultural fits are stronger than the influence of corporate cultural misfits. Corporate cultural fits are seen as the main reason to work together in an alliance as it gives advantages like access to new knowledge.



Further support for the hypothesis has been found in a model, which has been developed using statements from the questionnaire and the interviews. The statements have been

discussed in the group discussion which resulted in the model that can be seen above. The model from Sirmon and Lane (2004) only included culture and complementary resources as determinators for alliance success, while this new model includes all the personal and company related alliance performance determinators. Alliance success is directly influenced by personal and company factors while culture has an indirect influence. Complementary resources is only one company factor, company factors also include many other factors like added value and strategic interest. Personal factors are factors like trust, personal relations and mutual understanding. Organizations look for alliance partners using their personal relations. In the strategic alliance start-up discussion the personal factors, company factors as well as the different cultures have an important impact. Based on this discussion organizations decide to start an alliance together or not. Based on this discussion the personal (e.g. trust) and company factors (e.g. strategic interest) can be changed. These personal and company factors are also influenced by the different cultural levels. National and professional cultures mainly influence the personal factors while the company factors are mainly influenced by the corporate cultures. Company factors are mainly hard factors and corporate cultures are mainly about practices. Personal factors are mainly about values and are formed on a personal level. Personal factors are said to determine about 90% of alliance success and the other 10% is determined by the company factors. The importance of the personal factors and the strong influence of the professional culture on the personal factors confirms the importance of the professional culture. Moreover, one of the professionals that validated the Delphi Study stated that from the group discussion at the end of the Delphi Study it was clear that the professional culture was regarded as being the most important level in determining alliance success: *"It was during the statements regarding PC that the participants agreed the most."* It was however also suggested to further research the outcomes in a larger sample and in the context of a specific alliance.

The results from this study show that the professional culture is the most important level of culture in determining alliance success followed by the corporate and the national cultures. Because the professional culture is so important managers should give training to personnel working with people from different professional backgrounds. When people understand each other better and are aware of their differences many problems can be solved (Von Meier, 1999). In the interviews the experts indicated that there are only trainings in the differences on the national cultural level. Furthermore the experts indicated that there are only few problems concerning the national cultural level in strategic alliances. The fact that there are only few national culture related problems could mean that these trainings are effective or that national cultures just aren't a big problem. In further research it should be researched how professional cultural trainings can be effective in reducing professional culture related problems. When these problems can be solved much money can be saved as the failure of these projects can cost millions of euros for the participating organizations.

Preface

This report is a Master's Degree Thesis for the Organization Science and Marketing Group of the Department of Industrial Engineering and Management Science, Faculty of Technology Management, at Eindhoven University of Technology Management. It describes the influence of national, corporate and professional cultures on strategic alliance performance. The research has been done at Eindhoven University of Technology Management and in pre-competitive R&D alliances at the Philips R&D Campus.

My intention to do both academic research combined with doing research in some organizations has resulted in several surprising outcomes. From the start it was thought that cultures have a strong negative influence on alliance performance, but during the research it appeared that cultural fits can have an even stronger positive influence on the performance. Besides these outcomes I also managed to significantly improve a model found in the academic literature and confirm the hypothesis that professional cultural level is more important than national and corporate cultures in determining alliance performance.

I would like to thank my supervisors Prof. Dr. J.M. Ulijn and Ir. E. Meijer, without their expertise and their guidance I could not have come to these results. I also want to thank everybody who participated in the Delphi Study and in particular Lisette Appelo, Eliav Haskal and Boris de Ruyter. I also want to thank Prof. Dr. G. Duysters for his help during the research. Finally I want to thank my friends and my family who have always supported me, without them life would not be so beautiful!

Wim van Ravenswaaij
Eindhoven, April 2007

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List of abbreviations

CC	Corporate Culture
CDI	Confucian Dynamism Index
IJV	International Joint Venture
IND	Individualism (vs. Collectivism)
KSINDEX	Kogut and Singh Index
MAS	Masculinity vs. Femininity
NC	National Culture
PC	Professional Culture
PDI	Power Distance Index
R&D	Research and Development
RQ	Research Question
SA	Strategic Alliance
UAI	Uncertainty Avoidance Index

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Chapter 1

Context of the study

Nowadays there are many organizations competing on the same market. Especially in this era of 'open innovation' organizations need to develop competitive strategies to survive the competition. One of those strategies is to start working together with one or more other organizations. By working together organizations develop a competitive advantage. This is what strategic alliances are about. The importance of strategic alliances is confirmed by the fast growing number of newly established strategic alliances (see Figure 1). These strategic alliances are however not always a success. There are different factors influencing the success of the strategic alliances. This report researches one of the most important success factors of strategic alliances: the cultural fit. Culture is the factor that makes or breaks the relations between the partners in a strategic alliance. In this chapter the research scope will be described, the research questions will be formulated and the practical and scientific relevance of this study will be given. The chapter will conclude with a short overview of this report.

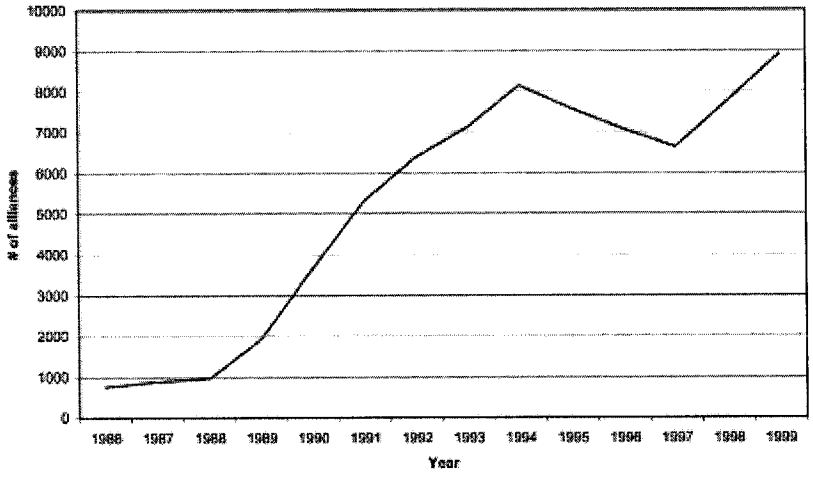


Figure 1: Number of newly established strategic alliances per year (1985–2000), three-year moving averages. (Source: Thomson Financial.)

1.1 Research scope

There are different factors influencing the performance of strategic alliances. In Section 2.2 an overview of the most important failure factors of strategic alliances will be given. Cultural fit is in the literature review suggested as having an important impact on strategic alliance performance. In this study we will research the influence of the cultural fit on the performance of strategic pre-competitive R&D alliances, especially for these activities alliances are very important (more information on pre-competitive R&D alliances can be found in Subsection 2.1.2). Although the cultural fit is a very important factor there is a significant gap in the literature on this, this gap will be described in Subsection 1.3.2. Now the different research levels of culture and strategic alliances will first be described.

1.1.1 Cultural fit research levels

To be able to study the influence of the cultural fit on strategic alliance success, the different levels of cultural fit will be identified first. Cultural fit can be divided into several levels of cultural fit: global culture, national culture, corporate culture and professional (group) culture (Erez et al., 2004). From these levels of culture the global culture will not be part of this study. Global culture is the same for everybody and therefore it does not cause alliance failure, which makes it uninteresting for this study. The other three levels of culture will be described in Chapter 3, and their influence on strategic alliance success will be discussed in Chapter 4. In Figure 2 the three levels of culture can be found in the cause and effect diagram of strategic alliance success (the causes are taken from Duysters and Heimeriks (2003)).

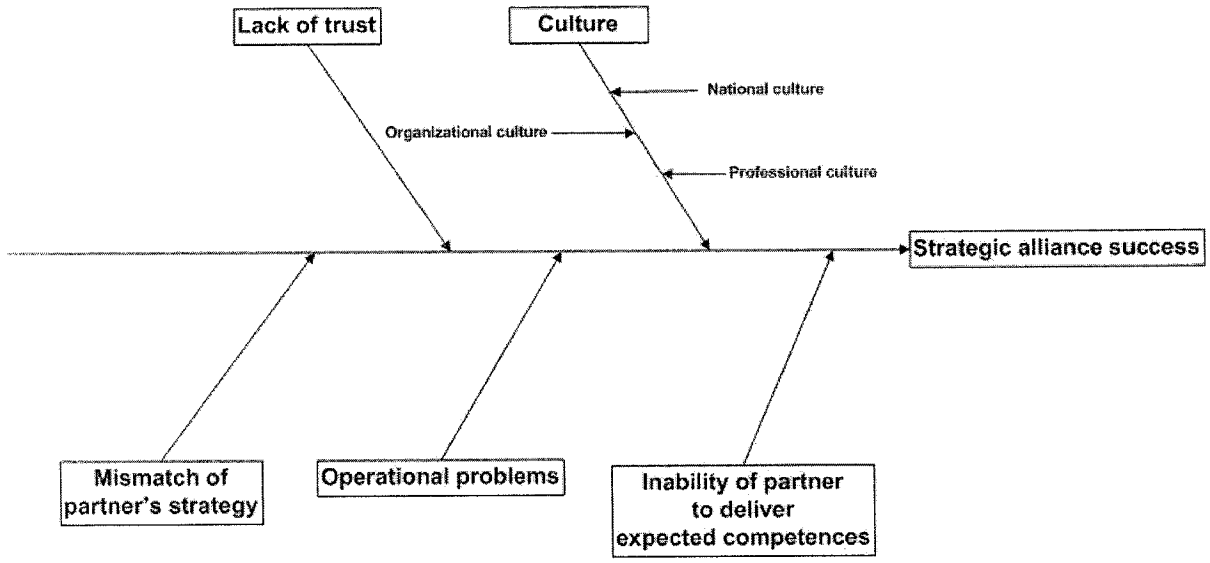


Figure 2: Cause and effect diagram of strategic alliance success factors

1.1.2 Strategic alliance research levels

Just like culture, strategic alliances can also be studied at several levels. Many scholars have researched strategic alliances and the factors that affect their success and failure. Their research has resulted in many success and failure factors (see for some of these factors Section 2.2), but no solution to solve the high failure rates has been found. The research on strategic alliances can be divided into three levels of research: (1) dyadic, (2) firm-level and (3) network-level (see Figure 3).

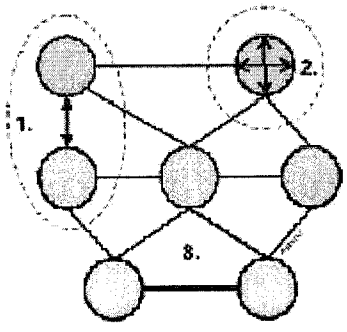


Figure 3: Three levels of alliance management. Source: Duysters et al. (2003)

These three levels represent different groups of problems that occur in the strategic alliances. Scholars have found different solutions to cope with these problems. In this study the focus will be on the dyadic level, but the other levels will also be shortly described below.

Dyadic level:
On the first level, the dyadic level, fit is the main problem. Fit is primarily about the question whether successful cooperation is possible, given the strategic background, objectives and organizational characteristics of the potential partners. Ulijn et al. (2003) call fit a matter of compatibility, complementarity and harmony implying common, similar and completely different elements that are needed to empower each other. For a strategic alliance this means that the participating organizations should not be exactly the same but compatible and complementary.

Douma et al. (2000) identified five forms of fit (the sixth form is from Sadowski et al. (2005):

1. *Strategic fit:* the partners' strategies and objectives are mutually dependent and compatible, and the alliance is of strategic importance to the partners' competitive position
2. *Organizational fit*: this does not mean the same as organizational equality. The organizations need to address the organizational differences and provide strategic and organizational flexibility
3. *Operational fit:* the mutual alignment of business processes and activities in which there is cooperation
4. *Human fit:* the mutual trust between the persons involved in the alliance
5. *Cultural fit:* the individual corporate cultures of the partners
6. *Technological fit:* technological fit defines the level of compatibility between the knowledge bases of cooperating partners in a strategic alliance

Concerning the cultural fit Douma (2000) only distinguished the corporate culture here, however there are more cultural levels, these cultural levels will be described in Chapter 3. As already indicated above only the influence of the cultural fit will be the subject of research in this study. According to Lajara et al. (2003) small cultural differences make it difficult to create synergies which ultimately end up in poor financial performance, this will further be discussed in Chapter 3. In Figure 4 the six forms of fit and their influence on alliance success is visualised. In this figure technological fit is in the top of the figure because this is a fit visible to the human eye. Culture is on the bottom of the figure because this is not as visible to the human eye.

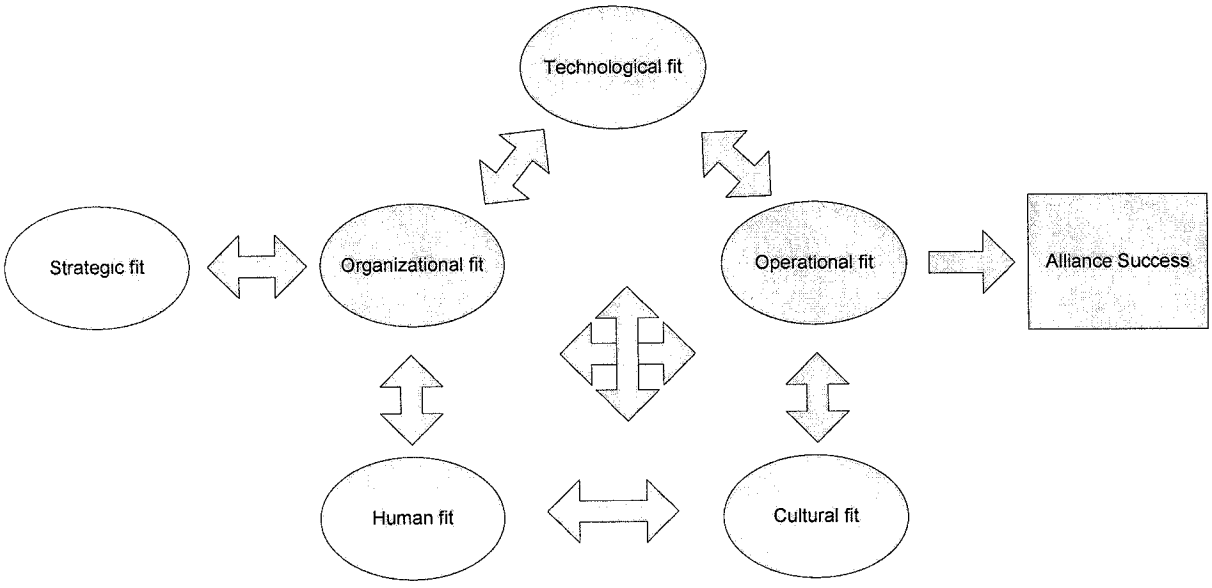


Figure 4: Generic fit framework. Adapted from: Douma et al. (2000)

Firm level:
On the second level, the firm-level, the literature has focused on alliance capabilities. According to Sadowski et al. (2005) alliance capabilities significantly increase alliance success, they defined alliance capabilities as "a set of organizational mechanisms that are used by partnering firms to develop a set of routines for managing alliances". Examples of alliance capabilities are cultural trainings, individual skills, the availability of an alliance specialist or even an entire alliance department.

Network level:
On the third level, the network-level, the focus is on the entire alliance network. Nowadays not only individual companies are competing with each other but also entire networks of alliances are competing with each other. On this level organizations have to pay attention to network positioning, which can give them a major source of competitive advantage.

In this section the research scope has been described. The subject of this study could be divided into two parts: culture and strategic alliances. These two parts can be researched on several levels. Culture will be studied on the national, corporate and professional level. The cultural fit will be studied on the dyadic level. In short we will research the influence of the national, corporate and professional culture on pre-competitive strategic R&D alliance success on the dyadic level. In Subsection 2.1.2 pre-competitive R&D alliances will be further described. Since the scope of this study has been described now, the research questions will now be described, this is covered in the next section.

1.2 Research questions

The strategic alliance literature has mentioned cultural fit as one of the most important strategic alliance success factors. In Subsection 1.1.1 several levels of cultural fit have been identified: the national, the corporate and the professional level. In most of the literature studies on strategic alliances and culture these levels of cultural fit have been studied separately from each other. There are only a few studies on strategic alliances and culture in which all the three levels of cultural fit have been identified. In this study the influence of the three levels of cultural fit on strategic alliance performance will be researched at the same time to be able to identify the relative importance of these three levels of cultural fit. In order to research this, the following research questions will be discussed first:

RQ 1 *What are strategic alliances (a) and what factors influence their success (b)?*
RQ 2 *What are national cultures, corporate cultures and professional cultures?*
RQ 3 *What is the possible influence of the three levels of culture on the success and failure of strategic alliances?*

These research questions will be discussed in the following chapters. RQ 1 will be discussed in Chapter 2, RQ 2 will be discussed in Chapter 3, and RQ 3 will be discussed in Chapter 4. In Chapter 5 a research hypothesis will be formulated which will be researched using a pilot study (Chapter 6).

1.3 Practical and scientific relevance

In this section the practical and the scientific relevance of this study will be discussed. As can be seen in Figure 5, theory and practice will be the inputs as well as the outputs of this study. In the next two subsections the practical and the theoretical relevance will be discussed.

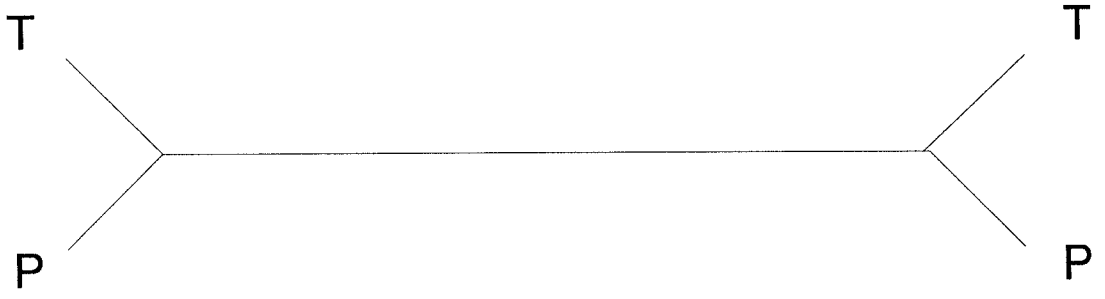


Figure 5: Theory and practice as input and output of the study

1.3.1 Practical relevance

In this study the cultural reasons of alliance failure will be researched. According to Kauser & Shaw (2004) between 30% and 70% of all strategic alliances fail. However, Duysters et al. (1999) concluded after an extensive literature review that the alliance failure rate is about 50-60%. All these alliance failures cause a lot of problems for the participating organizations, especially in financial terms. Managers of the organizations want to know what the causes of

strategic alliance failure are, and how to solve these problems. In several studies a lack of cultural fit was mentioned as a very important failure factor. In this study the cultural fit will be researched on three levels; national culture, corporate culture and professional culture. The influence of these cultural levels on strategic alliance success and failure will be identified and following this one of these levels will be identified as having the most influence on strategic alliance success.

To increase the performance of the strategic alliance in an effective and efficient way managers need to know to which problems they need to give the most or the first attention to. Knowing which cultural level has the most influence on strategic alliance success, managers can address the most and/or the first attention to problems occurring on that cultural level. For example, if the national culture is the most important cause of strategic alliance failure, the personnel should be trained to cope with the national cultural differences they face during their work. Corporate cultural differences are usually in 'the way things are done' in the organizations. These differences should be made clear to the personnel and probably these differences should even be adjusted to make cooperation possible. Professional cultural differences often occur because people from different professions look at a problem from different points of view. One way to decrease problems with professional cultural differences is also by giving trainings to the personnel in order to cope with these differences. By training this, people from different professional backgrounds can better understand the different points of view from people of other professional backgrounds on the same problem.

1.3.2 Scientific relevance

Much research has been done on strategic alliances, and scholars have concluded that cultural fit is a very important cause of strategic alliance failure. Although many scholars have agreed on the importance of a cultural fit only a few scholars have actually studied the impact of all the three levels of culture on strategic alliance performance. Most of these scholars have only studied one level of cultural fit on strategic alliance performance. From the three cultural levels national culture has most often been the subject of research while professional culture has almost been ignored. Sirmon and Lane (2004) came to the same conclusion and brought the three levels of culture together in one theoretic article. Sirmon and Lane have studied the influence of all the three levels of cultural fit based on a literature research (for a summary of their article see Appendix 4). The result of their research consisted of 6 propositions, these propositions were put into a model which described the relative influence of the three cultural levels on strategic alliance performance. Sirmon and Lane concluded in their article that the model still needed empirical testing.

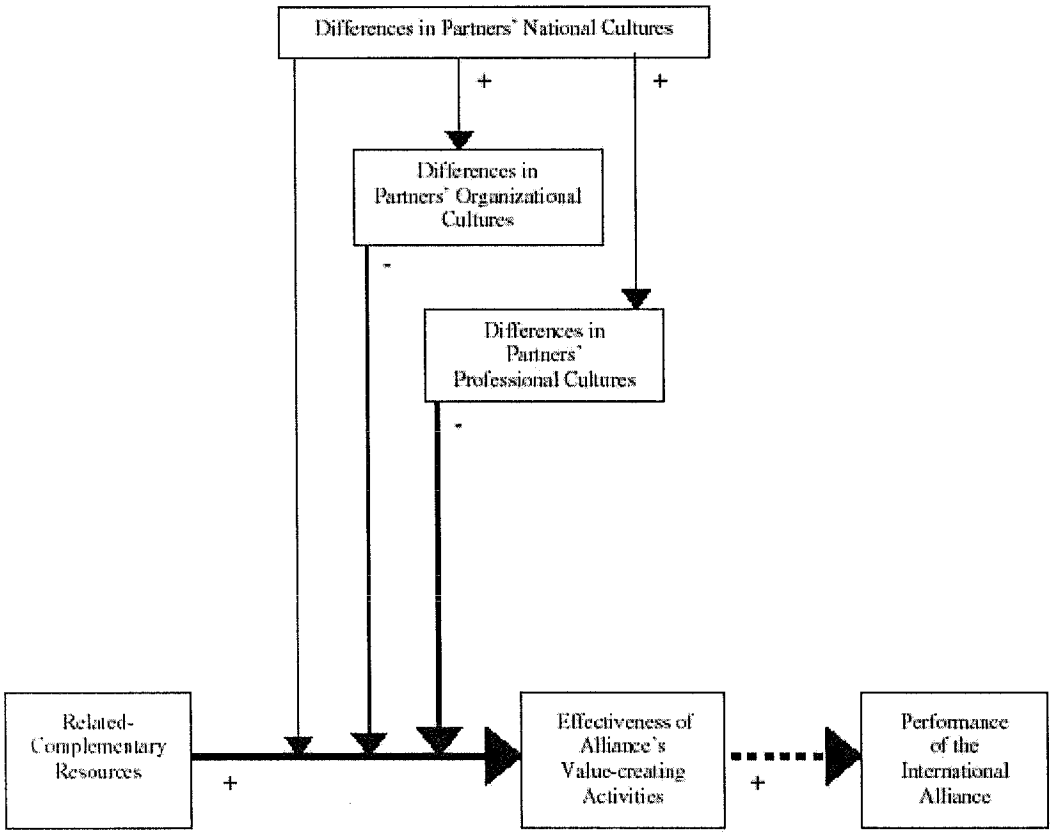


Figure 6: A model of cultural differences and international alliance performance. Source: Sirmon and Lane (2004)

In this research a pilot study will be done using the Delphi Method in which the influence of the three levels of cultural fit on strategic alliance performance will be investigated. In this pilot study not only the negative influence of cultural misfits but also the possible positive influence of a cultural fit will be taken into account. In the literature these positive effects have hardly been taken into account. Therefore this study will contribute to the actual literature by investigating the relative influence of the three cultural levels at the same time, while also taking the positive influence of a cultural fit into account. Moreover the pilot study will be done using the Delphi Method, this method has not been used before in this field of research but is an excellent method for it (see Section 5.2). Having discussed both the practical as well as the theoretical importance of this study the next section will give an overview of this report.

1.4 Research overview of this report

The structure of this report follows the research questions that have been formulated in Section 1.2. The first research question deals with what strategic alliances exactly are and what influences their performance (RQ1), this will be discussed in Chapter 2. In Chapter 3 the three levels of culture will be described (RQ 2). In Chapter 4 the influence of the three levels of cultural fit on strategic alliance success and failure will be described (RQ3). In Chapter 5 a research hypothesis will be formulated based on the literature research. The hypothesis will be researched using a pilot study, this pilot study will be described in Chapter 6. Chapter 7 will finally cover the conclusions of this study as well as the recommendations for further research. In Figure 7 the overview of this report is visualised.

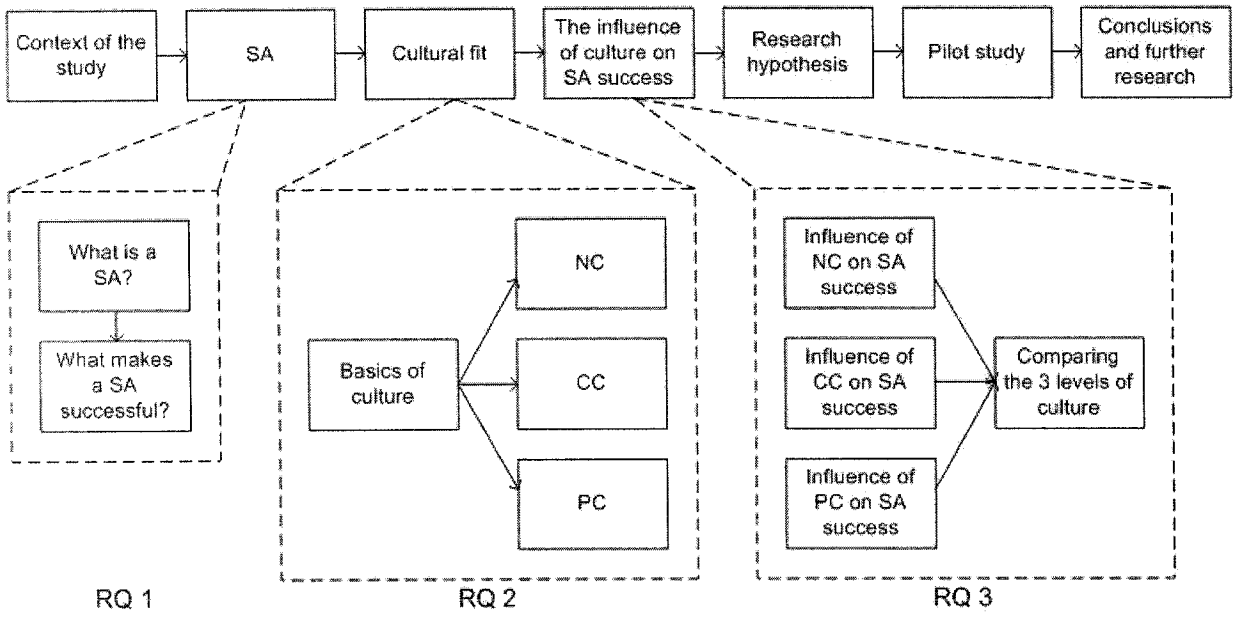
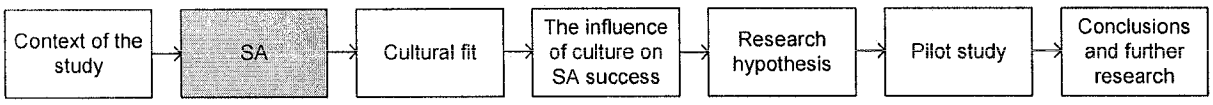


Figure 7: Overview of the structure of this report

Chapter 2

Strategic alliances (RQ 1)

In this chapter strategic alliances will be defined, because there is not one commonly used definition for strategic alliances in the strategic alliance literature. After having defined strategic alliances the success of strategic alliances will be discussed. An overview of strategic alliance failure factors will be used to indicate the importance of a cultural fit. Finally strategic alliance success will be defined, as many scholars have used different measures for strategic alliance success.



2.1 What is a strategic alliance? (RQ 1a)

Scholars wrote many articles about strategic alliances, however most of these scholars forgot to give a clear definition of what strategic alliances exactly are, or what they think strategic alliances are. Some scholars did give a definition but most definitions in the literature are different from each other. The strategic alliance definitions used by several scholars are based on different strategic alliance criteria. In Table 1 an overview of these criteria can be found. As can be seen in Table 1 many criteria could be found to define strategic alliances. Some of these criteria were mentioned more often than other criteria, in the table the criteria are arranged from most to least mentioned. One criterion was mentioned by all the reviewed scholars; a strategic alliance should be between two or more organizations. Other criteria were mentioned by one or more scholars. There can be several reasons why some criteria were not mentioned by all the scholars. Some criteria were not mentioned because they were not considered as important criteria, or the scholars had a different opinion on what a strategic alliance exactly is, or because they simply forgot to mention it.

