

MASTER

How to create synergy at an organization . How to create a campus : the development of two 'first prototypes of a SDF manual' to search for a desirable future for a campus
a study on how to increase internal cooperation in a holding structure

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Eindhoven, June 2016

**How to create synergy at an organization: a
study on how to increase internal
cooperation in a holding structure**

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in Innovation Management**

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How to create synergy at an organization: a study on how to increase internal cooperation in a holding structure

Master Thesis (1JM96)

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Abstract

This research was conducted at Conclusion, a service provider in organization and IT, who would like to increase the level of cooperation between its different operating companies. Over the past few years, Conclusion did increase this level of cooperation but not to full satisfaction. Therefore, this research aimed to further increase the level of cooperation. In the diagnosis, the organizational stage of development, the (cooperation) structure and (cooperation) strategy of the organization, and the organizational culture were analyzed. The main bottleneck of lack of cooperation seemed to be: 'emphasis on own operating company'. The design developed to decrease/take away this bottleneck, consisted of a set of three interventions: (1) let the operating companies share cases they have done, (2) organize brainstorm sessions together with (potential) clients, and (3) let management provide examples of successful cooperation activities.

Management summary

This chapter provides a management summary of the research executed.

Introduction

Conclusion, an organization located in Utrecht, is a service provider in organization and IT and consists of a lot of highly autonomous operating companies. Over the past few years Conclusion tried to increase the level of cooperation between the operating companies. However, even though the people at Conclusion already see an increase in the level of cooperation between the operating companies, the current level of cooperation is still lower than desired for.

Management believes that an increase in cooperation between the operating companies would create synergy and thereby an increase of revenue and opportunities for Conclusion as a whole. However, management is not sure about the bottlenecks responsible for the insufficient level of cooperation and how to increase the level of cooperation. Therefore, the management question is:

“How to increase the level of cooperation between the different operating companies within Conclusion?”

The research was limited to four operating companies within Conclusion. Several research questions were formulated in order to execute a diagnostic- and a design phase.

The main research question for the diagnostic phase was:

“What are the main bottlenecks responsible for the insufficient level of cooperation at Conclusion?”

To answer the main research question for the diagnosis, four sub-questions were formulated. These sub-questions derived from four main aspects the researcher selected to take into account to evaluate the ability of an organization to cooperate. These are: (1) the organizational stage of development, (2) the (cooperation) structure of an organization, (3) the (cooperation) strategy of an organization, and (4) the organizational culture present at an organization. Based on the diagnostic phase, a design was developed to decrease/take away the main bottlenecks found.

The main research question for the design phase was:

“What is an appropriate set of interventions for Conclusion which takes away the main bottlenecks responsible for the insufficient level of cooperation?”

To answer the main research question for the design phase, three sub-questions were formulated. These sub-questions stimulated research regarding: (1) interventions which can be used in order to increase the level of cooperation, (2) the expected impact of the design on the level of cooperation, and (3) the expected level of disturbance of the daily operational activities going on at Conclusion by the proposed set of interventions.

Research perspective

The research was executed from the perspective of the complexity paradigm (i.e. Chaordic Systems Thinking). The complexity paradigm describes a non-linear iterative process in which different components interact in an open an iterative manner.

Theoretical background

At first the maturity model was elaborated on. Then, alliances, as a type of cooperation structure were described. Third, four cooperation strategies were discussed. The four cooperation strategies discussed

were: (1) coopetition, (2) co-creation, (3) open innovation, and (4) co-innovation. Fourth, the competing values framework was elaborated on. This framework includes four culture types (i.e. (1) clan, (2) adhocracy, (3) hierarchy, and (4) market) who together reflect the organizational culture present. Last, some examples of interventions stimulating cooperation in comparable contexts were discussed.

Research method

The research was conducted following the regulative cycle. For this research, only the first three steps of the cycle were executed (i.e. (1) problem definition, (2) diagnosis, and (3) design).

The design was developed using the CIMO logic approach. CIMO stands for Context Intervention Mechanism Outcome. The CIMO logic approach was chosen as it allows to develop scientifically based and on the same hand, practical designs focusing on how an existing situation can be changed. The CIMO logic approach used in this research fits the perspective of the CST as it considers the interventions and mechanisms to be interconnected.

The information gathered for the diagnosis was done by using interviews, brainstorming, informal conversations, company documents, and company data. Based on these sources, an analysis was executed regarding the bottlenecks responsible for the insufficient level of cooperation. The data from the interviews was analyzed based on consensus. The company documents and brainstorming served to complement the findings from the interviews. Furthermore, the company data and informal conversations were used to support the bottlenecks found. The bottlenecks were combined into a cause-and-effect diagram.

For the design, a list of interventions was composed by input gathered from: (1) experts, (2) literature, and (3) best practices. This list was analyzed based on the mechanisms triggered by the interventions, and the design criteria. The mechanisms triggered were analyzed regarding their distribution in the AQAL matrix. The AQAL matrix inter alia, allows to analyze the perception of the operating company triggered by the mechanisms. There are two different perceptions: (1) perceiving the operating company by itself, and (2) perceiving the operating company as part of a bigger whole. To stimulate cooperation, the mechanisms preferable should stimulate the people at the operating companies to see their operating company as part of a bigger whole. The design criteria contained of: (1) functional requirements, (2) user requirements, and (3) boundary conditions. Based on these criteria, the interventions were evaluated by the researcher, the non-management, and the management.

As, from the perspective of the CST, interventions and mechanisms are interconnected, a set of interventions should be proposed rather than single interventions. Therefore, a new list of selection criteria was developed which merely focused on assessing *a set of interventions* on its capabilities to increase cooperation. The main input for this analysis were the evaluations on the interventions provided by the three perspectives (i.e. the researcher, and (non-) management).

The proposed set of interventions was evaluated concerning its expected impact on both the level of cooperation and the expected disturbance on daily operational activities. This was done during a workshop together with three managers at Conclusion.

Results

The data gathered in the diagnostic phase provided the researcher with enough information to execute an analysis. This analysis resulted in a cause-and-effect diagram, see Figure S1.

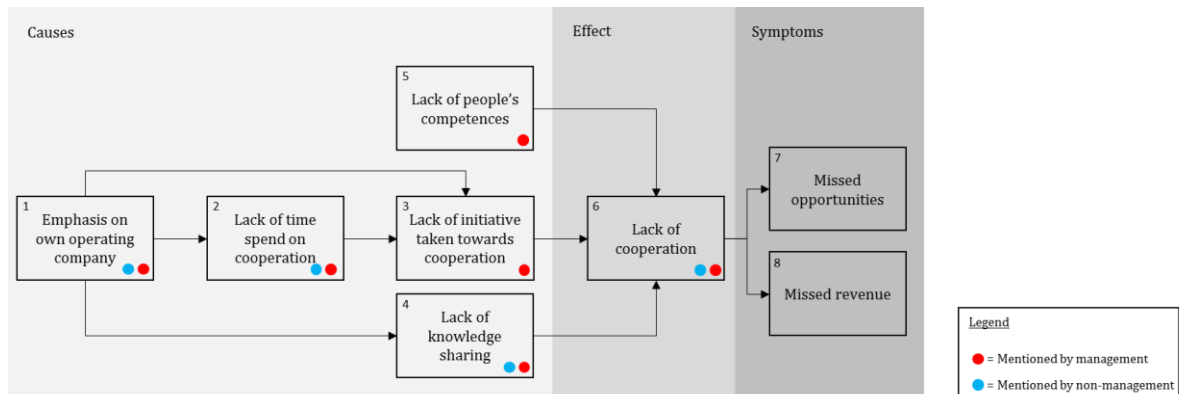


Figure S1: Cause-and-effect diagram

As can be concluded from the cause-and-effect diagram, the main bottleneck responsible for the insufficient level of cooperation seems to be: 'emphasis on own operating company'. Therefore, the design aimed to take away/decrease this bottleneck.

Based on the list of interventions analyzed, a set of three interventions was proposed. The three interventions included are: (1) let the operating companies share cases they have done, (2) organize brainstorm sessions together with (potential) clients, and (3) let management provide examples of successful cooperation activities.

The three interventions together are assumed to stimulate people at the operating companies to, not only have emphasis on their own operating company, but see the bigger picture as well. Thereby, the proposed set of interventions is expected to increase the level of cooperation and thereby increase the revenue and the number of opportunities.

Management positively evaluated the proposed set of interventions. At first they expected an increase of the level of cooperation and thereby revenue and opportunities. Furthermore, they evaluated the proposed set to have a low disturbance on the daily operational activities going on at the operating companies.

Conclusion and reflection

The researcher was able to answer almost all research questions up to a moderate to high level. One of the main difficulties was supporting the bottlenecks found with descriptive statistics which was a result of the small amount of data available. Furthermore, the evaluated impact (i.e. in terms of the ability to increase the level of cooperation and the level of disturbance on the daily activities) over the proposed set of interventions derived from a select group of managers. This particularly influenced the validity of the outcomes regarding the potential disturbances as the processes going on at the operating companies differ a lot from each other. Last, the research was conducted only at four operating companies. Therefore, the validity of the proposed set of interventions is questionable for Conclusion as a whole. However, based on the researcher's impressions while executing the research at Conclusion, the researcher expects the proposed set of interventions to be applicable to Conclusion as a whole, as well. Overall, the researcher concludes the management question (i.e. "How to increase cooperation between the different operating companies within Conclusion") has been answered with a theoretically well-founded, and practically useful solution. The solution is easy to implement, is expected to have a low level of disturbance on the daily activities and is expected to increase the level of cooperation and thereby the revenue and opportunities of Conclusion as a whole.

Preface

The research presented in this Master Thesis was executed at Conclusion from February 2016 to July 2016 and is the last step in the fulfillment of my Master Degree in Innovation Management and the beautiful period I have had as a student. The research described in this report is seen as the 'main research'. Besides this main research, an extra research was executed. The relationship between both researches can be found in Appendix I: Relationship research 1 and 2.

While performing the research, there were some special people around me who I would like to thank. At first my first supervisor Dr. Van Eijnatten who has been an important mentor for me during my last two years of studying. His exceptionally high dedication and perfect balance between guiding and providing space for exploration resulted in a steep learning curve during the research.

The main concept Van Eijnatten introduced was the concept of 'chaordic systems thinking'. This concept helped me to analyze organizations from a different perspective (compared to the commonly used analyses). This rather new perspective helped me to come to unique solutions as well. The ability to master this concept was not only of value during my master but will be a valuable asset for my next years as a young professional as well.

Besides my first supervisor, I would like to thank my second supervisor, Dr. Keizer, as well. Especially for his help regarding the design approach. Furthermore, he was able to take a bird's eye view over the research performed. The feedback he came up with as a result of his bird's eye view, made the research more coherent.

Moreover, I would like to thank my company supervisor Drs. De Weerd who, despite his full agenda, always made time available to discuss the process. Furthermore, he was always willing to provide feedback and help. Besides his help, I would like to thank him for his patience during the execution of the process. I got a lot of space to perform an extensive diagnosis which is rather unique for an organization. However, this was not only a result of my company supervisor, but also from a lot of other people working at Conclusion as well. Therefore, I would like to thank the whole management team and all other people who have helped me executing the research within Conclusion for their patience, trust, transparency, and help. Besides the valuable insights the people within Conclusion brought me, they made my time at Conclusion fun as well. The lunches, informal conversations, Thursday afternoon drinks, events, and especially the type of people, made me feel comfortable really quickly.

Furthermore, I would like to thank my family, boyfriend, and friends who have helped me to reflect, relax, and make my whole student life to a beautiful period to look back at.

Finally, I would like to bring a special thanks to my parents who made it possible for me to study. They have always showed faith in everything I did, provided me the space needed to explore, and helped me to see things in perspective.

As a result I can conclude I will look back at my graduation period as an energizing, inspiring, educating, fun and satisfying period. This conclusion perfectly fits my whole student life as well.

One thing I feel sorry for, are the amounts of paper I have printed in order to read and refine my written texts. Therefore, I hereby promise to plant a tree in order to reduce the negative impact of my master thesis research on the environment.

Maijke Receveur, June 2016.

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The appendices of this report are confidential and will not be made public.

List of used abbreviations

AE	Agency Exterior
AI	Agency Interior
AQAL matrix	All Quadrants All Levels matrix
BPO	Business Processes Outsourcing
CE	Communion Exterior
CI	Communion Interior
CIMO	Context Intervention Mechanism Outcome
CMO	Customer Management Office
CST	Chaordic Systems Thinking
E-Learning	Electronic Learning
ERP	Enterprise Resource Planning
FTE	Full Time Equivalent
HR	Human Resources
HRM	Human Resource Management
IT	Information Technology
ICT	Information and Communication Technology
Hucag	Human Capital Group
K&A desk	Knowledge and Allocation desk (i.e. Kennis en Allocatie desk in Dutch)
LMS	Learning Management Services
MT	Management Team
N	Sample size
P&L	Profit and Loss
R&D	Research and Development
SD-logic	Service Dominant logic
SLA	Service Level Agreements
SME	Small and Medium Enterprises

1. Introduction

At the moment, there is an increasing demand for inter-organizational cooperation. Organizations believe that a lot of benefits can be gained by inter-organizational cooperation. Examples of benefits that can be gained by inter-organizational cooperation are: increased innovativeness, a steeper learning curve, more opportunities, higher flexibility, and more powerful profiling. Conclusion, an organization located in Utrecht, consists of a lot of highly autonomous operating companies. Conclusion would like to increase the inter-organizational cooperation between the operating companies to increase their revenue and opportunities. This chapter will first zoom in on Conclusion as a company, then the context and management problem will be clarified and the research questions will be discussed.

1.1 Company description

Conclusion is a service provider in organization and IT. They had 1603 FTE working at the company by 2014 and their net turnover is increasing each year since 2011 (from ≈ €135 million in 2011 to ≈ €164 million in 2014).

The services Conclusion delivers are provided by the two service lines: (1) the IT service line, and (2) the organization service line. The services provided by both service lines are being delivered by the operating companies within Conclusion. The operating companies in the IT part of Conclusion, deliver three types of services: (1) 'Application', (2) 'Data & integration', and (3) 'Infrastructure'. The operating companies in the organizational part of Conclusion deliver four types of services: (1) 'Transformation & improvement', (2) 'People & performance', (3) 'Learning', and (4) 'Finance, dept & budget', see Figure 1.

The operating companies can be seen as almost autonomous companies. They have their own budget, their own clients, and their own management.

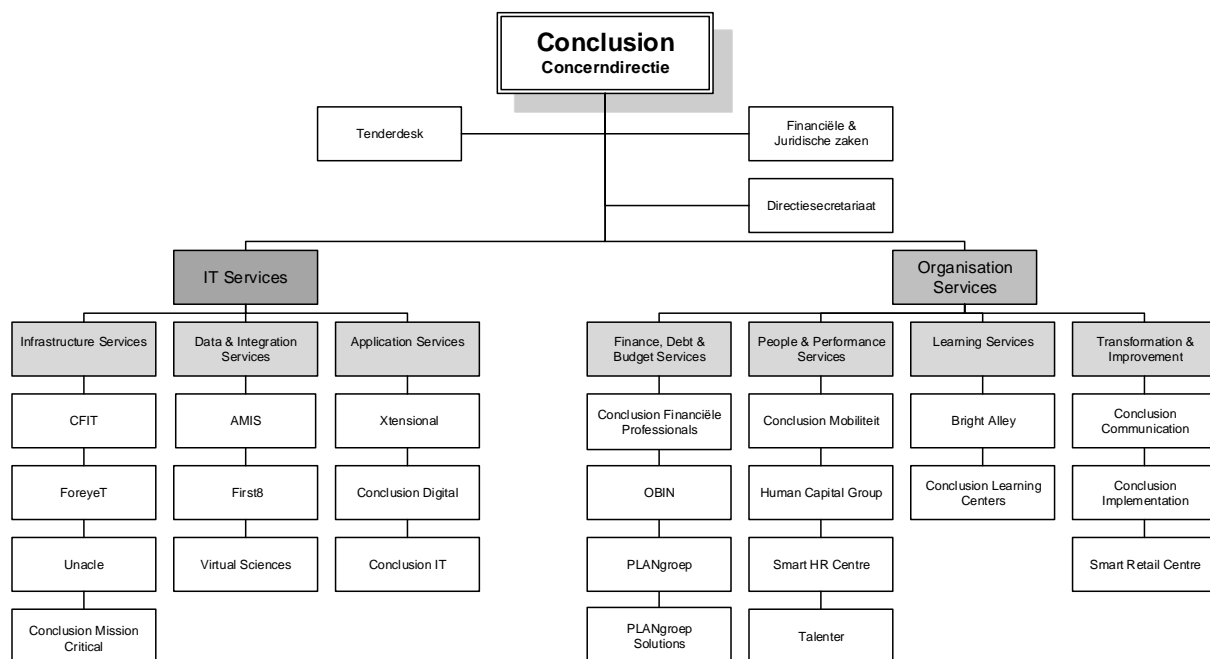


Figure 1: Company structure.

Last year, Conclusion implemented a new ERP system (AFAS software). This system helps the operating companies within Conclusion to automate more processes (e.g. writing invoices) and be more

integrated with each other. For Conclusion and its operating companies, this meant a huge step forward. However, integration between the different operating companies still is a big challenge for the board of Conclusion.

This research focusses on four different operating companies within the service line 'Organization Services'. These operating companies are: (1) 'Conclusion Mobiliteit', (2) 'Human Capital Group' (Hucag), (3) 'Bright Alley', and (4) Conclusion Learning Centers, see Figure 1. Besides the four operating companies, the 'Smart Human Resource Centre' (Smart HR centre) is analyzed as well. To give more insight into these operating companies and the Smart HR Centre, a short description of each of them is provided in the next five paragraphs.

1.1.1 'Conclusion Mobiliteit'

Conclusion Mobiliteit serves as a partner in outplacement services (i.e. they help companies to reposition their employees). This service is provided by making use of a multidisciplinary approach consisting of financial advice, personal coaching, training, (re)education and work experience trajectories, job-hunting and an 'entrepreneurs academy'. The active guidance towards new work consists of individual coaching, directed trainings, workshops, and support for development by providing internships, re-education and branch meetings. Conclusion Mobiliteit consists of mobility advisors, psychologists, financial advisers, and job hunters.

Besides outplacement services, Conclusion Mobiliteit has a separate department which is responsible for trainings regarding employees' behavior.

1.1.2 'Human Capital Group'

Human Capital Group (Hucag) provides specialized HR advice and practical solutions focusing on strategy, procedures, instruments, and insights. They support commercial companies and organizations in the public sector by helping them adjusting their compensation policies while taking into account their organizational goals. The clients of Hucag are SME+ companies, big (unlisted) businesses and corporations in the public sector. They advise employers, company directors, management teams, supervisory boards, boards of commissioners, and work councils in terms of compensations and working conditions. Within Hucag, there are four main working fields: (1) function-design and evaluation (i.e. ranking processes and activities within organizations and describing these in terms of functions, roles and development trajectories), (2) HR jobs (from providing HR-advice and full installation of a HR department, to coaching the HR processes and department), (3) performance- and competence management (i.e. providing performance scans, tools for competence management, workshops and trainings), and (4) strategic HRM (i.e. working – together with the client – towards a development or improvement of their HRM strategy which combines both the short- and long-term perspectives) including a list of activities necessary to realize the proposed strategy and the way of implementing it.

1.1.3 'Bright Alley'

Bright Alley develops online learning experiences (e.g. E-learning, learning apps, serious games and learning management) for employees who should gain new knowledge or should change. People working at Bright Alley are experts within the field of didactics, game design, state of the art techniques, and design. Bright Alley presents itself as a 'full service supplier' in helping organizations to change.

1.1.4 'Conclusion Learning Centers'

Conclusion learning centers is market leader in Learning Business Process Outsourcing (BPO) in the Netherlands and makes people in control of educational activities. They help organizations to take care of their performance development and the development of new employees. This is done on a strategic level. Furthermore, they help in the transition as well. They achieve this by providing 'learning services' and a 'learning management system' (LMS). This combination provides insight into the educational landscape of the company as well as cost reduction and a higher effectivity of the education.

1.1.5 'Smart Human Resource centre'

The 'Smart Human Resource centre' is some sort of Customer Management Office (CMO). CMOs operate companywide (i.e. over the boundaries of the operating companies) in order to unite the capabilities of several operating companies. Conclusion has three types of CMOs: (1) branch related CMOs (e.g. 'Smart Retail Center' and TLV), (2) functional CMOs (e.g. 'Smart Human Resource Center'), and (3) client based CMOs (e.g. APG). The 'Smart Human Resource centre', launched in the summer of 2015, serves as a functional CMO (e.g. by being a supporting team within 'People and Performance' and having client contact).

1.2 Context and management problem

Over the past few years Conclusion tried to increase their internal level of cooperation. The aim to increase cooperation is visible in a lot of Conclusion's (internal and external) communication. One of the examples in which their vision to cooperate is included is their 'code of conduct'. Conclusion's code of conduct represents five main values Conclusion stands for. These are: (1) 'specialism', (2) 'speak' (i.e. make subjects negotiable and be a point of contact for others), (3) 'the hand' (i.e. provide help to others and cooperate together towards solutions with positive intentions), (4) 'extra' (i.e. make a difference, develop ideas with enthusiasm and creativity and involve passion and excellence into the execution), (5) 'style' (i.e. provide your own style while simultaneously matching your environment).

To translate their vision into practice, activities are being provided companywide. Examples are: 'the Thursday afternoon drink', 'the red pepper day' (i.e. a quarterly activity for all new employees of Conclusion to meet each other and to learn what Conclusion stands for), 'quarterly society' (i.e. a meeting for the employees of Conclusion fulfilling a commercial role in order to search for new commercial possibilities and share contacts), 'lunch', 'Conclusion Insite' (i.e. a platform for knowledge sharing and cooperation within Conclusion), 'the core' (i.e. a two weekly newsletter provided to all employees working at Conclusion), and 'knowledge sessions' (i.e. an event usually initiated by individual operating companies at which employees can take part to share knowledge and meet each other). These initiatives resulted into a transformation of the organization towards more internal cooperation. This is visible in their attitude towards cooperation and practical examples in which internal cooperation was present. However, even though the people at Conclusion already see some positive changes regarding cooperation, they believe there still is a lot to improve, see Example 1 and Example 2.

Example 1: Symptom of lack of cooperation.

Example: "A lot of the operating companies provide products/services in branch x. However, as we do not cooperate, we miss the opportunity to get in touch with the higher management of organizations in branch x. If we would have the opportunity to get in touch with the higher management, we could provide a total solution containing (a set of) all our products/services we provide."

- Interviewee

Example 2: Symptom of lack of cooperation.

Example: "Sometimes I hear about projects other operating companies have done making me think why didn't you ask me [to help]. I would have had the perfect product/service for that case."

- Informal conversation with one of the employees at Conclusion

Management believes that an increase in cooperation between the operating companies would create synergy (e.g. by an increase in the steepness of the learning curve, and an increase in efficiency) and thereby increase the revenue and opportunities for Conclusion as an entity. Management concludes that the initiatives to increase cooperation between the operating companies thus far have not resulted in the desired level of cooperation yet as they still see a lot of missed opportunities and revenue as a result of noncooperation. However, management is not sure about the causes for the insufficient level of cooperation and on how to increase the level of cooperation.

Therefore the management question (Bloomberg, Cooper & Schindler, 2014) is:

“How to increase the level of cooperation¹ between the different operating companies within Conclusion²?”

1.3 Goals and research questions

To be able to answer the management question as formulated in Paragraph 1.2, two goals in the research were formulated. The first goal is to do empirical research about the main bottlenecks responsible for the insufficient level of cooperation between the operating companies within Conclusion (i.e. the diagnosis). The second goal, is to come up with a possible solution for Conclusion to decrease/take away the bottlenecks responsible for to the insufficient level of cooperation as found in the diagnosis (i.e. the design). Based on these two research goals, research questions were formulated to execute the research.

Research question 1, diagnostic phase: *“What are the main bottlenecks responsible for the insufficient level of cooperation at Conclusion?”*

To be able to answer this research question for the diagnosis, four sub research questions were formulated. These sub-questions derived from four main aspects the researcher selected to take into account to evaluate the ability of an organization to cooperate. These are: (1) the organizational stage of development, (2) the (cooperation) structure of an organization, (3) the (cooperation) strategy of an organization, and (4) the culture present in an organization. The sub-questions one to four are:

Research question 1.1, diagnostic phase: *“Does the current organizational stage of development fit the current goal of Conclusion to increase cooperation?”*

Research question 1.2, diagnostic phase: *“What aspects of existing cooperation structures, described in literature, are present/missing at Conclusion?”*

Research question 1.3, diagnostic phase: *“What aspects of existing cooperation strategies, described in literature, are present/missing at Conclusion?”*

Research question 1.4, diagnostic phase: *“What type of culture(s) is/are present at Conclusion and does this fit (the willingness to increase) the level of cooperation?”*

Based on the outcomes of the diagnosis (i.e. the bottlenecks), a design should be developed for Conclusion to increase their internal cooperation. Therefore, the design research question is:

Research question 2, design: *“What is an appropriate set of interventions for Conclusion which takes away the main bottlenecks responsible for the insufficient level of cooperation?”*

¹ Cooperation in this research refers to projects that were executed/assisted by an operating company (as a result of another operating company).

² As can be read in Paragraph 1.1, the research will limit itself to four operating companies within Conclusion. In the remaining of this research, the four operating companies are referred to as ‘Conclusion’ . ‘Conclusion as an entity’ refers to the company Conclusion as a whole (including all operating companies).

To be able to answer the main design question, three sub research questions for the design were formulated. The three sub-questions for the design are:

Research question 2.1, design: *“Which interventions can be used to increase the current level of cooperation at Conclusion?”*

Research question 2.2, design: *“What is the expected impact of the proposed set of interventions on the level of cooperation?”*

Research question 2.3, design: *“What is the expected level of disturbance of the proposed set of interventions on the daily operational activities going on at Conclusion?”*

2 Research perspective

The research was executed from the perspective of the complexity paradigm. The complexity paradigm describes a non-linear iterative process in which different components interact in an open and iterative manner. In this paragraph insight is provided in the different concepts of the complexity paradigm.

2.1 Chaordic systems thinking (CST)

Chaordic Systems Thinking (CST) finds its origin in the chaos theory. Chaos in CST is seen as a lens: *“we use chaos as a systematic way of looking at reality, as a world view, as a metaphor for change which recognizes that systems are complex, dynamical and nonlinear”* (Van Eijnatten, 2004b, p. 431). The term ‘caordic’ refers to ‘chaord’; an amalgamation of order and chaos in which none of these two is dominant (Van Eijnatten, 2004b). To read about the five core components of a chaordic system, see Appendix II: the five core components of a chaordic system.

2.1.1 Holons

An important subject within CST is the concept of a holon (Koestler, 1967). Van Eijnatten (2004a) defined a holon as *“an entity that is both a whole, and a part of a bigger whole at the same time”* (p. 126). Taking this definition into account, the operating companies within Conclusion can be seen as holons as they are an entity on their own and part of a bigger whole (Conclusion as an entity) as well.