Author / Criteria	Duysters et al. (2002)	Gomes-Casseres (1996)	Gulati (1998)	Ireland (2002)	Mohr et al. (1994)	Nueno (1999)	Todeva et al. (2005)	Tsang (1998)
Two or more organizations	X	X	X	X	X	X	X	X
Products, services. knowledge and technologies are exchanged, shared, or commonly developed	X		X	X		X	X	
Accomplish common and individual goals	X				X			X
Voluntary, evolutionary and flexible organization forms	X	X	X					
Conservation of the own identity	X	X						
Independent organizations					X			X
Acknowledge a high level of mutual dependence					X			
Improve competitive position				X				
Incomplete contract		X						
Not preventing competition						X		
Long-term arrangement								X
Remain legally independent							X	

Key of the table: from many to few number of times mentioned

Table 1: Strategic alliances criteria

Below the criteria from Table 1 will be evaluated in order to come to a new and better definition for strategic alliances:

- *Two or more organizations:* this is a very obvious criterion, a strategic alliance is impossible without having at least two organizations participating in it.

- *Products, services and technologies are exchanged, shared, or commonly developed*: in order to accomplish the common and the individual goals of the organizations they need to work together. Depending on the goal of the organizations to enter the strategic alliance their goal can be accomplished by exchanging, sharing, and/or developing products, services and technologies.

- *Accomplish common and individual goals:* there has to be a reason or a benefit why organizations participate in a strategic alliance, these reasons or benefits can be divided into common and individual goals.

- *Voluntary, evolutionary and flexible organization forms:* a strategic alliance is voluntarily entered by all organizations, no literature can be found that does not agree on this. If an alliance was not entered voluntary by an organization the alliance will not be a success either. An alliance that is not voluntarily entered by an organization lacks a common goal and no voluntary exchanging of products, services and technology will take place. A strategic alliance does not need to be evolutionary however, it is not a necessary criterion for a strategic alliance and it is not often mentioned in the literature.

Flexibility is characteristic to strategic alliances, this can also be seen in the fact that strategic alliances typically are open-ended and contain gaps in this way they can deal with unforeseen circumstances (Gomes-Casseres, 1996)

- *Conservation of the own identity:* some authors suggested that an organization entering a strategic alliance has to keep its own identity, there is however no consensus about this in the literature. It is included in the working definition because we want to research the influence of the cultural fit on the success of strategic alliances and if a company does not keep its own identity and takes over the same culture as the other organizations in the strategic alliance the difference in cultural fit cannot be researched anymore.

- *Independent organizations:* this is a necessary criterion for a strategic alliance, because if the participating organizations don't stay independent they form a merger or an acquisition (see Subsection 2.1.1).

- *Acknowledge a high level of mutual dependence:* this criterion is not so good, because the participating organizations have to be independent firms and the mutual dependence should not be too high (see also the "independent organizations" and the "remain legally independent" criteria).

- *Improve competitive position:* although this is mentioned as a separate criterion, it will likely be part of most common and individual goals of the organizations (see also the "not preventing competition" criterion).

- *Incomplete contract:* incomplete contracts are more like a characteristic of strategic alliances than a necessary criterion, therefore it won't be part of the working definition.

- *Not preventing competition:* when competing companies enter a strategic alliance together this will result in less competition. This difference in competition is however hard to measure. This criterion is not often mentioned in the literature and won't be part of the working definition either.

- *Long-term arrangement:* a few scholars argued that a strategic alliance has to be a long-term arrangement. Most companies will enter a strategic alliance with a long term arrangement, however most strategic alliances don't survive such a long period and there can also be several reasons for companies to enter a strategic alliance only for a short period.

- *Remain legally independent:* the organizations in the strategic alliance need to stay separate independent organizations, so they also need to be legally independent. This criterion is related to the "independent organizations" criterion, it won't be part of the working definition because there are several of such secondary criteria.

Based on this evaluation, a strategic alliance working definition to be used in this study can be formulated:

Strategic alliances are voluntary and flexible organization forms between two or more independent organizations to accomplish common and individual goals by exchanging, sharing and commonly developing products, services and technologies while keeping their own identity.

This definition implies that some modes of cooperation between organizations will not be considered to be strategic alliances and will therefore not be a part of this study. In Subsection 2.1.1 these different modes of cooperation will be discussed and it will be indicated which forms of cooperation will be included and which ones will be excluded in this study.

2.1.1 Strategic alliance classifications

Organizations cooperate for different reasons, this has caused that different forms of cooperation have been developed. Todeva et al. (2005) made a classification of 13 forms of interorganizational relations. These relations vary from hierarchical relations (high level of integration) to market relations (low level of integration) (see Figure 8). (An entire overview of the descriptions of these forms can be found in Appendix 1). Not all of these 13 interorganizational relations are forms of strategic alliances. The first relation; mergers and acquisitions (in Figure 8 referred to as hierarchical relations) are not considered to be strategic alliances. Some scholars have argued that joint ventures aren't strategic alliances either, they argued that in a joint venture a new corporate entity is formed (Callahan et al., 1999). Although joint ventures were not considered to be strategic alliances by some scholars, cultural problems occur in joint ventures in the same way as in strategic alliances. In this study the literature on the effects of culture on joint ventures will therefore also be included. The alliances from the pilot study can be placed under relation 5 in Figure 8, in these alliances several organizations share their R&D activities.

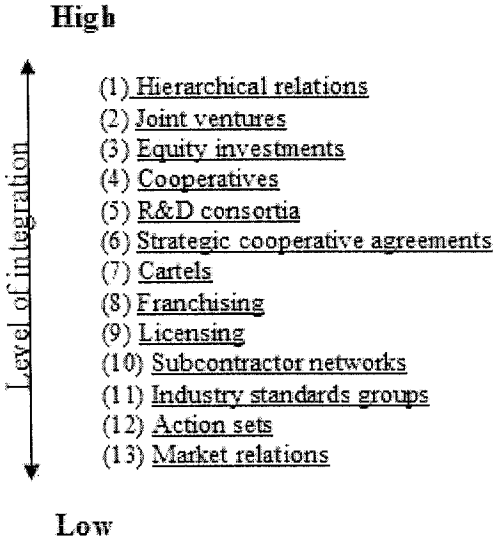


Figure 8: Interorganizational relations. Source: Todeva et al. (2005)

Besides the classification of interorganizational relations in Figure 8 strategic alliances can also be classified according to the type of business relation the organizations in the strategic alliances have. This relation is determined by the supply chain the organizations are participating in. In this classification two main types can be identified: horizontal and vertical alliances. Horizontal alliances are alliances between competing organizations. Vertical alliances are alliances between an organization and a customer or a supplier. A third type is a strategic alliance between two organizations in different supply chains that are not competing with each other, this relation is called a diagonal strategic alliance. In the alliances from the pilot study the organizations have several different relations with each other related to their supply chains. Besides these classifications alliances can also be differentiated on the

different activities the alliances develop and the competitive phase the alliances are in. One of these activities is R&D. In the next subsection pre-competitive R&D alliances will be further described because they will be the focus of the pilot study in Chapter 6.

2.1.2 Pre-competitive R&D alliances

The alliances researched in the pilot study in this report (see Chapter 6) are pre-competitive R&D alliances, therefore these particular forms of alliances will now be further discussed here. With R&D is meant the standard research and development activity devoted to increasing scientific or technical knowledge and the application of that knowledge to the creation of new and improved products and processes (Hagedoorn, 2002). Much of the knowledge generated by R&D is tacit knowledge (Quintas et al., 1995). Tacit knowledge is knowledge that cannot be written down in handbooks but it is in the minds of the personnel and embedded in the organizational and social processes (Watkins, 1995). Strategic alliances can facilitate in sharing and developing this knowledge. Strategic alliances have also proven to increase the innovativeness of firms (De Man et al., 2005), however there are several other motives why organizations enter strategic R&D alliances, these motives will be discussed in Appendix 2.

R&D projects can be classified into two types of technological outcome: projects leading to pre-competitive results and projects leading to marketable outcomes (Shapiro, 1985). Teichert (1993) found that R&D cooperation is suitable for both pre-competitive research as well as for achieving marketable products. Pre-competitive R&D is the R&D which is distanced from the market, being focused on 'generic' or 'enabling' technologies rather than the development of final-use products targeted on specific markets (Quintas & Guy, 1995). With 'enabling' technologies they meant process technologies like techniques, tools, methods and equipment which enable a multiplicity of product markets to be satisfied downstream. Rothaermel and Deeds (2004) called pre-competitive research alliances exploration alliances. Alliances after the product development phase are called exploitation alliances (see Figure 9). In exploration R&D alliances the focus is on the 'R' and in exploitation alliances the focus is on the 'D'. As can be seen from Figure 9 the alliances from the pilot study can be placed in the first box, here called exploration alliances.

Figure 9: Exploitation and Exploration Alliances. Adapted from: Rothaermel and Deeds (2004)

In this section strategic alliances have been defined as ; "*Strategic alliances are voluntary and flexible organization forms between two or more independent organizations to accomplish common and individual goals by exchanging, sharing and commonly developing products, services and technologies while keeping their own identity.*" The alliances from the pilot study can best be placed under the relation R&D consortia. The alliances are from the pre-competitive form. Especially for these types of activities interorganizational cooperation is very important. Since the type of alliance researched in the pilot study has now been discussed, we need to know how we can measure their performance, because we want to know how culture influences their performance. In Section 2.2 strategic alliance success will therefore be discussed.

2.2 What makes a strategic alliance successful? (RQ 1b)

Although strategic alliances can give a good competitive advantage, many strategic alliances have failed. In the literature several failure rates were mentioned, Kauser & Shaw (2004) mentioned a fail rate between 30% and 70%. Other authors are more precise, Duysters et al. (1999) found after an extensive literature review a failure rate between 50-60%, this is between a pessimistic and an optimistic view. Because of this high fail rate the question rises; "*What makes a strategic alliance successful?*" There are many factors influencing the success of strategic alliances. Duysters et al. (1999) give an overview of the reasons of strategic alliance failure mentioned in the literature (see Table 2). In this table the personal related and the corporate related factors are split up, because culture has a strong influence on personal factors like partnership, trust and commitment. By adding these personal related factors up we can see that 14 out of the 16 scholars (see the row total in Table 2) suggested these culture related factors are an important reason for alliance failure.

Author / **Reasons for failure**	Adarkar	Beamish & Delios	Bleeke & Ernst	Brouthers et al.	Chevallier	Dacin & Hitt	Douma	Kanter	Khanna et al.	Lorange & Roos	Maljers	Medcof	Niederkofler	Schuler et al.	Stafford	Wildeman & Kok
Culture related factors:																
-Partner/partnership					X	X		X				X		X		X
-Strong-weak/weak-weak partner	X		X				X			X	X				X	
-Culture (nationality/corporate)											X		X		X	X
-Trust					X						X		X			X
-Love at first sight								X			X				X	X
-Personnel				X	X								X	X		
-Commitment								X		X				X		X
Total:	**X**		**X**	**X**	**X**	**X**	**X**	**X**		**X**	**X**	**X**	**X**	**X**	**X**	**X**
Other factors:																
-Goals/strategy		X			X		X			X	X		X		X	X
-Geographic /operational overlap			X			X					X					X
-Expectations/time pressure						X							X		X	
-Alliance evolution (no recognition)			X						X				X			X
-Incentives (asymetric)					X				X	X						
-Complexity							X									
-Learning aspects (uneven)										X						

Key of the table: from many to little number of times mentioned by scholars, and culture related or not culture related

Table 2: Reasons for strategic alliance failure. Adapted from: Duysters et al. (1999)

In later work by Duysters and Heimeriks (2003) cultural fit was mentioned as being one of the five most important reasons for alliance failure (see Figure 10). Other important reasons for alliance failure which were mentioned are; lack of trust, operational problems, the inability of a partner to deliver the expected competences and a mismatch of the partner's strategy. Interesting here is that a mismatch in the partner's culture can be the cause of several of the other reasons of alliance failure as already indicated in Table 2. A mismatch in the partner's culture can be the cause that partners do not understand each others actions, which can result in a decline of the trust in each other. A misunderstanding of the partner's culture can even cause the organizations to develop different strategies that do not match, for example through a different perception of a problem in the alliance (see also Section 3.1 for more about perceptions). The inability of the partner to deliver the expected competences can also be related to cultural factors, by having a different perception on the competences of the partner this can later result into problems in the alliance. Based on this information from Table 2 and Figure 10 it can be concluded that cultural fit should be considered a very important factor for strategic alliance performance (more information about cultural fits can be found in Chapter 3).

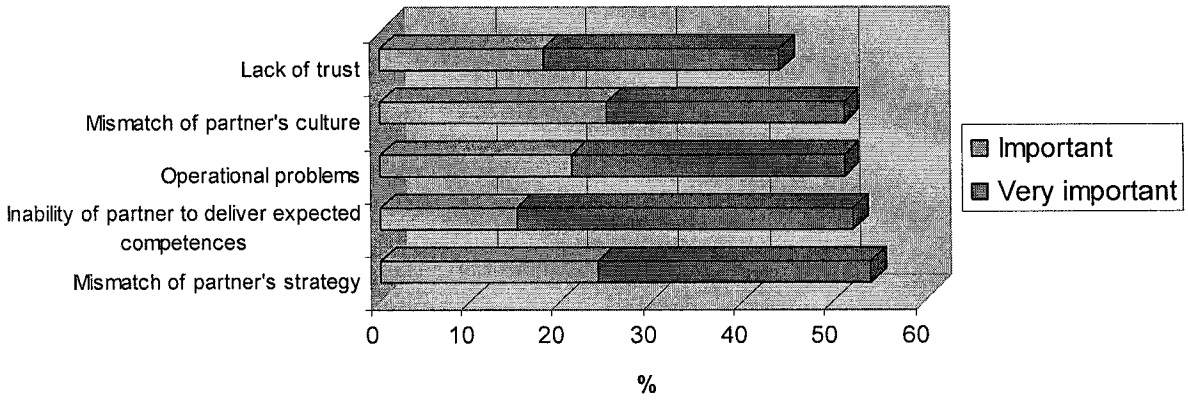


Figure 10: Top 5 reasons of alliance failure. Source: Duysters and Heimeriks (2003)

We know now that a cultural fit is very important in determining strategic alliance success, what has however not been described yet is what strategic alliance success exactly is. Some of the measures of alliance performance that have been used in the literature are; financial measures like profitability, alliance duration and survival, goal achievement and management judgements. On the first sight alliance survival seems to be a good measure of alliance success. Alliance survival can however not be a good metric because an alliance termination can mean that the goals of the participating organizations are achieved, whereas ongoing alliances can be very unsuccessful. This is confirmed in a comprehensive study by Harrigan (1988). Harrigan (1988) researched 895 alliances as to whether they were still operational and whether the alliances were viewed as successful. From these alliances 45% was still operational and 40% of them were not considered successful. From the other 55%, 30% was still considered to be successful although they were terminated. As can be seen from this it is not clear what strategic alliance success is, therefore the final part of this section will deal with the question; *"What is strategic R&D alliance success?"*

Although many scholars wrote about the failure of strategic alliances, there are no guidelines or metrics to measure strategic alliance performance. According to Gulati (1998) the study of how to measure the performance of alliances has received less attention than other areas because of some onerous research obstacles, which include measuring alliance performance and the logistical challenges of collecting the rich data necessary to assess these issues. Kauser and Shaw (2004) also concluded after a literature review that there is no single adequate measure of alliance success. It is very difficult to measure alliance success because all the alliances differ in their value-creating activities. In this study the focus is on R&D alliances and although there are many motives to enter a strategic R&D alliance (see Appendix 2) the *raison d'être* for R&D alliances is to enhance the innovativeness of the organization (e.g. Grimaldi and Tunzelmann, 2002). For example if a strategic R&D alliance is very innovative, other factors like the satisfaction of the relationship and the financial performance are less relevant. Furthermore, an R&D alliance cannot be financially successful if it is not innovative as the organization will lose their market share when they are not innovative. Therefore the measure of success for an R&D alliance will be defined as follows:

A strategic R&D alliance is considered to be successful for a participating organization when it improves the innovativeness of the participating organization.

This working definition is from the viewpoint of one organization. Alliance performance can however be asymmetric, which means that an alliance can be successful for one of the organizations while it is not successful for another organization in the alliance. Organizations often go into an alliance together with different goals, therefore it is necessary to look at alliance success for each organization separately.

2.3 Chapter conclusion

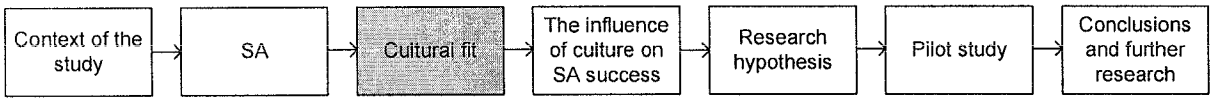
This chapter addressed the first research question: *"What are strategic alliances and what factors influence their success?"* In the literature on strategic alliances not one commonly accepted definition for strategic alliances could be found. By using and evaluating different strategic alliance definition criteria from the literature a new definition was formulated: *Strategic alliances are voluntary and flexible organization forms between two or more independent organizations to accomplish common and individual goals by exchanging, sharing and commonly developing products, services and technologies while keeping their own identity.* In order to further describe the alliances researched in the pilot study (see Chapter 6) different classifications of interorganizational cooperation were presented. The alliances researched in the pilot study are pre-competitive R&D alliances which can best be described with the relation R&D consortia.

From two different articles which researched strategic alliance failure factors it has been concluded in Section 2.2 that cultural fit is one of the most important factors in determining strategic alliance success. In the strategic alliance literature however no strict definitions were used to measure the success of alliances. As this study is about pre-competitive R&D alliances and the *raison d'être* for R&D alliances is to be innovative, the success of these alliances has been defined in Section 2.2 as: *A strategic R&D alliance is considered to be successful for a participating organization when it improves the innovativeness of the participating organization.* Since we know now what strategic alliances are, and that cultural fit is important in determining alliance success, cultural fit will further be described in the Chapter 3. When the cultural fit is further described the influence of the three cultural levels on strategic alliances will be discussed in Chapter 4.

Chapter 3

Cultural fit (RQ 2)

As has been mentioned in Section 2.2 cultural fit is one of the main reasons for strategic alliance failure. At the other end, when a good cultural fit happens, a psychological bond is formed that is not easily broken (Ashforth and Mael, 1989). Culture is a multi-level phenomenon and therefore it has to be studied at several levels. In this chapter culture will be defined, separated and described in three different cultural levels: national, corporate and professional culture. These three cultural levels explain the success and failure of strategic R&D alliances caused by cultural fits or misfits.



3.1 The basics of culture

Many scholars studied culture, however they did not come to a single cultural definition that explains it all. Some authors have even stated that culture will never be completely understood, and if it would there would be no cultural problems anymore. Kroeber and Kluckhohn (1963) already reported 164 culture definitions, coming from different disciplines like anthropology, linguistics and psychology. Since 1963 many more definitions can be found in the literature, of which the one by Hofstede (1980) is the most widely used. Hofstede defined culture as "*the collective programming of the mind, which distinguishes one group or category of people from another*". This definition is widely accepted in the literature and is therefore used in this study. According to Ulijn and Kumar (2000) Hofstede is one of the first to adopt an engineering problem-solving approach in trying to use a sound social science methodology. Hofstede's definition implies that culture is something shared by at least 2 persons as it is seen as a collective feature and not as an individual feature. Culture is to a human collectivity what personality is to an individual (Hofstede, 1980).

To understand culture, the different ways in which a culture manifests itself will be discussed first. Culture manifests itself in artifacts and products, norms and values, attitudes, perceptions and basic assumptions (Groen, Ulijn and Fayolle, 2006). These different layers of culture can be visualised in an onion model (see Figure 11). From these layers the artifacts and products are the visible part and the norms and values, attitudes, perceptions and basic assumptions are the invisible part. When studying culture it has to be taken into account that only a part of culture is visible to the human eye. Perceptions are an important part of the onion model. When people study culture they look at it from their perception, this can result into different opinions on matters. A different perception of a problem by two organizations in an alliance can for example lead to a different strategy that the organizations want to follow. Another example is the studying of culture itself. Because people have a different perception of culture they can also develop different models of it, a good example is the discussion on national cultural models which can be found in Section 3.2. It has to be taken into account that cultural matters are always studied from a certain perception and therefore

there can be different opinions on a cultural matter which can both be right. Cullen et al. (1995) give an example of how a different perception of partners can lead to problems; in a joint venture between U.S. and Japanese partners the level of commitment was related to the perceived benefits, the partners differed however in their perception of satisfaction. The Japanese partners perceived long-term organizational performance as an indicator of satisfaction and emphasized the nature of relationships as an important factor for commitment, while the U.S. partners were concerned with more immediate results.

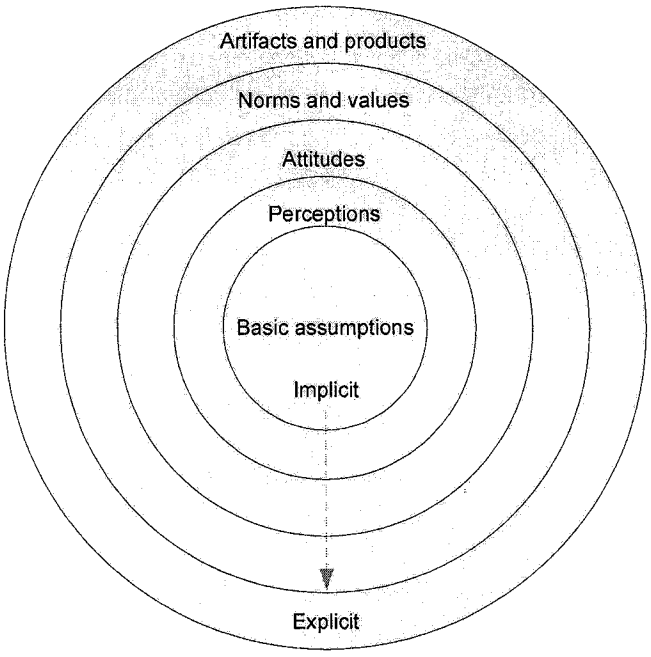


Figure 11: Onion model. Adapted from: Groen, Ulijn and Fayolle (2006)

An alternative onion model is the one by Hofstede et al. (1990), in this model values are in the middle of the onion, and rituals, heroes and symbols are on top of it. These last three layers are called practices and they are the visible part of a culture. Hofstede (1980) defined values as "a broad tendency to prefer certain states of affairs over others". After a literature review Schwartz and Bilsky (1987) came with a different definition that consists of five features: values are (a) concepts or beliefs, (b) about desirable end states or behaviours, (c) that transcend specific situations, (d) guide selection or evaluation of behaviour and events, and (e) are ordered by relative importance. According to Hofstede values are programmed early in our lives and are therefore non-rational (p. 19), he calls values the building blocks of culture (p. 25). As values are acquired early in life through the family and the neighbourhood and later through school, practices are learned later through socialization at the workplace. Values are hard to change but practices can be altered (Karahanna et al., 2005).

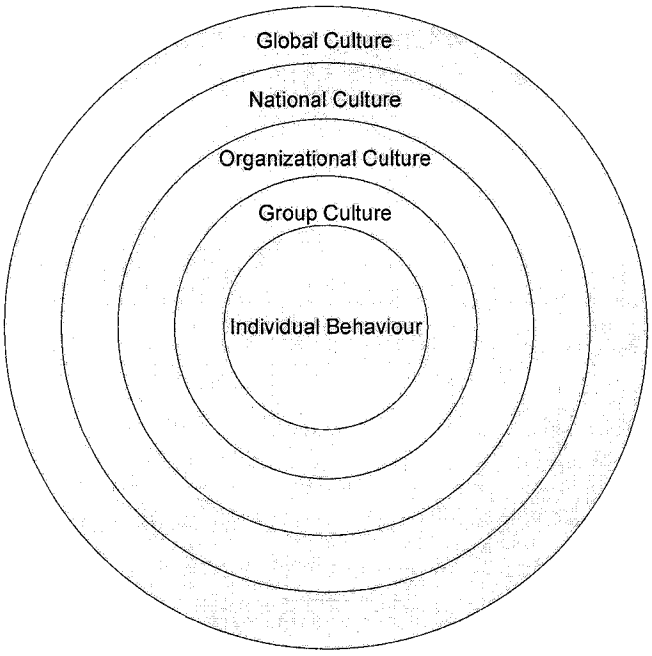


Figure 12: The onion model. Adapted from: Erez et al. (2004)

Another typology of culture is the iceberg model (French and Bell 1979, Mytrof and Kilman 1990). In this model the visible top of the iceberg represents facts like the price of a contract, while the invisible part represents the behaviour of the people. This model is comparable to the onion model but in a different picture, in both models culture manifests itself in different ways, invisible and visible. These manifestations of culture are studied at several cultural levels. Erez et al. (2004) visualised these cultural levels into the layers of an onion (see Figure 12). According to this onion model cultural differences occur on a national, a corporate, and on a group level. The outer layer of the onion, global culture, is shared by all the people on this world and would therefore not cause problems of cultural fit. The inner layer, the individual level, is subject to the field of psychology and following the definition from Hofstede it is not part of a culture because culture deals with the collective programming of the mind and not with the individual programming of the mind. Following the onion model of cultural levels by Erez et al. (2004) only the national, corporate and group (here further called professional) culture are left to be researched in this study.

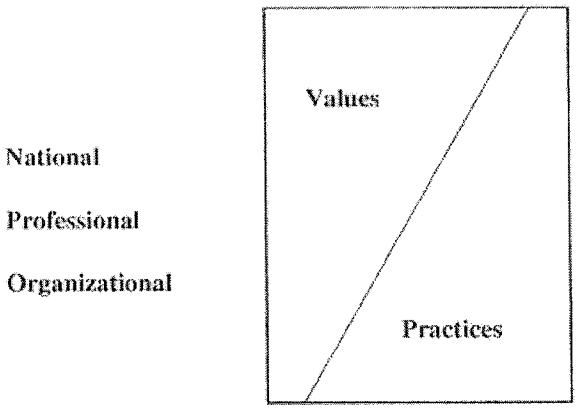


Figure 13: Values and practices. Adapted from: Hofstede (1980)

Hofstede (1980) combined both of the onion models discussed above into one figure which shows that the balance between values and practices changes over the levels of culture (see Figure 13). Values are acquired early in life and practices are acquired later in life. A person grows up in a country with a national culture, after that they start learning and get into a professional culture. Only after education a person starts to work in an organization where they get in touch with a corporate culture, therefore in corporate cultures practices are more important than values. Figure 13 also implies that it is harder to change a national culture than a corporate culture, as a national culture is deeper rooted in the individual persons. Values and practices change over time, therefore culture also changes over time. Although culture is something shared by a group of people, it changes within the individual persons. Sanders and Neuijen (1987) called culture a self-regulating system (see Figure 14). They stated that culture is influenced by its context and its consequences. Because culture is a self-regulating system, changing it is almost impossible. It is possible to change practices, but values don't change according to anyone's plans (Hofstede, 1998). Interesting in this figure is the place of national culture which is mentioned under 'context' and it is in that way influencing other cultures again. The 'consequences' in the figure are the causes why strategic alliances fail. One of those consequences, different interpretations, can cause a strategic alliance to break up due to a different cultural background. The different interpretations of a situation can cause that managers don't understand each other anymore and lose trust in each other.

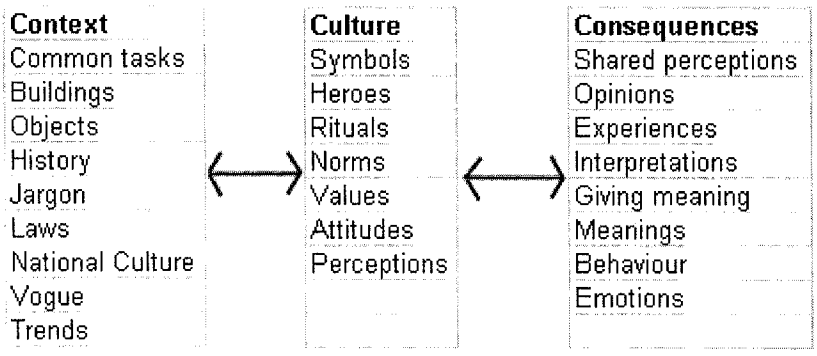


Figure 14: Culture as a self-regulating system. Source: Sanders and Neuijen (1987)

In this section culture has been defined using the definition by Hofstede (1980): "*culture is the collective programming of the mind, which distinguishes one group or category of people from another*". To understand culture better different typologies have been presented. Two onion models have been discussed, one in which culture was divided into several levels of culture: global, national, corporate and group culture. In the other one culture was divided into the layers of which culture is composed; artifacts and products, norms and values, attitudes, perceptions and basic assumptions. Perception is a very important layer of culture, it explains that culture is perceived differently by everybody. Because of the different perceptions of people culture is a difficult subject to study, this is something that can often be seen in this study like in the differences in professional cultures (see for example the different cultural models in Section 3.2 and the differences between marketers and engineers, Section 4.4). Since we know now about the basics of culture, the three levels of cultural fit will now be discussed starting with the national culture in Section 3.2.