A system of holons can be described as a holarchy; *“the holarchy defines the basic rules for cooperation of the holons”* (Van Eijnatten, CST3e basic concepts, p. 8). Within a holarchy, there are horizontal and vertical dimensions. The vertical dimension can be seen as ‘holonic depth’ which reflects the level of complexity the holon is in. These kinds of holarchies are called developmental holarchies. Ecological holarchies represent the horizontal dimension or ‘holonic width’. This type of holarchy reflects different inclusions of holons at the same level of complexity. So, the ecological holarchy shows scale differences within an organization (e.g. individual, department, organization)³.

From the perspective of the developmental holarchy, a holon (e.g. an operating company) can be seen as a whole what is able to grow towards a higher level of complexity. Reaching a higher level of complexity means the holon is capable to manage more complex situations. A different level of complexity is visible between two organizations if one organization is capable of working together with other organizations (higher level of complexity) instead of the other organization (lower level of complexity). Development towards a higher level of complexity is a nonlinear process in which the system is bifurcating (see Paragraph 2.1.2).

In this research, the assumption is made that the level of complexity depends on the lowest level of complexity present in the system as a whole (Receveur, 2015). Therefore, it is important for an organization to equally develop its parts (e.g. individuals, operating companies). Specified for Conclusion this would mean that to be able to grow towards a higher level of complexity as an entity (e.g. to cooperate), they need to start looking at the parts (having the lowest level within the company) unable to cooperate (i.e. the single operating companies). Once the operating companies have reached a sufficient level of complexity, Conclusion as an entity can focus on a higher level within the company to develop (i.e. the organizational level).

2.1.2 Eye of the chaos

When a system reaches its limits of growth, it enters the transformative stage. Within this stage the system starts bifurcating and becomes chaotic. During this stage, the system oscillates between four different states (1: old thinking, old doing; 2: old thinking, new doing; 3: new thinking, old doing; and 4: new thinking, new doing, see Appendix IV: visualization eye of the chaos) until it reaches a new point of equilibrium and thereby a higher level of complexity. Within the eye of chaos, the system is very

³ A department from the perspective of scales can be seen as a group of individuals, an organization from the perspective of scales can be seen as a group of departments.

susceptible to external variations (Van Eijnatten, 2004b). This is called “*sensitive dependence on initial conditions*” (Lorenz, 1963). When a small change occurs in such a state, this may lead to a major transition (‘butterfly effect’).

2.1.3 Non-linearity

Growing up to the transformative stage usually can be visualized as a linear phase (i.e. the incremental stage), see Appendix V: life cycles of a chaordic system. However, on a lower level of aggregation, the same S-shaped growth occurs (Van Eijnatten, 2004b). This appearance is called ‘scale invariance’ and was first noticed by Newcomb (1881). “*A function $f(x)$ is called 'scale invariant' if scaling x by a fixed amount does not change the shape of the function*” (<http://nrich.maths.org/5937>, 1997). The linear process on macro-level can be seen as a follow-up of a S-shaped growth on a micro-level, see Figure 2. This can be compared to an organization (macro-level) being in linear growth while parts of the organization (micro-level) experience a non-linear growth. In other words, linear growth can be seen as small (non-linear) steps towards a higher level of complexity.

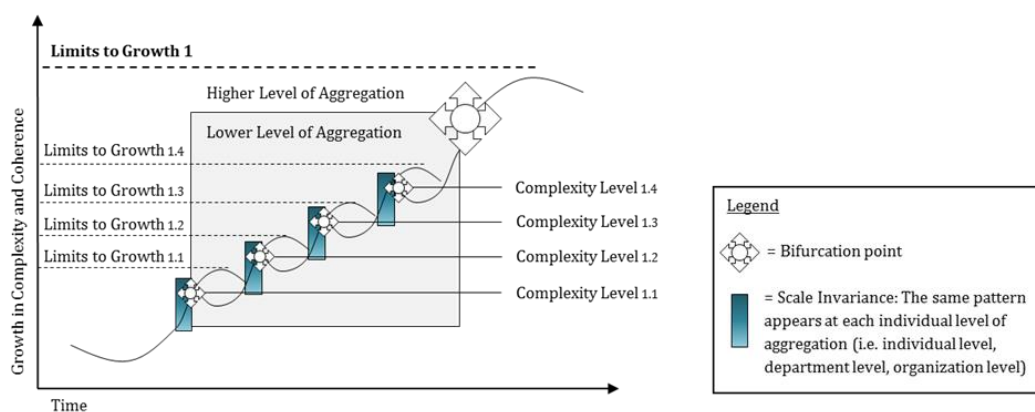


Figure 2: Scale invariance. Van Eijnatten, 2004b, p. 433.

2.1.4 Wilber’s quadrants

Development within one level of scale can be stimulated using the insights of Edwards (2007). Edwards (2007) adapted ‘Wilber’s Quadrants’ Wilber (1996) in such a way that these quadrants enable us to describe holons from the perspective of CST. The model is called the All Quadrants All Levels matrix (AQAL matrix). Within this model, the upper part shows the agency (i.e. perceiving a single holon as a whole) and the lower part the communion (i.e. perceiving a single holon as part of a bigger whole). The left hand side of the matrix shows the interior dimensions, the right hand side the exterior dimensions. The exterior quadrants are described as the things we can perceive whereas the interior quadrants are not perceivable by our five senses. Kira and van Eijnatten (2008) made a visualization of the integral view of the holon and the AQAL matrix (see Appendix III: Definition of a holon). To be able to step towards a higher level of complexity, all four quadrants should be developed equally well within one single holon.

Edwards (2007) distinguishes two types of development: transcendence and translation. Translation takes place on the same level of complexity between different quadrants (see Appendix III: Definition of a holon). During the translational development, quadrants influence each other to start developing. When for example the vision of an organization (agency, interior) is developing, this could influence the way this organization is cooperating with other organizations (communion, exterior). This ‘translation process’ can go in all directions.

Transcendence is the development of the characteristics (quadrants) of a holon towards a higher level of complexity (see Appendix III: Definition of a holon). When transcendence takes place on all quadrants simultaneously, a holon can transcend to a higher level of complexity. Reaching a higher level of complexity means the holon is capable to manage more complex situations, see Paragraph 2.1.1.

3 Theoretical background

In this chapter, important theoretical aspects for the diagnostic phase of the research are described. The subjects discussed here were derived from the research questions as described in Paragraph 1.2.

3.1 Organizational development (the maturity model)

Greiner (1998) proposes a model to analyze the development (phases) of organizations, see Figure 3. This model uses the theory of growth as described by the concepts of CST. The phases of growth present in this model reflect the maturity level of an organization (i.e. level of complexity).

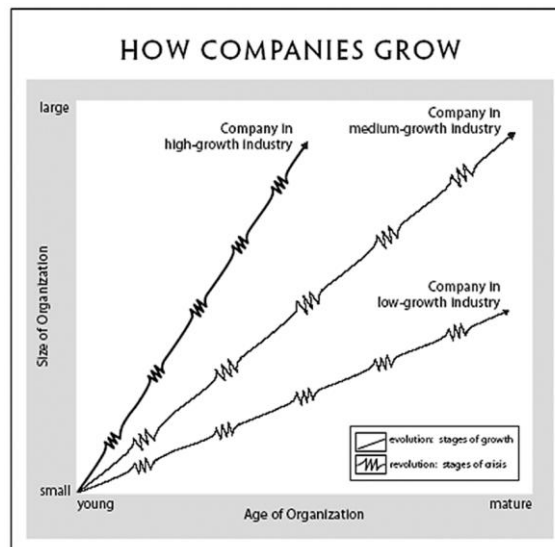


Figure 3: How companies grow. Greiner, 1998, p. 4.

To make a reasonable estimation about an organization's growth/development, five key dimensions should be taken into account. These are: (1) the organization's age, (2) the organization's size, (3) the organization's stage of evolution, (4) the organization's stage of revolution, and (5) the growth rate of the organization's industry.

3.1.1 Age of the organization

To describe the maturity level of an organization, its age is an important factor. An organization can experience relatively slow or fast growth. The age reflects the ability of an organization to develop during the years as continuous development is required for an organization to survive.

3.1.2 Size of the organization

Besides an organization's age, the size of an organization is an important aspect as well. Organizations who stay around the same size are less required to continuously develop as they will experience more or less the same management issues over their overall life time. Growing organizations (e.g. in terms of number of employees and/or sales volume), experience continuous changes (e.g. in hierarchy structures/functions/interrelatedness).

3.1.3 Stages of evolution (i.e. incremental stage)

Some phases of organizational growth (as displayed in Figure 3), represent a relatively linear process. Usually such a period takes around four to eight years after which an organization will enter the revolutionary phase. During the evolution phase, there are some incremental changes, no radical changes will occur.

3.1.4 Stages of revolution (i.e. transformative stage)

In stages of revolution (i.e. the transformation phase), organizations experience high levels of turbulence (i.e. bifurcation) (see Paragraph 2.1.2 to read about the transformative phase and

bifurcation). These periods of turbulence usually are accompanied by *“frustrated top-level managers and disillusioned lower-level managers”* (Greiner, 1998, p. 4). Some organizations fall short during these periods and decide to stay small and/or quit business (i.e. they experience limits of growth, see Figure 2). Other organizations will be able to find a (set of) solution(s) to manage the next period of evolution. Cynically, often the proposed solutions for one revolutionary change result into the cause for the next phase of turbulence.

3.1.5 Growth rate of the industry

The speed at which organizations grow and develop, is highly dependent on the growth rate of the market in which they operate. The faster the market changes (i.e. the higher the growth rate of the industry), the faster the organization is required to change to be able to catch up (e.g. by recruiting employees when the market is expanding). The slower an industry grows (i.e. the lower the growth rate of the industry), the longer the period of evolution will last.

The five key dimensions as described above continuously play a role in each phase of growth. To assess which phase of growth an organization is facing, Greiner (1998) described each phase in terms of: (1) management focus, (2) organizational structure, (3) top-management style, (4) the control system, and (5) management reward emphasis (see Appendix VI: The five phases of growth).

3.2 Cooperation structures

Since innovation and competition are increasing, companies are forced to focus on their core competences. By focusing on these competences, companies can be more innovative and flexible but need suppliers of complementary products as well. In their search for these complementary products, companies are looking for partners to cooperate with. One commonly used operation structure is an alliance structure. This paragraph zooms in on the cooperation structure of an alliance.

3.2.1 Alliances

De Man (2006) describes an alliance as a *“private partnership between one or more independent enterprises that meet the following criteria: (1) common goal, (2) shared risks, costs and revenue, (3) collaboration between partners, and joint decision making”* (Man, 2006, p. 13, translated from Dutch). An alliance lacks hierarchy, and decisions are often made by (representatives of) all partners together. Alliances can be recognized when enterprises keep their own legal independence within their cooperation, but simultaneously have a shared decision-making process. The need to form an alliance is especially present when organizations are searching for flexibility, coordination, and core competences/skills of a partner (De Man, 2006). This context often occurs in dynamic markets (De Man, 2006).

Alliances can be seen as the main component for networks (De Man, 2006). Networks arise when companies connect together and thereby have indirect relationships as well (see Appendix VII: Innovation partners and their contributions within a network).

This shift in focus on core competences and networks brings a new type of competition: horizontal competition (De Man, 2006). In horizontal competition, companies compete against each other as specialists with a network of partners who are suppliers of their complementary products. This is different from vertical competition in which companies compete against each other by a total integrated product developed themselves. Horizontal competition makes it important to be part of an alliance and network with a high competitive advantage.

Alliance management

Important aspects of alliance management are: dynamic issues, no hierarchy, incompatible management structures, opportunism, and temporality (De Man, 2006). Dynamic issues arise since the shared strategy of an alliance consists of a combination of strategies and visions of the partners. Therefore changes in (work) environment can have a higher impact on some partners than on others. In such a situation, it is important to be flexible as a partner. No hierarchy is a frequently observed

aspect of alliances. In such alliances, decisions are made by representatives of all partners. This calls for a shared strategy and a new type of leadership which brings us to the third important aspect of alliance management: incompatible management structures. Since each of the partners is confident with its own management structure, it can be a real challenge to align management structures. The fourth aspect to be mentioned here is opportunism. Opportunism occurs when a partner premises its own interest. Opportunism is often hard to recognize at an early stage. The last aspect is the temporality of alliances. This aspect is important for all decisions to be made within an alliance as it requires each organization to be able to become independent again as soon as the alliance splits up. Furthermore, capital, knowledge and brands generated by the alliance should be able to be divided equally once an alliance splits up.

3.3 Cooperation strategies

For an organization, there are different strategies to realize cooperation and thereby create value. An organization can for example work together with its customers to create superior customer value, work together with another organization to focus on core competences, or collaborate within the environment to create shared value. In this paragraph, coopetition, co-creation, open innovation and co-innovation are discussed.

3.3.1 Coopetition

Coopetition refers to an organizational relationship which includes cooperation as well as competition (Bengtsson & Kock, 2002). Bengtsson and Kock (2002) claim this type of relationship to be the most advantageous and on the same time the most complex relationship existing between organizations.

Competition is a type of relationship in which direct rivalry is present (e.g. because of scarcity of resources) thereby forcing organizations to stay innovative and constantly search for (new) business opportunities. Cooperation on the other hand represents a relationship in which organizations share resources to be able to grow and compete against other (networks of) organizations by increasing their efficiency and effectivity. As can be concluded, both types of relationships have positive outcomes when it comes to gaining competitive advantage. Combining both types of relationships, results into a relationship in which organizations *“in some respect help each other and to some extent force each other towards, for example, more innovative performance”* (Bengtsson & Kock, 2002, p. 412).

To describe competitors, Bengtsson and Kock (2002) use the definition *“actors that produce and market the same products”* (p. 415). However, within Conclusion it is visible that competition arises as well when organizations offer substitutes. Therefore, within this research, a competitor is stated to produce and market the same products or substitutes. Caves and Porter (1997) state that the degree of competition depends on the degree of distance between the competitors (e.g. *“Competition within strategic groups is less intensive than between strategic groups”* (Bengtsson & Kock, 2002, p. 413)).

Managing coopetition

To be able to describe the management of coopetition, the differences between vertical- and horizontal relationships should be taken into account. Within vertical relationships, there often exists a mutual interest to interact (i.e. relationships between the different players of a production cycle). Horizontal relationships on the other hand, often arise between competitors and are *“more informal and invisible, in that information and social exchanges are more common than economic exchange”* (Bengtsson & Kock, 2002, p. 414). In vertical- as well as horizontal relationships, cooperation and competition are important to gain competitive advantage (Mattson & Lundgren, 1992; Wilkinson & Young, 1994). However, horizontal coopetition is more complex and less common. The scope of this research will focus on the horizontal relationships between organizations.

One of the most important and complex aspects regarding coopetition management, is the human being who has to deal with these paradoxical relationships. From the competition perspective, individuals are focused on maximizing their own interest (Hobbes, 1968; Smith, 1976). To be able to maximize their own interest, individuals are competing against each other to gain most and best

resources. Cooperation, on the other hand, requires individuals to, work together towards a common goal to gain most value for all participants (instead of one actor's value). Because of the big contradictions between peoples' behavior in these two types of relationships, it is not recommended for individuals to be involved in both types of relationships. To avoid people from being involved in both types of relationships, the type of relationship can be linked to separate units within a firm (e.g. cooperation can be present between R&D activities while competition can be present for marketing activities). If this is not possible, or when more complex structures and relationships arise, the decision can be made to let the conflict be controlled and coordinated by an intermediate.

3.3.2 Co-creation

In the past, the market was separated from the value-creation process: organizations had an inside-out approach meaning that they decided what was brought to the market and what the customer should buy. From the perspective of the Service Dominant logic (see Appendix VIII: Service Dominant Logic), organizations should make use of an outside-in approach (Payne, Storbacka & Frow, 2008): they first should have a look at what the customer wants (e.g. by co-creation) before deciding what to produce. Therefore, this approach generates more value for the customer.

This shift from a firm-centric way of value creation towards co-creation partly happened through using (social) media. As (social) media make consumers able to communicate and evaluate values generated, consumers become more critical and are always searching for the highest value (Prahalad & Ramaswamy, 2004). Organizations should respond to this change by discussing with (potential) consumers what they want. Prahalad and Ramaswamy (2004) describe these discussions as *"high quality interactions that enable an individual customer to co-create unique experiences with the company"* (p. 7). Applying this method unlocks new sources of competitive advantage since it makes companies able to find the latent needs of their (potential) customers.

Prahalad & Ramaswamy (2004) provide four building blocks which create a system for co-creation of value. These four building blocks are: dialogue, access, risk-benefits, and transparency (DART). Applying these four building blocks increases the potential outcome of co-creation. Dialogue can be seen as the driver behind co-creation. *"Dialogue implies interactivity, deep engagement, and the ability and willingness to act on both sides"* (Prahalad & Ramaswamy, 2004, p. 9). Dialogue can be seen as a stream of ideas/opinions flowing among and through a group of people which will result in new understandings (Gerard & Ellinor, 1999). The emphasis of a dialogue is on learning, collaboration and the synthesis of points of view. Furthermore *"it creates a community-based culture of cooperation and shared leadership. It moves groups from the dependency, competition and exclusion [...] to increased collaboration, partnership and inclusion"* (Gerard & Ellinor, 1999, p. 1). Important for a dialogue to function properly is the equality of participants (e.g. organization and its customers). To gain dedication in the co-creation process, both the organization and the customer should see the added value of participating in dialogues. Furthermore, the rules of having dialogues should be clearly defined on forehand. Besides dialogue, access and transparency into the resources of an organization are important aspects as they enable the customer to reflect upon the potential risks and benefits. Being able to reflect on the potential risks and benefits enables the customer to reflect on choices as proposed by the organization.

3.3.3 Open innovation

Open innovation uses a business model in which multiple companies convert R&D into commercial values (Chesbrough, 2006). Following this model, ideas created within an organization are as important as ideas created outside. Organizations using open innovation, employ internal as well as external ideas to create value. This combination of both internal and external ideas applies as well for the marketization of the products that arise from this value-creation process (i.e. products are brought to the market from inside, as well as from outside the organization). Since external knowledge is seen as highly important, learning from both inside and outside the organization is seen as equally important.

Von Hippel (1988) provided four external sources to gain valuable knowledge:

1. suppliers and customers;
2. university, government and private laboratories;
3. competitors;
4. other nations.

Different from the closed model, intellectual property (IP) is seen as “a new class of assets that can deliver additional revenues to the current business model, and also point the way towards entry into new businesses and new business models” (Chesbrough, 2006, p. 5). Within open innovation IP is bought and sold more than within the closed model since organizations do see value in IP. The model of open innovation is supported mostly by ‘high technology industries’ (Chesbrough, 2006).

3.3.4 Co-innovation

To be able to create organizational as well as shared value, Lee, Olson & Trimi (2012) propose a platform to combine internal, external, collaborative, and co-creative ideas. This platform is called: co-innovation and is displayed in Figure 4. “Co-innovation is a platform where new ideas or approaches from various internal and external sources are applied differently to create new value or experience for all stakeholders, including consumers” (Lee et al., 2012, p. 824).

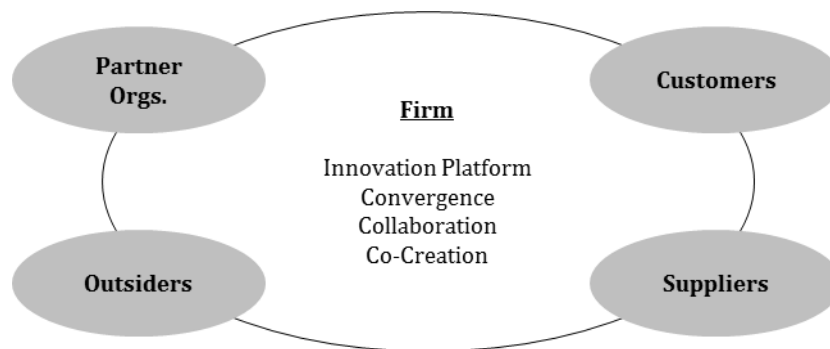


Figure 4: Co-innovation. Lee et al., 2012, p. 825

The platform shows five key elements by which an organization, be it non-profit, business enterprise, or government agency, can create value in the value chain. This new value is called ‘shared value’ as there are more parties gaining from the value created. Types of shared value that can be thought of are: “(1) new customer value, (2) new products, services, ventures,(3) new efficiency of the value chain, (4) new business model, and (5) a new customer base” (adapted from the visual: Co-innovation by Lee et al., 2012, p. 825).

3.4 Competing Values Framework

Culture is an important attribute in complex organizations. Without the right (mix of) company culture(s), cooperation will be blocked. To describe the culture of an organization, the ‘Competing Values Framework’ by Cameron and Quinn (2005) can be used. This framework consists of two basic dimensions: (1) the organizational perspective (internal versus external) and (2) the orientation towards change (focused versus flexible). Taken together, these two dimensions form a matrix of four quadrants, see Figure 5. The four quadrants are: (1) internal focus and orientation towards flexibility (i.e. clan), (2) external focus and orientation towards flexibility (i.e. adhocracy), (3) internal focus and orientation towards stability and control (i.e. hierarchy), and (4) external focus and orientation towards stability and control (i.e. market).

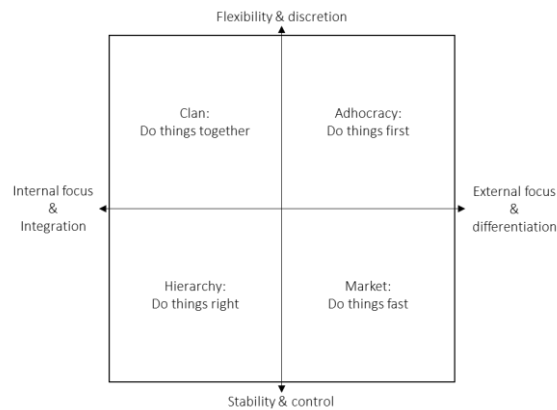


Figure 5: The four quadrants of the competing values framework. Quinn and Rohrbaugh, 1983; Cameron and Quinn, 2005, pp. 31-40

The culture type clan ('do things together') has a collaborative orientation which represents long-term development. Therefore this type of culture is an important asset when aiming for cooperation. The leader in such type of culture typically is a facilitator, mentor, and/or team builder. The value drivers are: commitment, communication, and development. The theory of effectiveness for this culture type is based on human development and high commitment (Quinn & Cameron, 1999).

The culture type adhocracy ('do things first') has an orientation in which creation is key. The type of leadership typically is an innovator, entrepreneur, and/or visionary. The value drivers are: innovative outputs, transformation, and agility. The theory of effectiveness for this culture type is based on innovativeness, a vision and constant change (Quinn & Cameron, 1999).

The culture type hierarchy ('do things right') has a controlling orientation which results in incremental changes. The type of leadership fits the values of a coordinator, monitor, and/or organizer. The value drivers are: efficiency, timeliness, consistency, and uniformity. The theory of effectiveness for this culture type is based on control and efficiency with capable processes (Quinn & Cameron, 1999).

The last proposed culture type is the market ('do things fast') which has an orientations towards short-term performance to be able to compete. The type of leadership fits the values of a hard-driver, competitor, and/or producer. The value drivers are: market share, goal achievement, and profitability. The theory of effectiveness for this culture type is based on aggressively competing and being customer focused (Quinn & Cameron, 1999).

Quinn and Cameron (1999) propose six dimensions of culture by which each of these four culture types can be characterized. These six dimensions are: (1) dominant organizational characteristics, (2) leadership style, (3) management of employees, (4) organizational glue, (5) strategic emphasis, and (6) criteria for success. A summary of these dimensions including the characteristics per culture type can be found in Appendix IX: Dimensions of culture.

3.5 Stimulating cooperation

Realizing an increase in the level of cooperation should be done by stimulating cooperation. This can be done by implementing one of the cooperation structures as described above. Besides introducing the (potentially) right structure, organizations can do more to increase the level of cooperation. This paragraph describes some interventions that could lead to an increase in the level of cooperation. One way to stimulate cooperation is by providing incentives (for example by rewarding cooperation as part of employees' KPIs) (Cross, Martin & Weiss, 2006). Providing incentives for cooperation could feel unnatural to use for an organization making use of individual P&L's for each operating company. However, an example provided by (Aiken, Keller, Lavoie & Weiss, 2009) shows us that the "accountability and collaboration need not be opposites to be traded off; instead, they can reinforce one another" (Aiken et al., 2009, p. 4), see Example 3.

Example 3: Introducing KPIs for collaboration in a firm containing >80 individual P&Ls.

“One company divided itself into more than 80 individual P&Ls as a mechanism to hold senior leaders firmly accountable for their own results, but balanced this structure with a relentless focus on achieving company-wide growth metric. Incentives were simply balanced; executives didn’t receive their maximum bonus if the company as a whole didn’t reach its goal, however well their individual business units had done” (Aiken et al., 2009, p. 4).

Besides providing incentives, providing individuals with a common goal for which they have to perform collective actions could help as well. Bengtsson and Kock (2002) state that *“it is the social structure that surrounds individuals that is considered to explain why people act collectively to create a win-win relationship. In such a relationship, the wellbeing of the actors involved is more important than one actor’s profit maximization or opportunism”* (p. 416). The execution of a project with a common goal should create a social structure in which collectivity is more important than individual gains.

De Man (2006) described the need for specialized organizations to cooperate as organizations focusing on their core competences are more dependent upon complementing organizations. Therefore specializing could be a suitable intervention to increase the willingness to cooperate.

Fostering the willingness of people to cooperate will not result in cooperation per se. Besides the willingness, people need to know why cooperation could lead to bigger successes and how to cooperate. This could be achieved by training people and by providing examples. Providing training and examples could be done as a result of network analysis tools. Network analysis tools have the ability to show high performing employees. Trainings then could be developed to *“emulate the collaborative approaches of successful colleagues”* (Cross et al., 2006, p. 2). As this could make trainings more applicable to people within the same company, this way of providing training could be very effective.

Furthermore, network analyses can help in following the value flowing around in a network. Being able to follow this value, makes organizations able to for example *“[replicate] high-performing networks, [...], making valuable expertise and advice more readily available, and revamping performance metrics to reflect mutually accountability better”* (Cross et al., 2006, p. 2). So network tools (in combination with providing examples and trainings) could be an useful intervention.

The last aspect that will be mentioned here, is introducing dialogue internally. The emphasis of dialogue is on learning, collaboration and the synthesis of points of view. *“It creates a community-based culture of cooperation and shared leadership. It moves groups to the dependency, competition and exclusion [...] to increased collaboration, partnership and inclusion”* (Gerard & Ellinor, 1999, p. 1). Furthermore, dialogue establishes a baseline of trust and de-personalizes ideas. This ensures *“everyone’s views get heard, and [...] that once the debate is done, the decision is binding on everyone taking part, even if their view was not adopted”* (Cross et al., 2006, p. 2). This is an important aspects as only then a shared goal and a shared process can be adopted by a group of people all working together towards the final result.

4 Method

This chapter starts with a short description of the ‘problem and design based approach’ and the CIMO logic method. Then, the methods for data collection and data analysis are being described for the diagnosis as well as the design. Last the method of design and impact of design are discussed.

4.1 Problem and design based approach

The research was conducted following the so-called regulative cycle (Van Strien, 1997), see Figure 6. The regulative cycle consists of five stages, each leading to decisions within the research process. This research limits itself to the first three stages (highlighted in blue in Figure 6). These stages are: (1) ‘problem definition’, (2) ‘diagnosis’, and (3) ‘design’. The approach regarding the problem definition was already described in Paragraph 1.2. The approach regarding the diagnosis can be found in Paragraph 4.3. The approach regarding the design can be found Paragraph 4.4. The last two stages: ‘intervention’ and ‘evaluation’ were not conducted as these are beyond the scope of a graduation project. However, after the design phase, the outcomes were reflected by some experts during a workshop (see Paragraph 4.4.4).

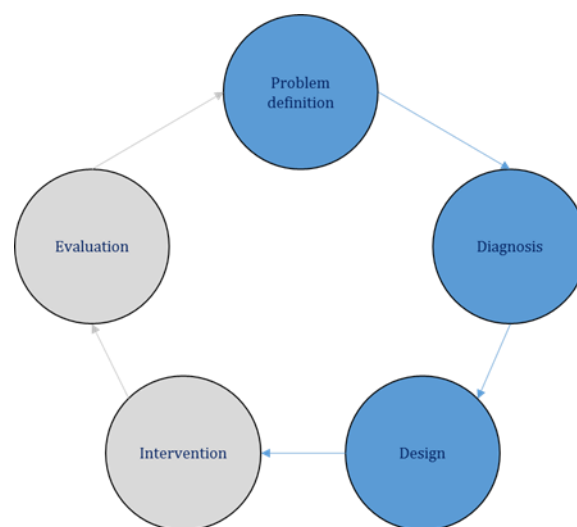


Figure 6: Regulative-cycle. Van Aken, Berends, & Van der Bij, 2012, p. 11.

4.2 CIMO logic

As the aim of this research is to produce a scientifically based and, on the same hand, practical solution, a logic choice was made to use CIMO logic. CIMO logic is a design approach addressing how to change an existing situation (Denyer, Tranfield, & Van Aken, 2008). This is often used within the field of organization- and management studies since this field requires solution oriented design projects. CIMO stands for: Context, Interventions, Mechanisms and Outcome. CIMO logic can be used within a linear and variable based environment (i.e. in a specific context, intervention ‘x’ by a mechanism ‘y’, results into an outcome ‘z’).

A linear approach however does not fit the perspective of chaordic systems thinking. To apply the CIMO logic within the perspective of chaordic systems thinking, the CIMO-logic approach of Mulder (2012) can be used. Mulder (2012) proposes a framework, based on the CIMO logic, in which the interventions and mechanisms are interconnected. So it is not just one intervention using one mechanism resulting in an outcome but a set of interventions using different mechanisms. The mechanisms can be assigned to one or more quadrants of the AQAL-matrix. The AQAL-matrix has the following four quadrants: agency/interior (AI), agency/exterior (AE), communion/interior (CI), and communion/exterior (CE), see Paragraph 2.1.4. Interventions can be introduced in different levels of scale. Taking Conclusion as an entity as an example, a set of interventions can be developed for individual-, operating companies’ -, and organizational level. In this study, the level of the operating companies is taken into account.

The mechanisms within this adapted CIMO approach stimulate transformation and transcendence (see Paragraph 2.1.4). Shortly said this means: when a set of interventions trigger a set of mechanisms equally spread over all quadrants, this will result in development of all quadrants. Movement in all quadrants (bifurcation) finally will result in the holon reaching a higher level of complexity. Important for transformation is an equally spread set of interventions over all four quadrants. Only when all four quadrants are developed equally and well enough, the system is able to step towards a higher level of complexity by transcendence. This higher level of complexity is seen as the outcome (O) of the CIMO.

Mulder (2012) proposed this adapted CIMO logic model as a tool for “*value-based project management*” (Mulder, 2012, p. 121). The tool fits best: highly complex and/or innovative and/or uncertain projects. To check whether a project fits this tool, the ‘project characteristics model’ can be used, see Figure 7.

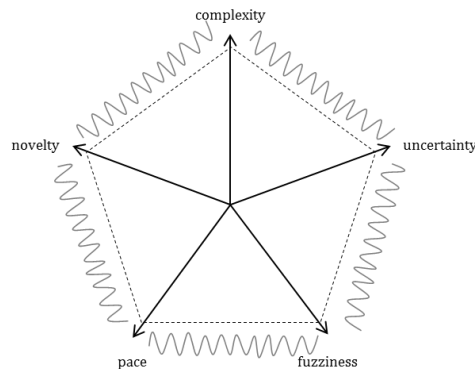


Figure 7: Application domain for value-based project management. Mulder, 2012, p. 28

Mulder (2012) states that a project fits the tool best, if all project characteristics are outliers on all dimensions in the model. The research context of this research is an organization containing several highly autonomous operating companies in search for a higher level of cooperation to grow (in terms of revenue) and to gain opportunities. Such an organization can be viewed through the lens of complex system thinking (high on complexity, uncertainty, and fuzziness). Besides that, for a lot of organizations, cooperating is something new (high on novelty) and takes a lot of development time (high on pace). Therefore it can be stated that this tool could be applicable to answer the research question.

4.3 Diagnosis

In this paragraph, the methods of data collection and data analysis are described.

4.3.1 Method of data collection

By the use of semi-structured interviews, brainstorming, informal conversations, company documents, and company data, information was gathered to perform the analysis and formulate a cause-and-effect diagram. In this paragraph, the method of data collection will be elaborated on.

Interviewing (semi-structured) part 1

The first batch of semi-structured interviews was conducted at four operating companies and one CMO as described in Paragraph 1.1.5. For each of the operating companies and the CMO, one representative was interviewed. The selection of these respondents was done in consultation with management of Conclusion. The interviews consisted of three main subjects: (1) characteristics of the operating company, (2) cooperation, and (3) the ‘Smart Services Campus’⁴. In total 18 topics were discussed (see Appendix X: Interview scheme 1, in Dutch).

Besides the interview, each respondent received a survey which they could fill out in their own time. This survey contained six questions regarding the current and preferred organizational culture of the operating company of the respondent. Furthermore, each of the respondents was asked to come up

⁴ The questions concerning the Smart Services Campus were not included in the analysis and design.

with one extra person who represented the culture of the operating company/CMO well. This person was requested to fill out the survey as well.

Interviewing (semi-structured) part 2

The second batch of semi-structured interviews was conducted at one of the four operating companies as described in Paragraph 1.1. These interviews were used to get a deeper understanding of the different functions within one operating company concerning cooperation. The selected company was assumed to represent the other operating companies and was chosen in consultation with Conclusion. At the selected operating company, a selection of four respondents (all having different functions) has been made in consultation with management of the operating company being analyzed.

The four different functions that were selected are: (1) commercial manager, (2) managerial consultant, (3) general consultant, and (4) back office employee.

The interviews consisted of three main subjects: (1) characteristics of the operating company, (2) cooperation, and (3) the ‘Smart Services Campus’⁵. In total 13 topics were discussed (see Appendix XI: Interview scheme 2, in Dutch).

Company documents

Company documents of the past twelve months were requested (of each operating company) to gain insight into the current phase of development, the structure, and the strategies present at Conclusion, see Table 1 for the requested documents.

Table 1: Company documents requested.

Company documents requested
Quality manual
Mission/vision document
Website information
Portal & intranet
(Planning) meetings reports/minutes
Project portfolios
Project budgets

Company data

The company data was used to complement the outcomes of the interviews and the company documents. The company data was requested from the ‘Kennis & Allocatie desk’ (K&A desk). The K&A desk is a department of Conclusion as an entity. One of the responsibilities of this department is to process all tenders exceeding € 50.000 and/or procurements they believe to be interesting for Conclusion as an entity. The requested data should provide insight into the K&A- (i.e. projects coordinated by the K&A desk) and non-K&A projects (i.e. projects not coordinated by K&A desk) performed by Conclusion within the past 12 months, see Table 2 for the requested data.

Table 2: Company data requested.

Company data requested from the (non-)K&A projects
Customer name
Project/activity name
Operating company name fulfilling the project
Month(s) in which a specific project was executed
Year(s) in which a specific project was executed
Revenue gained by the project (in total and per operating company)
Hours spent on the project (in total and per operating company)

⁵ The questions concerning the Smart Services Campus were not included in the analysis and design.

The following aspects were analyzed using company data of the four operating companies of the past twelve months:

- How many projects were done last 12 months?
- Were the projects multidisciplinary (i.e. was more than 1 operating company involved)?
- Were the multidisciplinary projects executed together or by separate projects?
- What was the size of the different projects done (in terms of revenue and hours spent on the project) and how were these spread over the operating companies cooperating?

4.3.2 Method of data analysis

Based on the interviews, an inventory of all bottlenecks was made. This list of bottlenecks was categorized under common headings to find the greatest common dominators. This smaller, more generalized list of bottlenecks was checked for consensus. The consensus criterion was set at 60%, meaning that only the categories mentioned by at least 60% of the respondents were taken into account for the development of the cause-and-effect diagram (Porras, 1987). The bottlenecks derived from the interviews were complemented by the outcomes of the analysis of the company documents and brainstorming. The informal conversations and company data was used to support the found bottlenecks. This was done by making use of descriptive statistics.

The data gathered by culture analysis had the form of ipsative data (Van Eijnatten, Van der Ark, Holloway, 2014). Therefore, for the descriptive statistics, closed part-wise geometric means were used. The analysis based on this method allows to compare culture profiles (per dimension) within one and the same organization. As geometric means cannot be calculated for zeros, the zeros being present within profiles have been substituted by 0.5. The other values present within the profile including (one) zero(s) were replaced by new values (ratio based) so that the sum per profile (i.e. clan, market, hierarchy, and adhocracy culture questions) added up to 100 again.

Based on the outcomes of the data analysis, the researcher developed a cause-and-effect diagram by the analysis of potential cause-effect relationships. To validate the cause-and-effect diagram developed, the diagram was reported back to the respondents, and feedback was asked regarding the drawn relationships and description of the bottlenecks included. Feedback was only processed when a level of consensus of 60% was met.

4.4 Design

This paragraph describes the method of data collection, the method of data analysis, and the method of design.

4.4.1 Method of data collection

Data collection to develop a design, can be done based on three different methods: (1) experts, (2) literature, and (3) best practices. Within this research, all three methods were used to find interventions that could lead to an increase of the level of cooperation within Conclusion.

Experts were asked to provide information on what they believed to be useful interventions. The experts selected for this research were the same people as involved in the diagnostic phase (i.e. a total of ten employees representing the operating companies at Conclusion on (non-)management level). These people were defined as experts as they understand what working at Conclusion stands for. Furthermore, they experience what is going well and wrong (regarding cooperation) and probably have clear ideas of what should be improved in the current situation. A positive side effect of involving employees within the design phase is a decrease of the probability of resistance once the design will be implemented (Van Aken *et al.*, 2007).

Besides the use of experts, literature was used to find validated interventions to increase the level of cooperation in comparable contexts.

Furthermore, best practices were used. These best practices were selected Conclusion wide and selected as a result of the interviews, brainstorms, and informal conversations with other employees working at Conclusion (as an entity).

4.4.2 Method of data analysis

The method of data analysis was performed by four sequential steps:

1. Selection of mechanisms triggered by the interventions;
2. Defining the design criteria;
3. Grading the interventions;
4. Selection set of interventions.

This paragraph describes how of each of these steps was executed.

Selection of mechanisms triggered by the interventions

At first, applicable mechanisms for the collected interventions were searched for. Then, the distribution of the impact of the mechanisms over the AQAL matrix was analyzed. As can be read in Paragraph 5.1.3, the design should preferably stimulate the CI and CE quadrants to foster cooperation.

Defining the design criteria

The second part of the data analysis contained assessing the single interventions based on a list of design criteria. This list of design criteria consisted of (1) functional requirements, (2) user requirements, and (3) boundary conditions, see Table 3. The functional requirements were subtracted from the literature described in Paragraph 3.5 and focus on decreasing the emphasis of employees on their own operating company (see Paragraph 5.1.3). The user requirements were a result of aspects mentioned by the experts during the diagnostic phase (i.e. a total of ten employees representing the operating companies at Conclusion on a (non-)management level). The boundary conditions were provided by management of the four operating companies and the research perspective of CST.

Table 3: Design criteria to be graded from three perspectives.

Functional requirements	Graded by:		
	Researcher	Non-management	Management
Provides incentives for cooperative behavior (Cross <i>et al.</i> , 2006; Aiken <i>et al.</i> , 2009)	Yes	Yes	No
Stimulates people of different operating companies to focus on a common goal (Bengtsson & Kock, 2002)	Yes	Yes	No
Makes the operating companies focus on core competences (De Man, 2006)	Yes	Yes	No
Provides insights into the added value of cooperation (Cross <i>et al.</i> , 2006)	Yes	Yes	No
Increases trust between people of the operating companies (Gerard & Ellinor, 1999; Cross <i>et al.</i> , 2006)	Yes	Yes	No
User requirements			
Management team (MT) is able to autonomously implement the intervention	Yes	No	Yes
User-friendly (i.e. the intervention does not take too much time/effort/change of employees to adapt)	Yes	Yes	No
Boundary conditions			
Fits the mission/vision/culture of Conclusion as an entity	Yes	Yes	No
Focusses on the behavior of a group of individuals	Yes	No	Yes
Realization possible within 12 months	Yes	No	Yes
The benefits should outweigh the costs (of the implementation)	Yes	No	Yes

Grading the 16 interventions

The last step of the data analysis for the design was to grade the individual interventions proposed by the data collection. This was done from three different perspectives: (1) the perspective of the researcher, (2) the perspective of the employees, and (3) the perspective of management. Grading took place using a three-point scale (i.e. 0=low score, 1=moderate score, 2=high score). This three-point scale was assumed to represent an interval scale.

Perspective of the researcher

The researcher was assumed to grade the interventions by a theoretically well-founded manner. Furthermore, the grading of the researcher was influenced by the insights gained during 20 weeks of intensive research in the context. Therefore, the researcher graded all design criteria, and the weight of the researcher's scores was 1/3.

Perspective of non-management

To get insight into the view of non-management, three respondents (non-management employees) were asked to grade the interventions. This was done during a workshop because this would provide the researcher with motives of the scores of these respondents. The structure of the workshop was based on the method of co-reflection. Therefore, the workshop consisted of three main phases: (1) an exploration phase, (2) an ideation phase, and (3) a confrontation phase (Tomico, O., Overbeeke, K., & Frens, F., 2009). During the exploration phase, the participants were introduced into the research subject. In the ideation phase, the experts were introduced to the interventions analyzed and were asked to add potentially missing interventions. Furthermore, they were requested to together grade the interventions by an open discussion. After the ideation phase, participants were 'confronted' with the concept set of interventions ranged by the researcher and asked to provide feedback.

The employees were assumed not to be able to grade the interventions on all design criteria. Therefore a selection was made, see Table 3. A positive attitude of employees towards the set of interventions forms an important aspect for the success of (implementing) the interventions (Van Aken *et al.*, 2007). Therefore, the scores of the three employees together weighted 1/3.

The perspective of management

The last perspective is management's point of view. This is especially important regarding the implementation aspects. As management had limited time available, management was asked to grade the interventions on the requirements not graded by non-management, see Table 3. Because of the limited availability of management, only one manager was requested to fill out the matrix. Because of a limited number of managers, this manager was involved in the diagnostic phase as well. Even though scored by one manager, the total scores provided by the manager weighted 1/3. The main reason for this weight is that management is responsible for the initiative, implementation, and control of non-management employees towards cooperative behavior. Therefore, their trust and dedication in the (implementation of the) interventions is important. Furthermore, they are assumed to have experience in implementing these types of interventions.

4.4.3 Method of design

Based on the scores provided by the three perspectives (i.e. the researcher, and (non-) management), insight was gained in the best individual scoring interventions. However, based on the CST perspective, not one single, but a set of interventions should be selected. To select the best set of interventions, a new list of requirements was developed, see Table 4. This list of requirements merely focuses on assessing a set of interventions on its capabilities to increase cooperation within Conclusion.

Table 4: Requirements for set of interventions.

Selection criteria set of interventions ⁶	
1.	The higher the average score of a specific intervention, the higher the probability that it will be picked.
2.	An intervention picked preferably should have an average score ≥ 1.5 (i.e. $\geq 75\%$ ⁷ of the maximum score of 2).
3.	The set of interventions should score at least a 2 from one perspective and not lower than a 1 from the other perspective per functional requirement.
4.	All selected intervention should score ≥ 1 on all boundary conditions and user requirements by all three perspectives.
5.	Each quadrant of the AQAL matrix should be triggered by the selected set of interventions. However, the quadrants CI and CE should be triggered more.
6.	There should be strived for a limited number of interventions in the final set of interventions.

To analyze the interventions based on requirement 1 as proposed in Table 4, the average scores per intervention had to be calculated for each of the three perspectives. Therefore, the totals by the researcher were divided by 11 as the interventions were graded on 11 requirements, the totals by non-management were divided by 7, and the totals of management were divided by 4. Based on the total averages, one calculated average per intervention was computed which made the researcher able to compare the interventions in terms of having a higher or lower average score.

The analysis for requirement 2 was performed based on the averages calculated for requirement 1. Based on requirement 1 and 2 (see Table 4) a concept set of interventions was formulated. This concept set of interventions then was checked on requirement 3 to 6 as proposed in Table 4.

The analysis for requirement 3 and 4 as proposed in Table 4, could be executed based on the scores of each perspective (i.e. researcher and (non) management) as described in Paragraph 4.4.2.

For requirement 5, the concept set of interventions was linked to the corresponding set of mechanisms (see Paragraph 4.4.2). Based on this list, the distribution of the triggers over the quadrants of the AQAL matrix was checked.

The last requirement of Table 4 (i.e. requirement 6), required the set of interventions to be decreased up to a limited number of interventions still meeting the requirements 1 to 5. The final set of interventions was proposed making use of the CIMO logic method (see Paragraph 4.2).

During the check of requirements 3 to 6, the concept set of interventions was adapted when needed. If it would not have been possible to come to a set of interventions meeting all requirements as described in Table 4, one extra step (innovation) had to be taken. This step included developing (a) new (set of) intervention(s) to complement the interventions selected so far to be able to come to a final set of interventions meeting the criteria.

4.4.4 Evaluation design

The design was evaluation during a second workshop. This workshop was executed with 3 managers (together representing one operating company and Smart HR center). These managers were included in the diagnostic phase as well. However, because of the limited number of managers this could not be avoided. The subjects discussed with the managers were: (1) potential challenges during the implementation, (2) the order of implementation of the interventions (e.g. sequential/parallel), (3) the expected impact (in the current processes going on), (4) the expected costs and benefits, and (5) the ability of the proposed set of interventions to increase cooperation and thereby the revenue and opportunities (i.e. the symptoms of a lack of cooperation).

⁶ The selection criteria for the set of interventions were developed during the research.

⁷ This number was set by the researcher as a score above 75% of the maximum attainable score was assumed to be a 'high score'.

5 Results

This chapter provides the results regarding the diagnosis, including a cause-and-effect diagram. Furthermore, the results regarding the final design are presented.

5.1 Diagnosis

The results of the diagnosis describe the results of both the data collection, and the data analysis.

5.1.1 Results data collection

In this paragraph the results of the data collection (i.e. the semi-structured interviews, company documents, and the company data) are being described.

Semi-structured interviews:

All required interviews were performed and all participants were able to respond to all questions within the given amount of time. The interviews had an average duration of 40 to 70 minutes. In the method, a distinction was made between the analysis of the operating companies in general (i.e. analysis by interviewing management) and the analysis of the different functions within one operating company (i.e. analysis by interviewing non-management). As one of the functions selected for the non-management analysis seemed to be part of the management team (MT), this respondent was categorized under the management category for the analysis, see Table 5. The outcomes of the interviews including the categories on basis of which the consensus was checked during the data analysis can be found in Appendix XIII: Outcomes interview.

Table 5: Functions of the interviewees within the research.

Functions of the interviewees
Director Smart HR center
Director Bright Alley
Commercial Director Conclusion Learning Centers
Director Conclusion Mobiliteit
Director Human Capital Group
Commercial manager (Human Capital Group)
Consultant (Human Capital Group)
Consultant (Human Capital Group)
Back office (Human Capital Group)

Besides the semi-structured interviews, information was gathered during ‘brainstorms’ with employees of Conclusion. The participants of these brainstorms were selected as a result of the semi-structured interviews and by spontaneous conversations at the company. The brainstorms took an average of 30 to 60 minutes and were not structured. However, the subject of these brainstorms always was: ‘Cooperation between the operating companies within Conclusion’. The participants of these brainstorms can be found in Table 6.

Table 6: Functions of the participants of the individual brainstorms.

Functions of the participants of the individual brainstorms
Consultant Mobiliteit
HR responsible of the IT part of Conclusion
Manager Kennis & Allocatiedesk (two times)

As one of the participants of the semi-structured interviews was switched from the non-management category to the management category, the outcomes of the brainstorm session with a consultant of Conclusion Mobiliteit was used to fill the spot of non-management for the analysis.

Apart from interviews and brainstorms, the researcher had a lot of informal conversations which validated the need for the research question and the findings displayed in the cause-and-effect diagram.

Out of a sample of around 25 employees, the researcher received uniform feedback that the subject was highly relevant and there indeed was too much focus on employees' own operating companies.

Company documents

Of the pre-set list of company documents, only a few were (easy) available at all operating companies (within the scope of this research). It seemed Conclusion is a company which does not rely on (policy) documents so much. However, the documents that were present, gave enough information to analyze the current phase of development and the structures and strategies regarding cooperation. An overview of the documents that (were not) (easy) available at all operating companies can be found in Table 7.

Table 7: Company documents (not) being analyzed.

Company documents requested	(easy) Available at all operating companies (within the scope of the research)
Quality manual	Yes
Mission/vision document	Yes
Website information	Yes
Portal & intranet	Yes
(Planning) meetings reports/minutes	No
Project portfolios	No
Project budgets	No

Company data

Only a part of the requested company data was available, see Table 8. The data that should have provided insight into the size of the projects (in terms of revenue and hours spent on the project and the distribution of these two) was not available because of sensibility of information.

Table 8: Availability requested company data (non-)tender projects.

Company data requested	Available (tender projects)	Available (non-tender projects)
Customer name	Yes	Yes
Project/activity name	Yes	Yes
Operating company name fulfilling the project	Yes	Yes
Month(s) in which a specific project was executed	Yes	Yes
Year(s) in which a specific project was executed	Yes	Yes
Revenue gained by the project (in total and per operating company)	No (because of sensitivity)	No (because of sensitivity)
Hours spent on the project (in total and per operating company)	No (because of sensitivity)	No (because of sensitivity)

5.1.2 Results data analysis

This chapter describes the results of the analysis of the semi-structured interviews, brainstorms, company documents, company data, and informal conversations at Conclusion. The analysis was performed on the subjects derived from the research questions as discussed in Paragraph 1.2 (i.e. (1) the organizational stage of development at Conclusion, (2) the presence/absence of (parts of) cooperation structures within Conclusion, (3) the presence/absence of (parts of) cooperation strategies within Conclusion, and (4) the type of culture(s) present at Conclusion).

The organizational stage of development at Conclusion

At the start of 2004, Conclusion as an entity presented a new mission: "de kracht van samenwerken" (i.e. the power of cooperation). This mission referred to the goal of Conclusion as an entity to stimulate cooperation internally which was a result of their company-broad growth in combination with changes in their operating market. Based on the interviews, company documents and the researcher's own experiences at Conclusion, it can be concluded this mission has been adapted by the operating companies (within the scope of this research) as well.

To check whether this mission fits the current situation, an analysis was done based on the five key categories as proposed by Greiner (1998) (see Appendix VI: The five phases of growth). Conclusion seems to balance between the end of phase four (coordination) and the beginning of phase five (cooperation). In phase four, Conclusion as an entity was forced to merge the operating companies into service lines, consisting of matching operating companies. Furthermore, in phase four *“technical functions, such as data processing, are centralized at headquarters while daily operating decisions remain decentralized”* (Greiner, 2008, p. 7). This is reflected in the introduction of AFAS companywide (a new ERP system) which gave the operating companies the ability to communicate via one shared system (instead of a batch of different ERP systems managed by each individual operating company). AFAS makes it easier for the holding to keep track without spending too much time. On the same time, the (directors of the) operating companies are treated as almost totally autonomous. This division of responsibility and level of monitoring fits the fourth phase as well.

At the moment, the employees within Conclusion would like to see an increase in the level of cooperation internally. They believe the level of cooperation could and should be higher. This is one of the characteristics of an organization attending the end of phase four and the entrance of phase five.

Phase five includes strong interpersonal collaboration and *“emphasizes spontaneity in management action through teams and skillful confrontation of interpersonal differences”* (Greiner, 2008, p. 7). This should be gained through teams arising across functions (e.g. by making use of a matrix structure). For Conclusion (as an entity), this means teams should be organized across operating companies/service lines. This is something Conclusion is introducing (e.g. in the form of branch groups and CMOs).

Usually, phase five is accompanied by a reduced number of staff experts at headquarters. The people at headquarters often are reassigned, and combined into interdisciplinary teams providing advice to the field units instead of directing them (Greiner, 2008). This is something which is not visible (yet) within Conclusion.

Furthermore, *“conferences of key managers are held frequently to focus on major problems”* (Greiner, 2008, p. 7). This is already visible at the IT part of Conclusion which has a clear structure of the different MT's at different levels of the company who regularly meet to get informed and share knowledge. However, this structure is less present within the organization part of Conclusion (so neither within the scope of this research).

Another important aspect in phase five, is the rewarding structure. As the fifth phase focuses on team performance (more than on individual performance) usually the rewarding structure changes as well (i.e. *“economic rewards are geared more to team performance than to individual achievement”* (Greiner, 2008, p. 7)). At the moment, there still is a rewarding structure based on individual performance. During the interviews it was mentioned several times this type of rewarding structure holds back cooperation.

One last important aspect of phase five to mention, is the presence of an 'experimental setting'. In this experimental setting, an organization is triggered to think about new practices throughout the organization. Conclusion is trying to stimulate experimental behavior. They for example introduced a challenge in which six teams competed to develop a new proposition in which they showed outstanding performance towards their customer and a strong competitive advantage. These teams consisted of people from different operating companies (i.e. cross functional teams which is an important aspects of phase five as well).

Taking into account the five key dimensions of growth (i.e. age, size, evolution, revolution, industry), this fits the analysis described above as Conclusion as an entity seems to be at the end of phase four/the beginning of phase five. The age reflects the ability of an organization to develop during the years as continuous development is required for an organization to grow. In 19 years of business, Conclusion as an entity saw the aim to continuously develop and therefore were able to survive in the dynamic environment in which they operate. Therefore, it is convincing to assume that Conclusion as an entity

will be able to develop well during a next phase of required development. Furthermore, as was explained in Paragraph 3.1.2, growing organizations (e.g. in terms of the number of employees and/or sales volume), experience continuous changes (e.g. differences in hierarchy structures/functions/interrelatedness). At the moment, Conclusion as an entity has around 1.800 employees which is a growth of almost 40% within the last five years. In the next five years, they want to double their number of employees (i.e. a growth of 200%) starting with 400 new employees in 2016. It is likely to assume that this ambitious goal of Conclusion as an entity will involve organizational change.

Regarding the stages of evolution, these stages seem to represent linear growth. As was stated by (Greiner, 2008), these evolution stages usually take around four to eight years after which an organization will enter the revolutionary phase. As became clear from their vision in 2004, Conclusion as an entity is already working towards cooperation for 12 years. This exceeds the average period of four to eight years. One explanation for this deviation in time could lay in the different levels of aggregation within Conclusion as an entity.