3.2 National Culture

To study the impact of national culture on strategic alliance success, we need to be able to distinguish the different kinds of national cultures. For describing national cultures scholars have developed several models. These models can be divided into two categories:

1) Empirical methods using variables. (Using these empirical methods, typologies can be made using clustering analyzes.)
2) Ideal typologies where the author defines some extreme and pure types of cultures.

In Subsection 3.2.1 and 3.2.2 two empirical models for national cultures will be discussed. The first model is from Hofstede and the second model is from Trompenaars and Hampden-Turner. These two models have been chosen because they are the most influential works concerning national culture, moreover a discussion between these two scholars illustrates the difficulty of defining culture through different perceptions people have of culture (see also Section 3.1). Although typologies are easier to understand than empirical models, empirical models will be preferred here because typologies are not empirically supported and are not suitable for research, moreover typologies are mostly overlapping as organizations and countries seldom correspond to an ideal type described in a typology. By using a dimensional model empirical clusters can be formed, using clustering analyzes. Using these clusters an empirical typology can be formed (Hofstede, 2001). The first model that will be discussed here is from Hofstede (1980), see Subsection 3.2.1.

3.2.1 Hofstede

In a study presented in his book "Cultures consequences: International differences in work-related values", Hofstede found four different cultural dimensions: Power Distance Index (PDI), Uncertainty Avoidance Index (UAI), Individualism vs. Collectivism (IND), and Masculinity vs. Femininity (MAS). Hofstede used a questionnaire survey of 117,000 employees working for IBM in 40 countries to find these dimensions. He used the empirical method to distinguish the different national cultures. Later Hofstede and Bond (1988) added a fifth cultural dimension, the Confucian Dynamism Index (CDI) which is about long-term and short-term orientation in life and work. These five dimensions are widely used in the literature to indicate the differences in national culture between organizations. In the literature the model from Hofstede (1980) is widely used, Fang (2003) called it even the most influential work to date in the study of cross-cultural management. The validity of the dimensions has also been supported through correlation with indexes devised by other researchers like Steensma et al. (2000). Here short explanations of the five dimensions will be given. After having described the dimensions some critique on Hofstede's model will be discussed to indicate that not all scholars have agreed with his model.

Power distance

Power distance is about human inequality. According to Hofstede inequality can occur in areas such as prestige, wealth, and power. Inside organizations inequality in power is inevitable and functional. Subordinates want to reduce the power distance and bosses want to maintain or enlarge it. The study suggests that the level of power distance at which both tendencies will find their equilibrium is societally determined. The power distance can be expressed in a Power Distance Index (PDI). The PDI for each country is derived from the mean scores on three questions in the survey. PDI scores inform us about the dependence

relationships in a country. In small power distance countries there is a limited dependence of subordinates on bosses and there is a preference for consultation. In large power distance countries there is considerable dependence of subordinates on bosses

> Hofstede et al. (2005) defined this dimension as follows: *the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.*

Uncertainty Avoidance

Uncertainty about the future is a basic fact of human life with which we try to cope through the domains of technology, law and religion. In organizations these take the form of technology, rules and rituals. There are three indicators for uncertainty: rule orientation, employment stability and stress, together these indicators produce the Uncertainty Avoidance Index (UAI). Uncertainty avoidance is not about risk avoidance. In uncertainty avoiding cultures people look for structures in their organizations, institutions and relationships, which makes events clearly interpretable and predictable.

> Hofstede et al. (2005) defined this dimension as follows: *the extent to which the members of a culture feel threatened by ambiguous or unknown situations.*

Individualism vs. Collectivism

Individualism describes the relationship between the individual and the collectivity which prevails in a given society. In some cultures, individualism is seen as a blessing and a source of well-being; in others, it is seen as alienating. The level of individualism is measured by the Individualism Index (IDV). The IDV correlates negatively with the PDI, but some countries have high IDV as well as high PDI. A high IDV indicates the importance of time for personal life while a low IDV means the importance of being trained by the company.

> Hofstede et al. (2005) defined this dimension as follows: *Individualism pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family. Collectivism as its opposite pertains to societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout people's lifetimes continue to protect them in exchange for unquestioning loyalty.*

Masculinity vs. Femininity

In this dimension the issue is about the question if the biological differences between the sexes should or should not have implications for their roles in social activities. The predominant socialization pattern is for men to be more assertive and for women to be more nurturing. Masculinity is measured with the Masculinity Index (MAS). The opposite of masculinity is femininity. Countries with higher MAS values show greater differences in values between men and women in the same jobs. The MAS measures to what extent people tend to endorse goals usually more popular among men (high MAS) or among women (low MAS).

> Hofstede et al. (2005) defined this dimension as follows: *a society is called masculine when emotional gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success, whereas women are supposed to be more modest, tender, and concerned with the quality of life. A society is called feminine*

when emotional gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life.

Confucian Dynamism

Confucian Dynamism is about the difference of people in their orientation. This dimension was later added to the first four dimensions after a Chinese Values Survey (Hofstede and Bond, 1988) and was named after the 500BC Chinese philosopher, teacher and political reformer Confucius. There are two poles to measure this dimension, one pole is called long-term orientation and the opposite is short-term orientation. The scores of countries on this dimension are in the long-term orientation index or Confucian Dynamism Index (CDI).

> Hofstede et al. (2005) defined this dimension as follows: *long-term orientation stands for the fostering of virtues oriented toward future rewards – in particular, perseverance and thrift. Its opposite pole, short-term orientation, stands for the fostering of virtues related to the past and present – in particular, respect for tradition, preservation of "face," and fulfilling social obligations.*

Although most scholars adopted Hofstede's model of national cultures, some scholars criticized it. An important reason for this is the different perceptions that people have (see Section 3.1). One of these scholars is McSweeny. McSweeny (2002) stated that Hofstede made five critical assumptions:

1. There is only one IBM culture which possesses all employees and every occupation has a worldwide occupational culture. Hofstede supposes that in IBM there is a singular, uniform and monopolistic corporate culture, while literature proves otherwise. After 10 years however, Hofstede began to acknowledge that there is cultural variety within and between units in the same organization. Hofstede now argues that national cultures and corporate cultures are phenomena of a different order. Hofstede now states that the core of an organization's culture is not shared 'values' but 'shared perceptions of daily practices' (see Section 3.1), therefore the cultural heterogeneity within IBM did not affect his cross-subsidiary comparison of values, as corporate culture does not contain/reflect values, however research of Hofstede on corporate cultures reveals some value differences: 'the organizations differed somewhat on three clusters of values'.
2. There are two definitions influencing the assumption where Hofstede relies on. Definition 1 states that individuals share a common national culture and definition 2 deals with a statistical average. Using definition 1, to assume national uniformity, would not be appropriate for a study which purports to have found it. Using definition 2, an average tendency is the average tendency, he assumes that the average tendency of IBM personnel is representative for the whole country. There are however no valid reasons for assuming that the IBM responses reflect 'the' national average. IBM had however many national atypical characteristics like; the companies selective recruitment only from the middle class, the frequent international training of the employees.
3. This assumption concerns that national culture creates questionnaire response differences. According to McSweeny every conceivable stratification of the questionnaire responses would most probably produce differences. Hofstede makes an unjustified analytical leap to treat the differences identified on the basis of his national stratification as a consequence of national culture.

4. This assumption concerns that a national culture can be identified by response difference analysis. According to McSweeny it takes another analytical leap that the cause may be identified through its assumed consequences. The dimensions found by Hofstede are bi-polar, they are composed of contrasting positions, like individualism/collectivism. According to Triandis (1994) however the two can coexist and are simply emphasized more or less depending on the situation.
5. In 1991 Hofstede added a fifth dimension to the model: 'Confucian Dynamism', he extracted this dimension from a Chinese Values Survey. This survey identified the Uncertainty Avoidance dimension as irrelevant to Chinese populations, downgrading it to a non-universal dimension. Hofstede regards the survey valid and added the 'Confucian Dynamism' to his model but did not downgrade 'Uncertainty Avoidance' in his model. This assumption suggests that within each country there is a single national culture, not merely a single national work-place culture. There are however no grounds on which Hofstede makes this claim.

In the same year Hofstede responded to the criticism of McSweeny. Hofstede (2002) gave answer to some of the critique from McSweeny but not to all of it. Hofstede's main argument is that the problems raised by McSweeny are already solved in the newer version of his book. Hofstede also mentioned five standard criticisms on his model and gave answer to them. This criticism showed the problem of defining culture, everybody perceives culture in a different way (see Section 3.1). McSweeny clearly had a different perception of culture than Hofstede. The perception of culture by Hofstede is one example but a widely accepted one. Many companies nowadays use the culture dimensions and the questionnaires developed by Hofstede, hereby Hofstede managed to get a better view of what culture is and how to measure it. Since we have now discussed the most widely used national culture model and some commentary on, a second model will be discussed in Subsection 3.2.2.

3.2.2 Trompenaars and Hampden-Turner

To get a broader view of national culture, another model for national culture will be discussed here, it is a model from Trompenaars and Hampden-Turner (1997). Trompenaars and Hampden-Turner (1997) conducted a questionnaire survey of 15,000 international managers and used this survey to identify the dimensions of national culture. Trompenaars and Hampden-Turner distinguished 3 categories under which cultural problems occur: relationships with other people, passage of time, and the environment. The authors identified seven fundamental dimensions of culture from which the first five arise from the first category:

1. Universalism vs. Particularism
2. Individualism vs. Communitarianism
3. Neutral vs. Emotional
4. Specific vs. Diffuse
5. Achievement vs. Ascription
6. Attitudes to Time
7. Attitudes to the Environment

The model from Trompenaars and Hampden-Turner caught the attention of Hofstede and resulted in the article 'Riding the waves of commerce: a test of Trompenaars' "model" of national culture differences'. In this article Hofstede (1996) criticized the work of Trompenaars and Hampden-Turner using correlation and factor analysis. According to

Hofstede (1996) the questionnaire used by Trompenaars and Hampden-Turner already consisted of seven subscales corresponding to the seven dimensions. The origin of the first five dimensions is the "General Theory of Action" by Talcott Parsons which was published with the co-authorship of Edward Shils in 1951. The other two dimensions are taken out of a classification of five value orientations from Kluckhohn and Strodtbeck (1961). According to Hofstede (1996) Parsons' theory was purely speculative. Hofstede (1996) stated that the questions used for each dimension should be strongly intercorrelated and the questions cited in different dimensions should be less strongly correlated. Hofstede tested this and concluded that this is not the case and only two dimensions can be confirmed statistically; Individualism/Achievement and Universalism/Diffuse. Both of these are correlated with the Individualism dimension from Hofstede (1980). According to Hofstede Trompenaars and Hampden-Turner did not start with an open-ended inventory of issues in this way but they tune to what he thinks the customer wants to hear. In 1997 a response from Trompenaars and Hampden-Turner on the criticism of Geert Hofstede was published. In this article Trompenaars and Hampden-Turner feel attacked by Hofstede and they question what Hofstede's motives for criticizing them are. This question seems to be very unscientific, because scholars should be open to criticism. Trompenaars and Hampden-Turner state that different ways to view culture is legitimate, and readers should judge themselves which model they prefer. Trompenaars and Hampden-Turner are right that people have a different perception of culture (see Section 3.1), however the research that Trompenaars and Hampden-Turner did was not very good as they did not develop a new and good cultural model but they are said to have copied ideas from Hofstede and gave it another label.

These two cultural models from Hofstede and Trompenaars and Hampden-Turner and the discussion about them show that people have a different perception of what culture is (see Section 3.1). Hofstede's model has however been used all over the world, many companies use his model and most scholars have preferred to use his model. Fang (2003) called it even the most influential work to date in the study of cross-cultural management. The validity of the dimensions has moreover also been supported through correlation with indexes devised by other researchers like Steensma et al. (2000). Hofstede's model is therefore the preferred model in this study to describe the influence of national cultures on strategic alliance success (see Section 4.2). In Section 3.3 the next cultural level will be discussed, the corporate culture.

3.3 Corporate Culture

The idea that corporate cultures of collaborating organizations need to be compatible was introduced in the *Harvard Business Review* by Davis (1968). Davis (1968) suggested that 'A successful combination depends at least on compatibility of business styles'. These business styles are nowadays called corporate cultures. The term corporate culture entered the literature with an article in *Administrative Science Quarterly* by Pettigrew in 1979. According to Cartwright and Cooper (1996) the type of culture an organization has, is shaped by different factors:

- History and ownership
- Size
- The technology it employs and the nature of its business activity
- The people, particularly the founders and leaders

Harrison (1972) was the first to distinguish several types of corporate culture. He suggested that there are four main types: power, role, task/achievement and person/support. Following Harrison several other typologies were developed. One of those typologies was developed by Trompenaars and Hampden-Turner (1997). According to Trompenaars and Hampden-Turner (1997) there are three aspects of organizational structure that are important in determining organizational culture:

- The general relationship between employees and their organization
- The vertical or hierarchical system of authority defining superiors and subordinates
- The general views of employees about the organization's destiny, purpose and goals and their places in this.

Using these three aspects two dimensions to distinguish different corporate cultures were identified: *equality vs. hierarchy* and *orientation to the person vs. orientation to the task.* Using these two dimensions four different types of corporate cultures were identified:

1. *The family:* this culture is at the same time personal but also hierarchical and power-oriented. Relationships are diffuse. The focus in this culture is not to do things efficiently but on doing things effectively. Employees are motivated by praise and not by money.
2. *The Eiffel Tower:* this culture has a bureaucratic division of labour and roles. Relationships are specific and status is ascribed. In the organization existing power differences are legitimised. Employees see their work as an obligation within themselves, it is their duty.
3. *The guided missile:* this culture is egalitarian furthermore it is impersonal and task-oriented. Loyalties to professions and projects are higher than loyalties to the company, the people get enthusiastic about and identify themselves with the final product.
4. *The incubator:* the idea of this culture is that organizations are secondary to the fulfilment of individuals. Incubators are both personal and egalitarian and leadership is achieved. Incubators are very motivated for their work, but work on islands of expertise.

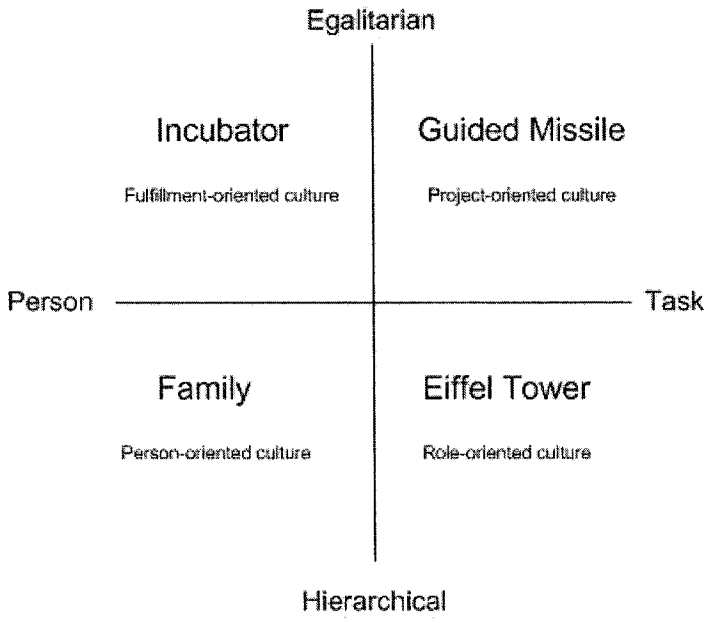


Figure 15: Organizational cultures. Source: Trompenaars and Hampden-Turner (1997)

Trompenaars and Hampden-Turner stated that companies in different national cultures prefer different kinds of corporate cultures, while they indicated that smaller companies usually take a family or incubator culture and larger companies an Eiffel Tower or guided missile culture. Another study on corporate culture was done by Hofstede et al. (1990). Using in-depth interviews and a questionnaire in twenty units from ten different organizations in Denmark and The Netherlands, Hofstede et al. (1990) found six clear and mutually independent dimensions of (perceived) practices distinguishing the organizational units from each other:

1. *Process oriented - results oriented:* In process-oriented cultures people are avoiding risks and spend only a limited effort in their jobs. In results-oriented cultures people are comfortable in unfamiliar situations and give a maximal effort, while each day is felt to bring new challenges.
2. *Employee oriented - job oriented:* In employee-oriented cultures people feel that their personal problems are taken into account, that the organization takes responsibility for employee welfare, and that important decisions are taken by groups or committees. In job-oriented cultures, people feel a strong pressure to complete the job while the organization is only interested in the work the employees do and not in their personal and family welfare. Important decisions in this culture are taken by individuals.
3. *Parochial – professional:* In parochial cultures people are hired not only for their job competence but also their social and family background is taken into account. People in the parochial culture do not look far into the future. This type of culture is often associated with the Japanese companies. In professional cultures people are hired for their job competences, their private life is their own business. People in the professional culture think far ahead. The scores in this dimension correlate with the education level of the employees. People with more formal education are more in the professional culture.
4. *Open system - closed system:* In an organization with an open system almost anyone fits into the organization and new employees only need a few days to feel at home. In an organization with a closed system culture the organization and the people seem very closed and only very special people fit into the organization. New employees need more than a year to fit into the organization. This dimension of corporate culture

is associated with the national culture, the open organization climate appeared to be more characteristic for Denmark than for the Netherlands.

5. *Loose - tight control:* In a loose organizational culture people feel that no one thinks of costs, meeting times are only kept approximately and jokes about the company and the job are frequent. In a tight organizational culture people are cost-conscious, meeting times are kept punctually and jokes about the company and the job are rare.
6. *Normative - pragmatic:* In normative corporate cultures the major emphasis is on correctly following organizational procedures, which are more important than results. In pragmatic corporate cultures there is an emphasis on meeting the customer's needs, results are more important than correct procedures.

The two models for corporate culture and the two models for national culture discussed in this chapter are developed by the same scholars. The method used to develop these models was the same as for their national cultural models. Surprising is that the corporate culture model developed by Trompenaars and Hampden-Turner is (in contrary to his national cultural model) quite often used by other scholars. Ulijn and Weggeman (2000) used it to find the ideal innovative culture (see Section 4.3). Ulijn and Weggeman indicated that the four typologies could be visualised using the two national cultural dimension power distance and uncertainty avoidance as axis. By visualising the four dimensions using these two dimensions the model has a good empirical support. As the two corporate culture models both have a good empirical support they will both be used to explain strategic R&D alliance failure and success (see Section 4.3).

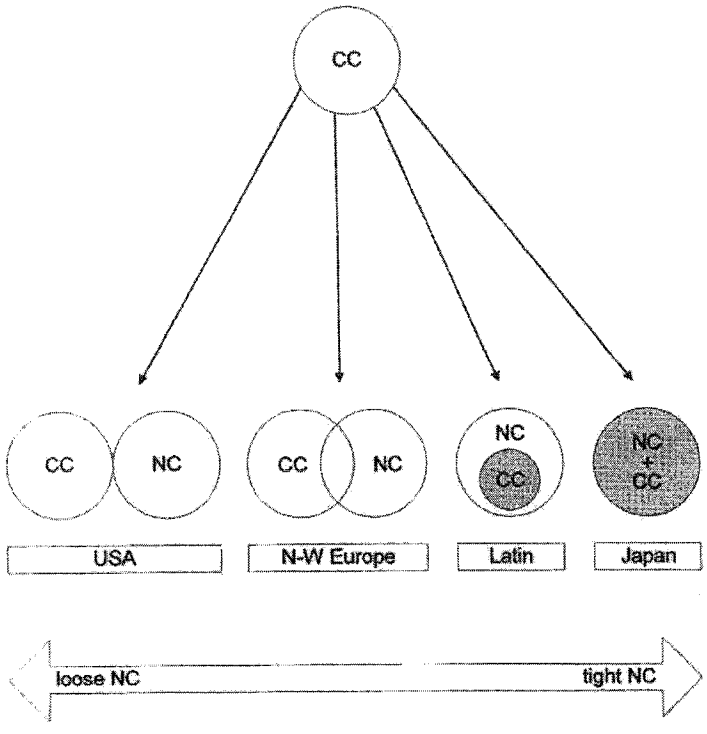


Figure 16: The effect of a homogenous CC on a loose or a tight NC. Source: Ulijn and Kumar (2000).

When looking more closely at the corporate culture model from Hofstede it shows that there is some interaction with the other two levels of cultural fit. National cultures appear to have influence on the open vs. closed system dimension, companies in one nation are in general more open than companies in other nations. Triandis (1989) found that collectivism and

tightness are related, which indicates an interaction between national and corporate cultures as these are dimensions of the cultural models. The parochial vs. professional also has some interaction with national cultures as Japanese organizations are usually more parochial. This dimension has also some interaction with the professional cultural level, as professional oriented organizations will hire people with certain job competences which can lead to organizations existing completely out of people with certain professional backgrounds. The loose and tight dimension from Hofstede's corporate culture model caught the attention of several other scholars. Ulijn and Kumar (2000) showed that companies in for example USA can work in their own ways independent of the national culture in the USA (see Figure 16). In Japan companies are however highly influenced by the national cultures. Using Grotenhuis (2001) we can give names to these four categories from Ulijn and Kumar (2000). In the USA where there is a very loose bond we can speak of strategic alliances, in N-W Europe we speak about joint ventures, in Latin countries we speak about acquisitions and in Japan where there is a very tight bond we speak about mergers.

In this section two useful models to research corporate culture have been discussed. The models showed that there is some interaction between the three levels of culture. Triandis (1989) found that the national culture dimension collectivism and the corporate culture dimension tightness are related, but also other dimensions appeared to be related. The relatedness between the cultural levels has to be taken into account when studying cultures. Having discussed the national and corporate cultural levels, in Section 3.4 the third and last cultural level, the professional culture, will be discussed.

3.4 Professional Culture

Professional cultures have received far less attention than national and corporate cultures. People get a professional culture through the education and professionalization (see Section 3.1). Professionalization brings together employees with occupational identities and ideologies that set them apart from other employees in an organization (Van Maanen & Barley, 1984). Schein (1992; 278) called them a group of practitioners, researchers, and teachers who have a common base of knowledge, a common jargon, similar background and training, and a sense of identifying with each other. An occupational community is not a profession in the sense of having genuine autonomy and review by only peers, but is often on the way to becoming or attempting to become a profession in this more traditional sense. On the national and corporate levels of culture several dimensions could be identified to measure the culture. For professional culture no dimensions have been identified. Hofstede et al. (2005) did however predict which dimensions of occupational cultures may well be found:

- Handling people vs. handling things (for example, nurse vs. engineer)
- Specialist vs. generalist or professional vs. amateur (for example psychologist vs. politician)
- Disciplined vs. independent (for example, police officer vs. shopkeeper)
- Structured vs. unstructured (for example, systems analyst vs. fashion designer)
- Theoretical vs. practical (for example, professor vs. sales manager)
- Normative vs. pragmatic (for example, judge vs. advertising agent)

Another classification was made by Otto & De Leeuw (1989), they identified 5 different 'environments' or occupational disciplines, this was not the result from a literature study but from experiences in the consultancy:

- Engineering environment
- Juridical environment
- Scientific behavioural environment
- Economic environment
- Politic-governing environment

The two classifications above illustrate that it is difficult to classify the different professional cultures. Moreover these two classifications lack empirical support. A third and better classification by Schein (1996) is therefore presented here. Schein stated that in most organizations there are three different major professional cultures that do not understand each other very well. The people in these professional cultures don't understand each other very well and often work at cross-purposes. The three cultures identified by Schein are:

- Operator culture
- Engineering culture
- Executive culture

Schein (1996) calls all the three cultures "valid" because they are all doing what they are supposed to do. They have formed worldwide occupational communities that have their own worldview based on their education. Executives are supposed to worry about the financial health and engineers are supposed to innovate. Although these three cultures are valid, they

do cause problems when people from these different cultures need to work together. These differences in thinking also come forward in an example by Sirmon and Lane (2004). Sirmon and Lane compared engineers with scientists as these are the dominant groups in R&D alliances. Engineers and scientists differ in the types of knowledge they emphasize, in the ways in which knowledge develops, and in the types of innovation process they utilize. In Section 4.4 more about professional cultural differences and the effects of it on strategic alliance performance will be described.

The classification by Schein is in some ways similar to the three subcultures found by Hofstede (1998). Hofstede composed a questionnaire on the basis of some open-ended interviews in a Danish insurance company. The survey was done among all the 3400 employees in all the departments. On the basis of the survey answers three clearly distinct subcultures were found: a professional, an administrative and a customer interface subculture. The professional subculture included the higher educated employees. The administrative subculture included the employees in the clerical departments (mostly female). The customer interface subculture included salespeople and claim handlers. Hofstede (1998) identified that the three different subcultures appeared to have different culture gaps concerning the corporate culture. The professional group was mostly job oriented, professional, open, tightly controlled and pragmatic. The administrative group was the most parochial and employee oriented. The customer interface subculture represented a counterculture to the professional culture that included higher management. These subcultures are closely related to the corporate culture dimensions described by Hofstede (see Section 3.3). The classification found by Schein (1996) closely resembles the subcultures found by Hofstede, however his classification better describes the different functions found in an R&D alliance, therefore this is the most suitable model to be used here. In other articles (e.g. Sirmon and Lane, 2004 and Ulijn et al, 2001) differences between these cultures are described, in Section 4.4 the influence of these professional cultural differences on strategic alliance success will be discussed.

3.5 Chapter conclusion

To understand what culture is actually about different typologies have been discussed in this chapter. Culture is build up out of several layers that can be visualised using typologies like an onion model. Culture has been divided into the layers of which culture is composed; artifacts and products, norms and values, attitudes, perceptions and basic assumptions. Perceptions explain that culture is perceived differently by everybody, this can be seen from the different national cultural models in Section 3.2 and the differences between marketers and engineers which will be discussed in Section 4.4.

In the this chapter the second research question has been addressed; *'What are national cultures, corporate cultures and professional cultures?'*. The three levels of culture have been described using models. For national culture two models have been discussed, one by Hofstede (1980) and one by Trompenaars and Hampden-Turner (1997) (see Section 3.2). Some critique on these models showed that it is difficult to develop a model for national culture that would be accepted by everybody. There will always be problems with cultural models because everybody has a different perception of what culture is (see Section 3.1). Like national culture, corporate culture was also discussed using two models (see Section 3.3). These models also showed that there is some interaction between the three levels of culture. Triandis (1989) found that collectivism and tightness are related, which indicates an interaction between national and corporate cultures. The parochial vs. professional dimension also has some interaction with national cultures as Japanese organizations are usually more parochial. This dimension has also some interaction with the professional cultural level, as professional oriented organizations will hire people with certain job competences which can lead to organizations existing completely out of people with certain backgrounds. Concerning professional cultures the classification by Schein (1996) appeared to be the best suitable classification, the model developed by Schein closely resembles the subcultures found by Hofstede which are empirically supported. Schein identified three professional cultures: the operator culture, the engineering culture and the executive culture.

The models concerning the three cultural levels that have been presented in this chapter are very useful in getting a better understanding of what culture is about. Moreover, these models enable us to describe on which matters cultures can be different from each other. Although these models are perceptions of people from about what culture actually is, they have proven to be very useful in researching cultures. These models will therefore be used in Chapter 4 to discuss the influence of national corporate and professional culture on strategic alliance success.

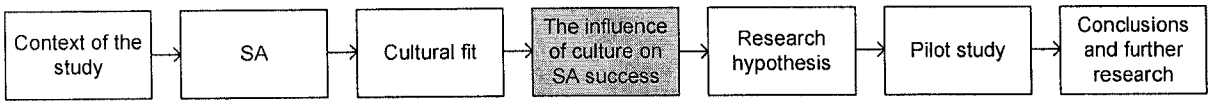
Chapter 4

The influence of national, corporate and professional culture on strategic alliance success (RQ 3)

The influence of the three levels of culture on strategic alliance success will be discussed in this chapter using the cultural models discussed in Chapter 3. Culture influences the innovativeness (that is success, see Section 2.2) of a strategic R&D alliance in three ways:

1. Through cultural misfits the strategic alliance cannot function properly, negatively influencing the performance of the strategic R&D alliance.
2. Through a cultural fit a bond between the organizations can be formed which is not easy to break, which positively influences R&D alliance performance.
3. The innovativeness of the R&D alliance can be improved through the right innovative culture of the strategic alliance.

This third point is however of less importance then the other two. Alliance performance is mainly influenced by cultural fits and misfits, therefore the organizations need to strive for a cultural fit. Although when there is already a cultural fit in the alliance striving for innovative cultures can give a further positive influence on their performance. In this chapter these three points will be discussed for national culture, then for corporate culture and finally for professional culture. However, the influence of the three points presented above will first be discussed. Hereby this chapter covers the third research question; *'What is the influence of the three levels of culture on the success of strategic alliances?'*.