The relatively linear parts in the growth model (see Figure 3) can be visualized for Conclusion as an entity. However, important to take into account, is the lower level of aggregation which is present in such a system, see Paragraph 2.1.3. On a lower level of aggregation (e.g. the operating companies) S-shaped growth occurs (i.e. the linear process on macro-level, can be seen as a follow up of S-shaped growth on a micro-level), see Figure 2. Therefore, for Conclusion to develop towards a new phase (i.e. higher level of complexity) as a whole, this will take some time (to read about the concept of complexity see Paragraph 2.1.1).

The revolution stage, which is the stage following the evaluation phase, represents a situation in which the system is bifurcating. During this phase, the (people of the) organization oscillate(s) between four modes (1: old thinking, old doing; 2: old thinking, new doing; 3: new thinking, old doing; and 4: new thinking, new doing). The bifurcation phase ends when the system enters a new point of equilibrium and, thereby, a higher level of complexity (see Chapter 0). As the mission of Conclusion (as an entity) is clearly present and there already are some good initiatives and examples of collaboration, but the aimed level of cooperation has not been reached yet, it can be assumed Conclusion (as an entity) is within this turbulent phase of growth. This fits the analysis of the maturity level of Conclusion which indicated Conclusion (as an entity) was at the end of the fourth/the beginning of the fifth phase. Last aspect that should be taken into account to analyze the growth, is the growth rate of the industry. At the moment, the market in which Conclusion is operating is subject to change. Therefore it can be assumed Conclusion should develop in order to be able to fit within this changing market.

The presence/absence of (parts of) cooperation structures within Conclusion

As described in the research context, Conclusion as an entity consists of a lot of highly autonomous operating companies. Cooperation between these operating companies can be seen as a form of inter-organizational collaboration. This type of cooperation can be compared to a network of independent companies working together in order to increase their competitive advantage (i.e. an alliance).

Conclusion (as an entity) could be compared to an alliance in a way that the operating companies have a common goal (i.e. helping Conclusion as an entity to grow), share risks, decision making, costs and revenue to a certain extent, and there already is some collaboration between the operating companies. Therefore, it is not surprising Conclusion is experiencing (some of) the same management issues alliance management usually experience. These aspects are: dynamic issues, the structure of no hierarchy, incompatible management structures, opportunism, and temporality (see Paragraph 3.2.1). For example, from the interviews as well as the company documents, it became clear that there still are big differences between the operating companies' processes (i.e. differences in type of processes, available information, and detail of process descriptions) (see Appendix XII: Processes of the different operating companies within Conclusion).

A big distinction between Conclusion as an entity and alliances, is the difference in legal independence of the companies in both structures. Within an alliance, the companies are legally independent while the operating companies within Conclusion as an entity are not. In general it can be stated that the holding (literally holding all operating companies together) makes the cooperation structure within Conclusion as an entity more coordinated than the cooperation structure of alliances. The difference in legal independence could reflect a potential difference in intrinsic motivation to cooperate within alliances and the holding structure of Conclusion. Alliances are groups of organizations merged together because of their own (intrinsic) motivation. However, the operating companies within Conclusion as an entity often were forced into a potentially unnatural position to become part of a network. Therefore, the willingness to cooperate within Conclusion (as an entity) could be lower compared to the willingness to cooperate within alliances.

As just discussed, the holding structure makes it able for Conclusion to guide towards cooperation (e.g. by centralizing the execution of big projects by making use of the K&A desk). The data provided by the K&A desk reflects the transformation of Conclusion to cooperation more: From the 31 bids (executed by the K&A desk) in 2014, only 33% was performed by more than one operating company. In 2015 this grew to 63% regarding 30 bids. Furthermore, where in 2014 0% of the tenders performed by more than one operating company was won, this grew to 42% in 2015, see Appendix XV: Data K&A desk. As these numbers are present over a period of just two years, the analysis done on these numbers cannot be supported statistically.

However, of non-centralized projects, a very low percentage was executed as a result of cooperation. This was confirmed by the interviews as well as the company data. From the 739 projects performed by the four operating companies analyzed (over 2015), only 4,6% was performed together (i.e. more than one company spent time on the same project). With an average of 2,12 operating company, most projects in which cooperation took place, two operating companies were involved, see Appendix XV: Data K&A desk.

There clearly is a difference between the percentage of cooperation in projects supervised by the K&A desk over the year 2015 and non-centralized projects over the year 2015. One explanation could be that the type of projects guided by the K&A desk are relatively big in terms of (potential) revenue and multidisciplinary opportunities (i.e. cooperation between operating companies). However, a difference this big seems to have other causes as well.

One potential cause, mentioned several times by the interviewees, could be the focus of people on their own operating company. As the tenders supervised by the K&A desk are sent to all operating companies who are eligible to perform (a part of) the project there is no space for self-interest. Guided by the K&A desk, the best (set of) operating company(ies) willing to perform the job are selected and an approach is developed. The approach and development of the plan is continuously monitored by the K&A desk.

The presence/absence of (parts of) cooperation strategies within Conclusion

As could be read in Paragraph 3.3.1, "*Competition within strategic groups is less intensive than between strategic groups*" (Bengtsson & Kock, 2002, p. 413), at Conclusion this is visible as well. Conclusion as an entity can be seen as a 'strategic group'. Some operating companies within Conclusion are direct competitors on some specialisms (see Appendix XIV: Specialisms per operating company). However, these operating companies do not aggressively compete against each other, and are even willing to cooperate in order to deliver superior customer value. This could be the result of mutual dependence for organizations within the same strategic group.

To decrease the confrontation of (people of) operating companies to be involved in competitive as well as cooperative relationships, Conclusion (as an entity) makes use of intermediaries controlling complex situations in which different (types of) relationships are present. One of these intermediaries Conclusion uses are so called CMO's. CMOs are set up to manage big branch/functional/client related projects for long-term propositions, see Paragraph 1.1.5. Furthermore, for a selection of projects (i.e. tenders

exceeding € 50.000 and/or procurements they believe to be interesting for Conclusion as an entity), the K&A desk is assigned this function as well, see Paragraph 4.3.1).

On the other hand, within Conclusion, individuals are placed into a (self-chosen) branch-group with the aim to increase client focus and company broad (horizontal) relationship building. This could increase the feeling of employees to be involved in competition relationships (between the different operating companies) while on the same time being involved in cooperation relationships (serving the branch their best possible company broad) as well. Referring to Bengtsson and Kock (2002) this is no preferred situation.

The coopetition approach fits the cooperation methods of open innovation and co-innovation as they both believe in creating (shared) value out of other companies. However, even though from their vision it becomes clear Conclusion believes in the added value of other companies, their internal approach is still quite closed. Information systems developed for knowledge sharing are rarely used as people seem to be hesitant about sharing information (such as client contacts) with other operating companies. One reason for this behavior seems to be the self-interest of operating companies.

The viewpoints of the SD-logic, which is an important aspect in co-creation, fits well the strategy of Conclusion (as an entity) to deliver ‘managed services’. Managed services are services provided by Conclusion which help other organizations to outsource their activities. Thereby Conclusion helps the outsourcing organization with a lot of aspects (costs, safety issues, (cloud)space). To be able to deliver the perfect service product, Conclusion should investigate the real needs of their clients. Therefore, from the perspective of the SD-logic, Conclusion should make use of an outside-in approach (i.e. they have to get to know the real need of their customer(s), which often is different from the question of the customer). However, at the moment, the operating companies too often focus on serving their customer by their own products (i.e. inside-out approach).

The type of culture(s) present at Conclusion

The culture analysis was performed by making use of the competing values framework. However, as a result of the limited sample size (N=11), the analysis of the culture at the different operating companies cannot be supported statistically. However, it can provide a glimpse of the current (and desired) culture present at the different operating companies in total and for the six dimensions of the competing values framework.

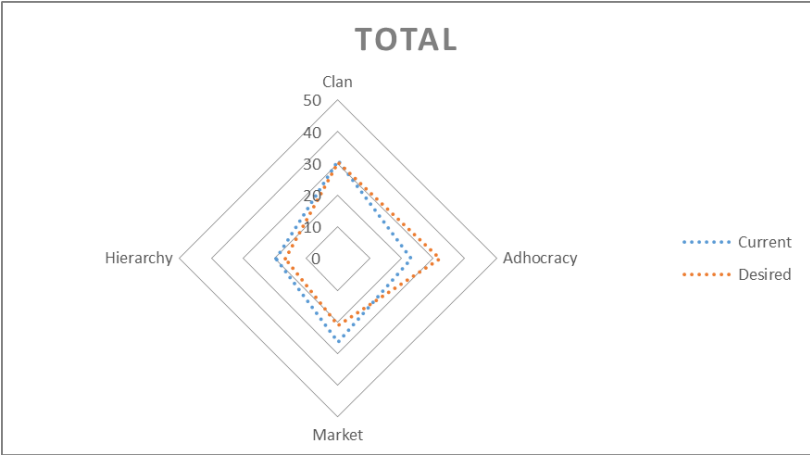


Figure 8: Total culture, N=11.

Starting at the overall culture present at the operating companies (Figure 8), it seems that the main culture present in the current situation (blue line) is the clan culture. In the desired situation (orange line), there seems to be a desire for a shift towards a more adhocracy focused culture at the expense of the hierarchical and market focused culture. The desired situation seems to represent a situation in which the clan culture and the adhocracy culture are the main cultures present. The potential

willingness to shift towards a more adhocracy focused culture suggests that the operating companies are willing to become more temporary, specialized, and dynamic (i.e. *“doing things first”* (Cameron & Quinn, 1999, pp. 31-40)) (Denison & Spreitzer, 1991). The clan culture, which seems to be present within the current as well as the desired situation, reflects a culture in which shared values and goals are present. Furthermore, cohesion and a sense of ‘we-ness’ are important in this type of culture (i.e. *“doing things together”* (Cameron & Quinn, 1999, pp. 31-40)). Therefore, a clan culture (across the individual operating companies) is an important asset when aiming for cooperation. The hierarchy and market culture seem to be a bit less important in the desired situation. This suggests a desire for a situation in which there is less focus on *“doing things right”* and *“doing things fast”* respectively (Cameron & Quinn, 1999, pp. 31-40).

The second part of the culture analysis will zoom in on the six dimensions present within the competing values framework. The six dimensions are: (1) dominant characteristics, (2) organizational leadership, (3) management of employees, (4) organizational glue, (5) strategic emphases, and (6) criteria of success.

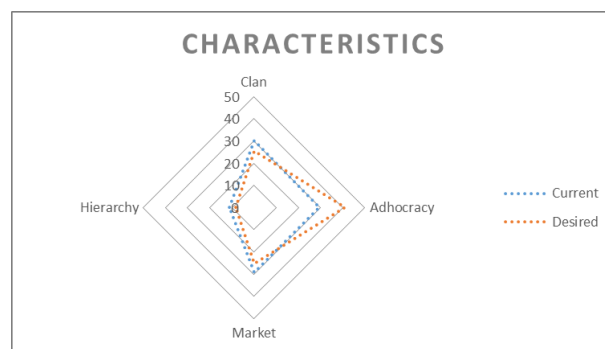


Figure 9: Dimension dominant characteristics, Competing Values Framework, N=11

At first the dominant characteristics (Figure 9) will be analyzed. It seems that in the current situation, the hierarchy culture present is rather low. This could indicate the presence of a low level of control and structure (Berrio, 2003). A current situation in which there is a low level of structure and control can be confirmed by the insights gained by the interviews, informal conversations and company documents. The desired situation suggests a shift towards a more adhocracy focused culture. This could imply a desire for a more entrepreneurial environment in which risk taking is accepted (Berrio, 2003). Furthermore, in the desired situation the hierarchy culture seems to be even less present.

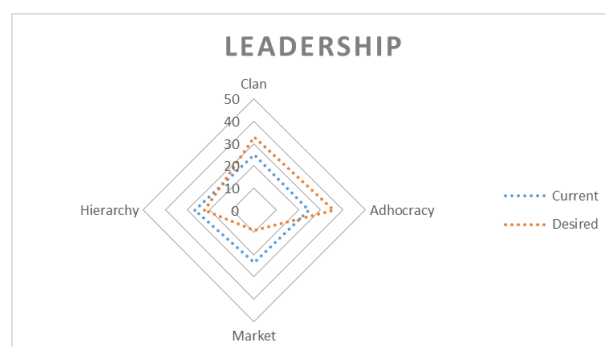


Figure 10: Dimension organizational leadership, Competing Values Framework, N=11

The leadership dimension (Figure 10), seems to show a current situation in which there is no dominant culture present. However, the desired situation shows a situation in which the dominant cultures present are the clan- and adhocracy focused cultures at the expense of especially the market focused culture. This could imply the desired leadership culture to be less aggressive and results oriented (i.e. market culture). Furthermore, this shift suggests a willingness for a more entrepreneurial and innovative type of leadership (i.e. adhocracy focused) together with a facilitating, and mentoring type of leadership

(i.e. clan focused) (Cameron & Quinn, 1999). The suggested desire to have a less market focused leadership culture, is in line with the findings from the interviews who stated that there is a high focus on own results (individually as well as per operating company) as this is what everyone is being evaluated on. This seems to be a big bottleneck towards cooperation at the moment.

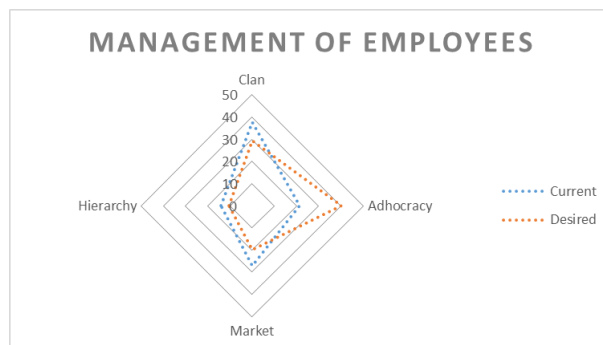


Figure 11: Dimension management of employees, Competing Values Framework, N=11

The current culture present regarding the management of employees (Figure 11) seems to be mainly clan focused. Furthermore, it seems that the hierarchy culture present in the management of employees is rather low. The high score on the clan culture implies a culture of teamwork and participation. The low level of the hierarchy culture could reflect a culture in which there is a low level of security, conformity, and predictability (Berrio, 2003) regarding the management of employees. The desired situation suggests a culture in which adhocracy is predominantly present. Regarding the management of employees, an adhocracy focused culture indicates a culture in which there is space for individual risk taking, innovation, freedom, and uniqueness (Berrio, 2003). In the desired situation, the hierarchy culture seems to be even lower.



Figure 12: Dimension organizational glue, Competing Values Framework, N=11

The current organizational glue (Figure 12) seems to be an organization in which loyalty and trust are the main aspects present (i.e. clan culture) (Berrio, 2003). Furthermore, it seems that there is a low level of hierarchy present in the current organizational glue (i.e. there are no formal rules and policies that hold together the organization). The low level of hierarchy can be confirmed by the insights gained by the interviews, informal conversations and company documents. In the desired situation the clan culture seems to be still quite dominant and the hierarchy culture still seems to be underrepresented. However, there seems to be a desired shift towards a more adhocracy focused culture. This implies a desire for an organization which is more committed to innovation and development (Berrio, 2003).

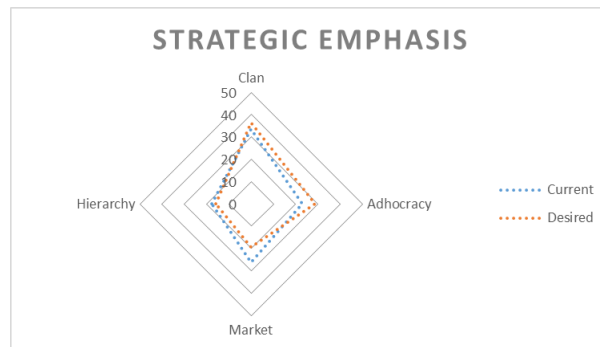


Figure 13: Dimension strategic emphasis, Competing Values Framework, N=11

The strategic emphasis (Figure 13) seems to represent a current situation in which the main culture present is the clan culture. This implies a current culture in which there is openness, high trust and a strong focus on human development (Berrio, 2003). The desired situation seems to reflect a situation in which the adhocracy- and especially the clan culture are predominantly present. The desired presence of the adhocracy culture seems to be at the expense of the market focused culture. This shift towards a more adhocracy focused culture suggests a strategic emphasis aiming to create new challenges and acquire new resources (Berrio, 2003).

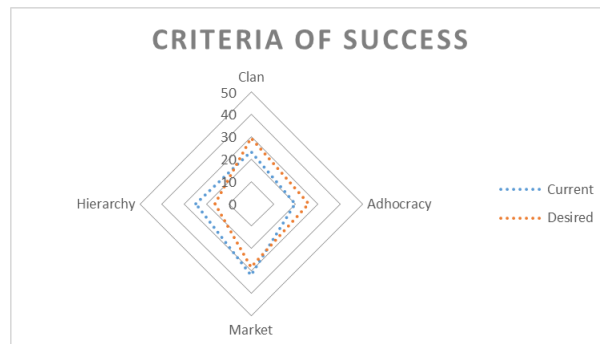


Figure 14: Dimension criteria of success, Competing Values Framework, N=11

The current culture present within the criteria of success (Figure 14) seems to be the market-, and the hierarchy culture. A presence of a market culture in criteria of success reflects a culture in which there is a focus on outpacing, competition, and winning (Berrio, 2003). A hierarchy culture here represents a high focus on efficiency, low costs and dependability (Berrio, 2003). The desired situation seems to reflect a shift towards a less hierarchy focused culture (i.e. it seems that dependability, efficiency and low costs are desired to be less important for the criteria of success). As a result, it seems that in the desired situation, the clan- and adhocracy culture (besides the market culture) are the cultures predominantly present.

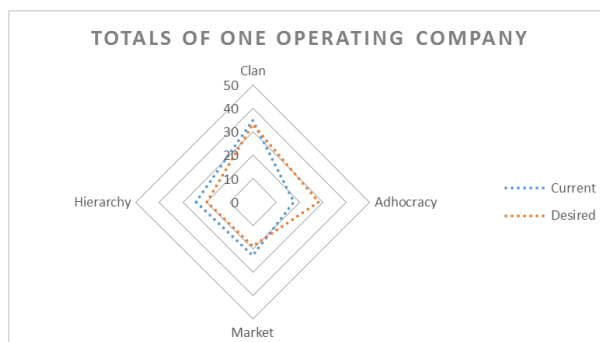


Figure 15: Total culture present within one operating company, N=5

The presence of a clan culture is something which is repeatedly visible (i.e. in the total culture present as well as in the six dimensions). A clan culture is an valuable asset when aiming for cooperation. However, the presence of a clan culture is not being confirmed by the analysis based on the interviews and documents. The outcomes of the interviews and documents indicate there is a high focus on employees' own operating companies. Furthermore, all employees interviewed mention cooperation between the operating companies could be improved. One explanation between this difference could be that the clan culture is present within the single operating companies but not so much between the people of the different operating companies. As the surveys were filled out from the perspective of each individual company, this explanation seems reasonable. Presence of a clan culture within the individual operating companies is confirmed by the interviews. Furthermore, this assumption seems to be confirmed by the analysis of the cultures present in one single operating company (having the biggest N, N=5), see Figure 15.

5.1.3 Cause-and-effect diagram

The categories which evolved as a result of the analysis of the interviews (see Appendix XIII: Outcomes interview) were saturating (i.e. no new aspects had to be added as a result of the analysis of the company documents). Furthermore, the analysis of the company data seemed to confirm the outcomes of the interviews and analysis of company documents. Based on these outcomes, a cause-and-effect diagram concerning the lack of cooperation at Conclusion was developed (see Appendix XVII: Potential cause-and-effect relationships), see Figure 16. Besides the bottlenecks, the diagram provides insight on the symptoms representing the lack of cooperation as well. This diagram is the basis for the design phase in which a potential solution for Conclusion is searched for.

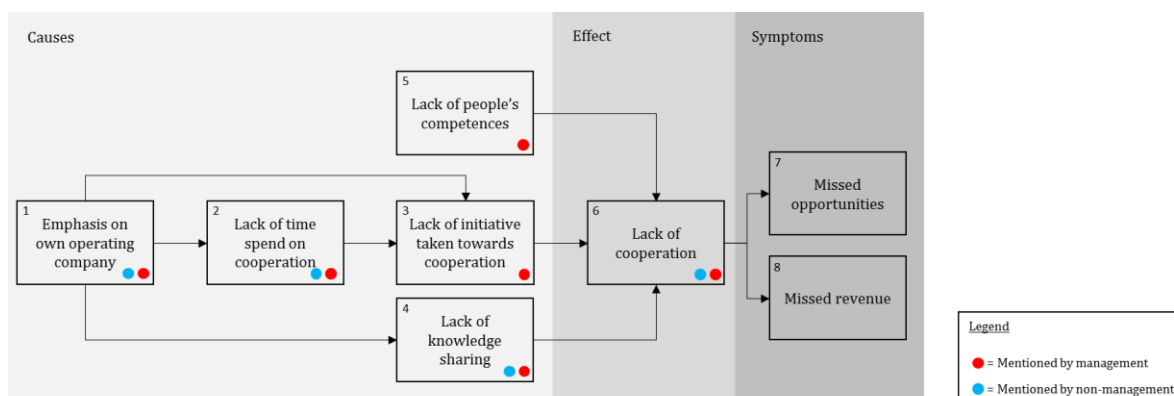


Figure 16: Cause-and-effect diagram

The cause-and-effect diagram shows the main bottleneck: 'emphasis on own operating company'. As can be seen in the diagram (Figure 16), there are four paths leading from 'emphasis on own operating company' to the final effect (i.e. lack of cooperation). Here the four present paths are described in terms of the relationships between the bottlenecks. To read an in-depth description of each bottleneck present in the cause-and-effect diagram, see Table 9.

Path 1 (i.e. bottlenecks 1-2-3-6): As a result of people's emphasis on their own operating company, they are less willing to spend their (own) time on (initiatives leading to) cooperation. When people feel they have a lack of time, they take less initiatives towards cooperation. These aspects together finally result in a lack of cooperation

Path 2 (i.e. bottlenecks 1-3-6): As peoples' emphasis is on their own operating company, they are less willing to take initiative towards cooperation which leads to a lack of cooperation

Path 3 (i.e. bottlenecks 1-4-6): As a result of the emphasis of people on their own operating company, there is a lack of knowledge sharing (i.e. people aim to hold information for their own). This results in a lack of collaboration as people don't know who could help with what

Path 4: As some people within Conclusion seem not to be competent to (work towards) cooperation (in this context) this leads to a lack of collaboration (i.e. path 5-6).

Table 9: List of bottlenecks including their description.

Bottlenecks	Description
1. Emphasis on own operating company	Emphasis of people on their own operating company is reflected in their strong focus on delivering their own products and keeping their own client (leads). This seems to be a result of the current rewarding structure which is based on the individual performance of a particular employer within a particular operating company. The operating companies on their turn are being judged on their own performance (revenue and P&L) as well. Furthermore, (the people within the) operating companies do not feel stimulated as no examples of good practices (within Conclusion) are being shared and management is not always leading the way by examples of cooperation. Some bad experiences of cooperation were described as well which reduces the demand to cooperate.
2. Lack of time spent on cooperation	Lack of time is a result of the willingness/ability of people to spend (their own) time on (the way towards) cooperation. The willingness/ability to spend (their own) time on (the way toward) cooperation is low. Some of the underlying reasons for this are the high time pressure on projects, and the amount of billable hours that have to be made.
3. Lack of initiative taken towards cooperation	The lack of initiative is reflected in the passivity of employees to attend (network) events organized by Conclusion('s operating companies). Furthermore, it is visible in the fact that people mention that they do realize the need to cooperate but that they do not act upon it yet. At last, some people are not even aware of the need to cooperate and therefore do not take any initiative in realizing it.
4. Lack of knowledge sharing	A lot of people within the different operating companies and the clients of Conclusion don't know what the people/operating companies of Conclusion are capable of. There is no knowledge sharing in terms of giving an update after delivering a product, there are no regular updates of people's profiles to make visible what they are capable of and what their experiences are, and people don't know which clients are being served by which operating company. Furthermore, people working on an interim project are not being connected to Conclusion and its employees and most employees tend to join people they already know when an event is organized. The intranet that could be used for knowledge sharing is rarely used for these types of activities.
5. Lack of people's competences	The lack of people's competences contains the inability of people to cooperate with others (in a continuously changing working environment), their negative vision and behavior towards cooperating, their limited knowledge within their working field and beyond, and their work mentality.
6. Lack of cooperation	Even though the vision of Conclusion is clearly focused on cooperation, most people within Conclusion mention the realization of this goal is lacking behind. They would like to see more effective and efficient cooperation within Conclusion from which each of the participants is getting better.

As was mentioned above, the main bottleneck responsible for the insufficient level of cooperation seems to be the 'emphasis on own operating company'. Therefore, taking into account the AQAL matrix as described in Paragraph 2.1.4, it seems that the quadrants AI and AE (i.e. movements based on the operating company itself) are overstimulated compared to the CI and CE quadrants (i.e. movements based on linking the operating company to the bigger picture). Therefore, the design should preferably stimulate the CI and CE quadrants.

Validation cause-and-effect diagram

The cause-and-effect diagram and the bottleneck descriptions were reviewed by all interviewees. 100% of the interviewees agreed upon the model (i.e. (the relationships between) the bottlenecks present in the model). 90% of the interviewees stated that the model as displayed reflected their personal view regarding cooperation within Conclusion. Furthermore, 100% of the interviewees agreed upon the descriptions of the bottlenecks. 80% of the interviewees mentioned the descriptions of the bottlenecks reflected their own idea of that bottleneck. Besides the interviewees, the outcomes of the analysis over the company data as well as the company documents and the company cultures are in line with this cause-and-effect diagram. Furthermore, the researcher had a lot of informal conversations that validated the findings displayed in the cause-and-effect diagram as well. Out of a sample of around 25 employees Conclusion wide, the researcher received uniform feedback that cooperation should be

increased and the aspects mentioned (especially the focus of employees' on their own operating companies) are highly relevant. As there was no consensus on aspects to add/change and or the other insights gained from within the analysis were in line with this diagram, the proposed diagram remained the same.

5.2 Design

This paragraph describes the development of the design. The proposed design in this paragraph aims to take away/decrease the main bottlenecks (i.e. emphasis on own operating company)⁸ responsible for the insufficient level of cooperation. The impact of the design should be to decrease or take away the missed opportunities and revenue (i.e. the main symptoms as a result of a lack of cooperation). Therefore, revenue and opportunities are good ways of measuring the impact of the design once implemented. The remaining of the chapter is as follows: results data collection, result data analysis, final set of interventions, and impact of the proposed set of interventions.

5.2.1 Results data collection

Conclusion (as an entity) has already introduced a lot of interventions to stimulate cooperation which already led to the transformative phase at which they are now. This paragraph summarizes the interventions already taken by Conclusion complemented by interventions from literature and experts. The interventions selected are displayed in Table 10. Appendix XVIII: Interventions, provides a more elaborated explanation of each intervention including the reference(s) and the method(s) of data collection used to select the intervention.

Table 10: List of selected interventions.

Interventions
1. Organize knowledge sharing events (regularly)
2. Organize network events (regularly)
3. Introduce a companywide onboarding program
4. Introduce an online platform for knowledge sharing
5. Centralize the customer demand
6. Provide incentives (by shared KPIs)
7. Let people across operating companies solve cases (including social value)
8. Let the operating companies share cases they have done
9. Communicate the capabilities of Conclusion as an entity to the (potential) customer
10. Organize brainstorm sessions across operating companies together with (potential) clients
11. Let people within Conclusion rotate jobs
12. let management provide examples of successful cooperation activities
13. Let internal projects being processed by teams containing members across operational companies
14. Specialize as an operating company
15. Train the people within Conclusion on how (and why) to cooperate
16. Perform dialogue internally across operating companies

⁸ To narrow down the scope of the analysis and design, the decision was made to exclude bottleneck 5 as displayed in the cause-and-effect diagram (Figure 16). This bottleneck seems to be a single and isolated bottleneck within the cause-and-effect diagram. Furthermore, this bottleneck was only mentioned by management. However, these two aspects do not mean the bottleneck is not relevant. The final decision to exclude this bottleneck in this research lays in the difficulty and time-consuming nature to change the competences of employees. Furthermore, changing employees' competences often results in resistance as people in general are reluctant to change. Possibly, when Conclusion is able to decrease/take away the other bottlenecks, the employees will be less reluctant to focus on their core competences.

As the other bottlenecks (i.e. bottleneck 2,3,4 and 6) are a result of the main bottleneck (i.e. bottleneck 1), the (functional) requirements of the design were developed for this bottleneck in particular (see Paragraph 0). The assumption is made, that when there is less focus on employees' own operating companies, the other bottlenecks will decrease as well and thereby an increase in the level of cooperation is realized.

5.2.2 Results data analysis

The data analysis as described in this paragraph consists of three sequential steps: (1) selection of mechanisms triggered by the interventions, (2) defining the design criteria, and (3) grading the interventions.

Selection of mechanisms triggered by the interventions

Based on the list of interventions as described in Paragraph 5.2.1, corresponding mechanisms were searched for. Most mechanisms selected were subtracted from Mulder (2012) as these mechanisms were validated by literature. The other mechanisms were added by the researcher. In total 13 mechanisms triggered by the proposed interventions were selected, see Table 11.

Table 11: List of mechanisms and their impact on the quadrants of the AQAL matrix.

Mechanism	Description	AI	AE	CI	CE
1. seeing the bigger picture	seeing the added value of complementary services			X	
2. open communication	exchanging knowledge by formal and informal interactions (Mulder, 2012)		X		X
3. guiding	providing the strategic way to reach the higher goal (Mulder, 2012)				X
4. self-efficacy	task specific confidence (Mulder, 2012)	X			
5. modelling	proving examples of how to cooperate				X
6. contagion	copying the behavior (or emotions) of people close (Mulder, 2012)		X		
7. motivation	requesting behavior by inner causal factors (Mulder, 2012)	X			
8. predictability	expectations on how others will act and how activities evolve (Mulder, 2012)				X
9. trust	the willingness to take a vulnerable position for the behavior of someone else while expecting this will not bring any damage to oneself (Mulder, 2012)			X	
10. reciprocity	the reactor behaves in a way the actor expected him/her to behave in exchange for the actor's behavior (Mulder, 2012)				X
11. solidarity	endorsing the common interest (possibly even by the expense of oneself) (Mulder, 2012)			X	
12. commitment	being committed to the vision/approach, the meaning and the accompanying responsibilities (Mulder, 2012)			X	
13. uniting values	uniting the values present (Mulder, 2012)			X	
Total		2	2	5	5

As part of the analysis, the impact of the mechanisms were classified per quadrant of the AQAL matrix. This was done to check the division of the mechanisms over the quadrants. As was described in Paragraph 5.1.3, the C-quadrants (i.e. CI and CE) should be stimulated more in order to foster cooperation. As is visible in Table 11, the CI and CE quadrants are triggered more compared to the AI and AE quadrants. Therefore, the researcher decided to continue with the proposed interventions and corresponding set of mechanisms.

Design criteria

To be able to objectively analyze the different interventions, a list of criteria was developed. This list consisted of (1) functional requirements, (2) user requirements, and (3) boundary conditions, see Table 3. One of the boundary conditions is to introduce the interventions on the same level within all operating companies (i.e. a group of people). Introducing the interventions within one level is important as only enough intervention within the same level of the company will stimulate the system as a whole to grow towards a higher level of complexity (i.e. the ability to cooperate).

Grading the specific interventions

The last aspect of the data analysis included scoring the interventions based on the proposed requirements. This was done by the researcher, and (non-)management. The next three paragraphs will zoom in on these three perspectives and the outcomes of their scores.

Perspective of the researcher

The scores assigned to the interventions by the researcher can be found in Appendix XIX: Scores interventions by the researcher. Scoring was done based on a three-point scale (i.e. 0=low, 1=moderate, and 2=high). The totals, visible in the last row of Table 12, represent the total scores of each intervention on all requirements by the researcher. The maximum total score that could be gained for each intervention was 22 (i.e. 11*2).

Table 12: Scores per intervention by the researcher.

	Specific interventions (described in key words)															
	1. Knowledge sharing events	2. Informal events	3. Onboarding program	4. Platform for knowledge sharing	5. Centralizing the customer demand	6. Providing incentives	7. Solving cases	8. Sharing cases	9. Communicating capabilities	10. Brainstorm sessions	11. Rotating jobs	12. Providing examples	13. Processing internal projects	14. Specialize	15. Training the employees	16. Perform dialogue
Totals by researcher	14	11	14	9	15	10	20	16	13	18	12	17	16	9	17	13

Perspective of non-management

The scores of non-management were provided by three employees within Conclusion. This was done during a workshop in which three employees filled out one matrix together. These scores can be found in Appendix XX: Scores interventions by non-management. The totals of the scores are presented in Table 13. As the respondents were required to fill out the scores for 7 of the 11 requirements, the maximum total score that could be gained for each intervention was 14 (i.e. 7*2).

Table 13: Scores per intervention by non-management.

	Specific interventions (described in key words)															
	1. Knowledge sharing events	2. Informal events	3. Onboarding program	4. Platform for knowledge sharing	5. Centralizing the customer demand	6. Providing incentives	7. Solving cases	8. Sharing cases	9. Communicating capabilities	10. Brainstorm sessions	11. Rotating jobs	12. Providing examples	13. Processing internal projects	14. Specialize	15. Training the employees	16. Perform dialogue
Totals non-management (limited number of requirements evaluated)	10	7	12	6	10	4	12	13	11	12	11	10	12	9	12	13

Perspective of management

The scores from the perspective of management are presented in Table 14. The whole matrix filled out by management can be found in Appendix XXI: Scores interventions by management. As management was requested to grade the interventions on 4 of the 11 requirements, the maximum total score that could be gained for each intervention was 8 (i.e. 4*2).

Table 14: Scores per intervention by management.

	Specific interventions (described in key words)															
	1. Knowledge sharing events	2. Informal events	3. Onboarding program	4. Platform for knowledge sharing	5. Centralizing the customer demand	6. Providing incentives	7. Solving cases	8. Sharing cases	9. Communicating capabilities	10. Brainstorm sessions	11. Rotating jobs	12. Providing examples	13. Processing internal projects	14. Specialize	15. Training the employees	16. Perform dialogue
Totals management (limited number of requirements evaluated)	6	8	6	5	0	0	2	7	4	8	0	8	2	3	4	2

5.2.3 Development design (i.e. selection set of interventions)

Based on a new set of criteria, see Table 4, a final set of interventions had to be selected. In this paragraph, the selection of the set of interventions is described step by step for each requirement.

Requirement 1: The higher the average score of a specific intervention, the higher the probability that it will be picked.

To be able to fairly compare the total scores provided by each perspective, first the average scores per intervention per perspective and in total were calculated for each of the three perspectives, see Table 15.

Table 15: Average score per interventions based on the three perspectives analyzed.

	Interventions															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Researcher	$\frac{14}{11}$	$\frac{11}{11}$	$\frac{14}{11}$	$\frac{9}{11}$	$\frac{15}{11}$	$\frac{10}{11}$	$\frac{20}{11}$	$\frac{16}{11}$	$\frac{13}{11}$	$\frac{18}{11}$	$\frac{12}{11}$	$\frac{17}{11}$	$\frac{16}{11}$	$\frac{9}{11}$	$\frac{17}{11}$	$\frac{13}{11}$
Non-management	$\frac{10}{7}$	$\frac{7}{7}$	$\frac{12}{7}$	$\frac{6}{7}$	$\frac{10}{7}$	$\frac{4}{7}$	$\frac{12}{7}$	$\frac{13}{7}$	$\frac{11}{7}$	$\frac{12}{7}$	$\frac{11}{7}$	$\frac{10}{7}$	$\frac{12}{7}$	$\frac{9}{7}$	$\frac{12}{7}$	$\frac{13}{7}$
Management	$\frac{6}{4}$	$\frac{8}{4}$	$\frac{6}{4}$	$\frac{5}{4}$	$\frac{0}{4}$	$\frac{0}{4}$	$\frac{2}{4}$	$\frac{7}{4}$	$\frac{4}{4}$	$\frac{8}{4}$	$\frac{0}{4}$	$\frac{8}{4}$	$\frac{2}{4}$	$\frac{3}{4}$	$\frac{4}{4}$	$\frac{2}{4}$
Average score per intervention	1,4	1,3	1,5	1	0,9	0,5	1,3	1,7	1,3	1,8	0,9	1,7	1,2	1	1,4	1,2

Based on the average scores per intervention, the interventions could be compared to each other in terms of scoring higher or lower compared to the other interventions. As was described in requirement 1, the higher the score, the higher the probability the intervention will be part of the final set.

Requirement 2: An intervention picked preferably should have an average score $\geq 1,5$ (i.e. $\geq 75\%$ of the maximum score of 2).

Based on the calculated averages as presented in Table 15, a selection could be made of the interventions scoring $\geq 1,5$ on average (highlighted in green). These four interventions together formed a concept set of interventions which was brought to the next steps of the requirement analysis.

Requirement 3: The set of interventions should score at least a 2 from one perspective and not lower than a 1 from the other perspective per functional requirement.

To analyze this requirement, the scores on the functional requirements from both perspectives were compared for the concept set of interventions, see Table 16. The combination of perspectives which met the requirement were highlighted in green.

Table 16: Scores on the functional requirements for the concept set of interventions.

Functional requirements	Concept set of interventions							
	Nr. 3		Nr. 8		Nr. 10		Nr. 12	
	R	NM	R	NM	R	NM	R	NM
Provides incentives for cooperative behavior	0	2	0	2	1	2	0	1
Stimulates people of different operating companies to focus on a common goal	1	2	1	2	2	2	1	2
Makes the operating companies focus on core competences	0	1	1	2	1	1	0	1
Provides insights into the added value of cooperation	1	2	2	2	1	2	2	2
Increases trust between people of the operating companies	1	1	1	1	1	1	2	1

Legend
R = scores by researcher
NM = scores by non-management

As can be concluded from the outcomes presented in Table 16, intervention number 8 and 10 are required for the functional requirement ‘provides incentives for cooperative behavior’ and ‘makes the operating companies focus on core competences’. Furthermore, either intervention number 3 or intervention number 12 are required for the rest of the functional requirements. Therefore, the decision was made to take all four interventions to the next step of the requirements analysis.

Requirement 4: All selected intervention should score ≥ 1 on all boundary conditions and user requirements by all three perspectives.

As can be seen in Table 17, all four proposed interventions met these criteria.

Table 17: Scores on the user requirements and boundary conditions for the concept set of interventions.

User requirements	Interventions selected by requirement 2											
	Intervention 3			Intervention 8			Intervention 10			Intervention 12		
	R	NM	M	R	NM	M	R	NM	M	R	NM	M
the MT is able to autonomously implement the intervention	2	-	1	2	-	2	2	-	2	2	-	2
user-friendly	2	2	-	2	2	-	2	2	-	2	1	-
Boundary conditions												
fits the mission/vision/culture of Conclusion	2	2	-	2	2	-	2	2	-	2	2	-
focuses on the behavior of a group of individuals	2	-	2	2	-	2	2	-	2	2	-	2
realization possible within 12 months	1	-	2	2	-	2	2	-	2	2	-	2
the benefits outweigh the costs	2	-	1	1	-	1	2	-	2	2	-	2

Legend
R = scores by researcher
NM = scores by non-management
M = scores by management

Requirement 5: Each quadrant of the AQAL matrix should be triggered by the selected set of interventions. However, the quadrants CI and CE should be triggered more.

To check this requirement for the concept set of interventions, the distribution of the four selected interventions over the AQAL matrix was checked, see Figure 17 and Appendix XXII: Distribution impact set displayed by the mechanisms.

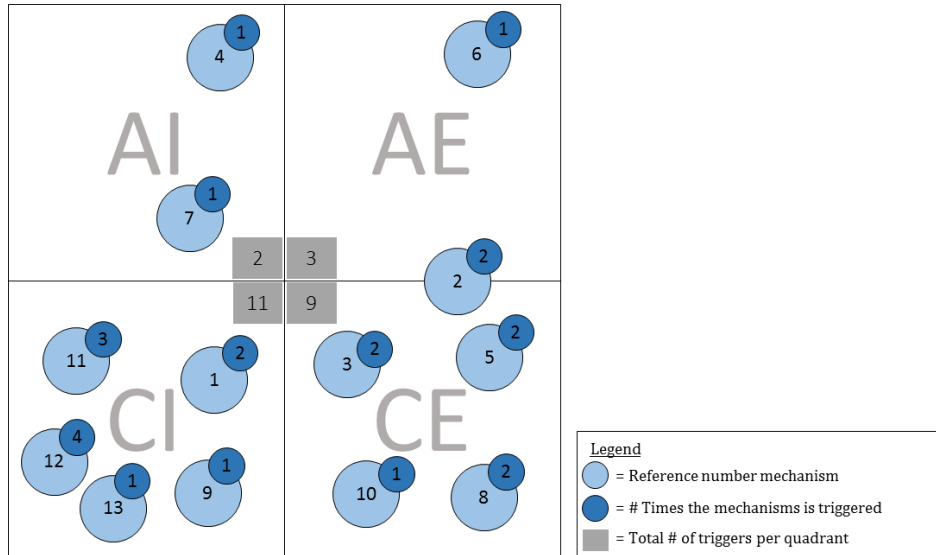


Figure 17: Distribution of the impact of the proposed set of interventions over the quadrants of the AQAL matrix

As can be seen, all quadrants are stimulated. However, the CI and CE quadrants are stimulated more compared to the AI and AE quadrants. Therefore, it can be concluded the requirements regarding the distribution over the AQAL matrix for the set of interventions were met.

Requirement 6: There should be strived for a limited number of interventions in the final set of interventions.

The concept set of interventions meets all requirements up to now. However, as the aim was to develop a set of interventions including a limited number of interventions (to make it more realistic for management to implement them) the decision was made to exclude intervention number 3. Intervention number three was excluded based on requirement 1 (i.e. the higher the average score of a specific intervention, the higher the probability that it will be picked). Even when intervention number 3 is excluded from the set, all requirements for the set of interventions are still met. The final design is displayed in Table 18 by making use of the CIMO logic method.

Table 18: Final set of interventions demonstrated by the CIMO logic method.

Context	Set of interventions ⁹	Mechanisms	Quadrants AQAL matrix				Outcome
			AI	AE	CI	CE	
A company consisting of highly autonomous parts (e.g. operating companies) having the aim to increase cooperation between these parts should...	Let the operating companies share cases they have done (8): Sharing the capabilities of operating companies in the format of a case, could serve as way to show the other (people of) operating companies what you (as an operating company) are capable of.	Seeing the bigger picture (1)			X		..To decrease the emphasis of people on their own operating company, thereby increasing the level of cooperation.
		Open communication (2)		X		X	
		Predictability (8)				X	
		Solidarity (11)			X		
		Commitment (12)			X		
	Organize brainstorm session together with (potential) clients (10): A brainstorm session together with (potential) clients and different operating companies can serve as a way to get to know each other. Furthermore, it can serve as a way to reveal customer demands by discussing about current business development and the propositions present within Conclusion.	Solidarity (11)			X		
		Commitment (12)			X		
		Self-efficacy (4)	X				
		Modelling (5)				X	
		Trust (9)			X		
	Let the management provide successful examples of cooperation activities (12): Examples (provided by the management) in which they show their own cooperative behavior should stimulate and inspire others to behave the same way.	Guiding (3)				X	
		Modelling (5)				X	
		Contagion (6)		X			
		Motivation (7)	X				
		Commitment (12)			X		
		Reciprocity (10)				X	
	Total			2	2	7	

5.2.4 Evaluation proposed set of interventions

The proposed set of interventions is assumed to stimulate the correct quadrants in the AQAL matrix and (thereby) decrease/take away the main bottleneck Conclusion was facing towards their aspired level of cooperation. Stimulating the correct quadrants will help Conclusion to grow in level of complexity (i.e. by transcendence and translation). Growth in level of complexity in this case means the employees within Conclusion will be focusing less on their own operating company. By an increase in the level of complexity a higher level of cooperation is expected. A higher level of cooperation is assumed to result in a higher revenue and the ability to take more opportunities.

The remaining of this paragraph discusses the evaluation of the set of interventions by management¹⁰. The subjects that will be elaborated on are: (1) potential challenges during the implementation, (2) the order of implementation of the interventions (e.g. sequential/parallel), (3) the expected impact (in the current processes going on), (4) the expected costs and benefits, and (5) the ability of the proposed set of interventions to increase cooperation and thereby the revenue and opportunities (i.e. the symptoms

⁹ The mechanisms and interventions assume the interventions to have positive outcomes in this model.

¹⁰ Here is referred to the managers who were present at the workshop (i.e. 3 managers who, together, represented one operating company and the Smart HR center, see Paragraph 4.4.4.

of a lack of cooperation). In Chapter 9, a reflection is provided over these aspects and recommendations are provided by the researcher.

Potential challenges (during the implementation)

As the operating companies' propositions and field of expertise are continuously and quickly developing, management would like to add the future perspective to invention number one (of the set) (i.e. 'Let the operating companies share cases they have done'). This future perspective could describe for example what propositions they are developing for the (near) future.

Management sees high potential in the brainstorm sessions (i.e. intervention number two of the set). However, they believe that, to be able to bring this intervention to a success, employees should (be able to) find each other and get to know each other. Therefore, management believes that employees should put priority in getting to know the (people at the) other operating companies. Furthermore, management sees a big risk in too general brainstorms leading to nowhere.

Regarding the third intervention (i.e. 'Let management provide examples of successful cooperation activities'), management understands the added value of the intervention but would like to have some more specific examples.

The order of implementation

Management believes intervention three (i.e. 'let management provide examples of successful cooperation activities') to be a key success factor for the other two interventions to succeed. Furthermore, they believe they could start with intervention three already as it only requires them to change their own perspective. Therefore, management would start with intervention number three. For the other two interventions, management does not have a clear preference for the order and way of implementation.

The expected level of disturbance on the daily operational activities

The set of interventions is expected to play a main role in the HR- and knowledge management processes. Regarding the HR processes, management does not see any changes required to implement the set. Regarding knowledge management, the tools to share knowledge are available. However, they are hardly used. Therefore, management believes changes are needed in the behavior of employees. Besides the HR- and knowledge management processes, management sees the need of guidance towards cooperative behavior of the employees in the form of performance management. They believe by proving examples they will empower the employees to cooperate. Furthermore, management is unsure about whether (and how) to provide incentives for cooperative behavior.

The expected costs and benefits

Management is sure the benefits outweigh the costs. The only costs management sees is time which can result in less productive hours. Furthermore, they understand they need to invest time first in order to gain benefits later. Concluding, they see the realization and implementation of the set of interventions as very realistic.

The ability of the proposed set of interventions to increase the level of cooperation

Management unanimously agreed that the proposed set of interventions is expected to increase the level of cooperation.

Furthermore, management believes that, as a result of the increased level of cooperation, the projects will become bigger (e.g. in terms of operating companies involved, workload, FTE required). Bigger projects are expected to result in higher staffing rates, happier employees, higher productivity, more time to spend on acquisition per client etcetera. Therefore, these aspects (together) are expected to lead to an increase in revenue and more opportunities.

Besides these two positive outcomes as a result of an increase in the level of cooperation, management expects one extra positive effect to occur; the fulfillment of the employees' ambitions to develop more broadly.

The implementation and reflection phase of the design are beyond the scope of this research (see Paragraph 4.1). However, in Chapter 9, the researcher will provide some suggestions regarding these two phases.

6 Conclusion and discussion

This chapter zooms in and reflects upon the ability to answer the research questions as described in Paragraph 1.2. At the end, the ability to answer the management question will be evaluated.

6.1 Research question 1, diagnostic phase

“What are the main bottlenecks responsible for the insufficient level of cooperation at Conclusion?”

Based on the answers on the five diagnostic questions described below, the researcher was able to develop a cause-and-effect diagram reflecting the main bottlenecks responsible for the insufficient level of cooperation. There was a high level of consensus on the bottlenecks (including their descriptions) responsible for the current level of cooperation. This high level of consensus was present between employees of the different operating companies as well as between management and non-management levels of the operating companies. Therefore, the researcher concluded the main bottlenecks responsible for the insufficient level of cooperation were found.

The interviews, informal conversations, brainstorming, and company documents provided a comprehensive view of the main bottlenecks responsible for the insufficient level of cooperation. However, one important limitation while analyzing the bottlenecks, was the absence of a focus on a specific type of cooperation. Within this research, cooperation included all projects that were executed/assisted by an operating company (as a result of another operating company). If a more specified type of cooperation would have been defined at the beginning of the research (e.g. acquiring leads for other operating companies or actively executing a project together), the research could have been executed with a more narrowed scope. A more narrowed down scope could have made the diagnosis and design more specified for a specific type of cooperation. Analyzing the more specified types of cooperation within Conclusion and how these can be stimulated, is an interesting subject for further research.

Besides the qualitative analysis regarding the bottlenecks, the researcher aimed to support the outcomes by using descriptive statistics. As a result of the limited data available (i.e. no overview of the revenue and hours spent on a project), the company data could support the outcomes to a moderate level. However, even when all requested data would have been available, the data should have been complemented with additional information about how the different operating companies got involved in a project. At the moment this information is not available at Conclusion. Furthermore, preferably data over more than 12 months should have been analyzed to see trends which could have been supported statistically. The data that were present, supported the findings from the qualitative analysis.

6.2 Research question 1.1, diagnostic phase

“Does the current organizational stage of development fit the current goal of Conclusion to increase cooperation?”

To find out whether the aim of Conclusion to increase their internal level of cooperation fits their current development phase, the maturity model was used. Based on this model, the researcher could come to a plausible explanation that the current phase of development of Conclusion requires Conclusion to increase their internal cooperation.

6.3 Research question 1.2, diagnostic phase

“What aspects of existing cooperation structures, described in literature, are present/missing at Conclusion?”

Conclusion in this research was treated as an alliance. This did not fully reflect the structure present within Conclusion. However, it served as the best representative for the structure present as Conclusion. This comparison helped to validate the struggles Conclusion is phasing while striving to increase their level of cooperation. Furthermore, it provided insight into potential solutions to solve these difficulties. However, to be able to come up with the best fitting solution for this type of contexts (i.e. cooperation

within a holding structure), it would have been valuable to have some in-depth knowledge on the similarities and differences between cooperation within alliances and cooperation within a holding structure. Interesting research subjects to analyze potential differences are for example: (1) the intrinsic motivation to cooperate, (2) the effect of being guided by a holding versus by a group of representatives of all participants (i.e. like in an alliance), (3) the focus of people on their own organization versus seeing the bigger picture, and (4) the attitude of organizations towards knowledge sharing.

6.4 Research question 1.3, diagnostic phase

“What aspects of existing cooperation strategies, described in literature, are present/missing at Conclusion?”

Based on the literature analyzed, the researcher was able to make a well-founded analysis regarding the current cooperation strategy of Conclusion. However, each of the strategies analyzed was developed for a rather specific context with a rather specific purpose and none of these strategies focused on (how to realize) cooperation in a holding structure. Therefore, to validate the analysis performed, and to potentially add new insights, it could be wise to search for best practices (in comparable contexts) and analyze the things that went well and wrong regarding cooperation strategies used there.

6.5 Research question 1.4, diagnostic phase

“What type of culture(s) is/are present at Conclusion and does this fit (the willingness to increase) the level of cooperation?”

The culture analysis within Conclusion was performed by a tool based on the ‘competing values framework’. This tool is argued to be valuable for analyzing the current and desired culture present within an organization. Despite the low sample size (which made no (statistical) conclusions could be drawn from the outcomes), the results were valuable as they supported (some of) the outcomes of the interviews, informal conversations brainstorms, company documents, and company data. Furthermore, even though not statistically supported, the outcomes of the culture analysis provided a glimpse of what could be the current and desired culture within Conclusion.

6.6 Research question 2, design

“What is an appropriate set of interventions for Conclusion which takes away the main bottlenecks responsible for the insufficient level of cooperation?”

Based on the sub-questions of the design (which is elaborated on in the next three paragraphs), a set of interventions could be developed which met all design criteria. Furthermore, management was enthusiastic about the proposed design in terms of the expected positive impact on the level of cooperation and the expected low impact on the current operating processes. One important limitation here is that not all operating companies were able to reflect upon the final set of interventions.

6.7 Research question 2.1, design

“Which interventions can be used to increase the current level of cooperation at Conclusion?”

To find out which interventions could stimulate cooperation internally at Conclusion, three different methods were used (i.e. (1) experts, (2) literature, and (3) best practices). This gave rise to an adequate list of interventions containing interventions which had been proven to work in comparable contexts. Based on this list of interventions, a final set of interventions -being theoretical and practical well founded- could be selected.

6.8 Research question 2.2, design

“What is the expected impact of the proposed set of interventions on the level of cooperation?”

Based on the preset list of requirements, it can be concluded that the proposed set of interventions is able to increase the level of cooperation within Conclusion. This was confirmed by management.

However, for this research the assumption was made that solving the main bottleneck would decrease/take away the other bottlenecks (which derived from this main bottleneck) as well thereby increasing the level of cooperation. Therefore, the design was developed to decrease/take away the main bottleneck. However, the bottleneck ‘lack of people’s competences’ did not have a (direct) relationship with the main bottleneck. Therefore, the assumption that solving the main bottleneck would lead to an decrease/disappearance of this bottleneck does not apply here.

The researcher was not able to include the bottleneck ‘lack of people’s competences’ in this research. Solving this bottleneck requires a more in depth research on subjects like which competences are lacking behind, which competences are required to increase cooperation and whether the competences can be developed or should be retrieved by recruiting new people. Furthermore, it is recommended to do research on why management mentioned this bottleneck to be present whilst non-management did not. The last important aspect concerning this bottleneck is that developing peoples’ competences should be done with policy as often people are reluctant to change. Therefore, it could be wise for Conclusion to start focusing on this bottleneck after solving the other bottlenecks. Potentially by solving the other bottlenecks first, employees will be less reluctant to change (as you as a company/management showed your own willingness to change).

6.9 Research question 2.3, design

“What is the expected level of disturbance of the proposed set of interventions on the daily operational activities going on at Conclusion?”

The expected impact of the set of interventions on the operational activities was evaluated to be low. However, due to absence of some managers during the workshop, some operating companies were not represented. This is a major limitation as the processes in all four operating companies are rather different. Therefore, the conclusions drawn from this analysis can only be stated to be applicable for a sub selection of operating companies.