4.1 How can a cultural fit, a cultural misfit and an innovative culture lead to an innovative strategic R&D alliance?

Before the influence of the three levels of culture on strategic R&D alliances will be discussed we first need to explain how the three different points mentioned in the introduction of this chapter can lead to an innovative (that is successful, see Section 2.2) strategic R&D alliance. There are different cultural combinations that can lead to a successful strategic R&D alliance. To illustrate these possibilities several scenarios are presented here.

Scenario 1: there is a cultural fit on all the cultural levels between the organizations in the strategic alliance.

> Possible result of scenario 1: because there is a cultural fit on all the three levels between the organizations in the strategic alliance, there won't be any major culture related problems in the alliance and it is expected that the strategic alliance will perform well.

Scenario 2: there is a cultural misfit on all the cultural levels between the organizations in the strategic alliance.

> Possible result of scenario 2: the cultural misfit between the organizations can cause several problems between the organizations. Problems in the alliance will be perceived differently by the organizations and the organizations will lose trust in each other which can eventually lead to an end of the alliance.

Scenario 3: there is a cultural misfit between the organizations on the national cultural level and the corporate cultural level, however there is a cultural fit on the professional level.

> Possible result of scenario 3: the cultural distance between the organizations on the national and corporate level makes it very difficult to work together in a strategic alliance. The cultural fit on the professional level will however lead to an increased flexibility of the people working in the organizations (Aulakh and Madhok, 2002). The flexibility of the people due to the professional cultural fit can overcome the cultural distance caused by the national and corporate misfit, this flexibility of the people is visualised in Figure 17. The increased flexibility can cause the organizations to overcome the cultural distance and give room to work together with each other in a strategic alliance (this is the middle part in Figure 17).

This model visualizes that not only cultural misfits should be studied but that cultural fits are at least as important. There is no information in the literature on how strong these fits of culture are, therefore this is taken into the practical research of this study (see Chapter 5). Since the importance to look at both the cultural fit and the cultural misfit, the role of the third point; the innovation culture will now be discussed.

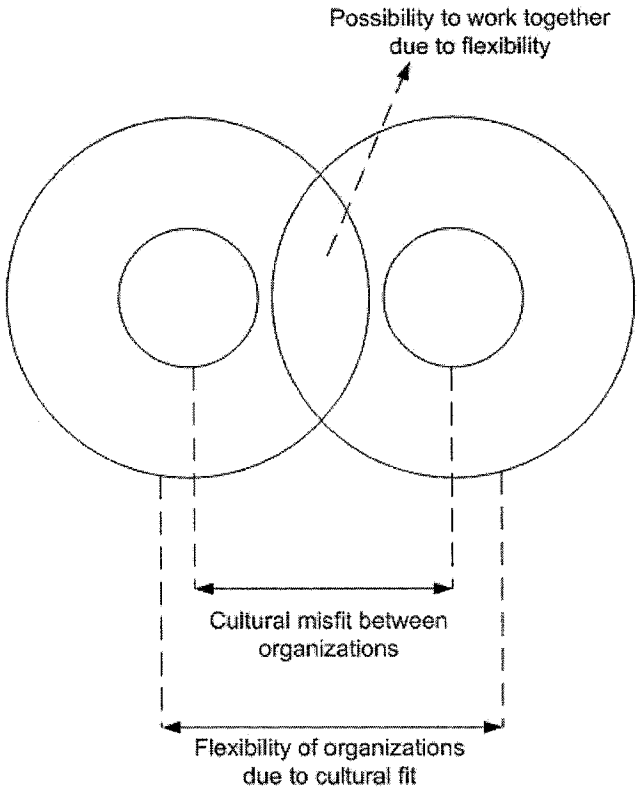


Figure 17: The effects of cultural fit and misfit on two organizations in a strategic alliance

Some aspects of a culture can have a positive influence on the innovativeness of the alliance, like a low power distance (see Section 4.2). The innovation culture itself however has no influence on the cultural fit or misfit between the organizations in an alliance, it is more like a desirable culture the alliance can strive for. The first objective for the organizations in an alliance is therefore to have a cultural fit, so that the organizations can work together without major cultural difficulties. When a cultural fit between the organizations is achieved they should strive to obtain a culture which positively influences the innovativeness. Therefore depending on the status of the alliance (if there is a cultural fit or not), the organizations should strive for a cultural fit or for the ideal innovative culture. Since we now know about the importance and the role of the three points, the influence of the three cultural levels on strategic alliance performance will now be discussed in the following sections using these three points, cultural fit, misfit and innovativeness.

4.2 How does national culture influence strategic alliance success?

There are several articles in which the influence of national culture on strategic alliances was studied. As has already been indicated in Section 2.2 the performance of R&D alliances can be measured by the innovativeness of the alliance. In this section the influence of national cultures on alliance success will be discussed using the three points from Section 4.1; national cultural misfit, national cultural fit and the ideal innovative national culture.

→ Cultural misfit

Cultural misfits are caused through a cultural distance between two cultures. Cultural distance is the difference between the national cultural characteristics of the home and of the host countries (Hennart and Larimo, 1998). Cultural distance can be measured in two ways: using the national cultural dimensions found by Hofstede, or using the measure of cultural distance developed by Kogut and Singh (1988). The measure by Kogut and Singh combines the dimensions found by Hofstede into one aggregate measure (KSINDEX):

$$CD_j = \sum_{i=1}^{4} \{(I_{ij} - I_{iu}) / V_i\} / 4$$

CD_j is the cultural distance of the jth country from the uth country.
I_{ij} is the index for the ith cultural dimension and the jth country.
I_{iu} is the index for the ith cultural dimension and the uth country.
V_i is the variance of the index of the ith dimension.

	Performance	
	Related studies	**Result**
Kogut and Singh Index (KSINDEX)	Glaister & Buckley (1999) Park & Ungson (1997) Schuler & Rogovsky (1998) Barkema et al. (1996) Merchant (2000) Luo (2002) Pothukuchi et al. (2002)	(X) (+) (-) (-) (X) (X) (*)
PD	Barkema & Vermeulen (1997) Pothukuchi et al. (2002)	(V) (*)
IDV	Barkema & Vermeulen (1997) Pothukuchi et al. (2002)	(V) (*)
MAS	Barkema & Vermeulen (1997) Pothukuchi et al. (2002)	(-) (+)
UA	Barkema & Vermeulen (1997) Pothukuchi et al. (2002)	(-) (*)
LTO	Barkema & Vermeulen (1997)	(-)

(X): No influence (V): Have influence (*): Mixed influence (+): Positive influence (-): Negative influence

Table 3: The influence of national cultural distance on (IJV) performance. Adapted from: Lu (2006)

A problem with the KSINDEX is that it takes all the dimensions from Hofstede as equivalent, meaning that all the dimensions have an equal influence on the cultural distance. Lu (2006) used this measure and the Hofstede dimensions to review the literature on the influence of cultural distance on international joint venture (IJV) performance (see Table 3). As mentioned above the KSINDEX is not a good measure for cultural distance, moreover as can be seen in the table above no conclusion can be drawn from the KSINDEX. Because there are several methodological problems with the KSINDEX, Lu (2006) also suggested that this measure should not be used in the future anymore. Two studies are left over in which the individual dimensions were researched, these studies will be discussed here to further explain the importance of the five dimensions on strategic alliance performance. These studies are one from Barkema and Vermeulen (1997) and one by Pothukuchi et al. (2002).

In the article from Barkema and Vermeulen (1997) they wanted to determine which differences in national culture are most disruptive for IJVs. To study this Barkema and Vermeulen used the national cultural dimensions from Hofstede (1980). Based on some literature and by using these dimensions they formulated 2 hypotheses that are relevant to us:

1. Differences in uncertainty avoidance between home and host country – rather than differences in power distance, individualism and masculinity – have a negative impact on IJV survival.
2. Differences in long-term orientation between home and host country – rather than differences in power distance, individualism and masculinity – have a negative impact on IJV survival.

The hypotheses were tested using a sample of 828 foreign entries of 25 non-financial Dutch multinationals in 72 countries between 1966 and 1994. As a measure Barkema and Vermeulen used venture survival. Based on this both of the hypotheses could be accepted. Cultural distance on all the Hofstede dimensions appeared to have a negative influence on venture survival but uncertainty avoidance and long-term orientation are the most important. Barkema and Vermeulen suggest that it would probably be easier to resolve the problems related to power distance, individualism and masculinity because these are reflected in the different attitudes towards the personnel and here firms can make explicit agreements about before entering a partnership. Differences in uncertainty avoidance will cause the organizations to perceive the opportunities and threats differently which will result in different actions by the organizations. Differences in long-term orientation between the partners will cause them to develop different objectives and different perceptions of opportunities and threats (Schneider and De Meyer, 1991).

In the article from Pothukuchi et al. (2002) the national as well as corporate culture were studied simultaneously. For their research Pothukuchi et al. formulated the following hypothesis regarding national culture:

1. National culture distance between partners negatively influences joint venture performance

To test the hypotheses data was collected from executives of joint ventures between Indian partners and partners from 21 other countries (40 JVs from U.S., 20 from Japan, 14 from Germany, 13 from England, 8 from France, 3 from The Netherlands, 3 from Singapore and 3 from Switzerland, while other countries had 1 or 2 JVs). From the 334 joint ventures contacted 127 agreed to participate in the study. In total of 202 executives participated in the

survey, 61 joint ventures had multiple participants which allowed to test the reliability of the responses. The data was collected by structured interviews in which questionnaires were filled in by the respondents. The performance of the joint ventures was measured by perceptual measures categorized according to several predictors (efficiency, competitiveness, and satisfaction). Pothukuchi et al. measured national culture using four of the national culture dimensions of Hofstede (1980); individualism, power distance, uncertainty avoidance and masculinity, they also used the Kogut and Sing formula but this is not discussed here for the reason mentioned earlier in this section. The influence of the four dimensions was measured using three categories: efficiency, competitiveness and satisfaction with JV. The results showed mixed results on the individualism, uncertainty avoidance and power distance dimensions. Masculinity appeared to have a positive influence on all the three categories, Pothukuchi et al. speculated that this positive influence might result from an admiration effect on the part of the Indian executives who might have attributed higher IJV performance to their foreign partners' pursuit of organizational success.

From these two studies we can see that it is not easy to measure the influence of a national cultural misfit on strategic alliance success. The two articles gave different results on how the dimensions from Hofstede influence strategic alliance performance. The results of the studies can however partly be explained. Barkema and Vermeulen used survival as a measure of performance and therefore CFD appeared to be the most important dimension. Masculinity gave contradicting results in the two articles, this could however be explained through the admiration effect from the Indian executives. These different results can be explained through the different measures of success that were used and the different perceptions of the people involved, therefore no hard conclusions can be drawn from these studies. Having discussed national cultural misfits, the national cultural fit will now be discussed.

→ Cultural fit

Whereas cultural misfits are a cause of strategic alliance failure, cultural fits enable organizations to form a bond which increases the flexibility between the organizations in the strategic alliance (Aulakh and Madhok, 2002). The increased flexibility of the organizations will improve the performance of the alliance. Aulakh and Madhok (2002) found that regarding the national cultural fit there is no significant influence on flexibility. Sometimes national cultural differences can however also have a positive effect on strategic alliance performance; Pothukuchi et al. (2002) found that a difference in masculinity vs. femininity can positively affect joint venture performance. They found this outcome in a study of 127 joint ventures with Indian companies. They speculated that the positive effect might be an admiration effect on the part of the Indian executives who might have attributed higher IJV performance to their foreign partners' pursuit of organizational success (see also the discussion under cultural misfit). Having discussed the cultural fits and the misfits, the innovativeness will now be discussed.

→ Innovativeness

Using the national culture dimensions found by Hofstede (1980) several scholars studied the influence of the national culture dimensions on the innovativeness of organizations. Shane (1992, 1993) found that nations with low power distance, weak uncertainty avoidance and high individualism had higher rates of innovation. Individualistic societies are more inventive because they value freedom more than collectivistic societies and according to Shane freedom is necessary to be creative. Creativity is reduced by bureaucracy and therefore a low power

distance also improves innovativeness. An acceptance of uncertainty is necessary because innovation requires a tolerance for risk and change. Couto and Vieira (2004) found that four dimensions of national culture found by Hofstede influence R&D activities; a high level of individualism leads to higher efforts in producing R&D contributions. A low power distance permits the interfunction cooperation and problem solving environment. Low masculinity leads to a type of more collaborative effort. A low uncertainty avoidance is present when there are more radical R&D contributions. Jones and Davis (2000) also considered the influence of the fifth dimension, Confucian Dynamism, on the innovativeness. Jones and Davis suggest that the innovativeness is positively influenced by the positive pole of this dimension. From these studies it can be concluded that the ideal innovative national culture has a low power distance, weak uncertainty avoidance, high individualism, low masculinity, and a long term orientation (Couto and Vieira, 2004; Jones and Davis, 2000; Shane, 1992, 1993).

In this section the influence of national culture on strategic alliance failure and success has been researched using Hofstede's (1980) dimensions on the three points, cultural fit, cultural misfit and innovativeness. Considering the ideal innovative culture, articles have been found that suggested that a low power distance, weak uncertainty avoidance, high individualism, low masculinity, and a long term orientation will improve the innovativeness of the alliance. On the other two points, cultural fits and misfits different results on how the dimensions from Hofstede influence strategic alliance performance were found. These differences could be explained through the different measures of success used and the different perceptions of the people involved, therefore no hard conclusions could be drawn from these studies. For a national cultural fit the only evidence could be found from the study by Pothukuchi et al. (2002) who suggested that masculinity positively influences alliance performance. In the pilot study it will be researched if clearer results can be found considering the influence of the national cultural dimensions on alliance performance (see Chapter 5). In the next section the influence of the corporate culture will be discussed.

4.3 How does corporate culture influence strategic alliance success?

The national cultural dimensions found by Hofstede (1980) were used by several scholars to research cultural misfits and innovativeness. As has already been discussed in Section 3.3 hardly any scholars could be found who used the corporate cultural dimensions by Hofstede (1990) to research these subjects. Instead of using the corporate cultural dimensions scholars have often used the national cultural dimensions uncertainty avoidance and power distance to describe the corporate cultures, these studies will also be used here. The influence of corporate cultures on alliance success will be discussed using the three points from Section 4.1; corporate cultural misfit, corporate cultural fit and the ideal innovative corporate culture.

→ Cultural misfit

As already indicated above hardly any scholars used the corporate cultural dimensions by Hofstede to study cultural misfits. Only one article could be found in which cultural misfits in a partnership were measured using the corporate cultural dimensions by Hofstede. This is an article by Pothukuchi et al. (2002) in this article Pothukuchi et al. simultaneously studied national as well as corporate cultures. Pothukuchi et al. formulated the following hypothesis regarding corporate culture:

2. Corporate culture distance between partners negatively influences joint venture performance

To test the hypotheses data was collected from executives of joint ventures between Indian partners and partners from 21 other countries (40 JVs from U.S., 20 from Japan, 14 from Germany, 13 from England, 8 from France, 3 from The Netherlands, 3 from Singapore and 3 from Switzerland, while other countries had 1 or 2 JVs). From the 334 joint ventures contacted 127 agreed to participate in the study. In total of 202 executives participated in the survey, 61 joint ventures had multiple participants which allowed to test the reliability of the responses. The data were collected by structured interviews in which questionnaires were filled in by the respondents. The performance of the joint ventures was measured by perceptual measures categorized according to several predictors (efficiency, competitiveness, and satisfaction). Pothukuchi et al. (2002) found that from the six corporate cultural dimensions only open vs. closed system had a significant negative relationship on all the performance measures used. Three other dimensions (normative vs. pragmatic, employee vs. job and process vs. result) also had a negative influence. The strong negative effect of open vs. closed system cultures in an alliance is according to Pothukuchi et al. (2002) because if one partner engages in high information sharing and the other does not, partners cannot capitalize on the synergy effect of a joint venture and the open system partner may come to suspect the closed system partner's commitment and loyalty toward the venture. As a result, IJV performance may suffer. Problems that can arise on the other dimensions are for example in an organization in a strategic alliance in which people only put a limited effort in their jobs, while in the partner organization people give a maximal effort (process oriented - results oriented). In this strategic alliance people will be irritated of each other which will influence the performance of the strategic alliance. Problems on the open vs. closed system have however a bigger impact than the other dimension and especially nowadays this dimension can even become more important because of the increasing importance of open innovations (Chesbrough, Vanhaverbeke and West, 2006).

→ Cultural fit

Whereas cultural misfits are a cause of strategic alliance failure, through cultural fits organizations can form a bond and increase the flexibility of the organizations towards each other in the strategic alliance (Aulakh and Madhok, 2002). The increased flexibility improves the performance of the alliance. Aulakh and Madhok (2002) found that there is a significant influence of organizational cultural fit on flexibility, this suggests that a corporate cultural fit would improve the flexibility of the organizations in the strategic alliance and in that way improve the performance of the strategic alliance. Having discussed the first two points; the corporate cultural fits and the corporate misfits, the innovativeness will now be discussed.

→ Innovativeness

Corporate culture is by many scholars characterized using the two national cultural dimensions power distance and uncertainty avoidance (e.g. Ulijn & Weggeman, 2001). Ulijn and Weggeman (2001) used these dimensions to search for the best corporate innovation culture. From Section 4.2 it was concluded that the best national innovation culture has a low power distance and a low uncertainty avoidance, translated to the corporate cultures this is the village market or the incubator. Ulijn and Weggeman, question if the Anglo-Nordic Village Market would have the exclusive innovation capacity. From this starting point the necessary characteristics for an innovation culture are determined. Ulijn and Weggeman conclude that the open system from the village market gives people the ability to develop and share their ideas, however these ideas need to be guided with a clear goal. This clear goal is present in the guided missile culture. Based on this information Ulijn and Weggeman suggest that the ideal innovation culture would be a combination of the Anglo-Nordic clan and the Germanic guided missile (see Figure 18).

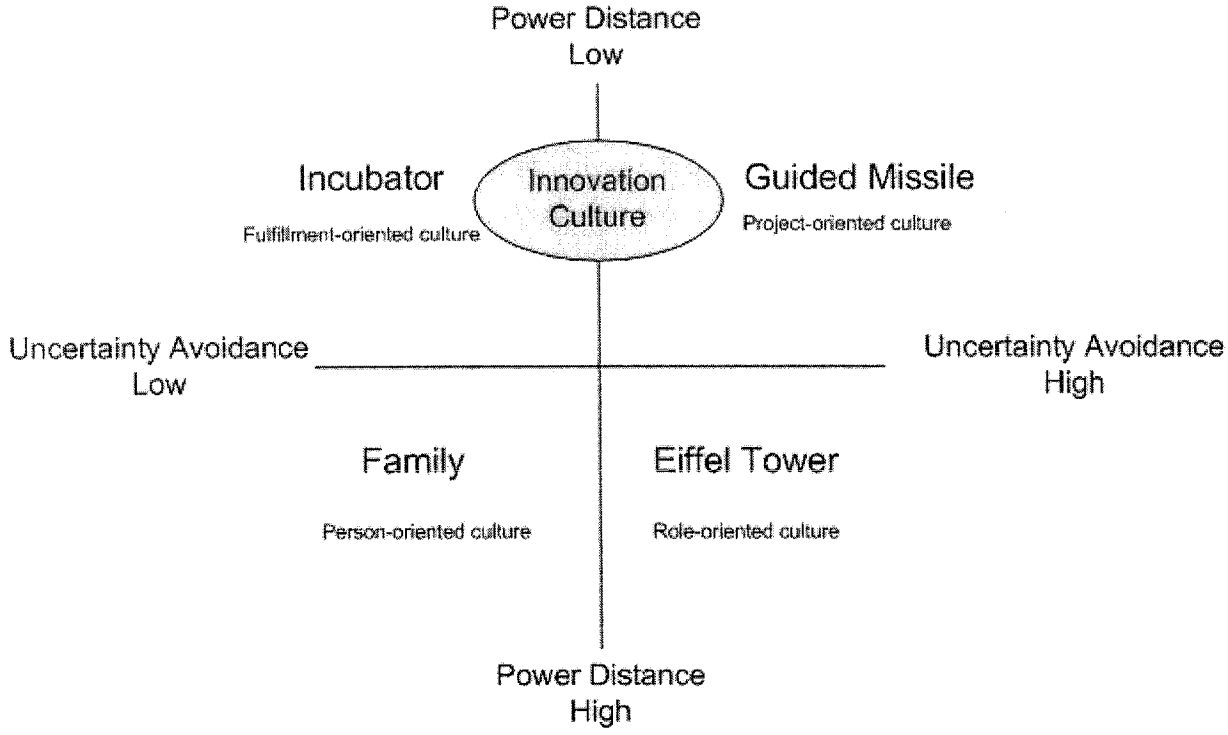


Figure 18: The possible position of an innovation culture. Source: Ulijn and Weggeman (2001)

In this section the influence of corporate culture on strategic alliance performance has been discussed using the three points mentioned in the introduction of this chapter. Pothukuchi et al. (2002) found that the open vs. closed system dimension appeared to have a strong influence on strategic alliance performance, they suggested that if one partner engages in high information sharing and the other does not, partners cannot capitalize on the synergy effect and the open system partner may come to suspect the closed system partner's commitment and loyalty toward the venture. Concerning cultural fit Aulakh and Madhok (2002) found that a corporate cultural fit significantly increases flexibility of the organizations in the alliance. The ideal corporate innovation culture was found using an article by Ulijn and Weggeman (2001), they suggest that the ideal innovation culture is a combination of the Anglo-Nordic clan and the Germanic guided missile. They conclude that the open system from the village market gives people the ability to develop and share their ideas, however these ideas need to be guided with a clear goal. This clear goal is present in the guided missile culture. In the pilot study the influence of the corporate culture on R&D alliance performance will be further researched (see Chapter 5). In the next section the influence of the professional culture will be discussed.

4.4 How does professional culture influence strategic alliance success?

The influence of professional cultures on alliance success will be discussed using the three points from Section 4.1; professional cultural misfit, professional cultural fit and the ideal innovative professional culture. As has been discussed in Section 3.4 no dimensions of professional culture could be identified in the literature. Scholars have often made their own classifications for describing different professions. In Section 3.4 a very good classification has been found which was developed by Schein (1996), therefore this classification will be used here when possible.

→ Cultural misfits

Professional cultural misfits occur when people from different professional cultures start working together. In R&D alliances however almost only people from the same professional culture work together, moreover Lajara et al. (2003) state that technology (R&D) alliances are the alliances with the lowest level of cultural conflict, due to the fact that the habits of scientists and engineers are practically the same on a worldwide basis. According to Schultz (1998) problems in R&D alliances start to occur when the cooperation is extended to commercialisation and distribution. The problem when the alliance starts with the commercialisation and distribution is caused by the fact that people from different professional cultural backgrounds start working together who do not agree on certain points. A good example of how different professional cultures think of each other is given by Ulijn et al. (2001) (see Table 4).

What marketers think of engineers	What engineers think of marketers
• Have no sense of time, service or competitive advantage • No worry about or underestimate costs • Hide in the lab • The client should adapt • Standardisation and technology are sacrosanct • Continue developing a product without planning	• Want everything always NOW, want to deliver the product before it is ready, are always in a hurry and impatient or cannot decide what they want • Are aggressive, demanding and unrealistic • Promise more than they can guarantee with the product specifications • Have no sense of technology, no trust in engineers and are not interested in their problems • Focus on unrealistic profit targets

Table 4: Mutual perception of engineers and marketers. Source Ulijn et al. (2001)

The examples given in Table 4 are a good example for what can go wrong when engineers and marketers work together. The differences between the marketers and engineers are a result of a different way of thinking they learned in their education. A marketer for example wants a product as fast as possible on the market to be ahead of their competitors, while an engineer only wants his product on the market when it is completely ready and checked on errors. These different goals marketers and engineers have can result in friction and wrong decisions being made. Sirmon and Lane (2004) give another example of differences between two professions; engineers and scientists (see Table 5).

Type of professional culture	*Locus of critical knowledge*	*Flow of critical knowledge*	*Innovation process characteristics*
Engineering	Internal: technology communities	Controlled: economic property rights	Problem driven Strict timelines Market criteria
Scientific	External: science communities	Open: few property rights	Curiosity driven Lax timelines Curiosity criteria

Table 5: Professional differences between Engineers and Scientists. Source: Sirmon and Lane (2004)

The differences between engineers and scientists are found in three areas; locus of critical knowledge, flow of critical knowledge and innovation process characteristics. As an example of what kind of problems can arise between scientists and engineers, Sirmon and Lane gave the following example:

> *"The Medical Research Council (MRC) had a scientific culture favouring broadly defined, science-driven research programs and 'curiosity-led funding'. The engineering culture of the Science and Engineering Research Council (SERC), on the other hand, placed more emphasis on industry relevance and problem-solving. It routinely shifted priorities and resources in accordance with new developments, and was thus able to quickly set up the Biotechnology Directorate that funded research, meeting the industry's needs. The MRC objected, and the debate that followed resulted in an inquiry by the House of Lords. During this inquiry, the MRC condemned the SERC's biotechnology program as 'opportunistic' and 'freewheeling', interested only in narrowly focused 'industrially relevant projects' and in funding too much second-rate science. The SERC, in turn, called its Biotechnology Directorate 'one of the jewels in our crown'."*

→ Cultural fit

Ulijn and Weggeman (2000) and Schultz (1998) indicated that when people from the same professional culture work together they forget about their national cultural differences. When people from the same professional cultures work together a bond is formed which increases their flexibility. Because of the increased flexibility towards each other in the alliance other cultural problems like the national cultural differences become irrelevant (see Section 4.1). In the literature no further relevant information on the professional cultural fit could be found. In the pilot study the influence of the professional cultural fit will be further discussed. Having discussed the first two points; the cultural fits and the misfits will now be discussed.

→ Innovativeness

Considering innovativeness on the professional cultural level we need to find the best combination of people from different professional cultures to increase the innovativeness of the strategic alliance. In R&D alliances however people from mainly one professional culture work together, these are the people from the engineering culture. People from this culture have the enthusiasm in themselves to be innovative, this enthusiasm can only be decreased by people from other professional cultures. People from other professional cultures don't understand the engineers or have different objectives. This can be illustrated by the article from Alexandra von Meier (1999) called 'Occupational Cultures as a Challenge to Technical

Innovation". In this article Von Meier showed that two professional cultures; operators and engineers use different mental models or cognitive representations of technology that are adaptive to their particular work contexts, but which give rise to conflicting evaluations of technological innovation. One example is that engineers have the objective to optimize performance while operators only want to maintain the systems in a state of equilibrium. Von Meier also gave a solution to many of the problems which occur in the communication among people from different professional cultures: people from another professional culture than the engineers are often not aware or misinformed about the capabilities of state-of-the-art technology, and conflicts on this field can be solved by education. Once everybody has all the facts straight they will probably choose the most reasonable course of action.

In this section the professional cultural differences have been discussed by showing the differences between two professional groups. The differences between marketers and engineers and between engineers and scientists have been discussed using two articles. The different ways of thinking and the different goals these professional groups have can cause several problems. In other articles it was suggested that when people from the same professional culture work together they forget about their national cultural differences. This positive influence of a professional cultural fit confirmed the model presented in Section 4.1. Considering the innovativeness of professional cultures it has been suggested that the people working in R&D alliances can very well work together due to their similar professional backgrounds, moreover they naturally have the enthusiasm in themselves to be innovative. Having discussed all the three levels of cultural fit the next section will deal with all the three levels at the same time. By comparing the three cultural levels we will be able to research their relative impact on strategic alliance performance.

4.5 Comparing the three levels of culture

In this section the relative influence of the three levels of culture on strategic alliance performance will be compared. The importance to study the relative influence of the cultural levels has been discussed in Subsections 1.3.1 and 1.3.2. The findings in this section will result in a hypothesis which will be discussed in Section 5.1 and will be researched in Chapter 6. Six relevant articles have been found in which the relative influence of at least two of the cultural levels in a strategic alliance were discussed (short summaries with the relevant information of each of these articles can be found in Appendix 4). An overview of the relevant results from the six articles can be found in Table 6. From this table three conclusions can be drawn which will be discussed below.

	Meschi and Roger (1994)	Pothukuchi et al. (2002)	Schultz (1998)	Sirmon et al. (2004)	Ulijn et al. (2003)	Ulijn and Weggeman (2000)
PC>CC			x	x	x	X
PC>NC			x	x	x	X
CC>NC		x		x	x	
NC>CC	x					
CC>PC						
NC>PC						
SA / Not SA	SA	SA	SA	SA	SA	Not SA
R&D / Not R&D	Not R&D (Industrial)	Not R&D (different branches)	R&D	R&D	Not R&D (different branches)	Not R&D
Sample size	51	127	34	N/A	83	N/A
Size of organi-zations	N/A	0.5-2000 million dollar	N/A	N/A	N/A	N/A
Region	Hungary – other countries	India – other countries	Denmark – other European companies	Theoretical	Dutch-German	Theoretical (NL)

Table 6: The relative impact of national, organizational and professional culture on strategic alliance success.

→ Professional culture > Corporate culture

As can be seen in Table 6, it has been suggested that professional culture has the most impact on strategic alliance performance. Both Schultz (1998) and Sirmon et al. (2004) came to the conclusion that the professional culture is more important in determining alliance success than the corporate culture. Schultz studied the perceptions of 19 project managers in R&D collaborations between Danish and other European corporations. Schultz came to the conclusion that the experiences of the professionals interacting with each other overshadowed

the differences in organizational and managerial preferences. Schultz backed up this conclusion by giving a citation from one of the project managers: "*Problems are discussed in an open atmosphere. Technicians can easily collaborate with technicians.*" Sirmon and Lane (2004) came to this conclusion by suggesting that the culture which predicts the behaviour of the individuals most accurately will also be the most influential culture. According to Sirmon and Lane the professional culture of the individuals predicts their behaviour most accurately and therefore this level of culture is the most important for creating strategic alliance success. Ulijn et al. (2003) have the same opinion on this as they state that employees are nowadays more loyal to their professional ethics than to their company. According to Ulijn and Weggeman (2000) the corporate culture has less influence because people don't work very long for the same organization anymore and therefore they don't identify themselves with the corporate culture anymore. Exposure to a corporate culture is also limited when people get older and have already been in several organizations. As an exception here Japan should be mentioned. In Japan employees usually work in an organization for their entire life, therefore the corporate culture in Japan is more important than in other countries. The influence of the several cultural levels can be different among countries but in fact it is different for every person individually.

→ Professional culture > National culture

According to Schultz (1998) the impact of national cultural differences in determining R&D alliance success is limited through the specific characteristics of R&D. National culture is likely a stronger predictor of group member communication behaviour during the early stages of a group's tenure, before members come to understand how deep attributes such as expertise will impact on the group. One of the informants in his research told that; "*The (national) cultural differences are of little importance. Perhaps you notice them when we have dinner. But they have no impact on the actual collaborative work.*" Sirmon and Lane (2004) also came to the conclusion, they suggest that the culture which predicts the behaviour of the individuals most accurately will also be the most influential culture. According to Sirmon and Lane the professional culture of the individuals predicts their behaviour more accurately than the national culture and therefore this level of culture is more important for creating strategic alliance success.

In a study between 12 Dutch-German cooperations Ulijn et al. (2003) found that the corporate culture seemed to be more important than the national culture. In their article they also state that employees are nowadays more loyal to their professional ethics than to their company. Although the authors did not research the relative influence of professional and national cultures, it can be concluded that they regard professional culture as being more important than national culture. Ulijn and Weggeman (2000) suggested that national culture has less influence because people start to forget about their national culture when they talk about their profession. Strategic alliances are composed of several people working together, these people are the bearers of the several levels of culture. Because the cultural problems occur in the cooperation between several different people the culture which has the most influence on a person will depend on the identification and loyalty of that person to the different cultural groups (Van Maanen & Barley, 1984).

→ Corporate culture > National culture

Concerning the relative influence of corporate and national culture we can see from Table 6 that scholars have come to different results. Meschi and Roger (1994) suggested that national culture is more important than corporate culture, however Pothukuchi et al. (2002), Sirmon et al. (2004) and Ulijn et al. (2003) conclude that corporate culture is more important than national culture. Meschi and Roger analyzed the impact of corporate and national culture on the social effectiveness in international joint ventures in Hungary with partners from several other European countries. The effect of the two cultural levels was measured using a five point Likert scale. The results showed that the national culture has a bigger impact on the social effectiveness than the corporate culture. Meschi and Roger suggested that this conclusion could be explained by the fact that in Hungary the involvement of employees in their company is not very strong in general. Pothukuchi et al. (2002) came to a different conclusion than Meschi and Roger, they suggest that corporate culture is more important than national culture. Pothukuchi et al. studied the relative impact by researching two hypotheses:

1) National culture distance between partners negatively influences joint venture performance
2) Corporate culture distance between partners negatively influences joint venture performance

These two hypotheses were tested using questionnaires in 127 joint ventures between Indian organizations with organizations from 21 other countries. By comparing the results of the two hypotheses Pothukuchi et al. found more support for the corporate culture distance to negatively affect joint venture performance than the national culture distance. Sirmon and Lane suggest that the culture which predicts the behaviour of the individuals most accurately will also be the most influential culture. According to Sirmon and Lane the corporate culture of the individuals predicts their behaviour more accurately than the national culture and therefore this level of culture is more important for creating strategic alliance success.

In a study in 12 Dutch-German cooperations Ulijn et al. (2003) asked 24 respondents on the differences between the partners. Most respondents did not see any difference between the partners. According to Ulijn et al. the partners seem to be more homogenous on the national culture than on the corporate culture and the corporate culture seemed to be more important than the national culture, however there is no further explanation for this as it was not the main research question of the study. Another study by Grotenhuis (2001) addressed the influence of national and corporate culture on the success of mergers and acquisitions. Grotenhuis found that in a Dutch-Japanese case mainly the national cultural differences were very important, although some panellists mentioned corporate culture as more important. These different results on the influence of national and corporate culture are not only caused by the differences in perception (see Section 3.1) but also because of the interaction between national and corporate culture. This interaction caused that the national culture in one country is more important than in another country.

Although the conclusions from this section are true in general, there are some variations among people, organizations and countries. This variation could already be seen in the article from Meschi and Roger (1994). The influence of the cultural levels is different for every individual and it also differs among countries. For people with a higher education the professional culture will be more important than for people with a lower education. People with a higher education have had more years of education than someone with a lower education and will therefore identify themselves more with their professional culture. Leung

et al. (2005) confirmed this, they suggested that sources like educational or professional affiliation play a much stronger role in defining who people are what motivates them and which values they hold. They state that culture matters more when a person identifies himself with the culture. Especially in R&D alliances the professional culture is expected to be very important. In R&D alliances people with a very high level of education are employed who identify themselves very strongly with their work and have contacts with people with a similar educational background with people from all around the world. National cultures have just like the other cultural levels a different impact on each individual. Through the globalisation of the world, people travel much more and understand each others national cultures much better. In Europe for example, people start to see themselves as Europeans and in many companies there are people who travel the whole world and who see themselves as world citizens. In companies where there are very specific rules, procedures or equipment for completing a task (like in R&D alliances), national culture will even have less impact.

From these six articles it could be concluded that the three cultural levels have a different impact on strategic alliance success. The impact of the cultural level depends mainly on how people identify themselves with the culture. When people identify themselves with a culture this culture will be a good predictor for their behaviour. The professional culture is the best predictor for the behaviour of people, on this level people communicate with each other in a strategic alliance. In R&D alliances highly educated people work with a similar background, these people can easily communicate with each other and they forget their other cultural differences when they talk about their work. Based on the three conclusions discussed above a hypothesis will be formulated in the next section, and in Chapter 5 this hypothesis will be researched using a pilot study.

4.6 Chapter conclusion

In this chapter the third research question has been addressed 'What is the influence of the three levels of culture on the success of strategic alliances?'. In Section 4.1 it has been explained that organizations in a strategic alliance need to strive for a cultural fit in order to improve alliance performance. When a cultural fit is achieved organizations should strive for an optimal innovative culture. In Section 4.2 the influence of national culture on strategic alliance performance has been discussed. Different results on how the dimensions from Hofstede influence strategic alliance performance have been found. The results of the studies could however partly be explained through the different measures of success used and the different perceptions of the people involved, therefore no hard conclusions could be drawn. In the pilot study it will be researched if clearer results can be found considering the influence of the national cultural dimensions on alliance performance. Considering the influence of the corporate culture Pothukuchi et al. (2002) suggested that the open system dimension is very important, however no further research on this could be found. Aulakh and Madhok (2002) found that a corporate cultural fit between the organizations in the alliance positively influences the flexibility of the organizations in the alliance which improves the performance of the strategic alliance, they could not find this influence for national cultures which suggests that corporate cultures are more important than national cultures in determining alliance success.

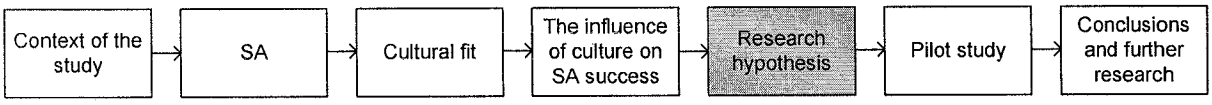
When we consider cultural misfits on the professional cultural level, problems occur when people from different professional cultures start working together. In pre-competitive R&D

alliances people from the same professional culture work together, they form a cultural bond through which increases their flexibility while other differences become irrelevant.
In Section 4.5 the three cultural levels have been taken together to examine the relative influence of them on strategic alliance performance. Six articles were found to come to the conclusion that the professional culture is seen as the most important level of culture. Several different reasons were mentioned to support this conclusion. The impact of the cultural level depends mainly on how people identify themselves with the culture. When people identify themselves with a culture this culture will be a good predictor for their behaviour. The professional culture is the best predictor for the behaviour of people, on this level people communicate with each other in a strategic alliance. In R&D alliances highly educated people work with a similar background, these people can easily communicate with each other and they forget their other cultural differences when they talk about their work. Based on these conclusions a hypothesis will be formulated in Chapter 5.

Chapter 5

Research Methodology

In this chapter the research methodology will be described. Firstly the research model will be discussed, along with the research questions and the hypothesis. Secondly the method of study, the Delphi Study, will be described.



5.1 Research model

To study the influence of culture on strategic alliances three research questions have been formulated in Section 1.2:

RQ 1 *What are strategic alliances (a) and what factors influence their success (b)?*
RQ 2 *What are national cultures, corporate cultures and professional cultures?*
RQ 3 *What is the possible influence of the three levels of culture on the success and failure of strategic alliances?*

Research question 1 has been discussed in Chapter 2, cultural fit was mentioned as one of the most important strategic alliance failure factors (see Section 2.2). Three levels of cultural fit could be identified; national, corporate and professional culture. These three levels of culture have been discussed in Chapter 3 and their influence on strategic alliances has been discussed in Chapter 4. There are only a few studies in the academic literature in which all the three levels of cultural fit were identified. In this study the influence of all the three levels of cultural fit on strategic alliance performance will be researched. The objective of this study will be to make clear which cultural level is the most important in determining strategic alliance success. Knowing which cultural level has the most influence on strategic alliance success, managers know where they have to give the most attention to in order to increase the performance of their strategic alliances (see Subsections 1.3.1 and 1.3.2). In Section 4.5 the relative influence of the three cultural levels on strategic alliance performance has been compared. Based on the literature research it has been suggested that the professional culture is the most important in determining strategic alliance success followed by the corporate and the national culture. Based on the literature review of the three cultural levels on strategic alliance performance a hypothesis has been formulated, which will be researched in a pilot study (see Chapter 6):

H: The fit between the professional cultures of the employees of the participating organizations in a strategic pre-competitive R&D alliance is the most critical cultural factor of alliance success.

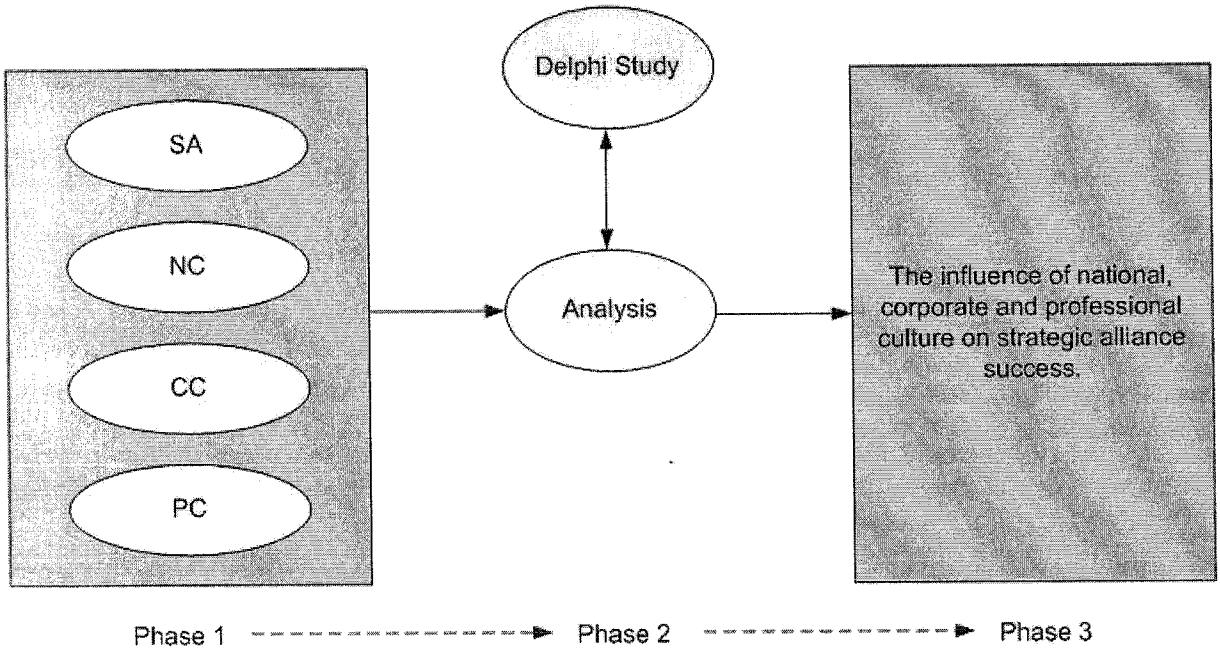


Figure 19: Research overview

To find further support for the hypothesis a Delphi Study has been done at the Philips R&D Campus. This method has never been used before in the research on the influence of culture on strategic alliances and is ideal for this kind of research because experts in the researched area are asked for their opinion. More about the Delphi Method can be found in Section 5.2. The research of this study can be divided into 3 phases:

- Phase 1: Literature study, where a hypothesis is formed.
- Phase 2: Analysis and Delphi Study, where the hypothesis from Phase 1 is analysed using a Delphi approach.
- Phase 3: Conclusion and recommendations, where the hypothesis is accepted or rejected based upon the literature study and the Delphi Study.

Phase 1 covers the literature study that can be found in Chapters 2, 3 and 4. Academic journals are the main source of information for this phase. The Delphi Study from Phase 2 will be further described in Section 5.2 and Phase 3 will be covered in Chapter 7.

5.2 Delphi Study

To research the hypothesis from Section 5.1 the Delphi Method has been used. The Delphi Method has been chosen for this research because it is an excellent method to research the influence of culture on alliance success. The Delphi Method was developed as a means to handle opinions rather than objective facts. As culture is not about clear facts Delphi is a good method to research the hypothesis. Using the Delphi Method experts are asked for their opinion on the selected issues. In the Delphi Method expert panels are used to come to a conclusion on a selected issue using the opinion of the experts. Delphi has never been used before to research the influence of culture on strategic alliance, which could help to find new

ideas concerning the area of research. Fowles (1978) described the following ten steps for the Delphi method:

1. Formation of a team to undertake and monitor a Delphi on a given subject.
2. Selection of one or more panels to participate in the exercise. Customarily, the panellists are experts in the area to be investigated.
3. Development of the first round Delphi questionnaire.
4. Testing the questionnaire for proper wording (e.g., ambiguities, vagueness).
5. Transmission of the first questionnaires to the panellists.
6. Analysis of the first round responses.
7. Preparation of the second round questionnaires (and possible testing).
8. Transmission of the second round questionnaires to the panellists.
9. Analysis of the second round responses (Steps 7 to 9 are reiterated as long as desired or necessary to achieve stability in the results).
10. Preparation of a report by the analysis team to present the conclusions of the exercise.

The Delphi Method was originally developed for forecasting purposes but it can also be used for many other purposes. In this study we want to know which cultural level is the most important in determining alliance performance, therefore we need to use an adapted Delphi Study for ranking purposes. Schmidt (1997) developed a method to conduct ranking-type Delphi surveys, the method consists of three phases: (1) the discovery of issues, (2) determining the most important issues, and (3) ranking the issues. In this study we are interested in which level of culture is the most important in determining strategic alliance success, therefore the following step plan will be followed:

1. Formation of a team to undertake and monitor a Delphi on a given subject.
2. Selection of one or more panels to participate in the exercise. Customarily, the panellists are experts in the area to be investigated.
3. Development of the first round Delphi questionnaire.
4. Transmission of the first questionnaires to the panellists.
5. Analysis of the first round responses.
6. Interviews with the panellists.
7. Analysis of the interviews.
8. Group discussion with the panellists.
9. Feedback from professionals
10. Preparation of a report by the analysis team to present the conclusions of the exercise.

By following this 10-step plan the panellists can rank the levels of culture according to their importance on strategic alliance success. In Subsection 5.2.1 the background of the alliances will be discussed, in Subsection 5.2.2 the expert sample will be discussed and in Subsection 5.2.3 the questionnaire, interviews and the group discussion will be discussed.

5.2.1 Alliance sample

The expert panel in the Delphi Study are experts from the Philips R&D Campus who work or have been working in pre-competitive strategic R&D alliances. In these alliances are different companies active, the experts from the expert panel are from Philips (13 experts) and the Telematica Institute (3 experts). In Europe much of the pre-competitive research has been sponsored by the European Union. The European Union states that in this era of 'open

innovation' (Chesbrough et al, 2006). Europe cannot be left behind and it is proven that sponsoring stimulates R&D efforts. In the European Union this research is clustered in programs like Eureka and in Framework Programmes. The research projects are clustered into several clusters of similar research projects. To illustrate how these projects work one of these clusters is further described here. One of the clusters in which many participants of the pilot study are active is called ITEA. ITEA stands *for Information Technology for European Advancement*. In this cluster many large companies like Airbus, Alcatel, Nokia and Philips are active. Besides the large companies there are also smaller companies, research institutes and universities active in these projects. The projects have an average of 30 to 300 person-years and run for about 2 to 3 years. In total 86 projects in the ITEA cluster have already been done (34 of these projects are still running). In these projects 517 partners participated from 25 countries, when all the projects have finished more than 9500 person-years of R&D will have been invested. The ITEA program will be followed up by the ITEA2 program.

Since one of the clusters (the ITEA cluster or program) has now been described one of the projects will be described shortly to illustrate what kind of research has been done in these projects. It is the project AMBIENCE, in this project companies from Austria, Belgium, Finland, France, Greece, Italy, The Netherlands and United Kingdom participated. Ambient Intelligence is about environments that are sensitive, adaptive and responsive to the needs, habits, gestures and emotions of people. The project had outcomes on three areas:

1. Dissemination
   - 60 papers presented at international conferences and published in books and journals
   - One open workshop and one international conference (EUSAI)
   - 10 radio and TV broadcasts and magazine articles
2. Exploitation
   - Three potential new products
   - One potential new commercial service
   - Six new systems for internal use (further research)
3. Standardisation
   - Three contributions to three standardisation bodies (Bluetooth, IEEE, OSGi)

Since we have now described the projects the experts from the pilot study work in, the results from the pilot study will be discussed in the next section.

5.2.2 Expert Sample

The contacts with the experts that participated in the Delphi Study are all made through a snowball effect. After each meeting with a person at the Philips R&D Campus new appropriate experts to participate in the Delphi were found. Using this snowball effect, 16 people were found who were willing to fill in the questionnaire (13 from Philips and 3 from the Telematica Institute). Interviews could only be held with 10 of the 16 experts because not all the respondents were available for the interviews.

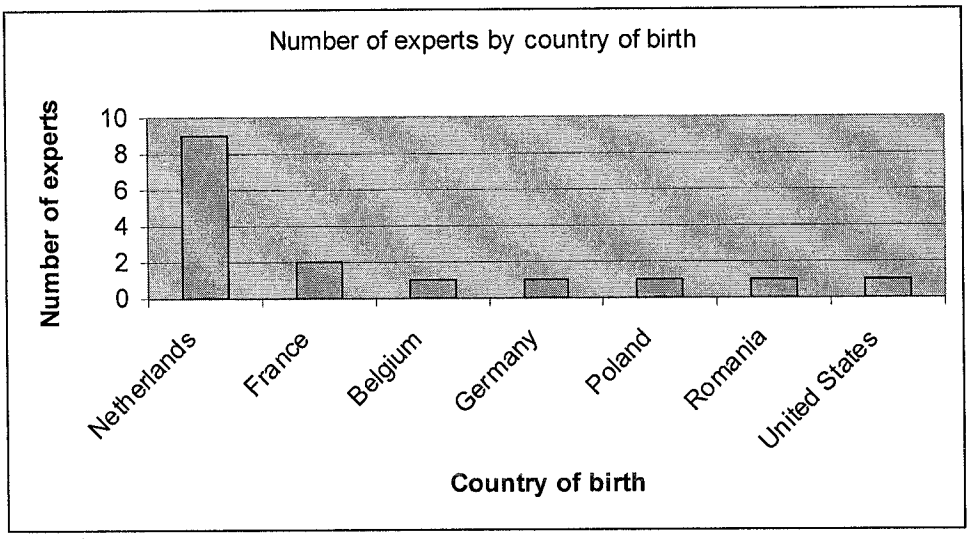


Figure 20: Number of experts by country of birth

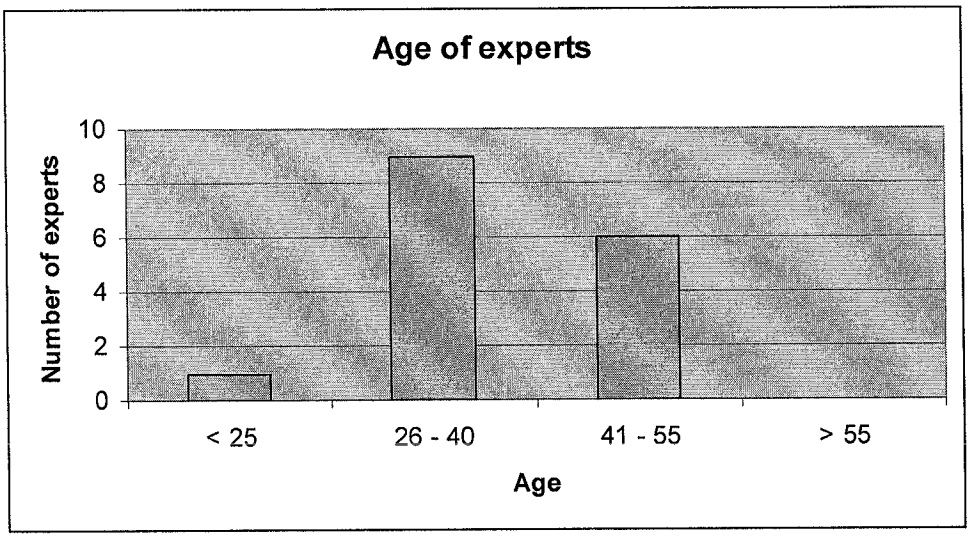


Figure 21: Age of the experts

The majority of the experts were from The Netherlands (9 out of 16, see Figure 20). The experts that are not from The Netherlands were however familiar with the Dutch culture because of their work. From the experts only 2 out of the 16 experts were women. One of the experts is under 25 years old, nine are between 26 and 40 years old and 6 are between 41 and 55 years old (see Figure 21). Fourteen out of the 16 experts have a master degree and some got a PhD. The majority (14 out of 16) has a technical background, like informatics and electrical engineering, one has an economical background and one has studied psychology. The role of the experts in the alliances was mainly as a project manager (14 out of 16) while some were both project manager as well as researcher (3 out of 16), 2 other experts only did research work in the alliances. The different backgrounds of the experts make them a very interesting sample because they will all have a different perception (see Section 3.1) of cultural situations that occur in alliances.

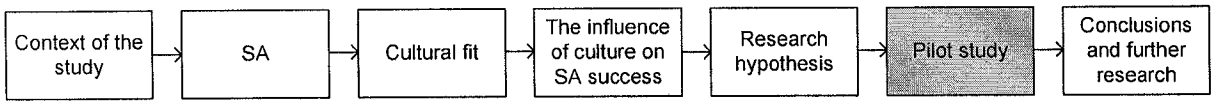
5.2.3 The questionnaire, interviews and group discussion

The questionnaire can be found in Appendix 3. The questionnaire dealt with five groups of questions; questions related to personal information like country of birth, age and education to know more about the background of the experts. This group of data can however not be used for further research on differences between these groups because the sample was too small to study these differences. The second group of questions dealt with the importance of alliances and the factors (culture) that influence them. These questions were necessary to know the opinion about the experts about strategic alliances. The third, fourth and fifth group of questions dealt with national, corporate and professional culture. These questions form the main part of the questionnaire to give answer to the research hypothesis. For each of these groups the negative and positive influence of the cultural level on alliance performance was asked. Because averages on Likert scales cannot be compared the Wilcoxon signed ranks test has been used. This test has been used because it is a nonparametric test and here we do not deal with a specific distribution, moreover it is an ideal test to perform rank tests. The cultural dimensions from Chapter 3 were also used in the questionnaire, however in the interviews it appeared that the cultural dimensions were not always well understood. The interviews have been used to find problems like this and to give experts the opportunity to give further explanations. Because of the problems with the cultural dimensions it was decided to further explain the influence of the cultural levels using a model supported with statements from the experts. This model appeared to be more useful in explaining the relative influence of the cultural levels in determining alliance success. In order to validate this procedure four professionals were at the final group discussion, their validation will be discussed in Section 6.2.3.

Chapter 6

Pilot study results

The pilot study has been done using the 10-step plan which has been described in Section 5.2. In this chapter the results from the Delphi Study will be discussed and the hypothesis from Section 5.1 will be examined.



6.1 Results from the Delphi Study

The results from the Delphi Study will be presented in Subsections 6.1.1 and 6.1.2. Subsection 6.1.1 will discuss the questionnaire results along with the argumentation from the interviews, Subsection 6.1.2 will be about the group discussion.

6.1.1 Questionnaire and interview results

In the pilot study no clear results have been found in describing the cultural differences using the dimensions from the cultural models which have been discussed in Chapter 4. In the interviews it also appeared that not all the experts had understood the dimensions, although there was a short explanation of them included in the questionnaire. It has been decided to use statements from the experts to get a better understanding of the influence of the different cultural levels on strategic alliance success. These statements are more useful to give a better understanding on how the experts think about the influence of the cultural levels than the dimensional models from Chapter 4.

→ Strategic Alliance questions in the questionnaire

In the questionnaire (see Appendix 3) several questions were formulated that preceded the questions concerning the influence of the three levels of culture on strategic alliance performance. These questions are about the importance of the alliances the experts work in, these questions are discussed first (they are numbered according to the question number they have in the questionnaire, see Appendix 3):

7. *What is your opinion on the usefulness of strategic alliances for your organization? (1 = not useful, 7 is very useful)*

The average score on this question was 6,3 on a scale from 1 to 7, which means that the experts regard strategic alliances as being very important to their organization. This question has been asked to see how important the alliances are according to the experts. These answers

confirm the theory from Chapters 1 and 2 in which the importance of strategic alliances for R&D was indicated. The next question was to determine why the respondents regard strategic alliances as being or not being useful to their organization:

8. *Why in your opinion are strategic alliances useful / not useful for your organization?*

Several different answers have been given:

> *"Need for speed has become more and more important today. By strategic alliances complementary competencies are available in a fast way. All stakeholders in the product creation process are participating."*
>
> *"They are essential when standards have to be set (CD, DVD, Blue Ray etc.)."*
>
> *"They are very useful to open up new markets."*
>
> *"They are useful to access knowledge and expertise in new domains."*

These answers indicate that there are many different reasons why an organization can decide to enter a strategic alliance. The general argument behind these reasons is that the organization needs the cooperation with other organizations because together they both get an added value. These answers confirm Table 10 from Appendix 2 where similar reasons to enter a strategic alliance are mentioned. The next question concerned the factors that influence the performance of the strategic alliance:

9. *What factors, in your opinion, influence the performance of a strategic alliance?*

Several different answers have been given:

> *"Compatibility and complementarities."*
>
> *"Alliances should create clear added value for both parties. Additional, strategic alliances should have future potential (beyond the current situation)."*
>
> *"Trust, Openness and Transparency, Mutual understanding, Business interest, Shared risk"*

Personal	**Organizational/Alliance**
Team spirit Personal relations Personal motivation Trust Mutual understanding	Added value Strategic interest Financial constraints Balanced size of partners involved Organizational support Absence of bureaucracy Management support Shared risk Future potential for both partners No hidden agenda Have a common goal

Table 7: Personal and organizational related determinants on the usefulness of strategic alliances

The answers on this question given by the experts can be divided into two groups: a group with personally related determinants and a group with organizational/alliance related determinants for strategic alliance performance (see Table 7). The importance of dividing these factors in two groups is because culture has a different relation to these factors (see Subsection 5.2.2). The next question was about the importance of the cultural fit:

10. How important do you consider cultural fit for the successfulness of a strategic alliance? (1= not important, 7= very important)

The average answer to this question was 4,9 out of 7. The experts indicate that they recognize the importance of a cultural fit in strategic alliances. From these introductory questions it can be concluded that the experts recognize the importance of strategic alliances and moreover they recognize the importance of a cultural fit in these alliances. The experts, all working in pre-competitive R&D alliances and all confirming the importance of strategic alliances and culture are therefore the right people to use as experts in the study on the influence of culture on strategic R&D alliances. Having investigated the opinion of the experts on the importance of strategic alliances and on the importance of a cultural fit, the rest of the questionnaire will deal with the influence of the three cultural levels (NC, CC and PC) on strategic alliance success and failure.