6.10 Management question

“How to increase the level of cooperation between the different operating companies within Conclusion?”

The management question has been answered with a theoretical well-founded and on the same time practical design. However, because of the limited time, no company-broad analysis could be performed. Therefore, the choice was made to make a selection of four operating companies representing Conclusion. As a result, the diagnosis and design can only be stated to be valid within the research context analyzed (i.e. the four operating companies). To check whether the research and proposed solutions are applicable within Conclusion as an entity as well, further research should be done. However, based on personal interpretations of Conclusion as an entity, the researcher expects the proposed solution to be applicable for all operating companies within Conclusion.

7 Reflection theory

This chapter reflects on the potential contradictions between theories used within this research. Furthermore, a reflection is provided over the parts of the research which enriched the theory.

7.1 Using cooperation in order to develop service products

Most literature regarding cooperation in a business environment, is about high-tech product development. This research adds practical insight on how to increase cooperation between business units for the development of service products.

7.2 Cooperation within a holding structure

Furthermore, most literature discuss cooperation structures who consist of independent individual companies pooling together in order to create synergy (e.g. in the form of an alliance structure). This research adds to the literature by providing insights on how to realize cooperation between inter-organizational business units pooled together and guided by a holding aiming to create synergy. Unique in this context is the responsibility of the operating companies for their own P&L as well of P&L of the company as a whole. The desire to create inter-organizational cooperation between business units is something you see a lot nowadays. Therefore, the outcomes of this research are a valuable addition to the current literature available.

7.3 Practical implication of the CST perspective

The concept of CST is a rather theoretical concept to describe the organizational behavior. Even though the CST view fits the current problems organizations are facing, this is not used a lot in practical solutions yet. This research adds to the literature with a practical application of the CST methodology by combining it with a design science based research approach.

7.4 Level of aggregation within the maturity model

The maturity model is a model that fits well the concepts of the CST and therefore functioned well as a tool to analyze the current level of development within Conclusion. However, this model does not take into account the level of aggregation, which is an important concept of the CST theory. The maturity model suggests the different phases of organizational development to last an average timespan of four to eight years. However, in this case the timespan of the phase towards cooperation highly exceeded this average timespan suggested. This of course could be an exceptional case. However, another reason could lay in the level of aggregation in combination with the highly autonomous operating companies. At Conclusion as an entity, there are different levels of aggregation (i.e. individual, group of individuals) at a lot of different places within the organization (e.g. the ±25 operating companies Conclusion as an entity consists of). This could explain their inertia towards cooperation compared to the average timespan suggested in the maturity model. It could be an interesting subject for future research to analyze the effect of the number of (highly autonomous) business units (all including different levels of aggregation) on the duration of the phases of the maturity model.

8 Reflection methods

This chapter reflects upon the methods used within this research including their potential weaknesses. Furthermore, a reflection is provided about the applicability of the methods used for further research.

8.1 Culture analysis

The questions for the culture analysis were filled out from the perspective of the respondents' own operating companies. The researcher assumes this to have the biggest effect on the interpretability of the quadrant clan culture. When a clan culture is present within one operating company, this does not reflect the presence of a clan culture between the operating companies as well. The other quadrants (i.e. hierarchy, adhocracy, and market) are assumed to be better interpretable for the culture present between the operating companies even though filled out from the perspective within one operating company. When for example the culture within each individual operating company is market focused, it is plausible to assume that all operating companies together are market focused as well. However, to be able to make a more validated analysis of the current culture within Conclusion, the respondents should be asked to fill out the questionnaire from the perspective of Conclusion as an entity (or in this case, the four operating companies analyzed).

8.2 Ipsative data analysis

More than half of the respondents who had to fulfill the culture survey, complained about the difficulty to fairly distribute the 100 points over the four statements. This is one of the, well-known, difficulties of ipsative data. Because of the unclear distribution of ipsative data, statistical analysis (for small sample sizes) are hard to achieve. Therefore, the differences which were visible between the current and desired situation (for which the geometric means were calculated) could be different from the real situation.

Furthermore, ipsative data cannot be used for normative measurement (i.e. *"the values of the parts cannot be compared between respondents, or between organizations"* (Van Eijnatten *et al.*, 2015 p. 566)). Therefore, even though wished for, there could not be made a comparison between the operating companies within Conclusion regarding their organizational culture.

Despite the uncertainties of working with ipsative data and a low sample size, the outcomes provided interesting results which were useful for the analysis within this research. If Conclusion would like to draw statistical conclusions out of the culture analysis, the same research could be executed using a bigger sample size (i.e. $N \geq 30$). As the operating companies analyzed in this research have 25, 45, 45, and 30 FTE, all employees should fill out the questionnaire to come to an acceptable sample size per operating company.

8.3 Respondents included in the research

The selection of respondents for the qualitative- as well as the quantitative analysis was done by convenience sampling (i.e. respondents were gained by management, by their availability and/or by snowball sampling). Therefore, the sample could be biased and not represent the entire population. Especially management seems to have a relatively high impact on the results. Management proposed which people to approach to participate in the culture analysis. Furthermore, management helped selecting the respondents for the interviews. Therefore, it could be that the employees being less visible by management and/or having a different opinion, were excluded from this research. This decreases the (external) validity. However, one thing that speaks in favor of the (external) validity, are the conversations the researcher had with different employees ($N \approx 25$) within Conclusion who all confirmed the outcomes found in the diagnosis.

The review over the proposed set of interventions preferably should have been done by a group of (non-) management employees not involved in the diagnostic phase. This was possible for the group of non-management employees. However, as the number of managers was rather small, it was impossible to form a group of managers who were not included in the diagnostic phase to review the interventions.

Besides the (potential) biased review, the review was executed by a low sample size (i.e. 3 non-management employees and 1 management employee). To increase the validity, an extra analysis of the interventions' scores on the requirements by a bigger sample size could be performed.

In the workshop set up to evaluate the design, three managers were involved. However, by these three managers only one operating company and the Human Resource Center were represented. Furthermore, these managers were included in the diagnostic phase as well which was the result of the small group of managers in the research context. As the processes per operating company differ a lot, especially the impact of the set of interventions on the current processes are expected to be different for each operating company. The evaluation over the other aspects (i.e. potential challenges, order of implementation, expected costs and benefits, and the ability to increase the level of cooperation) are expected to be easier generalizable for the other operating companies. However, to validate the expected impact of the design, the researcher advises to execute one more workshop in which the management of all four operating companies is present.

8.4 CIMO logic

The CIMO logic approach used for this research uses mechanisms to describe the expected outcome of an intervention. However, as cooperation can be hard to realize and the probability of failures is (highly) present, it is likely to assume not all interventions will always have positive outcomes. Therefore, it would be an interesting subject to do research at the effect of 'negative' outcomes of the proposed interventions. Potentially negative outcomes of interventions trigger an opposite of the mechanisms (proposed or the positive outcomes) and thereby de-stimulate cooperation (e.g. no open communication, not seeing the bigger picture, no motivation).

8.5 Qualitative and qualitative data used

As the research context is complex, the researcher looked for detailed information. Therefore, qualitative analysis, in the form of (semi-structured) interviews, brainstorming, informal conversations and workshops were assumed to fit best research in this context. Despite, some quantitative data was used as well (i.e. the company data and the culture analysis). However, these quantitative data did not allow for drawing statistical conclusions. Firstly, the available data of the K&A desk did not contain enough details to draw strong conclusions. Furthermore, the culture analysis contained a too low sample size. However, both analyses did provide useful information as most outcomes supported the findings from the qualitative data analysis. Therefore, the company data as well as the culture analysis functioned as a way to complement the outcomes of the interviews and the company documents.

8.6 Formulating the design requirements

To select the best set of interventions, the researcher started with a set of criteria on which each individual intervention could be scored. At the beginning the researcher aimed to select the best set of interventions based on the scores of the individual interventions. However, from the perspective of CST, everything is interconnected. Therefore, during a later stage of the research, the researcher developed a new set of interventions to select a set of interventions based on the qualities of the set instead of the qualities of the individual evaluated requirements.

9 Recommendations

This chapter zooms in on some important aspects the researcher believes Conclusion should take into account which were not mentioned in the research yet.

9.1 Collaboration is a tool, not a mean in itself

The first thing to mention is that more collaboration is not necessarily better. Collaboration is only valuable when it is organized the right way and with people and an organizational climate that is open towards cooperation. Keep in mind that cooperation is a tool, not a mean in itself.

9.2 Make money out of your own transition

If Conclusion is capable to improve their internal level of cooperation (e.g. by making use of a method like described in this research), they could make a proposition out of it as well. The urgency operations feel nowadays to increase their (internal) level of cooperation is high. However, most organization do not know how to reach their desired level of cooperation. Conclusion has the right potential resources to develop a proposition to help such organizations transform and increase their (internal) level of cooperation. As research show us that a lot of value (literally) could be gained from cooperating, this is an interesting proposition for Conclusion to develop.

9.3 Organizational change is an ongoing process

Organizations should continuously change in order to continue existing. The need of Conclusion to increase its internal level of cooperation seems to be one of this requests for change. Following the maturity model, it is argued that the proposed solutions for growth for one phase often result in the main bottleneck for the next phase. When not being aware of this -rather cynical- relationship, managers could become disappointed. Therefore, the researcher advices to remember that an organization will never be finished changing.

9.4 Other interventions

As can be concluded from this research, Conclusion already introduced a lot of initiatives to stimulate cooperation. Some of them seem to have higher potential outcomes compared to others. The proposed set of interventions does not mean Conclusion should eliminate the initiatives implemented already. However, the researcher recommends Conclusion to evaluate the initiatives by the requirements as discussed in this research and make a deliberate decision on which initiatives to (dis)continue. It is better to execute some interventions excellent than to execute a bunch of interventions half.

9.5 Implementation and reflection

Even though the implementation is beyond the scope of this research, the researcher will provide some recommendations for Conclusion to take into account before the implementation. The remaining of this paragraph follows the five subjects as discussed in Paragraph 5.2.4 (i.e. potential challenges, order of implementation, expected impact, expected costs and benefits, and the ability to increase the level of cooperation).

9.5.1 Potential challenges (during the implementation)

The first challenge mentioned by management is that employees should put priority on getting to know each other. However, this requires the employees to spend time on orientating within Conclusion (which they claim not to have, see Paragraph 5.1.3). Management could decide to allocate a percentage of each employees' time on orientating. To make this happen, it is important to communicate towards the employees that a percentage of their time is 'reserved' for orientation.

Another solution is to wait for the effects of the set of interventions. There already have been a lot of initiatives to let people (and thereby the operating companies) get to know each other. However, up to now these initiatives were not attended much and/or used as a way to get to know each other. Therefore, just stimulating the employees to get to know each other seems not the right strategy. The researcher suggests to implement the set of interventions as proposed in this research. It is assumed

that by this set of interventions, employees are forced to focus less on their own operating company and more on others'. It is assumed that, once employees see the bigger picture and the overarching goal of getting to know each other, their willingness and (thereby) behavior to get to know each other better will increase.

Of course both proposed solutions for this challenge could be combined in order to leverage the desired behavior of employees.

A second challenge, is the risk management sees in too general brainstorm. To narrow down the scope of the brainstorms and be better prepared, the researcher recommends management to guide employees to deepen themselves into what aspects are high on the agenda of the client. A positive side effect of a narrowed down scope is that it makes it easier to select complementing operating companies feasible for the brainstorm.

Regarding the example behavior, management understands the added value of the intervention but would like to have some more specific examples. The researcher noticed that, because management believes cooperation to be something 'normal' to do, they do not feel the need to expose what they have done (i.e. as it was normal to act that way). This has a negative effect on employees who do not see any 'examples' provided by management. Therefore, the researcher would advise management to think about things which included cooperation across operating companies and give more exposure to what they (have) achieve(d) regarding cooperation. Examples management can think of are: explaining what was done and achieved together with other operating companies (e.g. active CMOs they participated in) during knowledge sharing events or in the digital newspaper.

9.5.2 The order of implementation

Besides implementing intervention three (i.e. 'Let management provide examples of successful cooperation activities') first, management does not have a clear preference in the order of implementation of the other two interventions. The researcher would advise management to implement them parallel as all interventions positively influence each other (see Figure 18).

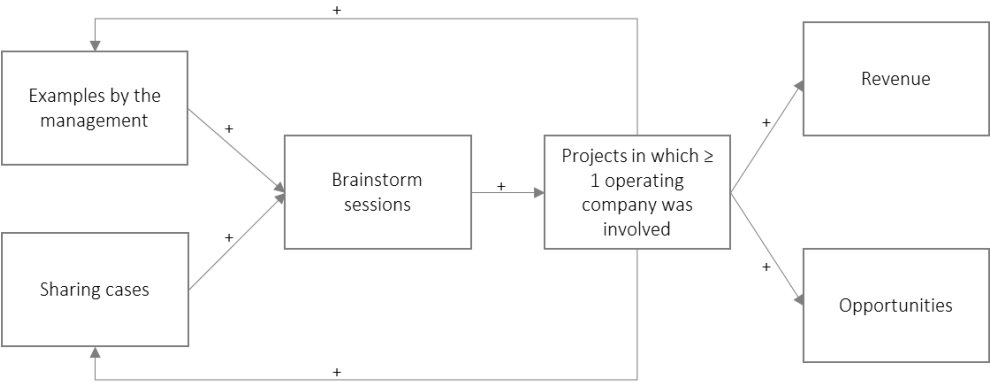


Figure 18: Interrelatedness interventions

9.5.3 The expected impact on the current processes going on

The expected impact of the set of interventions on the current HR cycle was expected to be low. However, this was from the perspective of one operating company. The current HR cycle of this operating company includes the following four subjects: (1) knowledge sharing, (2) the operating company, (3) The Smart HR center, and (4) Conclusion. These four aspects are reflected in their acquisition-, sales- and service processes as well. Therefore, the set of interventions fit well the current processes. However, this should be checked for the other operating companies as well. Potentially the current HR processes going on in this specific operating company could serve as a guidance for the other operating companies.

To bring the proposed interventions to a success management believes knowledge sharing should be done more often. They for example claim that the CRM system should be used (more often) to share client contact. The researcher believes the proposed set of interventions to foster employees to see the added value of knowledge sharing (see Figure 16), build trust and thereby increases the willingness of employees to share knowledge. As systems to share knowledge are available within Conclusion the researcher expects employees to start sharing knowledge by then. However, the researcher believes some guiding from management is required for this transition. Furthermore, it could be valuable to do research about the ease of use of the programs available for knowledge management.

Regarding performance management, management is unsure about whether (and how) to provide incentives for cooperative behavior. Referring to Example 3 in this research, in comparable context providing incentives has helped organizations to increase value.

At the moment some of the operating companies within the research context have changed their evaluation systems in evaluations based on competences. The researcher would recommend these operating companies to include the competence 'cooperative behavior'. It shows employees this is one of the important competences which they should have. It could be valuable to link this to the yearly rewards as well (e.g. no reward is received when not performed high enough on all competences). To make the right decision in this case, more research could be done to rewarding strategies.

Furthermore, the researcher recommends the other operating companies to develop their evaluation method into a competence based evaluation method as well. The operating companies who already implemented this system can function as an example and guidance for this transition.

9.5.4 The expected costs and benefits

Regarding the expected costs management did not see any difficulties. The researcher would advise management not to believe it is too easy. To execute the interventions parallel, a good preparation is needed. Furthermore, employees should be introduced into the subject. Even though the researcher does not expects much resistance from employees, it is important to explain what is going to happen and why management believes this to be important. Furthermore, management should reserve time to think about cases to share and how to formulate them in a manner that it is informative and clear enough to know what the operating companies are capable of (in the future). Besides that, management should start sharing examples of their own cooperative behavior which are empowering. This requests a change in management's mindset which will require time as well. The researcher will strongly advice to make clear agreements on the number of cases, examples, and brainstorming per period to make sure it will not be forgotten or set as a low priority project.

9.5.5 The ability of the set to increase the level of cooperation

After the implementation, Conclusion should reflect upon the effect of the set of interventions. Therefore, it is wise to already define the parameters to measure the effect. Defining these parameters on beforehand allows the possibility to perform a baseline measurement. A baseline measurement gives the opportunity to compare the current situation with the new situation (e.g. one year after the implementation of the interventions). In this paragraph, the researcher proposes some parameters Conclusion could think of to measure the impact of the design. These parameters were derived from the symptoms (i.e. missed opportunities, missed revenue) as presented in the cause-and-effect diagram and complemented by the expected effect of management to fulfill the ambitions of the employees. The design has proven its value when being able to decrease/take away the symptoms. Possible parameters are:

- % of projects performed by more than one company (not guided by the K&A desk);
- % of leads received from people of other companies;
- % of leads provided to other operating companies;
- % of tenders won by working together with other operating companies;
- Satisfaction of employees in which their ambitions are met (regarding a broad development).

9.6 Take a first step instead of thinking about everything that should change

Cooperation can be a complex task to realize as there are a lot of different bottlenecks all being interrelated. It is not realistic to take away all (potential) bottlenecks by one (practical implementable) set of interventions. The researcher is aware this set of interventions will neither be able to decrease/take away all (potential) bottlenecks towards cooperation. However, even though there still can be thought of a lot of other issues needed to be solved to increase cooperation, the researcher would suggest to take a first step by implementing this set. After the implementation, the effect should be evaluated so adjustments can be made to the set (or come up with a new set of interventions) when necessary. Continuously thinking about what should be solved as well will increase the risk that nothing will increase the risk that nothing will be realized at the end.

9.7 Conclusion and 'Future Groep'

Halfway the execution of the research, 70% part of Conclusion as an entity has been sold to a (new) investor. The result is that one half of the context (i.e. two operating companies) are operating under another holding (i.e. 'Future Groep') than the other half (who were still operating under the name Conclusion). The researcher decided to continue the research as proposed as if the context had not been changed. This was no problem as all (people at all) operating companies in the pre-defined context were still willing to participate in the research.

The impact of the splitting of Conclusion as an entity on the applicability of the research question and the design developed is assumed to be low. Before the splitting as well as after, cooperation should be seen as something by which everyone participating increases value (for themselves as well as for the whole). Therefore, the need to increase the level of cooperation between the operating companies (even though operating under another holding) is expected to remain important. The proposed set of interventions can be used to realize this.

Potentially one of the biggest bottlenecks towards cooperation between Conclusion and 'Future Groep' towards cooperation is the disbelieve people seem to have in cooperation between these two organizations. The researcher believes management should play an important role here by providing examples, expressing confidence, and explaining the added value of cooperation between Conclusion and 'Future Groep'.

10 Suggestions for further research

The Paragraphs 6.3, 6.4, 6.8, 6.10, 7.4, 8.1, 8.2, 8.3, 8.4, 9.4, and 9.5 already provided a variety of suggestions for future research. This chapter will elaborate on two more suggestions which have not been discussed yet.

10.1 Scale versus level

In this literature study, the concept 'scale' as well as 'level' is often used. Within the context of CST it is still unclear how to differentiate between these two. Levels in this literature study refer to a unit of people within an organization (i.e. individuals, group of people, and a network of people). Scales refer to levels within an ecosystem (i.e. one person, a group of persons). Therefore, in principle the concepts of level and scale are quite similar. On the other hand the difference to be a group of people within an organization has some major differences compared to a group of people in the world. To further explore these concepts and find out what the differences are, more research has to be done.

10.2 Interventions on a lower level of aggregation

The set of interventions in this research were developed to guide a group of people. It could be interesting to look at a lower level of aggregation (i.e. the individual) as well. By making use of network analysis tools, the added value of people within a network can be analyzed. For example, employees having a valuable role in the network (e.g. in terms of knowledge sharing and connecting) could be traced. Being able to find these employees, makes it possible to analyze their behavior which could be used as an example (and training material) for other employees. Introducing interventions on a lower level of aggregation therefore could be valuable. Analyzing the network, developing interventions on a lower level of aggregation, and analyzing the effect of interventions on a lower level of aggregation could be interesting subjects for further research.

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The appendices of this report are confidential and will not be made public.

Eindhoven, June 2016

**How to create a campus: the development
of two 'first prototypes of a SDF manual' to
search for a desirable future for a campus**

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**Master of Science
in Innovation Management**

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Subject headings: cooperation, campus, Delphi study, campus performance measurement tool,
desirable future, exploratory research

How to create a campus: the development of two 'first prototypes of a SDF manual' to search for a desirable future for a campus

Master Thesis (1JM96)

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Abstract

This research was executed on behalf of Conclusion, a service provider in organization and IT, who is one of the three strategic partners of the Smart Services Campus (SSC), yet to be developed in Heerlen. Conclusion wants to know how to develop the SSC in order to create synergy. This research responded to the management question by providing two 'first prototypes of a SDF manual'. These two SDF manuals were developed based on the insights gained by an exploratory research about finding a desirable future for a campus in a comparable context. The exploratory research was set up making use of the 'Delphi method' and the 'campus performance measurement tool'. Based on the outcomes of the exploratory research, theoretical- as well as methodological insights were gained. These insights enabled the researcher to develop two 'first prototypes of a SDF manual'. The first SDF manual aims to make it possible for stakeholders at a campus to search for a desirable future for a campus yet to be established. The second SDF manual aims to make it possible for stakeholders at a campus to search –by a less time-intensive study– for a desirable future for a campus existing already. Developing the campus in such a way that (parts of) the desirable future is met, is expected to result in synergy.

Management summary

This chapter provides a management summary of the research executed.

Introduction

There is a growing interest in organizations to participate on a campus. Campuses are expected to create synergy. However, the reasons to participate on a campus can vary for different types of organizations. Therefore, up to now there is a lot of uncertainty on how a campus should be set up and developed in order to create synergy. Conclusion, a service provider in organization and IT, is one of the three strategic partners of the Smart Services Campus (SSC), yet to be developed in Heerlen. The strategic partners are not sure yet on how to develop the campus. Therefore, the management question of Conclusion is:

“How to develop the SSC in order to create synergy at the campus?”

The SSC was not open for research yet. Therefore, the research was conducted at a comparable context: Strijp-S. Strijp-S is a place, in Eindhoven, where entrepreneurs are located. Strijp-S can be compared to a (smart services) campus in the way that it represents a physical place at which different companies (varying in size) are located with the aim to (together) deliver (smart) services/products. To execute the research, four companies (operating in the same branches as Conclusion) were selected.

To answer the management question, the researcher formulated two goals in the research. The first goal in the research was:

To execute an exploratory research about a desirable future for Strijp-S.

The second goal in the research was:

To develop a first prototype of a ‘SDF manual’ based on the findings of the exploratory research, to be used in other situations such as the SSC.

The developed SDF manual should allow stakeholders of a campus to search for a desirable future for a campus themselves. Providing the ability to (future) stakeholders of a campus to search for a desirable future should help them in shaping the campus as well as deciding what direction to go while the campus is developing.

Theoretical background

The theory discussed concerned three types of cooperation structures: (1) alliances, (2) networks, and (3) collaborative networked organizations. It provided the researcher with the necessary background to execute the exploratory research.

Research method

Both, the Delphi method and the ‘campus performance measurement tool’ were used as input for the exploratory research.

Four respondents were selected for the exploratory research. During the Delphi study, each participant had to reflect upon the visions/ambitions/demands of the other participants by two questionnaires and sequential interviews. The first questionnaire requested the respondents to fill out a list of relevant aspects for growth on a campus within the next five years. Furthermore, they were requested to add, at least three, new aspects to the list. Besides that, they had to write a piece of text on their vision/ambition of being a participant at a campus within the next five years.

The important aspects selected and added by the respondents were merged into one single list and served as input for the second questionnaire. The second questionnaire requested the respondents to rank their seven most important aspects from most to least important.

The visions/ambitions gathered by questionnaire one were used as input for the sequential interviews. During the sequential interviews, the outcomes of all previous interviews were provided to the next respondent. This was done making use of a document which included aspects of consensus, consent, and disagreement.

Besides the Delphi study, a selection of questions of the ‘campus performance measurement tool’ was used. The questions selected enabled the researcher to measure the campus performance from the perspective of the firms located on the campus. The respondents were requested to evaluate the campus performance by grading the questions on a seven-point scale. Furthermore, they were requested to evaluate the relevance of each question to measure campus performance.

The combination of the performance-scores and the relevance-scores, provided insight into the performance of Strijp-S and where there was space for improvement. Furthermore, it provided insight into the necessity of the questions for measuring campus performance for future analyses.

In order to develop the manual, data was gathered from: (1) an expert, (2) literature, and (3) a best practice. The researcher fulfilled the expert role. The literature used was regarding the cooperation structures. The best practice used was the exploratory research executed at Strijp-S. The data gathered was analyzed concerning its theoretical- as well as methodological value for the design of the SDF manual

Results

The analysis of the data gathered by the exploratory research complemented by literature and the researcher’s own experiences of executing the research, provided the researcher with enough theoretical- as well as methodological knowledge to reflect upon.

Based on the outcomes of this reflection, two ‘first prototypes of a SDF manual’ were developed. The first SDF manual aims to make it possible for stakeholders at a campus to search for a desirable future for a campus yet to be established. The second SDF manual aims to make it possible for stakeholders at a campus to search –by a less time-intensive study– for a desirable future for a campus existing already.

Both SDF manuals were developed to allow the stakeholders of the SSC (e.g. Conclusion) to search for a desirable future for the SSC. However, the SDF manuals are assumed to be applicable to search for desirable futures for other campuses as well.

The first SDF manual consists of four steps: (1) context selection, (2) selection participants, (3) data collection, and (4) follow up. The second SDF manual consists of three steps: (1) selection participants, (2) iterative question selection, and (3) follow up. A summarized description of both SDF manuals is provided in Figure S1. As can be seen, SDF manual 2 logically follows SDF manual 1.

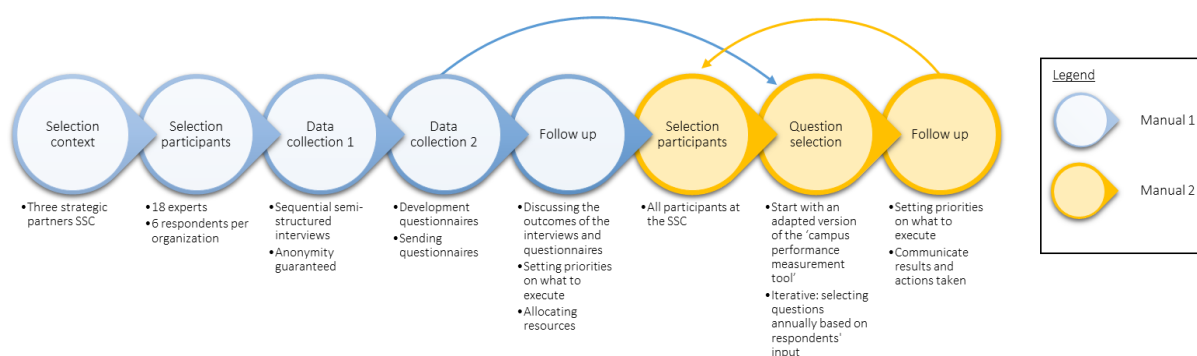


Figure S1: visualization process execution SDF manual 1 and 2

Conclusion and reflection

Even though asked for, the researcher did not provide Conclusion with the information needed in order to develop the SSC. Despite, Conclusion was provided with two 'first prototypes of a SDF manual' which allow them to search for the desirable future for the SSC, themselves.