→ The influence of national culture on strategic alliance success and failure

The influence of national culture on strategic alliance success and failure has been investigated by asking the following two questions:

11. According to your experience, do national cultural differences have a negative influence on the performance of strategic alliances? (1= very weak, 7= very strong)

12. Does national cultural fit between partners have a positive influence on strategic alliance performance? (1= very weak, 7= very strong)

On the question if national culture has a negative influence on strategic alliance performance the experts gave an average answer of 3,6 (see Figure 22).

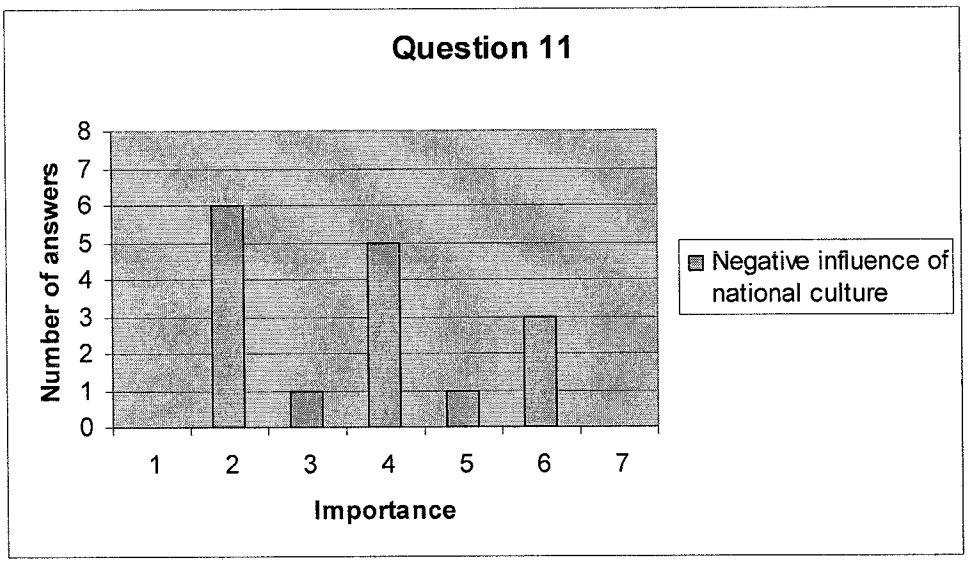


Figure 22: The negative influence of national culture on strategic alliance success according to the experts

On the question if a national cultural fit has a positive influence on strategic alliance performance the experts gave an average answer of 3,9 (see Figure 23).

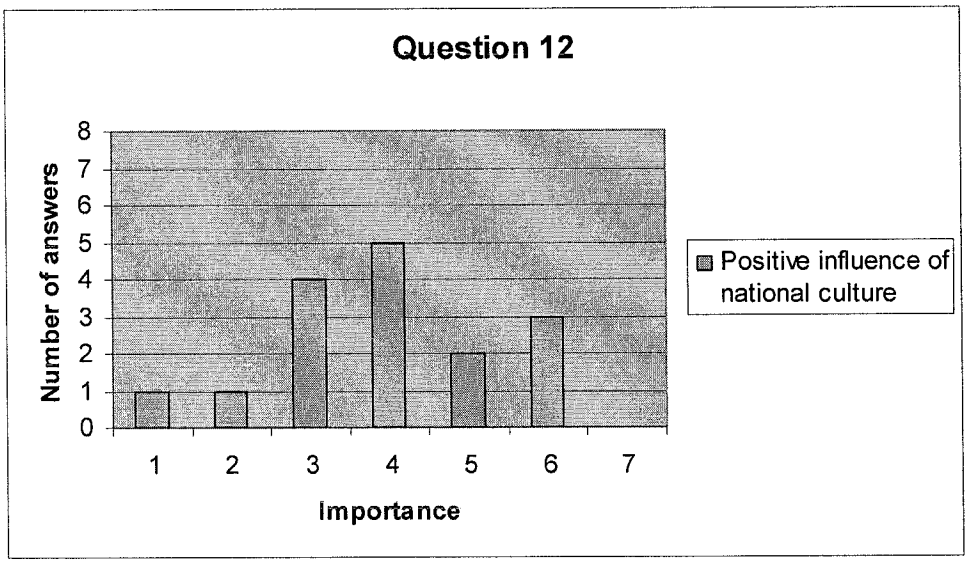


Figure 23: The positive influence of national culture on strategic alliance success according to the experts

From the answers to these two questions it can be seen that a national cultural misfit can have a negative influence and a national cultural fit can have a positive influence on strategic R&D alliance performance. The results are however not strongly negative or strongly positive. The experts have also been asked if they could give an example of a cultural problem which occurred in one of their projects, different national cultural problems have been mentioned:

> *"French are more hierarchical than Dutch, decisions are taken through different levels."*

One expert reminded a more concrete problem related to national cultural differences:

> *"In one project we had several companies from several countries. It was noticeable that the Spanish partners with a strong collectivism always aligned their votes which meant that in decisions with several options, they mostly decided the vote, as the other companies from a more individual culture clearly decided what they liked without focusing on the opinions of the companies in their own country. They really where a Spanish cluster which also isolated them from the rest as one was never sure what their own opinion was as they always spoke as one front."*

These examples show that there can really be problems related to national cultural problems, however these problems are not very strong, in the interviews it has been told that people are aware of these national cultural problems which makes that these differences have less influence.

→ The influence of corporate culture on strategic alliance success and failure

The influence of corporate culture on strategic alliance success and failure has been investigated by asking the following two questions:

16. According to your experience, do organizational cultural differences have a negative influence on the performance of strategic alliances? (1= very weak, 7= very strong)

17. Does organizational cultural fit between partners have a positive influence on strategic alliance performance? (1= very weak, 7= very strong)

On the question if corporate culture has a negative influence on strategic alliance performance the experts gave an average answer of 4,7 (see Figure 24).

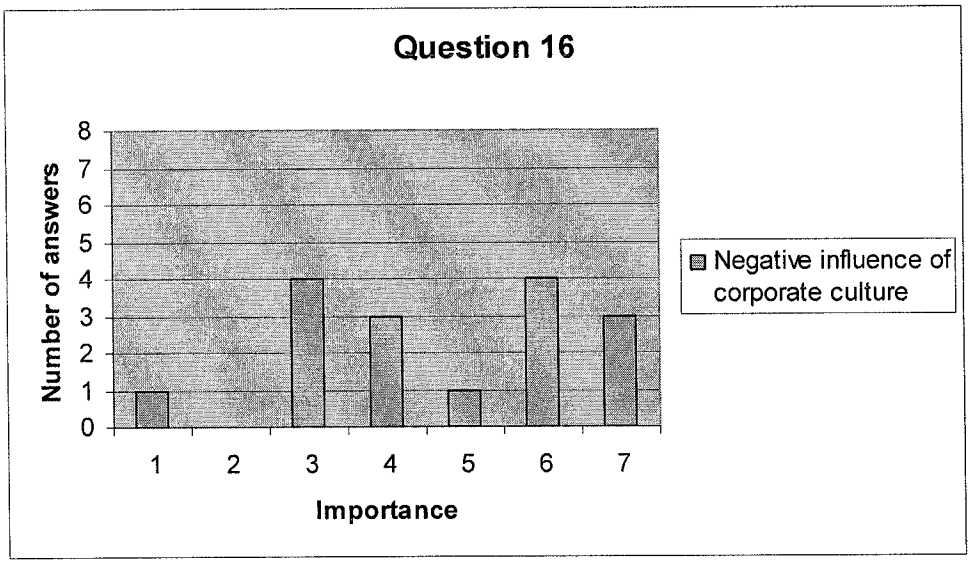


Figure 24: The negative influence of corporate culture on strategic alliance success according to the experts

On the question if a corporate cultural fit has a positive influence on strategic alliance performance the experts gave an average answer of 5,4 (see Figure 25).

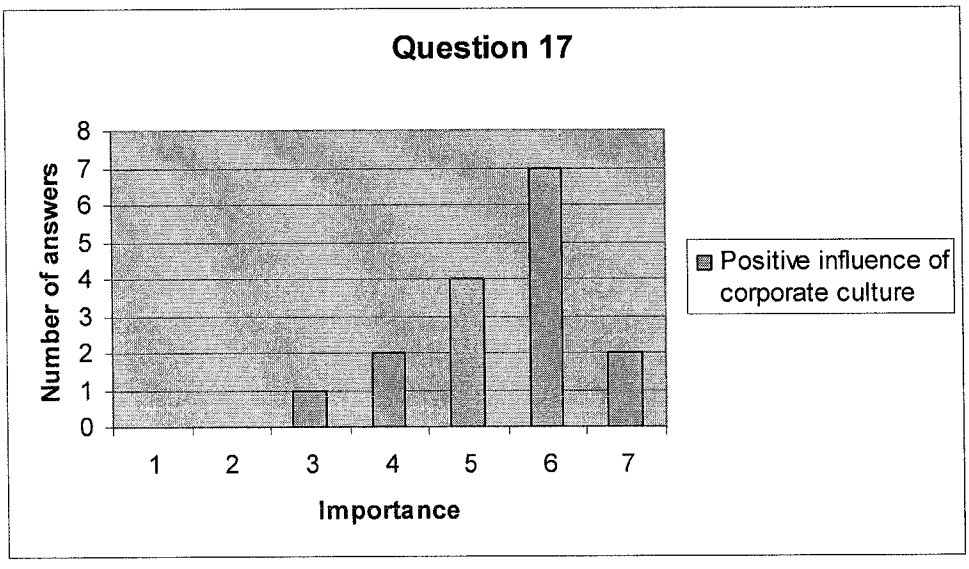


Figure 25: The positive influence of corporate culture on strategic alliance success according to the experts

From these answers it is suggested that a corporate culture fit is seen as being more important than corporate cultural misfits. The positive influence of a corporate cultural fit can easily be explained; the corporate cultural fit is often the reason why the organizations work together in

a strategic alliance in the first place because it can give them chances to open up new markets, or to access knowledge and expertise in new domains and other advantages (see Question 8 on the usefulness of strategic alliances). Also on the corporate level it was asked if there have been any problems related to different corporate cultural misfits. Several different problems were described:

> *"Small companies working with large, bureaucratic companies (like Philips) often have a problem with our reaction time, and our willingness to express interest in the form of a high level of interaction and cooperation. Most partnerships between two different cultures of organization have to address these issues from the first day, as to how decisions are made, how long they take, and who has the final word. Without these discussions, failure of the partnership is frankly quite likely, in the form of a withering death. On the other hand, matched organizational cultures are no guarantee for success, since matched bureaucratic cultures often work ultimately slower than either company – making technical progress painfully slow and difficult, leading to failure. In this respect, small companies are much more suited for partnerships, since their goals and missions are clear, and they are required to work hard, do not have 672 levels of bureaucracy, etc."*

> *"A multi-partner research project where one partner was more results-driven & minded (and spent a lot of resources on achieving the deliverables), whereas the other was more focussed on the well-feeling of humans, social interactions, etc. problems arose when the results committed to by project agreement were not reached at the delivery dates."*

These problems related to corporate cultural misfits can often very easily be seen as these differences are visible to the human eye (see Section 3.1). Differences between the corporate cultures can be discussed about prior to entering the strategic alliance, and when no agreement can be made on this it can be decided not to enter the alliance together.

→ The influence of professional culture on strategic alliance success and failure

The influence of professional culture on strategic alliance success and failure has been investigated by asking the following two questions:

21. *According to your experience, do professional cultural differences have a negative effect on strategic alliance performance? (1= very weak, 7= very strong)*

22. *Does professional cultural fit have a positive effect on strategic alliance performance? (1= very weak, 7= very strong)*

On the question if professional culture has a negative influence on strategic alliance performance the experts gave an average answer of 4,9 (see Figure 26).

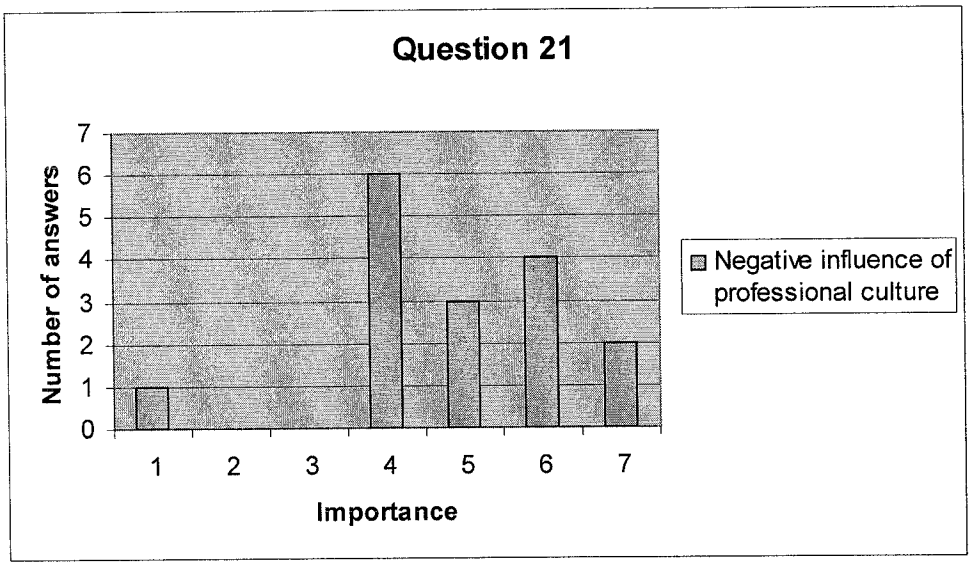


Figure 26: The negative influence of professional culture on strategic alliance success according to the experts

On the question if a professional cultural fit has a positive influence on strategic alliance performance the experts gave an average answer of 5,5 (see Figure 27).

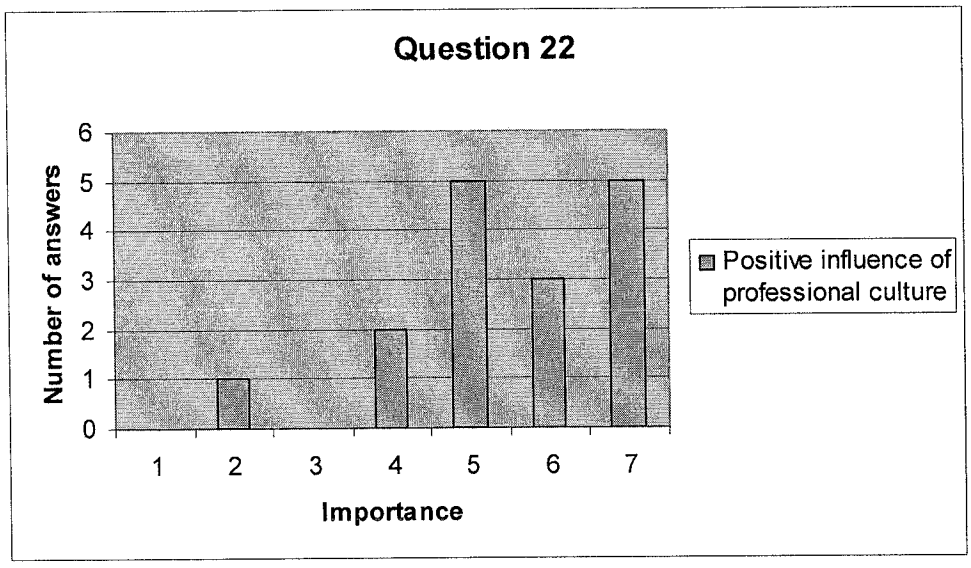


Figure 27: The positive influence of professional culture on strategic alliance success according to the experts

From these answers it can be seen that a professional cultural misfit has a strong negative influence on a strategic alliance while a professional cultural fit has a strong positive influence on strategic alliance performance. The strong influence of the professional culture is caused through the fact that the people communicate with each other on this level. When people talk the same worldwide 'language' on this level they can work very good together while a professional cultural misfit causes the people to talk different 'languages'. Also on the professional cultural level it has been asked if there have been any problems related to different professional cultures. Several different problems were described:

> *"Multidisciplinary teams are difficult to coordinate, due to the different approaches for problem-solving, etc."*

"Production engineers have in general very pragmatic approach to new development, while people from R&D tend to explore new ideas before adopting a solution. This might sometimes result in disagreements."

"Working with for example researchers and business people can cause difficulties in setting concrete targets and goals for a strategic alliance."

Some experts explicitly mentioned the positive effects of a professional cultural fit in this question:

"This was a European (ITEA) project, where all people involved were R&D scientists, and typically quite open-minded. I believe this was one of the reasons for the very good team spirit in the project."

"Mainly on the professional level people actually work together and that is where the trust really is built up."

The fact that the experts spontaneously started to mention the positive effects of professional cultural fits indicates that this has certainly a strong positive influence on strategic alliance success. In the next part the positive as well as the negative influence of the three levels of cultural fit on strategic alliance performance will be compared.

→ Comparing the three levels of cultural fit

Since the influence of all the three levels on strategic alliance performance has now been described the three levels of cultural fit will now be discussed to give answer to the central hypothesis given in Section 5.1:

H: The fit between the professional cultures of the employees of the participating organizations in a strategic pre-competitive R&D alliance is the most critical cultural factor of success.

To test the hypothesis the results from questions 11, 12, 16, 17, 21 and 22 are summarized in Table 8. The results are averages of the answers from the questionnaire. Before any conclusions can be drawn the data needs to be empirically researched.

NC -	3,6	3,8
NC +	3,9	
CC -	4,7	5,1
CC +	5,4	
PC -	4,9	5,2
PC +	5,5	

Table 8: The relative influence of the three cultural levels on strategic alliance success and failure

To test the differences between the cultural levels, the data is researched using the Wilcoxon Signed Ranks Test. This test is used because it is a nonparametric test and here we do not deal with a specific distribution, moreover it is ideal to perform rank tests. Using this test six hypotheses have been researched:

1. Whether PC influence > CC influence
2. Whether PC influence > NC influence
3. Whether CC influence > NC influence
4. Whether PC+ influence > PC- influence
5. Whether CC+ influence > CC- influence
6. Whether NC+ influence > CC- influence

For each of these six hypotheses the following test is done:

$$H_0 : \mu_1 = \mu_2$$
$$H_1 : \mu_1 \neq \mu_2$$

The significance level $\alpha = 0{,}1$.

$$p < 0{,}1 \Rightarrow \text{reject } H_0$$
$$p \geq 0{,}1 \Rightarrow \text{accept } H_0$$

Hypothesis	P-Value	Accept/ Cannot accept
1: PC>CC	0,569	Cannot accept
2: PC>NC	0,004	Accept
3: CC>NC	0,003	Accept
4: PC+>PC-	0,288	Cannot accept
5: CC+>CC-	0,093	Accept
6: NC+>NC-	0,437	Cannot accept

Table 9: Results of the hypotheses tests

The results from the statistical research of the questionnaire results can be found in Table 9. From the results of the questionnaire we can conclude that the professional culture and the corporate culture are significantly more important than the national culture. No empirical evidence could however be found to support that the professional culture is more important than the corporate culture. In the interviews the experts mentioned that they have hardly had any national cultural problems. People are used to work with people from different nationalities and are aware of the differences. In Subsection 6.1.2 the relative influence of the cultural levels will be further discussed. The difference of the negative and the positive influence of the cultural levels have also been researched. It could be empirically proven from the data that a corporate cultural fit has a stronger influence on strategic alliance performance than a corporate cultural misfit. Corporate cultural misfits are a smaller problem because prior to the start of the alliance the organizations can discuss about these differences and when they are too large they can decide not to enter the alliance together. Moreover, corporate cultural fits are very important because organizations work together in an alliance because the organizations have an added value (a corporate fit). For the national and the professional cultural levels no empirical evidence could be found from the data on the difference between the negative and the positive influence on strategic alliance performance. In Subsection 6.1.2 about the group discussion the influence of the three cultural levels will be further discussed.

6.1.2 Group discussion

The third round of the Delphi Study has been a discussion with 3 strategic alliance experts, moreover there were 4 professionals present to validate the process of the Delphi Study (see Section 6.2.3 for this validation). The purpose of the meeting was to come to a consensus about the relative influence of the three cultural levels on strategic alliance performance. In this meeting different statements from the questionnaire and the interviews have been discussed. Based on these statements a model about the influence of culture on strategic alliance success has been developed and discussed in the group discussion. Based on the group discussion and the validation round with the professionals the model has been changed in some places. Here the final model and the statements discussed in the group discussion, on which the model is based, will be discussed along with some further argumentation (see Figure 28).

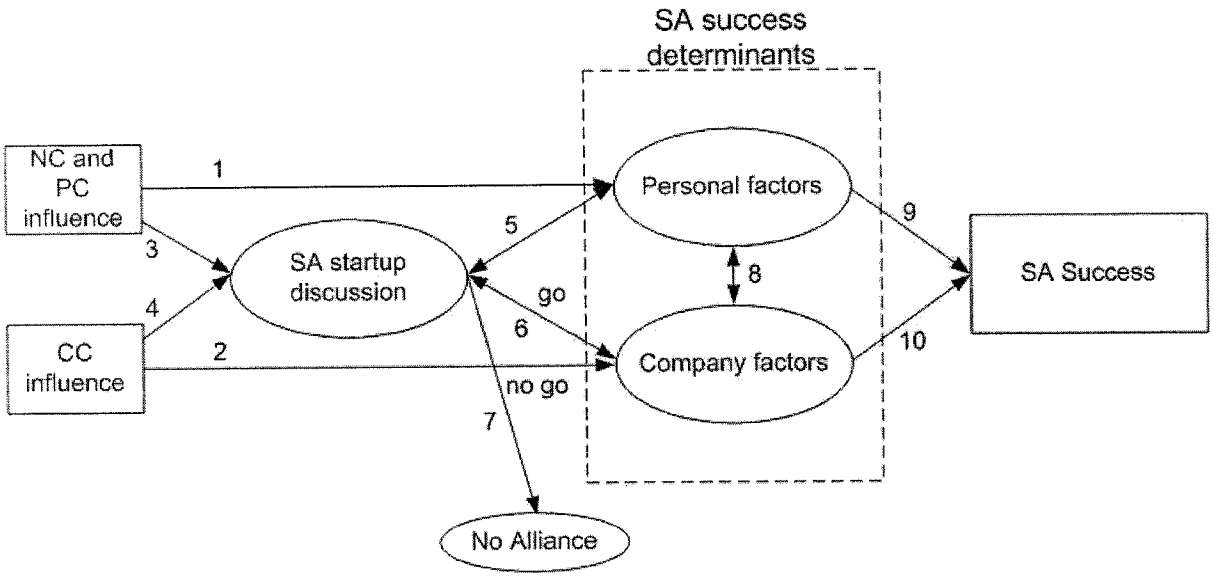


Figure 28: The influence of national, corporate and professional culture on strategic alliance success.

The centre of the model are the strategic alliance determinants; personal factors and company factors, these determinants have a very large influence on the success of strategic alliances. The personal factors are factors like trust and mutual understanding, the company factors are factors like added value and strategic interest. The overview of these factors can be found in Table 7. When strategic alliances are started organizations look for partners they know and trust through their own personal network **(5)**. In a strategic alliance start-up discussion that follows personal factors like trust and mutual understanding are very important. In this discussion the organizations talk about how to work together in the alliance, the company factors are discussed here and based on this discussion it is decided to work together in the alliance or not **(6,7)**. In this discussion several cultural factors also play an important role, for example in France decisions are taken through different levels than in The Netherlands **(3,4)**. As an outcome of the discussion the trust and mutual understanding the people have in each other can be changed **(5),** furthermore the company factors like hidden agenda's can be changed **(6)**. Between personal factors and company factors there is also a correlation, personal factors can be formed through company factors while company factors can be formed by personal factors **(8)**.

As can be seen in the model the influence of culture on strategic alliance success is indirect. Cultures have a direct influence on discussions and on how decisions are made **(3,4)** but strategic alliance success is determined by personal and company factors **(9,10)**. Culture does however have a direct influence on the personal and company factors **(1,2)**. National and professional culture mainly influence the personal factors **(1)** while corporate culture mainly influences the company factors **(2)**. This confirms the model from Hofstede (1980) (see Figure 13) in which he suggests that national and professional cultures are mainly formed by values (personal factors) while corporate culture is mainly formed by practices (company factors). This model is mainly based on statements from the questionnaire and interviews, it was completed after the group discussion, professional opinions and the literature. Each of the numbers below present one of the numbered lines in Figure 26, the corresponding statement is mentioned and some further explanation is given.

1. *"Mainly on the professional level people actually work together and that is where the trust really is built up."*

Trust is one of the personal factors. National and professional culture have a direct influence on these factors.

2. There were no direct statements relating to the influence between the company factors and the corporate culture. From the literature study however it appeared that the corporate culture influences hard factors such as these company factors, therefore this line has been added.

3&4. *"French are more hierarchical than Dutch, decisions are taken through different levels."*
In a discussion between organizations on strategic alliances cultural factors have a direct influence, this can clearly be seen from the statement above. In a discussion between people from different countries some people want to make the decisions in the discussion but other people want to ask their superiors first.

5. *"Contacts with alliance partners are mainly made through personal relations using a personal network of people."*
When organizations want to work together with other organizations the people in these organizations use their personal network of people to find a suitable alliance partner. When a strategic alliance is formed with familiar organizations people already have a lot of trust in each other (personal factors), on the other hand the outcomes of these discussions influence these personal factors again.

6&7. *"Corporate cultural problems are mostly solved before the alliance starts, or there is a no-go."*
This line works in two ways. In the discussion the ways of working of the organizations are compared and decisions are made on how the organizations are going to work together in the strategic alliance. There is a two-way line because the organizations take their corporate factors in the discussion and as an outcome of the discussion these factors can be changed.

8. There is no statement that supported this line, because this line has been added in the group discussion. In this discussion it has been suggested that these factors correlate with each other. For example corporate factors like 'have no hidden agenda' (see Table 7) can have a strong influence on the personal factors like mutual understanding and trust.

9&10. Strategic alliance success is influenced by both personal and corporate factors, these lines are based on Question 9 from the questionnaire (see Appendix 3). The answers on Question 9 have been split up into personal and corporate factors (see Table 7). Personal factors were seen as being very important by the people in the group discussion depending on the situation. It was said that personal factors determine 90% of alliance success and the other 10% is determined by the company factors.

From the model presented above it can be seen that the three levels of culture have a different influence on strategic alliance success. In addition to the model some statements to illustrate the different impact of the cultural levels on strategic alliance success have been discussed in the group discussion. Here these statements will first be given and after that the relative influence of the three cultural levels will be discussed centrally (An overview of all the statements can be found in Appendix 5).

1. *"The different national cultural backgrounds of the people in the SA works as an eye opener when working together in a SA."* ***(NC+)***
   Although the people in the group discussion did not disagree with this argument they did not see a strong positive influence of national cultural fit on strategic alliance success. This confirms the results from the questionnaire in which the positive influence of a national cultural fit only gets an 3,8 on average.

2. *"French are more hierarchical than Dutch, decisions are taken through different levels."* ***(NC-)***
   Everybody agreed with this statement, they confirm that national cultural misfits occur in strategic alliances. The strong agreement and the less strong agreement on the first statement confirm that there is no significant difference between the influence of national cultural fits and misfits.

3. *"Working with other companies has a positive influence because you complete each other."* ***(CC+)***
   This is an obvious statement, the organizations that are chosen to work with are chosen because they have a complementary fit and therefore this is regarded as a very important factor.

4. *"Small companies working with large, bureaucratic companies often have a problem with the reaction time, and the willingness to express interest in the form of a high level of interaction and cooperation."* ***(CC-)***
   The problems on the level of corporate cultures are agreed upon, moreover it is suggested that a company like Philips is more hierarchic than other smaller companies it may look like Philips does not want to cooperate because it takes more time. The positive influence of corporate cultures was however more spontaneous agreement upon, which is in confirmation with the finding that corporate cultural fits are more important than corporate cultural misfits (see Subsection 6.2.1).

5. *"This was a European (ITEA) project, where all people involved were R&D scientists, and typically quite open-minded. I believe this was one of the reasons for the very good team spirit in the project."* ***(PC+)***
   "*Mainly on the professional level people actually work together and that is where the trust really is built up."* **(PC+)**
   All experts agreed on the positive influence of professional cultural fits, they saw it as an open door.