As the researcher assumes each campus has different missions/visions/demands and therefore a different desirable future, the manuals are expected to be a useful tool. Furthermore, the SDF manuals developed provide the stakeholders of a campus with the ability to continuously monitor the desirable future in order to keep on developing new directions and face new opportunities. The desirable future is assumed to provide the insights needed to develop a campus at which synergy takes place. Therefore, the researcher believes the developed manuals provide a valuable answer to the management question.

The researcher believes there is a high need for tools which enable people to search for a desirable future for a campus, themselves. This research might be the first who adds to the literature by providing two 'first prototypes of a SDF manual' to search for desirable futures for campuses. Because of the exploratory character of the research, the research had a small sample size (N=4). Further research should validate the prototype SDF manuals in different campus contexts.

Preface

This research was conducted as an extra research as part of my Master Thesis and was a result of the ambitions of Conclusion to participate on the SSC. The relationship between this research and the 'main research' can be found in Relationship research 1 and 2.

At the beginning of this research I could not believe the research to bring so much insights. Visiting the entrepreneurs at Strijp-S provided me with insights in a whole new research context in which I believe a lot has to be found out yet. The research provided me with energy and enthusiasm continuously. Therefore, I would like to thank the four participating entrepreneurs for their valuable contribution to this research.

While performing the research, there were some special people around me who I would like to thank as well. At first my first supervisor Dr. Van Eijnatten who has been an important mentor for me during my last two years of studying. His exceptionally high dedication and perfect balance between guiding and providing space for exploration resulted in a steep learning curve during the research.

Besides my first supervisor, I would like to thank my second supervisor, Dr. Keizer as well. His extensive knowledge about campuses made him a valuable sparring partner. Furthermore, he was able to take a bird's eye view over the research performed. The feedback he came up with as a result of his bird's eye view, made the research more coherent.

Moreover, I would like to thank my company supervisor Drs. De Weerd who, despite his full agenda, always made time available to discuss the process. Furthermore, he was always willing to provide feedback and help.

Furthermore, I would like to thank my family, boyfriend, and friends who have helped me to reflect, relax, and make my whole student life to a beautiful period to look back at.

Finally, I would like to bring a special thanks to my parents who made it possible for me to study. They have always showed faith in everything I did, provided me the space needed to explore, and helped me to see things in perspective.

As a result I can conclude I will look back at my graduation period as an energizing, inspiring, educating, fun and satisfying period. This conclusion perfectly fits my whole student life as well.

One thing I feel sorry for, are the amounts of paper I have printed in order to read and refine my written texts. Therefore, I hereby promise to plant a tree in order to reduce the negative impact of my master thesis research on the environment.

Maijke Receveur, June 2016.

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The appendices of this report are confidential and will not be made public.

List of used abbreviations

CNO	Collaborative Networked Organization
DVO	Dynamic Virtual Organization
ICT	Information and Communication Technology
PVC	Professional Virtual Community
SSC	Smart Services Campus
VBE	Virtual Organizations Breeding Environment

1 Introduction

There is a growing interest in organizations to participate on a campus. Campuses are expected to create synergy. However, the reasons to participate on a campus can vary for different types of organizations. Therefore, up to now there is a lot of uncertainty on how a campus should be set up and developed in order to create synergy. This research aims to execute a research about how a desirable future (Emery, 1977) for a campus can be found. It is assumed that knowing the desirable future for a campus provides the information needed to develop a campus at which synergy takes place. This research was executed on behalf of Conclusion who would like to know what is needed to create synergy at the Smart Services Campus (SSC) in Heerlen.

1.1 Context and management challenge

The SSC will be realized in the summer of 2016. The SSC should become an incubator for businesses, innovation and talent development (related to smart services) by stimulating interaction between education, research and entrepreneurs. Smart services are ingenious product- and service innovations based on data connected by ICT. Even though Conclusion has already located some of its employees in Heerlen, Conclusion will start its real business on the campus by July 2016. Conclusion sees the SSC as an opportunity to start new business and gain clients.

At the moment, the two main strategic partners of Conclusion at the SSC are APG and Accenture. To make business at the SSC a success, it is important for the three strategic partners to know how to develop a campus in order to create synergy. However, the strategic partners are not sure yet what is needed to develop the campus. Therefore, the management question of Conclusion is:

“How to develop the SSC in order to create synergy at the campus?”

As the SSC is not open for research yet, a comparable research context was searched for. This was found at Strijp-S. Strijp-S is a place, at Eindhoven, where entrepreneurs are located. The entrepreneurs vary from freelancers, to creative couples, and teams (of dozens of people) in a lot of different branches. Strijp-S can be compared to a (smart services) campus in the way that it represents a physical place at which different companies (varying in size) are located with the aim to (together) deliver (smart) services/products.

For this research, a selection has been made of organizations operating in branches comparable to the branches Conclusion operates in, see Table 1.

Table 1: Organizations selected for the research at Strijp-S.

Branch selected	Number of organizations operating at Strijp-S
Change management	1
Consultancy	2
Education	1
HRM	2
ICT	4

1.2 Research goals

Based on the management question as described in Paragraph 1.1, the goal of the research was formulated as follows:

Develop a first prototype of a ‘SDF manual’ which enables stakeholders of a campus to search for a desirable future for a campus.

In order to meet the set goal of the research, two research goals were formulated. The first goal in the research was to execute an exploratory research about a desirable future for Strijp-S. The second goal in this research was to develop a first prototype of a ‘Search for Desirable Future manual’ (i.e. SDF

manual) based on the findings of the exploratory research, to be used in other situations such as the SSC.

The exploratory research should provide the researcher with theoretical as well as methodical insights on how to execute a research about a desirable future for a campus. The developed SDF manual should allow stakeholders of a campus to search for a desirable future for a campus themselves. Providing the ability to (future) stakeholders of a campus to search for a desirable future should help them in shaping a campus as well as deciding what direction to go while the campus is developing.

To start the research, the researcher roughly defined a campus as:

“A (physical) location at which multiple organizations (like companies, entrepreneurs, knowledge institutes) are located which (together) offer products/services to the market.”

2 Theoretical background

The theoretical background described in this chapter provides insight into different types of cooperation structures. The theory discussed here provided the researcher with the necessary base of background knowledge to execute the exploratory research.

2.1 Cooperation structures

There is a variety of cooperation structures. Within this paragraph, three cooperation structures applicable to a campus context are described. These are: alliances, networks, and collaborate networked organizations. In particular, the management aspects and the development regarding these three structures are elaborated on.

2.1.1 Alliances

De Man (2006) describes an alliance as a *“private partnership between one or more independent enterprises that meet the following criteria: (1) common goal, (2) shared risks, costs and revenue, (3) collaboration between partners, and joint decision making”* (Man, 2006, p. 13, translated from Dutch). An alliance lacks hierarchy and decisions are often made together (by representatives of) all partners. Alliances can be recognized when enterprises keep their own legal independence within their cooperation, but simultaneously have a shared decision-making process. The need to form an alliance is especially present when organizations are searching for flexibility, coordination, and core competences/skills of a partner (De Man, 2006). This context often occurs in dynamic markets (De Man, 2006).

This shift in focus on core competences brings a new type of competition: horizontal competition (De Man, 2006). In horizontal competition, companies compete against each other as specialists with a network of partners who are suppliers of their complementary products. This is different from vertical competition in which companies compete against each other by a total integrated product developed themselves. Horizontal competition makes it important to be part of an alliance and network with a high competitive advantage.

When aiming to form an alliance, the first step for an organization is to start formulating its strategy. By formulating its own strategy, an organization is more capable of deciding what type of partners it is looking for. After this first step, the organization has to develop an alliance strategy in which it describes what type of partnership it is looking for. The third phase is to start partnering. In this phase, the organization starts searching for potential partners, selects them and starts negotiating about the type of contract and their shared business model. This is a first step into phase four in which the organization decides what type of alliance management to apply (i.e. control and/or trust). Therefore they can make use of the framework displayed in Table 2. After the start of a cooperation, the position of an alliance can shift within this framework (Receveur, 2015). In phase five, the daily management is continuously monitoring the system. The last phase, phase six, periodically evaluates the dynamics and management of the alliance.

Table 2: Control, trust and uncertainty when entering a new alliance. De Man, 2006, p. 117, translated from Dutch.

	Low Business uncertainty	High business uncertainty
High relational uncertainty	Control	Trust and control
Low relational uncertainty	Trust or control	Trust

Important aspects of alliance management are: dynamic issues, no hierarchy, incompatible management structures, opportunism, and temporality (De Man, 2006). Dynamic issues arise since the shared strategy of an alliance consists of a combination of strategies and visions of the partners. Therefore changes in (work) environment can have a higher impact on some partners than on others. In such a situation, it is important to be flexible as a partner. No hierarchy is a frequently observed aspect of alliances. In such alliances, decisions are made by representatives of all partners. This calls for a shared strategy and a new type of leadership which brings us to the third important aspect of alliance

management: incompatible management structures. Since each of the partners is confident with its own management structure, it can be a real challenge to align management structures. The fourth aspect to be mentioned here is opportunism. Opportunism occurs when a partner premises its own interest. Opportunism is often hard to recognize at an early stage. The last aspect is the temporality of alliances. This aspect is important for all decisions to be made within an alliance as it requires each organization to be able to become independent again as soon as the alliance splits up. Furthermore, capital, knowledge and brands generated by the alliance should be able to be divided equally once an alliance splits up.

2.1.2 Networks

Alliances can be seen as the main component for networks (De Man, 2006). Networks arise when companies connect together and thereby have indirect relationships as well, see Appendix II: innovation partners and their contributions within a network.

To be able to create value in a network, Kothandaraman and Wilson (2001) propose three core components: (1) superior customer value, (2) core competences, and (3) relationships. These three components are strongly interlinked with each other (see Figure 1).

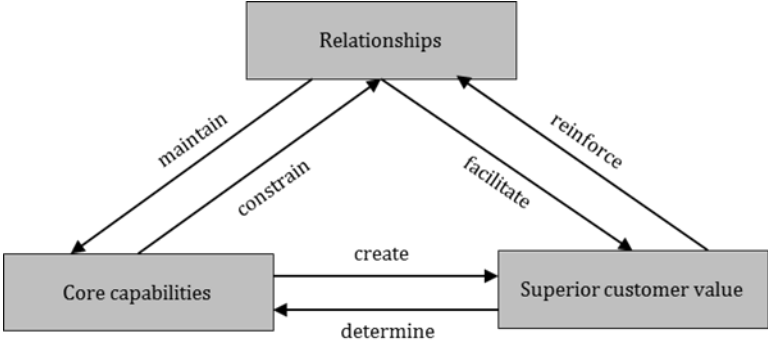


Figure 1: A model of value creating networks. Kothandaraman & Wilson, 2001, p. 384

The awareness about the added value of networks resulted in a shift from competition on a firm level, to competition on a network level. Therefore, Ritter and Gemünden (2003) state firm performance is closely related to their competence in relationship management within their network. Inter-organizational relationships are long-term oriented arrangements between organizations that can create value for an organization. The network created by relationships can be even more important than the relationship itself (Ritter & Gemünden, 2003).

Within networks, some parties have bigger roles than others have. Depending on how big one’s contribution is, they play an important role in shaping the network (the bigger the role in the network the bigger the influence on the shape of the network). Therefore, looking at the position of a (potential) partner should be as important as the inter-organizational relationship.

As can be seen in Table 3, the (core)competences together with the accompanying risks of an organization, determines its position within the network. Therefore, it is important for organizations to think about their (core) competences. This should help them to think about their potential position within a (value) creating network and how to become an attractive partner.

Table 3: Evaluation of potential partners. Kothandaraman & Wilson, 2001, p. 383.

	Low value added to partner	High value added to partner
Low operating risk	Facilitative	Integrative
High operating risk	Loser	Developmental

Managing networks is a complex task. The elements of network-management tasks can be divided into relationship specific tasks and cross-relational tasks. Relationship specific tasks play an important role

in single relationships. These tasks are: initiation, exchange, and coordination. Cross-relational tasks, on their turn, play an important role in relationship management within a network. These tasks are: planning, organizing, staffing, and controlling. To be able to fulfil these tasks, management qualifications are needed. The two most important management qualifications are specialist- and social qualifications. These tasks together with the qualifications of an organization form the organization's network competence.

2.1.3 Collaborative networked organizations

A Collaborative Networked Organization (CNO) is a concept describing a virtual network environment (Camarinha-Matos & Afsermanesh, 2002; Van Eijnatten & Putnik, 2005). This network aims to increase flexibility and competitiveness for organizations by a lack of hierarchy, the availability of information, and the presence of intrinsic motivation of members to participate in such a network Gloor (2004).

The behavior of a CNO, can be described by three different types of virtual organizations: (1) a Dynamic Virtual Organization (DVO), (2) a Virtual Organizations Breeding Environment (VBE), and (3) a Professional Virtual Community (PVC).

The DVO is a *“temporal alliance of organizations that come together to share skills or core competencies and resources in order to better respond to business opportunities and produce value-added services and products. And whose cooperation is supported by computer networks”* (Camarinha-Matos, Afsermanesh & Ortiz, 2005, p. 6).

The VBE contains organizations and supporting institutions. Important in this community is the intrinsic motivation, potential, and openness of the participants to cooperate. In this environment, virtual organizations arise by the influence of members, acting as a broker, who select a subset of organizations (Camarinha-Matos *et al.*, 2005)

A PVC is an environment where participants' relationships can be mediated (Camarinha-Matos *et al.*, 2005) by *“[sharing their] body of knowledge of their professions such as similar working culture problem perceptions, problem solving techniques, professional values, and professional behavior”* (Camarinha-Matos, Afsermanesh & Ortiz, 2005, p. 6). In the case of virtual communities this is realized by the use of computer technologies.

The three components as described above play different roles in the stages of development. The VBE plays an important role in the exploration and creation phase. Furthermore, the VBE brings in people and explicit knowledge to the DVO. The DVO on its turn plays an important role in the exploitation at first and the destruction phase in a later stage. Besides, the DVOs bring in people and competences to the PVC. The PVC plays an important role in points of reflection in their own discipline, and brings in people and tacit knowledge to the VBE again.

Management of this network should be described for each of the three types of virtual organizations individually. At first the PVC. This organization does not experience a formal management (Van Eijnatten, 2005). The organization as well as the decision making activities are organized by individuals. Within the VBE, there usually is *“emergent leadership: I.e., encouraging instead of sanctioning; letting go instead of controlling, allowing to make errors instead of demanding to do [the] first time right”* (e.g. by taking up the role of a Broker) (Van Eijnatten, 2005, pp. 11-12). In the last one, the DVO, *“the management role is expected to be rather fixed: It is to be allocated to clearly identifiable, trusted, and competent persons in the network, who are not necessary the ideas owners in the VBE”* (Van Eijnatten, 2005, p. 12). Because of the high uncertainty, Van Eijnatten and Keizer (2002) suggest to make use of 'holonic decision making'. This refers to an iterative decision making process. Thereby the uncertainty of not making the right decision the first time is decreased. Just like the importance of trust in alliance- and network management, trust plays an important factor in all organizations of the CNOs as well.

3 Method

This chapter describes the method for the exploratory research as well as the method of design for the SDF manual.

3.1 Method 'exploratory research'

By the use of a 'Delphi study' and the 'campus performance measurement tool' (Vliek, 2011), an exploratory research about searching for a desirable future for a campus was conducted at Strijp-S. The next paragraphs will elaborate on how the exploratory research was executed.

3.1.1 Delphi method

The first part of the exploratory research was set up making use of the 'Delphi method'. The Delphi method is a qualitative research method which uses insights of experts, usually in an anonymous manner, to formulate an answer (based on consensus) to an open question (Goodman, 1987; Hasson, Keeney & McKenna, 2000; Keeney, Hasson & McKenna 2001; Van der Bruggen, 2002). This unique approach makes the Delphi method useful for research in which there is a non-existing situation and when (potential) different visions about the desired situation are present.

Thorsrud (1972) describes the search for a desirable future as a type of policy making by a continuous learning process in which active, adaptive planning is key. Therefore the Delphi method is expected to be valuable to search for a desirable future. The next paragraphs describe the first part of the exploratory research which is derived from the delphi method.

Company selection

Ten potential companies at Strijp-S were contacted to participate in this research. The selection of these companies was based on the branch they were operating in (see Paragraph 1.1). Before the company committed to participate, information was provided on the time span of the research, the amount of time it would take to participate, and what would happen with the results. Furthermore, the incentives for participation were discussed. The incentives for participation had been derived from Okoli and Pawlowski (2004) and contained: *"(1) being chosen in a diverse but selective group; and (2) the opportunity to learn from the consensus building"* (p. 23).

Questionnaire part 1

The first data gathered from the participating companies was collected by a questionnaire. The first part of the questionnaire requested the respondent to fill out a list of relevant aspects for growing on a campus within the next five years. A total of 16 potential relevant aspects were already provided by the (see Appendix III: first list of aspects). This list was a result of the theoretical background as described in chapter 2. Each respondent was requested to add, at least three, new aspects (i.e. aspects that were not provided by the researcher). There was no limited number of aspects that could be selected and/or added by the respondents.

The second part of the questionnaire requested the respondent to describe their vision/ambition of being a participant at a campus within the next five years. The respondent was asked to describe his/her vision/ambitions within one to two pages A4. No other restrictions were provided on this question.

The introduction of the questionnaire provided the respondent with a definition of the concept 'campus' so each of the respondents could answer the questions from the same perspective. The definition provided was the same as described in Paragraph 1.2 (i.e. "A campus is a (physical) location at which multiple organizations (like companies, entrepreneurs, knowledge institutes) are located which (together) offer products/services to the market").

The respondents were required to respond within five working days after the request by the researcher.

Analysis questionnaire part 1

The important aspects selected and added by the respondents were merged into one single list of important aspects to grow on a campus within the next five years. This list was used as input for the second questionnaire.

All visions/ambitions provided by the respondents were merged into one single document. If aspects mentioned by respondents were contradictory, this was indicated in the document.

Questionnaire part 2

The second questionnaire requested the respondents to select their seven most important aspects to grow on a campus within the next five years. This selection had to be made based on the list provided by the researcher (which was a result of the analysis of the first questionnaire). After making a selection of their seven most important aspects, they were requested to rank the aspects from 7 (most important) to 1 (least important). This list was filled out during the interviews¹.

Analysis questionnaire part 2

After receiving the ranked lists of important aspects, a final list of important aspects to grow on a campus was made. The ranking of this list was based on the number of times an aspect was mentioned and the mode as a descriptive statistic. So, the more an aspect was mentioned and the higher the mode, the higher the ranking in the final list.

Sequential interviewing (semi-structured)

The visions/ambitions of the respondents, gathered by questionnaire one, were reported back to the respondents by making use of sequential semi-structured interviews. The first respondent was asked to provide feedback/suggestions on the first vision/ambition document. This feedback was then processed in a new vision/ambition document which was reported back to the next respondent by making use of a semi-structured interview again. These steps were repeated until all four respondents participated in an interview.

The format of the vision/ambition document consisted of the following three parts: (1) consensus (i.e. when all of the participants agreed), (2) consent (i.e. when none of participants disagreed (Endenburg, 1992)), and (3) disagreement (i.e. when at least one respondent disagreed). This was different from the initial plan in which only consensus would have been included (like is the case in the Delphi method). However, during the research, the researcher got a growing interest in the parts of non-consensus in which there was space for uncertainty and differences in opinion. To get a throughout view of the participants' vision/ambition on a campus, the researcher believed the non-consensus parts to be at least as valuable as the parts of consensus.

Analysis interviews (semi-structured)

The last vision/ambition document (as a result of the sequential interviews) was sent back to all respondents and feedback was requested within five working days. The feedback was processed making use of the consensus criteria as proposed by Porras (1987); if at least 60% of the respondents mentioned the same aspect(s) to be different/added, this was adapted in the final vision/ambition document. Respondents who did not reply within five working days were assumed to agree with the content of the document. The respondents were informed about this procedure.

3.1.2 Campus performance measurement tool

The second part of the exploratory research was executed by using the 'campus² performance measurement tool' as developed by Vliek (2011). This tool was developed because of the absence of tools available for the performance measurement of campuses (Vliek, 2011). The tool consists of four measurement subjects: (1) the management of the campus (to be filled out by the management), (2)

¹ This was not in line with the initial plan which included to let the respondents fill out the questionnaires by email. However, this choice was made to ensure the response rate.

² Vliek (2011) uses the word 'cluster' instead of 'campus'.

the firms located at the campus (to be filled out by the firms), (3) knowledge institutes (to be filled out by knowledge institutes), and (4) the government (to be filled out the by government).

The choice to use this tool was twofold. At first the tool provided insight into the current performance of the campus analyzed. The current performance of a campus is valuable as it is expected to provide insight into the desirable future. Secondly, as the tool had never been validated by an external party, this research aimed to get some first insights into the relevance of the questions to measure campus performance.

Measuring the campus performance at Strijp-S

Of the four measurement subjects as proposed by Vliek (2011), the subject ‘firms located at the campus’ was the only subject applicable for this research. Of the total of 20 questions in this subject, 12 (potentially) relevant questions for this research context were selected, see Appendix IV: questionnaire campus performance (Vliek, 2011).

At the end of each interview, the respondent was requested to grade the campus performance questions based on a seven-point scale (i.e. 1: do not agree to 7: do agree).

Measuring the relevance of the questions

To measure the relevance of the selected questions (see Appendix IV: questionnaire campus performance (Vliek, 2011), each respondent was requested to grade the questions on their relevance to measure campus performance at the end of each interview. Grading was done based on a five-point scale (i.e. 1: do not agree to 5: do agree) per question.

Data analysis campus performance

The campus performance was analyzed by counting the number of respondents who scored the performance of the campus higher, equal, and lower compared to the neutral score (i.e. a score of 4). Furthermore, the relevance of the questions was analyzed by counting the number of respondents who scored the relevance per question higher, equal, and lower compared to the neutral score (i.e. a score of 3). The combination of the performance-score and relevance-score, provided insight into the performance of Strijp-S and where there is space for improvement. Furthermore, it provided insight into the relevance of the questions to measure campus performance at Strijp-S.

3.2 Method of design of the two ‘first prototypes of a SDF manual’

This paragraph describes the method of data collection, the method of data analysis, and the method of design.

3.2.1 Method of data collection

Data collection to develop a design can be done based on three different methods: (1) experts, (2) literature, and (3) by best practices. For this research, all three methods were used to develop two ‘first prototypes of a SDF manual’.

The researcher fulfilled the expert role by the gained experiences as a result of the exploratory research as described in Paragraph 3.1. Furthermore, literature (as described in Chapter 2) was used to evaluate the outcomes of the exploratory research. At last, the exploratory research as described in Paragraph 3.1 was used as best practice. This was the only best practice used as this was the only applicable best practice known by the researcher.

3.2.2 Method of data analysis

The data collected was analyzed on its theoretical- as well as methodological value for the two SDF manuals.

At first, the theoretical insights gained by the exploratory research were compared with literature in order to evaluate the relevance and saturation of the outcomes gained by the exploratory research. Furthermore, the researcher (as an expert) evaluated the (external) validity of the theoretical outcomes.

The methodological insights gained from the exploratory research were evaluated by the researcher (as an expert) on their applicability to search for a desirable future for a campus.

3.2.3 Method of design

Based on the insights gained from the data analysis, the researcher (as an expert) developed two 'first prototypes of a SDF manual'. The first SDF manual aims to make it possible for stakeholders at a campus to search for a desirable future for a campus yet to be established. The second SDF manual aims to make it possible for stakeholders at a campus to search –by a less time-intensive study– for a desirable future for a campus existing already.

Both SDF manuals were developed to allow the stakeholders of the SSC (e.g. Conclusion) to search for a desirable future for the SSC. However, the SDF manuals are assumed to be applicable to search for desirable futures for other campuses as well.

4 Results

This chapter describes the outcomes of the exploratory research executed at Strijp-S. Furthermore, the two 'first prototypes of a SDF manual' are presented.

4.1 Data collection exploratory research

In this paragraph, the results of the data collection as described in Paragraph 3.1 are provided.

4.1.1 Company selection

Of the total of ten companies contacted, 40% committed to participate in the research (i.e. a total of four participants). The participating companies represented four different branches: (1) consultancy, (2) ICT, (3) change management, and (4) education. This is a fair representation of the branches in which Conclusion operates.

4.1.2 Questionnaire part 1

All respondents responded to the first questionnaire and filled out all questions within five working days. Furthermore, all respondents provided at least three new aspects which they believed to be important to grow on a campus within the next five years. To see the total list of all aspects mentioned, see Appendix V: second list of aspects.

The texts the respondents provided about their vision/ambitions on participating at a campus were far shorter than the one to two pages A4 requested. However, together with the (new) aspects mentioned to be important, the researcher was able to set up a first document containing enough useful and interesting information to discuss during the first interview.

4.1.3 Questionnaire part 2

All respondents were able to select their seven most important aspects to grow on a campus within the next five years. Furthermore, they were all able to rank the aspects from 7 (most important) to 1 (least important).

4.1.4 Sequential interviewing

The sequential interviews took an average of 60 to 90 minutes. This was more than the planned 60 minutes. However, during the interviews the respondents were requested to fill out two questionnaires (i.e. the list of aspects, and the campus performance questions) which was different from the initial plan. This explains the difference in time planned and time needed.

4.1.5 Analysis interviews

Based on the outcomes of the four interviews a document about the desirable future for Strijp-S could be formulated. This document was sent back to all participants and feedback was asked. As none of the respondents responded, the document was assumed to reflect well the respondents' desirable future for Strijp-S (see Paragraph 3.1.2).

4.1.6 Questions campus performance measurement

All questions regarding the campus performance and the questions regarding the relevance of the questions were filled out by all respondents. However, question 17 and 18 (see Appendix IV: questionnaire campus performance (Vliek, 2011)) were filled out not to be applicable to one of the four respondents.

4.2 Data analysis exploratory research

This chapter describes the results of the exploratory research executed at Strijp-S.

4.2.1 List of important aspects

In total 16 aspects important to grow on a campus were selected (out of 29 aspects; see Appendix VII: Aspects mentioned to be important for growth). These 16 aspects (from most important to least

important) can be found in Table 4. Besides the ranking, Table 4 shows the number of times an aspect was mentioned as well.

Table 4: Aspects mentioned to be important to grow on a campus within the next five years, N=4

Aspects mentioned	# respondents
1. Knowledge sharing	4
2. Meeting points	3
3. External independent party to guide the campus	2
4. Different branches	2
5. Determination to grow and cooperate + Certainty of a place to work	2
6. Informal activities to stimulate cooperation	2
7. Thematic network events	2
8. Complementarity of organizations present	2
9. Presence of different organizational cultures	1
10. Presence of organizations aiming to invest in cooperatives + Shared meeting rooms	1
11. Ability to hire additional services + Minimum number of organizations present	1
12. Presence of parties actively stimulating cooperation + Presence of organizations in one and the same building	1

As can be seen, the aspects ‘knowledge sharing’ and ‘meeting points’ were mentioned by more than half of the respondents (i.e. >2 respondents). Furthermore, seven more aspects were selected by half of the respondents (i.e. 2 respondents). So, for this analysis nine of the 29 aspects (i.e. ≈ 30%) were mentioned to be important by ≥ 50% of the respondents.