6. *"Multidisciplinary teams are difficult to coordinate, due to the different approaches for problem-solving."* ***(PC-)***
   "Working with for example researchers and business people can cause difficulties in setting concrete targets and goals for a strategic alliance." ***(PC-)***
   Just like the positive influence this negative influence was also seen as an open door. Difference between the relative influence of a negative and a positive influence of professional cultural misfits and fits are not found.

As we can see from these statements and the model the three cultural levels have a different impact on strategic alliance success. In Subsection 6.1.1 we could already see that there was agreement that professional and corporate cultures are more important than national culture in

determining strategic alliance success. In the group discussion the statements concerning the national culture were also not seen as being very important, although the impact of national culture was not disagreed upon. When we compare the discussions about professional and the corporate cultures both were seen as being very important, however professional cultural fits and misfits were seen as an open door and there was no discussion about these statements at all. Based on the model further support has been found for the hypothesis that the professional culture is the most important. Professional culture and national culture have a strong influence on the personal factors while the corporate culture has a strong influence on the company factors. According to one of the experts however (and nobody disagreed with this) personal factors determine 90% of alliance success and the other 10% is determined by the company factors. This importance of the personal factors confirms the importance of the professional culture, however further research is needed to empirically confirm this.

6.1.3 Pilot study validation

At the group discussion presented in Subsection 6.1.2 four professionals were present to validate the pilot study. Seven questions have been asked to the experts to validate the pilot study:

1. Is the Delphi Method the right instrument to validate the statements to give some plausibility to the developed model?
2. Why do you think this is (not) a valid method for this study?
3. Do you think that the model presented is good supported and validated?
4. Is there anything you want to change on the model?
5. If question 4 was answered with 'yes' what should you change on the model and why?
6. It was indicated that the professional culture (pc) is the most important, this was supported by using Likert scales and by the statements. Is the hypothesis that pc is the most important supported in your opinion?
7. Do you have any other comments?

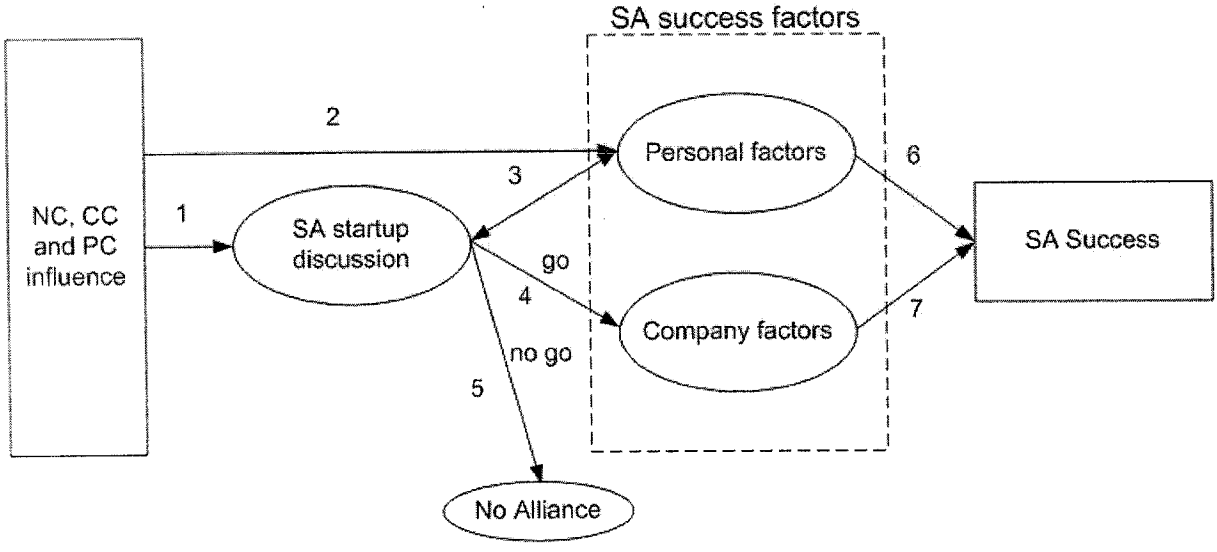


Figure 29: The old model before the validations

In the opinion of the professionals the Delphi Method has been the right method to study the influence of culture on strategic alliance success. Using the Delphi Method you give experts on the researched area the opportunity to give their opinion and using these opinions you can come to a conclusion. Based on feedback from the experts and the group discussion the old model (see Figure 29) has been changed on some points. Personal and company factors do have an influence on each other and therefore there should be a line between these. As a result from this NC and PC can be split up from CC because these levels of culture have a different relation with the personal and company factors. Another change that was made was that the personal and the corporate factors are called determinants when we speak about their influence on strategic alliance success. Based on these changes the experts acknowledged that the model is well supported using the statements from the other Delphi rounds. Based on this model and the group discussion it could moreover be concluded that the professional culture is the most important cultural level in determining alliance performance. One of the experts stated that: *"It was during the statements regarding PC that the participants agreed the most."* Finally one of the experts suggested to further validate the results on a larger scale while another expert recommended to research the influence of the cultural levels in the context of a specific alliance.

6.2 Chapter conclusion

The hypothesis from Section 5.1 has been examined in this chapter:

> *The fit between the professional cultures of the employees of the participating organizations in a strategic pre-competitive R&D alliance is the most critical cultural factor of alliance success.*

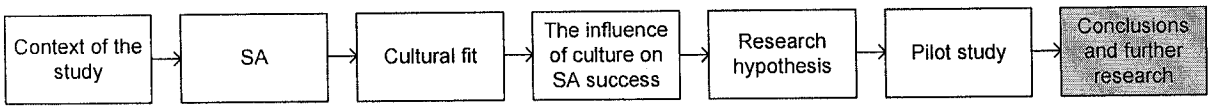
To research this hypothesis a Delphi Study has been done in pre-competitive R&D alliances on the Philips R&D Campus. The Delphi Study has been done in three rounds; a questionnaire, supporting interviews, and a group discussion. The experts working in pre-competitive strategic R&D alliances regarded strategic alliances as being very important, moreover they confirmed the importance of a cultural fit in these alliances. The experts indicated that the three levels of culture can have a positive as well as a negative influence on strategic alliance performance. By comparing the data on the three cultural levels it could be empirically confirmed that the professional and the corporate culture have more influence on strategic alliance performance than the national culture. It is suggested that people are aware of national cultural differences and therefore these differences are less problematic. Empirical evidence has also been found on the difference between the influence of corporate cultural fits and misfits. According to the experts corporate cultural fits have more effects on strategic alliance performance than corporate cultural misfits. It has been suggested that corporate cultural fits are an important reason for the organizations to work together because it can open up new markets, give them access to new knowledge and more. Corporate cultural misfits are a smaller problem because prior to the start of the alliance the organizations can discuss about these differences and when they are too large they can decide not to enter the alliance together.

Important statements from the questionnaires and the supporting interviews have been discussed in the group discussion with 3 experts. These statements have been used to develop a model to visualise the influence of the cultural levels on strategic alliance success. It could be concluded that culture does not have a direct influence on strategic alliance success. Alliance success is determined by corporate and by personal factors. Culture has an influence on these factors. Corporate culture mainly influences corporate factors while personal factors are mainly influenced by the national and professional cultures. The hypothesis that the professional culture is the most important in determining strategic alliance success was confirmed by the statement that personal factors determine 90% of alliance success and the other 10% is determined by the company factors. Professional and national cultures are strongly related with these personal factors (see also Figure 13). The professional culture is however more important in determining alliance success than the national culture, according to the questionnaire results. As professional culture has a direct influence on the personal factors and as professional culture was already indicated to be more important than national culture it can be concluded that the professional culture is the most important in determining strategic alliance success. The pilot study has finally been validated by four professionals, these professionals concluded that the Delphi Method is the right method to study the hypothesis. One of the professionals stated that from the group discussion it was clear that the professional culture was regarded as being the most important level in determining alliance success: *"It was during the statements regarding PC that the participants agreed the most."*

Chapter 7

Conclusions and further research

This chapter will discuss and summarize the final conclusions from this study. These conclusions will result in some recommendations for further research which will be discussed in Section 7.2.



7.1 Conclusions

In this era of open innovation (Chesbrough et al., 2006) organizations need to work together to be competitive. In the last years the number of R&D alliances has increased fast, however many of these alliances fail. In the research from Duysters et al. (1999) and Duysters and Heimeriks (2003) culture was mentioned as an important reason for alliance failure. Alliance failures cost organizations a lot of money, therefore managers need to know how to solve these problems.

Strategic alliances can be studied on several levels and on these levels different solutions to the cultural problems are needed. On the network level the positioning of the alliance positioning is very important, and on the firm level alliance capabilities are very important. The scope of this study is on the dyadic level. On this level the focus is on a cultural fit between the organizations. Fit is about the compatibility, complementarity and harmony implying common, similar and completely different elements that are needed to empower each other (Ulijn et al., 2003). In this report the influence of national, corporate, and professional cultural fit on pre-competitive R&D alliances has been researched. Together these levels can cause an alliance to fail or to succeed due to cultural fits and misfits.

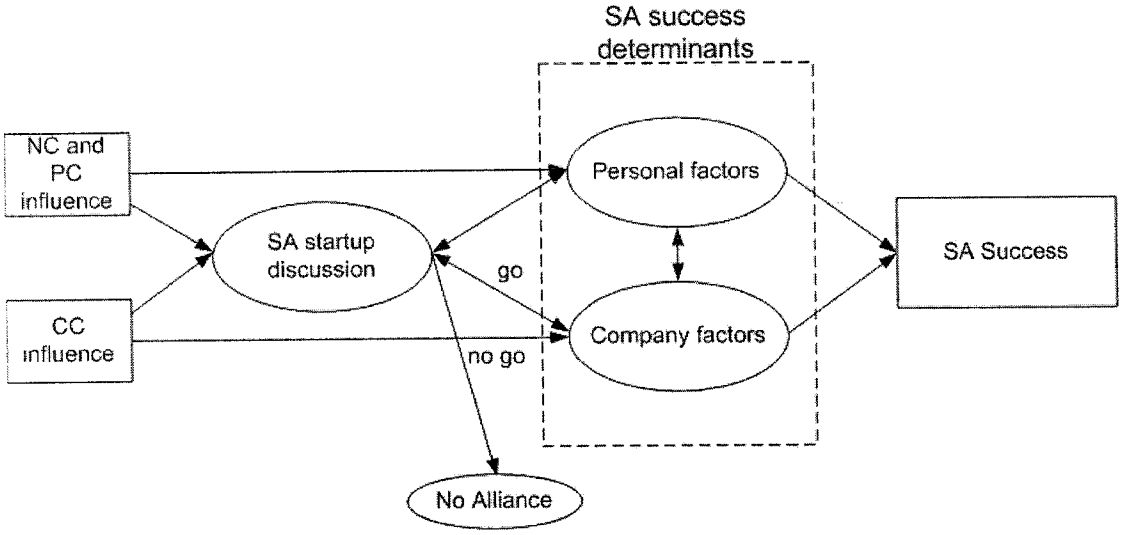
From the literature research no hard conclusions could be drawn on how national cultural misfits influence strategic alliance failure. In the literature contradicting results were found. Due to a different perception of the researchers and due to different measures of performance they came to different results. Culture is something that will never be completely understood, otherwise there would also not be so many culture related problems. On the corporate cultural level better evidence was found for culture related problems. The Hofstede (1990) dimension open vs. closed system appeared to have a strong influence on strategic alliance performance. Open vs. closed system is about the level of information sharing in the organizations. This dimension is related the importance of open innovation (Chesbrough et al.,2006). There has not been done much research on the professional cultural level. People gain a professional culture during their education and there they learn a way of thinking that binds them with colleagues all over the world. Problems occur when people from a certain professional culture need to work with people from another professional culture. Some examples have been given of problems that can occur. In R&D alliances problems usually occur when marketers and

engineers need to work together. Marketers want a product as fast as possible on the market to be ahead of the competitors while engineers only want their product on the market when it is completely ready and tested.

It can be seen that the three cultural levels have a different impact on strategic alliance performance. The relative influence of the three cultural levels on alliance performance has been compared using six academic articles. These articles suggested that the most important cultural level is the professional cultural level followed by the corporate and the national cultural level. As already discussed above people from the same professional culture can very well work together independent from which organization or country they are. According to Ulijn and Weggeman (2000) corporate cultures are less important because people do not work very long in the same organization anymore. In general it can be concluded that the most important cultural level is the level that a person identifies himself most with. For most people this is the professional cultural level. In order to research this in pre-competitive R&D alliances the following hypothesis has been formulated:

The fit between the professional cultures of the employees of the participating organizations in a strategic pre-competitive R&D alliance is the most critical cultural factor of alliance success.

This hypothesis has been researched in a Pilot Study in alliance projects on the Philips R&D Campus. These alliances are pre-competitive, have about 30-300 person years and run for about 2 to 3 years. The alliances are in clusters of other similar projects and are sponsored by the European Union. The Delphi Method to study these alliances has been done in three rounds; a questionnaire, supporting interviews, and a group discussion. From the questionnaire, which was filled in by 16 experts, it could be empirically confirmed that the professional and the corporate culture are more important in determining alliance success than the national culture. From the interviews, which were done with 10 out of the 16 experts, additional argumentation and information was gathered. From the questionnaire different statements regarding the influence of culture on alliance performance have been extracted. The most important statements have been discussed in a group discussion with three experts. Based on these statements, the group discussion and further argumentation from four professionals, who were also present in the group discussion, a model which visualises the relation between the three cultural levels and alliance success has been developed.



In this model it can be seen that culture does not have a direct influence on strategic alliance success. Alliance success is influenced by personal (e.g. mutual understanding, trust) and company factors (e.g. strategic interest, added value). The three levels of culture have a direct influence on the personal and company factors. It can be seen that the national and the professional culture mainly influence the personal factors and that the company factors are mainly influenced by the corporate culture. The influence of the personal factors and the company factors on strategic alliance performance is however not the same. In the group discussion it was suggested that the personal factors determine 90% of alliance success and the other 10% is determined by the company factors. This information together with the literature findings, the questionnaire results and the interviews confirms the hypothesis that the professional culture is the most important cultural factor in determining strategic pre-competitive R&D alliance success. Moreover, one of the professionals stated that from the group discussion it was clear that the professional culture was regarded as being the most important cultural level in determining alliance success: *"It was during the statements regarding professional culture that the participants agreed the most."*

The outcomes from this study have different implications, scientific as well as practical (see also Section 1.3). Regarding the scientific relevance the model from Sirmon and Lane (2004) on the relative influence of the three cultural levels on strategic alliance performance has been improved. In the model from Sirmon and Lane only one company factor was part of the model: related complementary resources. In the model developed in this study it appeared that much more factors influence strategic alliance success. Furthermore it was found that these factors could be split up into two groups; company factors and personal factors. Sirmon and Lane also mentioned in their article that their findings needed to be empirically tested. In this study the findings from the questionnaire were tested empirically and further argumentation was gathered in the Delphi Study. The practical relevance of this study is that it helps alliance managers in solving culture related problems in their alliances. As already mentioned many alliances fail and culture is an important reason for this. Knowing which cultural level has the most impact on strategic alliance success alliance managers know which level of culture we need to give the most or the first attention to. It has been found that the professional culture is the most important in determining alliance performance. Interestingly, none of the alliance managers, talked to in the interviews, had ever had any training in solving or coping with professional cultural differences. These kinds of trainings did not even exist. Some of the managers did however had national cultural related trainings. One of the experts also mentioned that the awareness of the national cultural differences helps to minimise their negative impact. The minimum influence of the impact of national cultural misfits can thus possibly be explained by this.

An important recommendation from this study is to train employees in professional cultural differences. When the employees are aware of these professional differences and learn to cope with the different ways of thinking of their colleagues with a different professional background the negative impact of these differences on strategic alliance performance may well be reduced (Von Meier, 1999). A reduction of the professional cultural problems can save much money from the organizations and the costs of cross-functional training of the employees is expected to pay the organizations back many times.

7.2 Further research

A cultural fit is very important in determining alliance success. Because cultures are hard to change (see Section 3.1), partner selection is very important. Sarkar et al. (2001) mention that in recent scholarship on international alliances the need for more research on partner selection issues has been articulated, especially because of their impact on alliance performance. Cultural fit must be explored further in partner selection. As cultures are hard to change the best solution to the cultural fit problem is a good partner selection.

In this study it has been suggested that professional cultures are the most important in determining alliance success. The alliance managers in the Pilot Study indicated there were no cross-functional trainings for the people working in the alliance. Trainings on national cultural differences did however exist and from the minimal impact of national cultural differences on alliance performance these trainings also seem to work. It should be further researched how cross-functional trainings in alliances can reduce professional cultural differences and improve alliance performance (see also Von Meier, 1999).

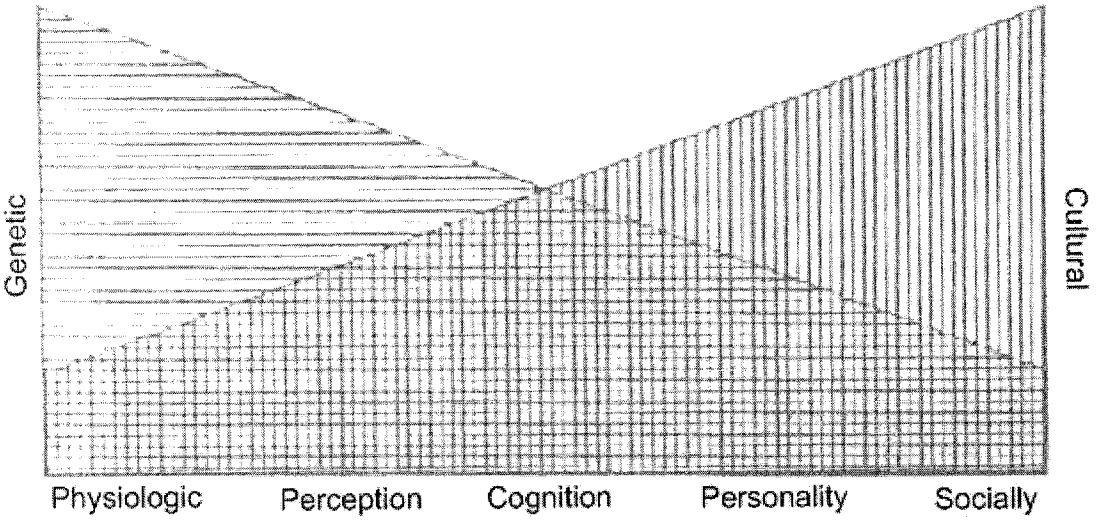


Figure 30: Personal behaviour explained by culture and genetics. Source: Poortinga et al. (1990)

Only the effect of groups of people on alliance performance has been researched in this study, however people also vary from person to person. The inner circle from Erez et al. (2004), individual behaviour, was not part of this study, individual behaviour is however expected to be a very important factor in determining alliance success. Kauser and Shaw (2004) for example indicate that the individual behaviour has more influence on alliance success than organizational characteristics. Culture and individual behaviour are moreover related with each other Poortinga et al. (1990) suggested that individual behaviour can be explained by both culture and genetics (see Figure 30). The importance of individual behaviour has not been part of this study but it should be researched further as it is expected to be a very important factor in determining alliance performance. The final recommendations from this research come from the expert panel from the Delphi Study. The experts regarded this study and its results as very valuable and therefore it was suggested to further validate the results on a larger scale while another expert recommended to research the influence of the cultural levels in the context of a specific alliance.

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Appendix 1: Interorganizational relations

(1) Hierarchical relations: through acquisition or merger, one firm takes full control of another's assets and coordinates actions by the ownership rights mechanism.
(2) Joint ventures: two or more firms create a jointly owned legal organization that serves a limited purpose for its parents, such as R&D or marketing.
(3) Equity investments: a majority or minority equity holding by one firm through a direct stock purchase of shares in another firm.
(4) Cooperatives: a coalition of small enterprises that combine, coordinate, and manage their collective resources.
(5) R&D consortia: inter-firm agreements for research and development collaboration, typically formed in fast-changing technological fields.
(6) Strategic cooperative agreements: contractual business networks based on joint multi-party strategic control, with the partners collaborating over key strategic decisions and sharing responsibilities for performance outcomes.
(7) Cartels: large corporations collude to constrain competition by cooperatively controlling production and/or prices within a specific industry.
(8) Franchising: a franchiser grants a franchisee the use of a brand-name identity within a geographic area, but retains control over pricing, marketing, and standardized service norms.
(9) Licensing: one company grants another the right to use patented technologies or production processes in return for royalties and fees.
(10) Subcontractor networks: inter-linked firms where a subcontractor negotiates its suppliers' long-term prices, production runs, and delivery schedules.
(11) Industry standards groups: committees that seek the member organizations' agreements on the adoption of technical standards for manufacturing and trade.
(12) Action sets: short-lived organizational coalitions whose members coordinate their lobbying efforts to influence public policy making.
(13) Market relations: arm's-length transactions between organizations coordinated only through the price mechanism.

Appendix 2: Why do strategic alliances exist?

Why strategic alliances exist is already partly answered by the working definition for strategic alliances which has been given in Section 2.1. Strategic alliances give the individual organizations an advantage, like access to more technologies. Duysters and Van den Oord (2002) called strategic alliances a means to realize the strategy of the organization. This means that the organization is not able to realize their strategy on their own. Duysters and Van den Oord (2002) called strategic alliances even a necessity for organizations to be successful: to survive in the dynamic surroundings of today organizations need to give integrated and flexible solutions to consumers that can better be realized by co-operating with partners. In the strategic alliance literature many more reasons for organizations to start a strategic alliance can be found. These reasons can be divided into three categories of literature: transaction costs, strategic management and mainstream industrial organization literature (Hagedoorn et al., 2000; Caloghirou et al., 2003).

According to the transaction cost theory contractual designs are created or governance structures are created to minimize the sum of production costs and transaction costs between specialized factors of production (Coase, 1937; Klein, Crawford and Alchian, 1978). Production costs are the costs formed through proprietary knowledge, abilities to learn and economies of scale and scope, these costs vary from firm to firm (Hagedoorn et al. 2000). Transaction costs are 'the expense incurred for writing and enforcing contracts, for haggling over terms and contingent claims, for deviating from optimal kinds of investments in order to increase dependence on a party or to stabilize a relationship, and for administering a transaction' (Kogut, 1988, p.320). According to the transaction cost theory the most economically efficient organization will prevail. This theory became a widely known theory through the works of Williamson (1975, 1985).

Transaction costs theory only explains some of the advantages strategic alliances can offer. The strategic management theory is therefore a complementary theory concerning strategic alliance motives. There are several approaches in the strategic management literature, Caloghirou et al. (2003) classified these approaches into three groups:

- Shaping the competitive environment

The main focus here is the competitive force approach (Porter, 1980, 1985, 1990; Harrigan, 1988b). This approach focuses on improving the firms' competitive position by shaping the competitive framework in which they operate. There are five competitive forces; market competitors, bargaining power of suppliers and customers, substitute services and the threat of new market entrants (see Figure 31). R&D alliances are one way of improving this competitive position. By using coalitions, a firm can benefit from a broader scope of activities without spending precious resources to enter new market segments (Porter, 1986). According to Hagedoorn (2002) inter-firm technological collaboration permits firm to react swiftly to market needs and allows them to bring technology to the marketplace faster.

Caloghirou et al. (2003) finally distinguish two other approaches in this group: the strategic behaviour approach and the strategic network approach. The strategic behaviour approach focuses on the strategic action that a firm takes in order to influence its market environment. According to the strategic network approach networks allow the exploitation of economies of scale and scope, can lower transaction costs or raise transaction benefits and give the opportunity for the joint creation of new value through technological development.

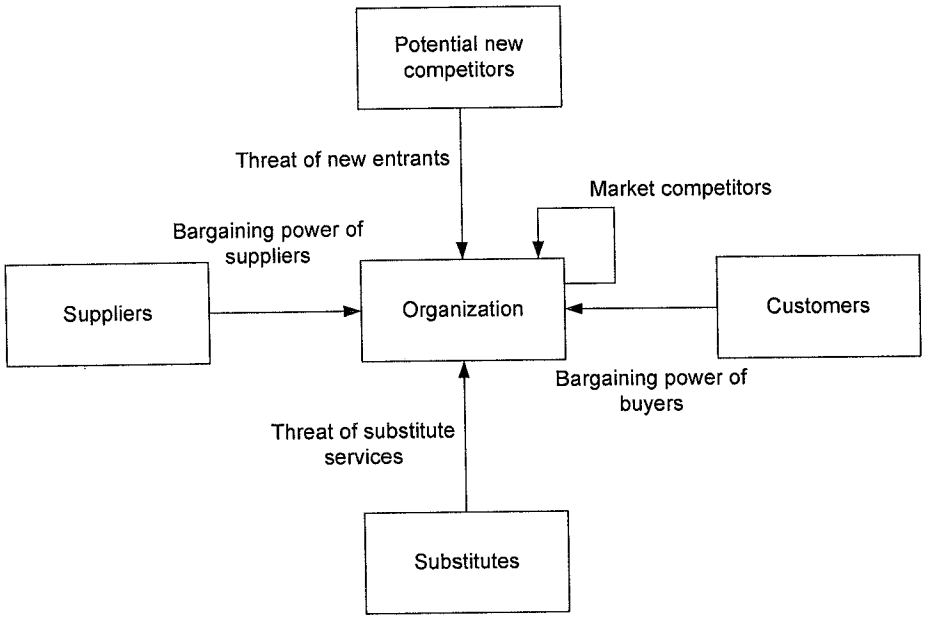


Figure 31: Competitive forces model. Adapted from Porter (1985)

– Emphasizing resources and dynamic capabilities

According to the resource based view firm resources are valuable, rare, and not easily substitutable. Firms need to acquire and maintain these flows of critical resources. One strategy firms use to cope with external dependencies and the associated uncertainty is to establish interorganizational linkages such as alliances. Firms can use alliances to locate the optimal resource configuration in which the value of their resources is maximized relative to other possible combinations (Das & Teng, 2000)

The dynamic capabilities can be defined as the firm's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments (Teece et al., 1997). Most of the knowledge generated in R&D is tacit knowledge, which cannot easily be transferred as it can not be written down in handbooks (Quintas and Guy, 1995). Tacit knowledge is difficult to transfer between organizations, alliances can facilitate organizations in this process which is also referred to as organizational learning.

– Emphasizing knowledge and uncertainty

Caloghirou et al. (2003) divide this group into three approaches. The first approach considers strategic alliances as a consequence of the globalization of knowledge (Badaracco, 1991). The second approach considers technical collaboration as a driving force for learning and knowledge creation. According to Pavitt (1988) cooperation can be an effective mechanism for transferring tacit and firm specific knowledge. The third approach considers R&D collaboration as a tool to create "options" in radically new technologies.

In the industrial organization theory the focus is on resource allocation and economic welfare effects. The firm is viewed as being entirely describable while internal organization and the endogenous forces are excluded from the analysis. The literature on this subject deals heavily on game-theoretic tools and mathematical modelling. These models can be categorized into two categories: non-tournament models and tournament models. The non-tournament models

focus on the extent of innovation, approximated by the degree of cost reduction or product differentiation (Hagedoorn et al., 2000). Tournament models emphasize the timing of innovation where the winner of an innovative race earns the right to an exogenously or endogenously determined monopolistic return.

An overview of all the motives to form a strategic R&D alliance can be found in Table 10.

	Transaction Costs	Strategic management	Industrial organization
Motives to form an R&D alliance	• Minimize cost of transactions involving intangible assets (technical knowledge); • Circumvent incomplete contracts; • Avoid opportunistic market behavior; • Avoid high costs of internalizing the activity	• Share R&D costs • Pool risks • Economies of scale and scope • Co-opt competition • Improve competitive position • Coordinate value chains with coalition partners • Increase efficiency, synergy, power through network • Access complementary resources to exploit own resources • Use collaboration as learning vehicle to accumulate and deploy new skills and capabilities • Learn from partners; transfer technology • Create new investment options	• Share R&D costs • Pool risks • Economies of scale and scope • Co-opt competition • Accelerate return on investments • Access complementary resources • Decelerate rate of innovation • Increase market power

Table 10: Motives to form a strategic R&D alliance (Source: Hagedoorn, Link and Vonortas, 2000)

Hagedoorn and Schakenraad (1993) indicated that R&D alliances are for over 85 percent strategically motivated and for medium and low-tech sectors market access motives prevail. Strategic considerations suggest which technologies should be developed and transaction costs influence how the remaining technologies should be acquired. In horizontal alliances motives like complementary resources and an increase in market power are very important, while in vertical relationships cost reduction is a more important motive.

Huyzer (1990) developed a model in which some of the motives concerning R&D activities are related to each other (Figure 32). It can be seen that these motives to enter a strategic alliance influence each other and in that way the need for strategic alliances increases even more. It becomes impossible to be competitive with R&D activities without participating in a strategic alliance. Huyzer suggests that through the internationalization of the markets these markets support more R&D. Because there is more support for R&D the complexity of the technologies increases. In the same way the increasing complexity of the technologies demands the internationalization of the markets because single markets cannot support the complex technologies by themselves anymore. With the increase of the complexity of the technologies the speed of innovation also increases. The higher R&D costs necessary for the development of the complex technologies ask for new and efficient methods, while the higher efforts in R&D are required to gain a competitive advantage through innovations.

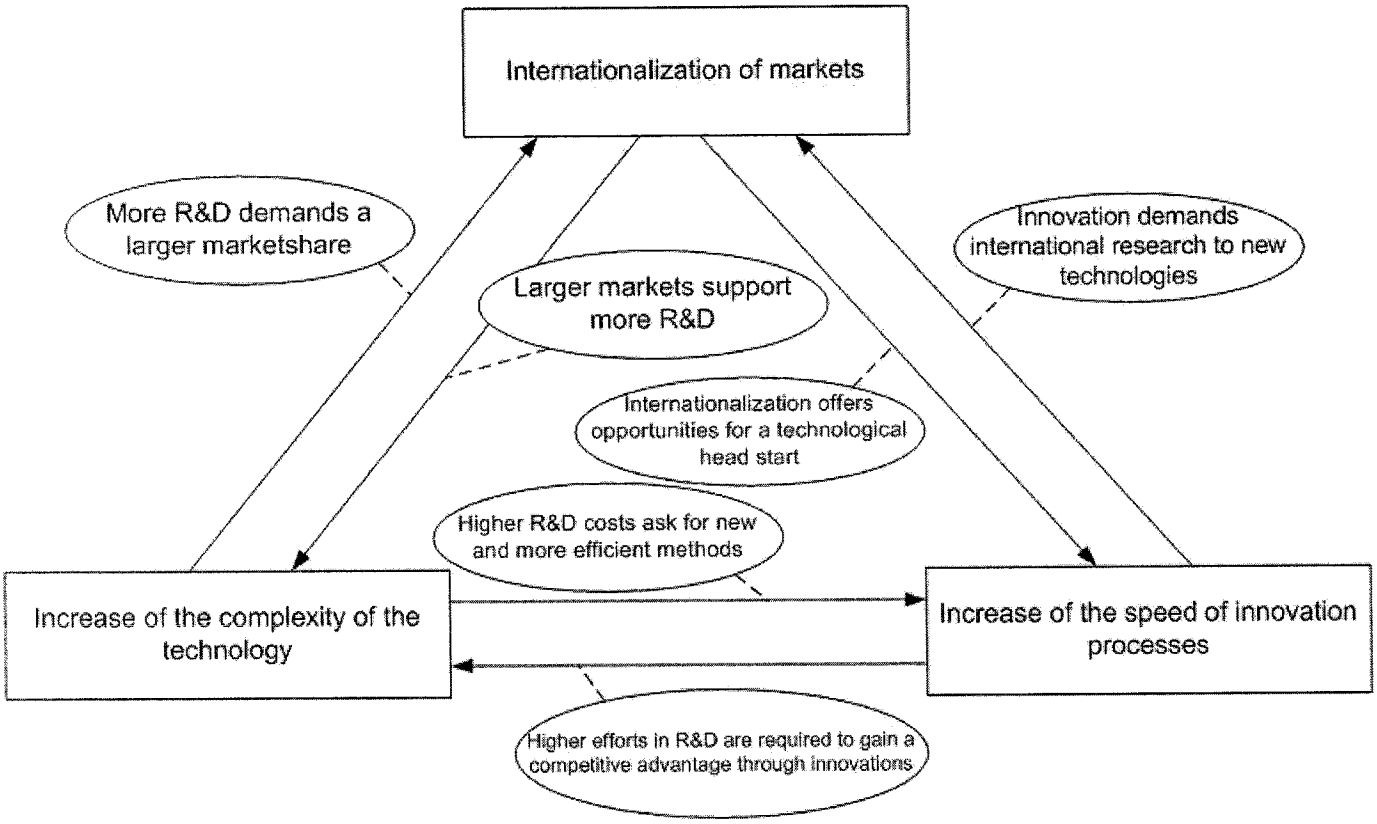


Figure 32: Relations of motives to form a R&D alliance. Source: Huyzer (1990)

The motives to enter a strategic alliance have not always been the same. The motives to enter a strategic alliance are changing over time. Duysters et al. (1999) gave a good overview of how the motives to enter a strategic alliance changed over time: until the early 1970's reasons to enter strategic alliances were to gain access to foreign markets and to bypass government regulations. Innovative purposes were almost never the reason to enter a strategic alliance. After this period until the 1980's organizations started to change and entered strategic alliances for different reasons, like to share development costs, to gain from the know how of other organizations and to reduce the time to market. After this period organizations became more aware of the risks of strategic alliances and the growth of new strategic alliances reduced.

Appendix 3: Pilot Study

Questionnaire Strategic Alliances & Culture

Cooperation between organizations is very important nowadays, despite their importance, many of those cooperations do not end successfully. An important factor which influences successfulness is cultural fit between the cooperating partners. Three levels of cultural fit have been identified: national culture, organizational culture and professional culture. In this survey the influence of cultural fit on the successfulness of international cooperations will be further investigated. These cooperations are referred to as strategic alliances.

→ Please don't discuss the answers given in this survey with your colleagues because it will influence the results!
→ Your answers given in this survey will be processed anonymously.
→ Please answer the questions not in absolute terms but based on your experience. It is not needed to answer in absolute terms. Thank you.

1. In what country did you grow up?

2. What is your age?

- ❑ Under 25 years
- ❑ 26-40 years
- ❑ 41-55 years
- ❑ Older than 55 years

3. What is your educational level?

- ❑ Primary education
- ❑ High school
- ❑ Bachelor level
- ❑ Master level and higher

4. What is your educational background?

- ❑ Technical education
- ❑ Economical / management education
- ❑ Other(s)

5. For how many years have you been working in your organization?

- ❑ Less than 1 year
- ❑ 2-5 years
- ❑ 6-10 years
- ❑ 11 or more years

6. What kind(s) of function(s) do you have in the strategic alliance?

- ❑ Project Manager / Executive function
- ❑ Researcher / Engineer
- ❑ Operator

7. What is your opinion on the usefulness of strategic alliances for your organization? (1= not useful, 7 is very useful)

❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7

8. Why in your opinion are strategic alliances useful / not useful for your organization?

9. What factors, in your opinion, influence the performance of a strategic alliance?

10. How important do you consider cultural fit for the successfulness of a strategic alliance? (1= not important, 7= very important)

❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7

Fit relates to the question whether successful cooperation is possible, given the strategic background, objectives and organizational characteristics of the potential partners. It is a matter of compatibility, complementarity and harmony implying both common, similar and completely different elements that are needed to empower each other. For a strategic alliance it might mean that the participating organizations should not be exactly the same but compatible and complementary.

The following questions relate to the influence of culture on strategic alliance performance.

Culture can be divided into three levels: national culture, organizational culture and professional culture. The following questions will be first about national culture, followed by organizational culture and professional culture.

National Culture is the collective programming of the mind which distinguishes the people from one nation from the other. (Hofstede, 1980)

11. According to your experience, do national cultural differences have a negative influence on the performance of strategic alliances? (1= very weak, 7= very strong)

❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7

12. Does national cultural fit between partners have a positive influence on strategic alliance performance? (1= very weak, 7= very strong)

❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7

13. Have there been any difficulties caused by different national cultural backgrounds of people in the strategic alliance?

❑ Never
❑ Only a few times
❑ Several times
❑ Very often

14. How well do the following national cultural dimensions in your opinion explain problems caused due to national cultural differences? (1= very weak, 7= very strong)

	1	2	3	4	5	6	7
Low vs. big power distance	❑	❑	❑	❑	❑	❑	❑
Low vs. big uncertainty avoidance	❑	❑	❑	❑	❑	❑	❑
Individualism vs. Collectivism	❑	❑	❑	❑	❑	❑	❑
Masculinity vs. femininity	❑	❑	❑	❑	❑	❑	❑
Long term vs. short term orientation	❑	❑	❑	❑	❑	❑	❑

Low vs. big power distance: the acceptance of unequal power distribution in an organization
Low vs. big uncertainty avoidance: the extent to which people feel threatened by ambiguous or unknown situations
Individualism vs. collectivism: everybody takes care of himself vs. loyalty to group members
Masculinity vs. femininity: masculinity is more assertive, femininity implies more affiliation
Long term vs. short term orientation: long term orientation stands for fostering of virtues oriented to future rewards

15. Could you give an example of a problem caused by different national cultural backgrounds of people working in a strategic alliance?

Organizational Culture is the collective programming of the mind which distinguishes the members of one organization from the other. Organizational cultural differences can be seen in the differences in practices of the organization.

16. According to your experience, do organizational cultural differences have a negative influence on the performance of strategic alliances? (1= very weak, 7= very strong)

❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7

17. Does organizational cultural fit between partners have a positive influence on strategic alliance performance? (1= very weak, 7= very strong)

❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7

18. Have there been any difficulties caused by different organizational cultures of the organizations participating in the strategic alliance?

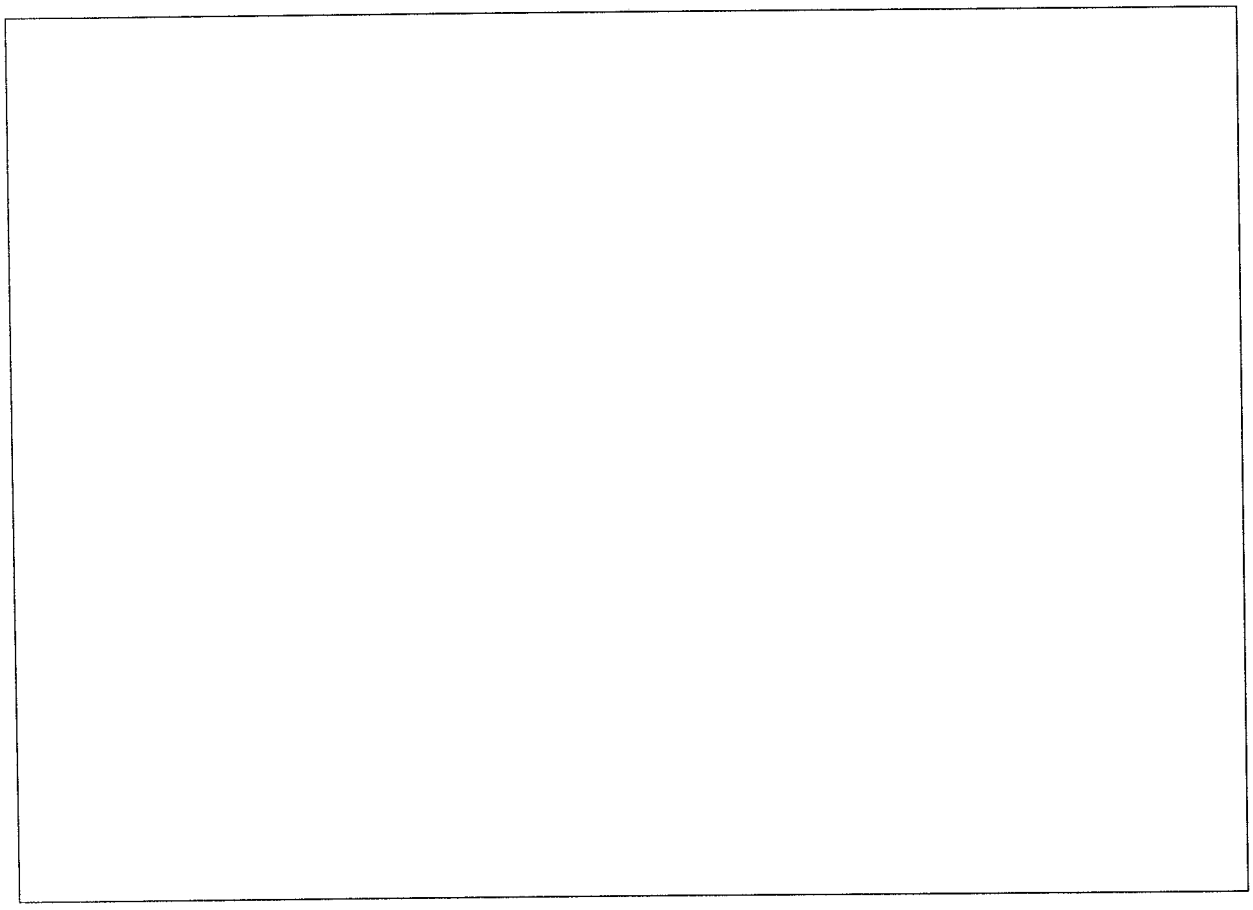
❑ Never
❑ Only a few times
❑ Several times
❑ Very often

19. To what extent do the following organizational cultural dimensions in your opinion explain problems caused by organizational cultural differences? (1= very weak, 7= very strong)

	1	2	3	4	5	6	7
Process vs. results oriented	❑	❑	❑	❑	❑	❑	❑
Employee vs. job oriented	❑	❑	❑	❑	❑	❑	❑
Parochial vs. professional	❑	❑	❑	❑	❑	❑	❑
Open system vs. closed system	❑	❑	❑	❑	❑	❑	❑
Loose vs. tight control	❑	❑	❑	❑	❑	❑	❑
Normative vs. pragmatic	❑	❑	❑	❑	❑	❑	❑

Process vs. results oriented: aimed at resources & work normal vs. aimed at results & hard work
Employee vs. job oriented: aimed at individuals & decisions are taken by groups vs. aimed at groups & decisions are made by individuals
Parochial vs. professional: people identify with organization & work standards also apply to home situation vs. people identify with profession & strict division work and private life
Open system vs. closed system: organization is open for newcomers & newcomers feel at ease vs. employees see colleagues as new and mysterious
Loose vs. tight control: little discipline and control vs. much discipline and control
Normative vs. pragmatic: procedure oriented & ethical business vs. customer oriented & flexible attitude towards ethics and honesty

20. Could you give an example of a problem caused by different organizational cultural background of the organizations participating in a strategic alliance?



Professional Culture is the collective programming of the mind which distinguishes the people from one profession from the other. (e.g. marketers, construction workers, production engineers, R&D scientists etc.).

21. According to your experience, do professional cultural differences have a negative effect on strategic alliance performance? (1= very weak, 7= very strong)

❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7

22. Does professional cultural fit have a positive effect on strategic alliance performance? (1= very weak, 7= very strong)

❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7

23. Have there been any difficulties caused by different professional cultures of the people working in the strategic alliance?

❑ Never
❑ Only a few times
❑ Several times
❑ Very often

24. Could you give an example of a problem caused by different professional cultural backgrounds of the people working in a strategic alliance?

25. If you have any further comments or suggestions around this topic of cultural fit please mention them below:

For further correspondence about this questionnaire could you please give your name and e-mail address. Your answers will be processed anonymously.

26. Your name:

27. Your e-mail address:

Appendix 4: Relevant articles on the relative influence of the levels of cultural fit on strategic alliance performance

Meschi, P.X. and Roger, A. (1994). Cultural context and social effectiveness in international joint ventures, *Management International Review* 34(3), 197-215

In this study Meschi and Roger analyzed the impact of organizational and national culture on the social effectiveness in international joint ventures in Hungary with partners from several other countries (Germany, Austria, U.S., France and Great Britain). The authors had 29 interviews in which they administered a questionnaire to the respondent. Another 126 questionnaires were administered by mail from which 25 were returned.

The national and organizational cultural distance and social effectiveness were measured using a five point Likert scale. The results from these questionnaires showed that the organizational culture influences one specific dimension of social effectiveness; the organizational involvement of employees. The national culture influences the work climate. The cultural distance between the international joint venture partners influences significantly the social effectiveness but the national culture has a bigger impact than the organizational impact.

Meschi and Roger gave an explanation why the organizational impact in Hungary is small in Hungary; the involvement of employees in their companies is not very strong in general in Hungary.

Pothukuchi, V., Damanpour, F., Choi, J., Chen, C.C. and Park, S.H. (2002). National and organizational culture differences and international joint venture performance, Journal of International Business Studies 33(2), 243-265

Pothukuchi et al. mentioned that past studies on the effect of cultural distance primarily focussed on national culture while the effect of organizational culture distance was not examined. In this paper Pothukuchi et al. simultaneously study both levels of culture. When studying culture at both these levels the national culture should be operationalized in values and the organizational culture should be operationalized in practices. Partners with a different national culture will have difficulty with their interactions. Partners with a different organizational culture differ in their expectations and incompatible organizational processes.

Pothukuchi et al. formulated two hypotheses:
1) National culture distance between partners negatively influences joint venture performance
2) Organizational culture distance between partners negatively influences joint venture performance

To test these hypotheses data was collected from executives of joint ventures between Indian partners and partners from 21 other countries (40 JVs from U.S., 20 from Japan, 14 from Germany, 13 from England, 8 from France, 3 from The Netherlands, 3 from Singapore and 3 from Switzerland, while other countries had 1 or 2 JVs). From the 334 joint ventures contacted 127 agreed to participate in the study. In total of 202 executives participated in the

survey, 61 joint ventures had multiple participants which allowed to test the reliability of the responses. The data were collected by structured interviews in which questionnaires were filled in by the respondents. The performance of the joint ventures was measured by perceptual measures categorized according to several predictors (efficiency, competitiveness, and satisfaction).

Pothukuchi et al. found that national and organizational culture influence the performance of the joint venture in a different way. Masculinity positively affects all the performance measures while individualism, uncertainty avoidance and power distance have negative effects on satisfaction. From the organizational culture dimensions the open vs. closed system dimension strongly negatively influences joint venture performance, while the other dimensions have a less strong impact. In general national culture more significantly affects the efficiency and competitiveness measures while organizational culture distance is a better predictor for the satisfaction measure.

Comparing the two hypotheses Pothukuchi et al. found more support for the organizational culture distance to negatively affect joint venture performance than national culture distance.

Schultz, M. (1998). European Cultures in Collaboration: Do Cultural Differences Matter? In Sevón, G. and Kreiner, K. (eds.) *Constructing R&D Collaboration*, Copenhagen Business School Press

In this article Schultz studied and analyzed the impact of cultural differences to R&D collaboration within the EUREKA program between Danish and other European companies. The motivation for the research was the expectation that the differences in culture will be an obstacle in cross-border collaborations. To study this expectation project managers or another project responsible person from nineteen active projects were interviewed four times in a period of three years. Four projects were selected from the population for case studies, in order to get more data.

The results showed that 12 of the 19 partners perceived that national culture has no or very little impact on collaboration. Schultz also mentions some comments of the informants who tell why national cultural difference has no impact on collaboration: "*The cultural differences are of little importance. Perhaps you notice them when we have dinner. But they have no impact on the actual collaborative work.*"

The reason why national culture has hardly any influence is that the people working in the R&D collaborations are professionals with strong professional values and a technical curiosity, they also have a strong commitment. The experiences of professionals interacting with one another overshadow the differences in organizational and managerial preferences. Schultz confirms this by giving some citations: "*Problems are discussed in an open atmosphere. Technicians can easily collaborate with technicians.*"

According to Schultz the similarities between the professionals work as a kind of collaborative glue which makes the influence of the national cultural differences unimportant.

Sirmon, D. G. and Lane, P. J., (2004). A model of cultural differences and international alliance performance, *Journal of International Business Studies* 35, 306-319

Sirmon and Lane developed a model of cultural differences based on six propositions, which need furtherresearch by empirically testing them. These propositions are:

P1: The complementarity of partners' resources positively affects alliance performance only when those resources are related to the primary value-creating activities of the international alliance, and when the employees involved in those activities interact effectively.

This interaction of the partners' socialization can be difficult due to the systematic differences of the partners' employees socialization differences. Three sources of differences are explored: one's nation, one's organization and one's profession. According to Sirmon and Lane the differences in national culture systematically influence organizational differences through the firm's administrative heritage (P2). Professional cultures are also influenced by the national culture, Sirmon and Lane state that professionals in the same functional domain but from different countries can systematically vary in their attitudes toward and implementation of the preferred solutions for the problems that those in their occupation face (P3).

The fourth proposition concerns the influence of the organizational culture, Sirmon and Lane propose that; differences in the organizational cultures of international alliance partners negatively moderate the relationship between related complementary resources and effectiveness of the alliance's value creating activities (P4).The fifth proposition concerns the influence of the professional culture, Sirmon and Lane propose that the differences in the professional cultures of international alliance partners' employees negatively moderate the relationship between related complementary resources and effectiveness of the alliance's value-creating activities.

The sixth proposition is about the relative influence of the three cultural levels. Sirmon and Lane state that by specifying and understanding a more proximal and salient cultures to which people belong, one can predict behaviours more accurately. Following this logic Sirmon and Lane propose that the professional culture has the most influence flowed by the organizational and the national culture as these are less proximal and salient to the behaviour of individuals (P6). The article ended with the suggestion to test the model empirically.

Ulijn, J. and Weggeman, M. (2000). Towards an innovation culture: What are its national, corporate, marketing and engineering aspects, some experimental evidence, in: The *international handbook of organizational culture and climate*, ed. C.L. Cooper, S. Cartwright, and P.C. Earley, John Wiley & Sons

In this article Ulijn and Weggeman studied what the ideal innovation culture would be. In order to find the ideal innovation culture they addressed national, organizational and professional culture separately. In the article Ulijn gives anecdotal evidence that different types of engineers and international business graduates (who share a professional culture) in international MBA-classes quickly forget their national cultural descent when working on common management problems. Concerning organizational culture the authors state that employees switch between organizational cultures very often nowadays and the organizational culture is therefore not able to root in the employee anymore. Professional culture is suggested to be the most important factor in an innovation culture and will even get stronger in the future.

Ulijn, J.M.; Duijsters, G.; Schaetzlein, R. and Remer, S. (2003). Culture and its perception in strategic alliances, does it affect the performance? An exploratory study into Dutch-German ventures, *Eindhoven Centre for Innovation Studies*, Working paper 3.05

In this article Ulijn et al. studied the mutual cultural perception fit of 12 Dutch-German strategic alliances. To test this the following hypothesis was formulated:

> *There is a positive relationship between the perceived cultural fit between strategic alliance partners of The Netherlands and Germany and the global appraisal of their alliance performance.*

The hypothesis was tested in 12 Dutch-German in several industries and from different sizes. Data was gathered using questionnaires. Cultural differences were measured on the national and the corporate level while professional cultural differences were supposed to be equal. From the questionnaires it appeared that most respondents see no big differences between the partners. The national cultures were seen as more homogenous than the corporate cultures while the corporate culture seemed to be more powerful than the national culture.

Another part of the questionnaire dealt with the performance of the organization. This data shows that the better the cultural fit is perceived, the better the satisfaction with the alliance is. It could be concluded from this data that the hypothesis is confirmed.

Appendix 5: Cultural statements from the questionnaire

National culture related statements:

- At my company (Dutch) I have even at a "younger" age authority to take decision within a certain limit. In Germany those decision are usually taken open a much higher level. Therefore, in meeting with German partners I observe a lot of mistrust when I take a decision on the spot, as German people first have to consult with higher management before doing anything.
- Decisions never being made, because one side has the mentality of 'decide here and now', while the other has the mentality 'I'll have to consult with the others.
- Dutch all-equals versus Indian class-system.
- Dutch 'polder model' versus Italian top-down model.
- Dutch vs. America: Dutch people are less risk taking, American move on much faster.
- French are more hierarchic then Dutch, decisions are taken on different levels.
- Germans value numbers and count these to judge your power in meetings French are used to give their opinion as in a brainstorm session and expect the boss to take the decision without argumenting on the suitability of each proposed solution; while Dutch try to compromise and take a balanced decision (polder model) making everyone a bit happy and motivate this to participants. If you don't know this cultural difference you may end up in very long meetings and even be seen as a weak boss or chairman.
- German vs. Dutch culture: Germans tend to function only along line management organization schemes. Dutch people tend to be more individualistic and can be directed also without having line management authorities. Germans like to have everything well planned and organized roadmaps.
- In one project we had several companies from several countries. It was noticeable that the Spanish partners with a strong collectivism always aligned their votes which meant that in decisions with several options, they mostly decided the vote, as the other companies from a more individual culture clearly decided what they liked without focusing on the opinions of the companies in their own country. They really where a Spanish cluster which also isolated them from the rest as one was never sure what their own opinion was as they always spoke as one front.
- Large power distance at some (notably French) partners meant that formal agreements sometimes took a long time, but that did not seriously hinder the project.
- Spanish macho's versus very 'cold' Scandinavians.
- Speed of interaction is one example; work had to approved at several levels at our Japanese partners, while we were idly waiting...but when it was approved at their site, the engineers very quickly did the work so as to meet the (our, and their internal) request, often resulting in sloppy work. This "power distance from management problem" often wasted our time. Similarly, the patience of French partners was often misinterpreted as laziness, while in fact, their frustration at delays was as strong as our own...it was just not their way to blatantly state this. Since no one was complaining on their side, we assumed that they didn't care, and slowed down ourselves.... There are many more of these stories.

Corporate culture related statements:

- A multi-partner research project where one partner was more results-driven & minded (and spent a lot of resources on achieving the deliverables), whereas the other was more focussed on the well-feeling of humans, social interactions, etc. problems arose when the results committed to by project agreement were not reached at the delivery dates. I think that needs no further explanation.
- Attitude with respect to work and responsibility varies very much from South to North and from East to West. Compare Poland, United Kingdom, Spain, Italy, Finland, the Netherlands.
- In our alliance people from one partner are open to share their contributions and to help others while other partners try to keep their work sealed. I believe that that partner is an "open system" organization, and considers that participation in a project will result in additional training and knowledge fro their employees.
- Lack of vision and creative attitude in the other organisation blocks the establishment of a strategic alliance.
- Persons trying to 'arrange things' vs. persons following transparent procedures and keeping agreements, causing mutual misunderstandings and failure to deliver the required quality of the expected work.
- Small companies working with large, bureaucratic companies (like Philips) often have a problem with our reaction time, and our willingness to express interest in the form of a high level of interaction and cooperation. Most partnerships between two different cultures of organization have to address these issues from the first day, as to how decisions are made, how long they take, and who has the final word. Without these discussions, failure of the partnership is frankly quite likely, in the form of a withering death. On the other hand, matched organizational cultures are no guarantee for success, since matched bureaucratic cultures often work ultimately slower than either company – making technical progress painfully slow and difficult, leading to failure. In this respect, small companies are much more suited for partnerships, since their goals and missions are clear, and they are required to work hard, do not have 672 levels of bureaucracy.
- Such cultural differences get most noticeable under stress, e.g. close to the final deadline. Some small differences of the process-vs.-results category were noticeable, but got solved.
- This was related to decision making. Especially for people in job-oriented (industrial) companies who were able to take decision fast via one person, there was often irritation about the slow and democratic processes in government organisations. But this is a more general point. No real problems are known as these are mostly solved before the alliance starts as this creates a "no go".

Professional culture related statements:

- Collaboration with a Korean partner went wrong as the professional culture was completely different. The speed and commitment of the Korean company was much faster.
- Emphasis on different aspects may lead to a stalemate situation.
- I do not think that this has a relation with the cultural background of the participants, in all cultures marketers, designers and engineers have a hard time to communicate efficiently and effective.
- Low acceptance of the market is not always understood by R&D people.
- Mainly because on the professional level people actually work together and that is where the trust really is build up. One problem I often see that in several situations people are used to survive when they do not keep their promise or do not do the work they have been assigned to and they accepted. In alliances this is almost impossible as many other people are used to keeping promises and deliver as planned. This interpersonal difference is one that often causes problems. Secondly one is in the way people make decisions. Some people (related to culture) are used to fully democratic decision making where they discuss everything out in the open and then make a rational best decision. In alliances this does not work that way. Real decisions have to be pre-cooked at personal level and in the corridors on inter-personal levels. The discussion is that still held out of the open, but the outcome is mostly fully predefined.
- Production engineers have in general very pragmatic approach to new development, while people from R&D tend to explore new ideas before adopting a solution. This might sometimes result in disagreements.
- This is not typical for strategic alliances; it is always difficult to have people with different professional cultural backgrounds work together. Multidisciplinary teams are difficult to coordinate, due to the different approaches for problem-solving, etc.
- This was a European (ITEA) project, where all people involved were R&D scientists, and typically quite open-minded. I believe this was one of the reasons for the very good team spirit in the project.
- When people from different professional backgrounds work together, there is a need for the relationship which typically outweighs the differences. For example, marketers or customers who do not have any technical background are difficult to work with because they don't understand the engineer's problems...but so what, since they need the product, and can be made to understand that things take time. We work with customers regularly within research projects; the bridging of the professional cultural gap is a challenge, like learning a new language...but it can be done with some experience.
- When project acquisition was done by business developers (marketing minded) without keeping sufficient contact with the researchers, often too many technical results were committed to in project agreements.
- Working with for example researchers and business people can cause difficulties in setting concrete targets and goals for a strategic alliance.