4.2.2 Topics discussed during the sequential interviews

During the interviews, 13 discussion topics arose, see Table 5. No new topics were added after the second interview as no aspects for which a new topic should have been formulated were mentioned by the respondents. Therefore, this list of topics seems to be saturated for this research.

Table 5: Topics discussed during the interviews

Topics discussed during the interviews
1. Number of organizations at a campus
2. The type of organizations present at a campus
3. Branches present at a campus
4. The culture at (organizations at) a campus
5. Location of the organizations at a campus
6. The management of a campus
7. Presence of a platform at a campus
8. Funding at a campus
9. Spotting trends and developments
10. Knowledge sharing at a campus
11. Facilities at a campus
12. Events organized at a campus
13. Expected benefits of a well performing campus

The consensus, uncertainties, and disagreements discussed per topic can be found in Appendix VI: Topics discussed during the interviews. There was only one topic in which there was just consensus. This reflects the complexity of developing a desirable future for a campus. The one topic over which there was consensus was: ‘Expected benefits of a well performing campus’. The (expected) benefits can be found in Table 6.

Table 6: Expected benefits of a well performing campus

Expected benefits of a well performing campus
1. Stimulating to cooperate
2. Creating (more) customer value
3. Seeing trends and developments
4. Making use of facilities (relatively cheap)
5. Creating trust between participants on a campus
6. Starting new relationships (with people/organizations) and maintaining them

4.2.2 The performance measurement tool

In Table 7, a summary is provided of the campus performance-scores of Strijp-S and the relevance-scores to measure campus performance per question. For the original data, see Appendix VIII: scores questionnaire campus performance. There was made a distinction between a low score (i.e. more than half of all respondents graded the aspect lower than average), a medium score (i.e. there was an equal number of respondents grading below and above average and/or (all) respondents scored the aspects to be average), and a high score (i.e. more than half of all respondents graded the aspect higher than average).

Table 7: Scores of the performance measurement tool

	Performance-score	Relevance-score
1. Strijp-S is an attractive location to reside/settle	High	High
2. Strijp-S improves visibility / observability	Medium	Low
3. Strijp-S increases the ability of my firm to maintain and/or increase its knowledge base	low	Medium
4. Strijp-S offers the utilities, infrastructure and facilities & services my firm needs to perform efficiently	High	High
5. Strijp-S has a clear strategy and focus in developing the Campus	Low	Medium
6. Strijp-S enables my firm to achieve higher project returns?	Low	Low
7. Strijp-S improves the ability of my firm to acquire resources to support development projects	Medium	High
8. My firm invests its resources in products or projects of other firms located at the campus	Low	Low
9. Strijp-S enables my firm to improve its innovativeness	Low	Low
10. Strijp-S improves my firms' ability to set market standards	Low	Low
11. Strijp-S improves my firms' ability to reduce development cycle times	Low	Low
12. My firm has performed/performs projects in cooperation with the local/regional knowledge institute and will do so in the future	Medium	Medium

Taking a look at Table 7, it seems that, from the perspective of the four respondents, only half of the questions as proposed by Vliek (2011) were argued to be of medium to high relevance to measure the performance of a campus. Combining the aspects scoring medium to high on relevance with the aspects scoring low to medium on campus performance, implies that there seems to be room for improvement at Strijp-S regarding the following aspects:

- 'Strijp-S increases the ability of my firm to maintain and/or increase its knowledge base' (3);
- 'Strijp-S has a clear strategy and focus in developing the Campus' (5);
- 'Strijp-S improves the ability of my firm to acquire resources to support development projects' (7).

4.3 Development of the two ‘first prototypes of a SDF manual’

This paragraph describes the development of two ‘first prototypes of a SDF manual’.

4.3.1 Results data collection

The researcher executed the exploratory research as described in Paragraph 3.1. Thereby the researcher gained the experience needed to take an expert role in the development of two ‘first prototypes of a SDF manual’. The literature used for this research was already described in Chapter 2. The outcomes from the best practices used as input for the design can be found in paragraph 4.2.

4.3.2 Results data analysis

The results of the data analysis are divided in two subjects: (1) theoretical aspects, and (2) methodological aspects.

Theoretical aspects

The analysis of the theoretical aspects focused on the outcomes gathered by the exploratory research and evaluated whether the outcomes are useful for the design. the remaining of this paragraph will follow the headings as presented in the data analysis of the exploratory research (see Paragraph 4.2).

List of important aspects

The list of important aspects did not provide any extra insights in addition to the interviews as all aspects mentioned were discussed during the interviews as well. However, even though no new insights were gained, the ranking of the list could provide valuable insights into the priority (of execution) of the topics discussed during the interviews.

Topics discussed as a result of the sequential interviews

The interviews executed in this research provided a clear and apparently saturated list of 13 topics to discuss while searching for a desirable future for a campus. The 13 topics provided enough information to formulate a desirable future for Strijp-S. Comparing the 13 topics with the aspects mentioned in literature regarding cooperation structures as discussed Chapter 2, three main topics seem to be missing. These are: (1) the legal structure of (participants at) a campus (De Man, 2006), (2) the strategy of the campus (De Man, 2006), and (3) the role of (future) participants at a campus (Kothandaraman & Wilson, 2001; Van Eijnatten & Putnik, 2005).

Furthermore, the researcher would suggest to replace the topic ‘funding at a campus’ by ‘supporting organizations at a campus’ as supporting organizations at a campus includes more than just funding (e.g. recruitment activities, administrative activities)

Last, the researcher would suggest to exclude topic 9: ‘spotting trends and developments’ as this is seen as a potential benefit.

Concluding, the researcher would suggest to –at least– discuss the 15 topics as presented in Table 8 while executing a research at the desirable future for a campus.

Table 8: Topics to discuss during interviews

Topics to discussed during the interviews
1. Number of organizations at a campus
2. The type of organizations present at a campus
3. Branches present at a campus
4. The culture at (organizations at) a campus
5. Location of the organizations at a campus
6. The management of a campus
7. Presence of a platform at a campus
8. supporting organizations at a campus
9. Knowledge sharing at a campus
10. Facilities at a campus
11. Events organized at a campus
12. The legal structure of (participants at a) a campus
13. The strategy of the campus
14. The role of (future) participants at a campus
15. Expected benefits of a well performing campus

Outcomes of the performance measurement tool

The outcomes of the performance measurement of Strijp-S showed that 3 aspects provided room for improvement and only half of the questions were evaluated to be relevant when aiming to evaluate campus performance, see Table 7. However, as the (relevance of the) aspects were evaluated by just four respondents and the (questions of the) tool proposed by Vliek (2011) have not been validated by other research, the researcher concludes no (external) valid conclusion can be drawn on these results.

Regarding the selected questions (see Appendix IV: questionnaire campus performance (Vliek, 2011)) it seemed that, even though two questions were evaluated to be not applicable by one on the respondents, the selected questions were applicable in this context. Therefore, when using this tool to search for a desirable future for a campus from the perspective of the firms located at a campus, the same set of questions is recommended.

Methodological aspects

The analysis of the methodological aspects zooms in on the Delphi method and performance measurement tool used in the exploratory research.

Delphi method

Literature suggests to include 10-18 respondents in a Delphi study (Okoli & Pawlowski, 2004). However, as this was an exploratory research, a Delphi study was executed in which only four respondents were included. This provided enough insight into the advantages and disadvantages of the Delphi method to search for a desirable future for a campus, see Table 9.

Table 9: Advantages and disadvantages of the Delphi method

Advantages	Disadvantages
Anonymity	Aim to find consensus
Leaves room for unexpected (new) insights	Takes a lot of time
Provides rich information	

Anonymity is an important advantage of the Delphi method as trust is needed to make people speak openly about the desirable future for a campus. Questions like ‘does your organization help other organizations’ and ‘do you think knowledge sharing is important for the campus performance’ are typical questions by which respondents could feel the need to provide ‘politically correct’ answers when anonymity is not guaranteed.

Furthermore, the flexibility of the method to include new findings is highly valuable. Especially as less is known yet about how to find the desirable future for a campus, it is recommended to stay open for new

insights. The iterative character of the Delphi method leaves room for unexpected new insights which is a big advantage.

Last, the Delphi method allows to gather rich information as it makes respondents reflect upon their first opinion by evaluating upon the opinion of others. Furthermore, it provided respondents with (new) information they would not have thought of themselves which stimulated new thoughts and input.

A disadvantage of the Delphi study is the aim to find consensus. The researcher concluded that for the completeness of a study about a desirable future for a campus, the non-consensus aspects (i.e. consent and disagreement) should be taken into account as well. However, it should be mentioned that, once the non-consensus aspects will be taken into account, a pragmatic next step is needed in order to make decisions on how to develop the campus.

Furthermore, executing a Delphi study takes quite some time as it is a qualitative research method. However, as less is known about how a campus should be developed and the researcher assumes each campus has different missions/visions/demands and therefore a different desirable future, the researcher believes a qualitative research method is required.

Comparing the (dis)advantages of the Delphi method made the researcher conclude the Delphi method to be a valuable method to search for a desirable future for a campus.

Performance measurement tool

The questions of the performance measurement tool have not been validated by (extensive) research yet. The researcher expects the relevance of the questions to measure campus performance highly depends on the type of (participants operating at the) campus. Therefore, the researcher believes the tool proposed by Vliek (2011) only creates added value when the relevance is checked per question to measure campus performance for each single campus. By adding the question regarding the relevance, the researcher believes the tool to be of high value to decide on what direction a campus, already existing, should go.

The seven-point scale to evaluate the campus performance and the five-point scale to evaluate the relevance per question seemed to allow the respondents to provide their opinion. However, the researcher believes the seven-point scale to be too detailed to measure the campus performance as the level of abstraction of each question is rather high. Therefore, the researcher would suggest using a five-point scale to evaluate the current performance. Furthermore, this contributes to the consistency of using a five-point scale.

4.4 Two 'first prototypes of a SDF manual'

Based on the findings presented in Paragraph 4.3.2, this paragraph provides two 'first prototypes of a SDF manual'. The first SDF manual aims to make it possible for stakeholders at a campus to search for a desirable future for a campus yet to be established. The second SDF manual aims to make it possible for stakeholders at a campus to search –by a less time-intensive study– for a desirable future for a campus existing already.

Both SDF manuals were developed to allow the stakeholders of the SSC (e.g. Conclusion) to search for a desirable future for the SSC. However, the SDF manuals are assumed to be applicable to search for desirable futures for other campuses as well.

At the end of the description of both SDF manuals, a visualization of the process of the execution of both SDF manuals is provided, see Figure 2.

4.4.1 First prototype of SDF manual 1

The first prototype of SDF manual 1 contains four steps: (1) context selection, (2) selection participants, (3) data collection, and (4) follow up. In the next paragraphs, the four steps of SDF manual 1 are

elaborated on. After these steps, an estimation of the duration and costs to execute SDF manual 1 are provided.

Step 1: selection context

At first, the research context should be defined. To decrease the complexity, it is recommended to select a context in which just a few organizations are involved. Furthermore, preferable the biggest (potential) parties at a campus should be selected as the bigger ones role on a campus, the bigger ones influence on the shape of the campus. Later (once the campus already exists), a study including more (potential) participants could be executed.

For Conclusion, this would mean they should select a context in which Accenture, APG, and they themselves are involved (see context number 3 Appendix IX: Potential research contexts Conclusion).

Step 2: selection participants

Based on the selected research context, the respondents for the execution of the study should be selected. Preferably the respondents reflect the entire population of the context selected well and have visions/ambitions/demands regarding the desirable future. Furthermore, involvement of the management is highly important as they are required for the execution of the outcomes. In the case of Conclusion, the researcher suggests to select 6 respondents per organization. A list of potential respondents to include in the study at the SSC is presented in Table 10.

Table 10: Potential experts to involve in the study at the SSC

Functions
General manager Conclusion Heerlen, APG Heerlen, Accenture Heerlen
Commercial manager Conclusion Heerlen, APG Heerlen, Accenture Heerlen
Innovation manager Conclusion Heerlen, APG Heerlen, Accenture Heerlen
HR manager Conclusion Heerlen, APG Heerlen, Accenture Heerlen
'General employees' Conclusion Heerlen, APG Heerlen, Accenture Heerlen (two per organization)

The (potential) respondents should be informed about the time span of the study, the amount of time it will take to participate, and what will happen with the results. Furthermore the incentives for participation should be discussed. A potential incentive for participating in the study at the SSC is to have a voice in the development of the SSC (which will be their own working field).

Step 3: data collection

The data to analyze will be gathered by: (1) sequential semi-structured interviews, and (2) questionnaires. How the data collection should be executed is described in the next two paragraphs.

Sequential semi-structured interviews

The sequential semi-structured should stimulate the respondents to think about the desirable future for the campus and reflect upon the ideas of other respondents in an anonymous manner. To increase the feeling of trust, each respondents should be asked to read and sign the informed consent at the beginning of the interview, see Appendix X: Informed Consent.

The topics for the first semi-structured interview can be found in Table 8. The first respondent should be asked to provide his/her desirable future (e.g. in terms of his/her mission/vision) over the subjects as mentioned in Table 8. The outcomes of the first interview should be used as input for the next interview. The second respondent should be asked to reflect upon the desirable future provided by the previous respondent and add his/her own. Based on these two interviews, the researcher should make a document which summarizes the aspects mentioned by the two respondents in terms of consensus, consent, and disagreement. This second document will be discussed with the next respondent, after which the content of the document is adjusted. This last step should be repeated until all respondents have been interviewed.

At the end of each interview, the respondent should be asked whether he/she missed topics which should be added. Topics missed by the respondents should be added to the document and taken to the next respondents from that moment on.

Once all respondents have been interviewed, a final document should be formulated. This document should be used as input for the follow up (see step 4).

Questionnaire

It is recommended to complement the qualitative data gained by the interviews with quantitative data. Therefore, a questionnaire, including (potential) important aspects to grow on a campus, should be developed. The aspects to include in the questionnaire should be derived from the outcomes of the interviews. The questionnaire should request the respondents to select the seven most important aspects for growing on a campus within the next five years and rank these aspects from 7 (most important) to 1 (least important). An example of aspects can be found in Table 4.

Based on the responses, a ranked list of important aspects should be made. The ranking of this list should be based on the number of times an aspect was mentioned and the mode as a descriptive statistic. So, the more an aspect was mentioned and the higher the mode, the higher the ranking in the list of important aspects. The ranked list of aspects can be used as input for the follow up (see step 4).

Preferably, the questionnaire should be sent to all people in the selected context as the bigger the response rate and the better the respondents reflect the total population, the higher the validity of the results. For the study at the SSC this should mean all (future) employees within APG, Accenture, and Conclusion involved in projects at the campus should receive the questionnaire.

Step 4: follow up

As follow up on the findings gained by the interviews, a meeting should be executed. During this meeting the anonymity of the interviewees should be ensured (i.e. it will not be discussed who said what during the interviews unless this is mentioned by the respondents themselves).

During the meeting, only general management should be present. So, for Conclusion this would mean the general managers of: (1) Conclusion Heerlen, (2) APG Heerlen, and (3) Accenture Heerlen. Merely the presence of general management will decrease the complexity of the meeting and increases the probability of decision making and follow up.

The meeting should have three goals: (1) discussing the outcomes of the study, (2) setting priorities on what to execute, and (3) allocating resources for the execution. The meeting should be attended by a facilitator who makes sure everyone's view is getting heard (as well of those who are not present at the meeting).

In order to realize goal one of the meeting, all topics including the different perspectives (e.g. the aspects over which there was disagreement) should be elaborated.

After all aspects have been discussed, priorities should be given to the execution of the aspects discussed. While setting priorities, management should take into account the outcomes of the questionnaire

After management has prioritized the aspects, resources should be allocated and clear agreements regarding the follow up should be made.

Planning

Some parts of SDF manual 1 can be executed parallel while some should be executed sequential. Executing whole SDF manual 1 as described above (including 18 respondents) is expected to have a duration of around five months, see Appendix XI: Estimated planning study SSC. In order to stay in control, the process should be continuously monitored and adapted along the road of execution.

The duration time of five months takes into account the time spend on waiting (e.g. for the (potential) respondents to respond). Therefore, an estimation of the expected time required to execute this study is provided as well, see Appendix XII: Estimated time it costs to execute SDF manual 1. The time it costs to execute SDF manual 1 at the SSC is estimated to be around 200 hours. The monetary costs depend on the party executing the study (e.g. a student or consultant).

4.4.2 First prototype of SDF manual 2

Besides the applicability of the first prototype of SDF Manual 1 to search for a desirable future for a campus yet to be established, the manual can be used as well to search for a desirable future for a campus existing already. However, as execution of SDF manual 1 has a rather long duration and quite high costs, a second SDF manual was developed. This first prototype of SDF manual 2 allows stakeholders of a campus to search –by a less time-intensive study– for a desirable future for a campus existing already. It is recommended to annually search for a desirable future for a campus as a result of the dynamic, fast changing, and turbulent environments campuses operate in.

The first prototype of SDF manual 2 contains three steps: (1) selection participants, (2) iterative question selection, and (3) follow up. In the next paragraphs the three steps of SDF manual 2 are elaborated on.

Step 1: selection participants

Preferably all participants of the campus should participate in the study. It is valuable to ask some demographics (e.g. age, function, gender) so the representation of the campus population (and thereby the validity) can be analyzed. Anonymity should be guaranteed to all respondents.

Step 2: iterative question selection

The first set of questions of SDF manual 2 are a selection of questions from the ‘campus performance measurement tool’ developed by Vliek (2011), see Appendix IV: questionnaire campus performance (Vliek, 2011). Besides the selected questions, the questions should be complemented by performance measurement questions derived from the expected benefits of a well performing campus (which are a result from the sequential interviews)³.

Based on the selected questions, the respondents should be requested to evaluate the campus performance based on a five-point scale (i.e. 1: do not agree to 5: do agree). Furthermore, the respondents should evaluate the relevance of each question to measure campus performance by a five-point scale again. Questions evaluated not to be relevant to measure the campus performance (i.e. having an average score of < 3) should be excluded from the questionnaire of next year.

Besides that, the respondents should be allowed to add aspects they believe to be important for measuring campus performance. The five aspects on which the level of consensus is highest, should be added to the questionnaire of next year. This way the tool stays up to date with a limited number of questions for a specific campus.

Step 3: follow up

The questions on which the campus performance was evaluated to be medium to low (i.e. an average score of ≤ 3) and the average relevance was evaluated to be medium to high (i.e. an average score of ≥ 3) provide room for improvement. It is recommended to improve these aspects in order to develop towards a desirable future for the campus.

It is recommended to provide the participants with feedback based on the outcomes of the questionnaire and communicate the actions that will be taken. The results of the actions taken should be communicated as well (e.g. annually together with the new questionnaire). This is important for the campus participants’ commitment to participate in the study annually. Commitment is important as active participation (e.g. by suggesting aspects upon which campus performance could be measured)

³ This step is only applicably when SDF manual 1 has been executed in the past already.

increases the value of the study. Furthermore, commitment is important as the higher the response rate, the higher the potential validity of the outcomes.

4.4.3 Visualisation execution process of the two ‘first prototypes of a SDF manual’.

Based on the descriptions of the two ‘first prototypes of a SDF manual’ (described in Paragraph 4.4.1 and 4.4.2) a visualization of the execution process of both SDF manuals was made, see Figure 2. The blue part of the visualization reflects the process of executing SDF manual 1. The yellow part of the visualization reflects the process of executing SDF manual 2. As can be seen, SDF manual 2 logically follows SDF manual 1.

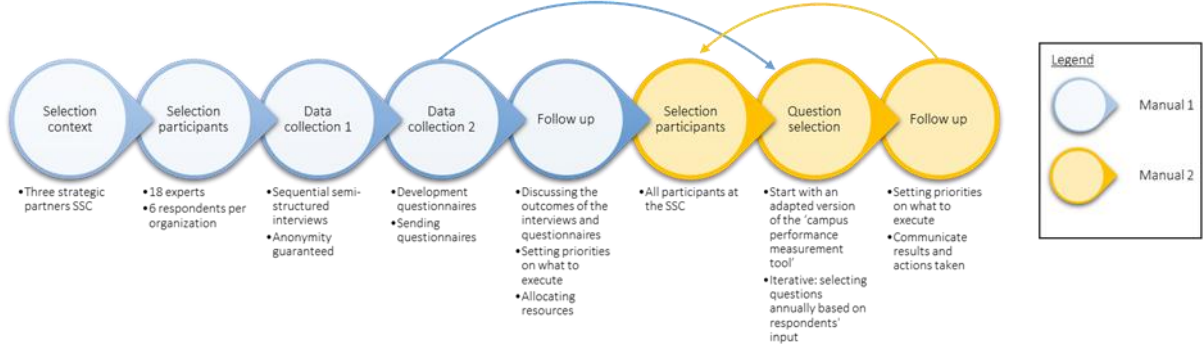


Figure 2: Visualization process execution SDF manual 1 and 2.

5 Conclusion and discussion

This chapter zooms in and reflects upon the ability to meet the goals in the research (i.e. (1) to execute an exploratory research about a desirable future for Strijp-S, and (2) to develop a first prototype of a SDF manual based on the findings of the exploratory research, to be used in other situations such as the SSC"). At the end, the ability to answer the management question (i.e. *"how to develop the SSC in order to create synergy at the campus?"*) will be evaluated on.

5.1 Exploratory research

The Delphi method combined with the campus performance measurement tool provided the researcher with enough valuable input to describe a desirable future for Strijp-S. Furthermore, the exploratory research provided the researcher with valuable theoretical- and methodological insights to reflect upon. By executing the research, the researcher got insight in what it takes to search for a desirable future for a campus. Based on the theoretical, methodological, and practical insights, the researcher was able to fulfill the role of expert in the development of the SDF manuals.

5.2 The two 'first prototypes of a SDF manual'

The two 'first prototypes of a SDF manual', allow stakeholders of any campus to search for a desirable future for any campus, themselves. However, for the development of the SDF manuals, limited information was available (e.g. literature concerning cooperation structures, one best practice, and the researcher as an expert). This made the developed SDF manuals to be only a first prototype with questionable validity. However, since this is (one of) the first attempt(s) to find a desirable future for a campus, the SDF manuals developed are assumed to be of high value for both practice (e.g. (stakeholders of) campuses) as well a theory (e.g. for future research).

5.3 How to develop the SSC

The management of Conclusion was wondering how to develop the SSC in order to create synergy. This research did not provide the management with an answer on how the SSC should be developed. Despite, Conclusion was provided with two 'first prototypes of a SDF manual' which allow them to search for the desirable future for the SSC, themselves. As the researcher assumes each campus has different missions/visions/demands and therefore a different desirable future, the manuals are expected to be a useful tool. Furthermore, the SDF manuals developed provide the stakeholders of a campus with the ability to continuously monitor the desirable future in order to keep on developing new directions and face new opportunities. The desirable future is assumed to provide the insights needed to develop a campus at which synergy takes place. Therefore, the researcher believes the developed manuals provide a valuable answer to the management question.

6 Reflection theory and method

Besides the theoretical- and methodological reflections provided in Paragraph 4.3.2 and chapter 5, this chapter will reflect on a number on additional theoretical- and methodological aspects.

6.1 There is not one single desirable future

As there is not one correct way of developing a campus in order to create synergy and gain competitive advantage, there are more 'desirable futures' for a campus. In order to be able to make more reliable estimations about a desirable future for a campus, it is recommend to search for desirable futures annually. This fits the perspective of Van Eijnatten and Keizer (2002) as described in their 'holonic decision making' process.

6.2 Delphi method: anonymity

The anonymity of the Delphi method was evaluated to be a valuable asset to search for a desirable future for a campus. The researcher is aware that organizing a meeting (as proposed in SDF manual 1) will take away this anonymity. However, as the strategic partners should realize the campus together, the researcher recommends not to postpone this confrontation. Having the meeting together with a good facilitator (which realizes a feeling of trust and guarantees anonymity of the interviewees) can facilitate the basis for the development of a campus.

6.3 Delphi method: the Delphi panel

Literature recommends involving around 10-18 experts on a Delphi panel. However, in this study only four experts were included. Furthermore, the experts selected to participate in this research were selected by convenience sampling (i.e. the respondents were selected based on their availability and branch they operated in). Therefore, the validity of the found visions/ambitions/demands is questionable. Because of the exploratory character, validity was not the main issue. However, for further research (e.g. at the Smart Services Campus) it is recommended to do include 10-18 experts who together represent the population of the context selected.

7 Recommendations

This chapter zooms in on some important aspects the researcher believes Conclusion should take into account which were not mentioned in the research yet.

7.1 Feel the responsibility

As was mentioned in this research, some parties within a network have bigger roles than others. The bigger one's role in the network, the more its influence on the shape of the network. As Accenture, APG, and Conclusion are the three strategic partners of the SSC for now, the researcher would recommend to take responsibility in the establishment of the SSC, and later the development of the SSC as well.

7.2 Perform the proposed study as soon as possible

As there are no formal activities going on yet but the three strategic partners are known already, this seems to be the ideal moment to think about how to develop the campus in order to create synergy. Therefore, the researcher would recommend Conclusion to search for a desirable future for the SSC using SDF manual 1, as soon as possible. The earlier this study is executed, the easier it will be to establish a campus which is in line with a desirable future for the SSC.

7.3 Let a trusted third party execute the research

To increase the feeling of trust between the three strategic partners of the SSC, it is recommended to execute the study (as proposed in SDF manual 1) by a trusted third party willing to execute a study as proposed in SDF manual 1. Therefore, the researcher would recommend Conclusion, together with Accenture and APG, to decide to let the study be executed by a university (student).

8 Suggestions for further research

The Paragraphs 5.1 and 5.2 already provided a variety of suggestions for further research. This chapter will elaborate on seven more suggestions for further research not been discussed yet.

8.1 Ability to include different management styles

From the exploratory research executed at Strijp-S, it became clear a lot of disagreement was present regarding the type of management style needed in order to 'guide' the campus. As there were big contradictions in the type of management styles wished for, the researcher suggests to do research about the applicability to include different management styles at a campus as is the case at the collaborative networked organization.

8.2 General list of important aspects

As was discussed already, the desirable future presented in this research cannot be stated to be valid for all campuses. It could be interesting to do research at aspects to be important for growth at a campus over different campuses. Analyzing aspects to be important over different campuses could contribute to some sort of 'general important aspects list' for campus development.

8.3 The 'campus performance measurement tool'

As was already mentioned, the selected questions of the campus performance measurement tool (Vliek, 2011) should be validated by further research. This research did only use a selection of questions of the performance measurement tool to search for a desirable future for a campus. However, the campus performance measurement tool includes more potentially relevant questions to search for a desirable future for a campus (from different perspectives). Therefore, it could be valuable to do research at the relevance of all questions of the performance measurement tool and analyze the validity of these questions to search for a desirable future.

8.4 Applicability developed manuals in other contexts

The researcher expects the proposed manuals to be applicable to search for a desirable future in other contexts as well (e.g. alliances, networks, organizations consisting of a holding structure). Further research could reveal the applicability of the SDF manuals in other contexts.

8.5 Influence of the location of the campus on its internal culture

During the exploratory research at Strijp-S it became clear there was disagreement about the influence of the location of a campus on the culture present at a campus. Therefore, executing a research at the influence of the location of the campus on the culture present at the campus is interesting.

8.6 Operating in the Euregio

The location of the SSC provides the (participants of the) campus with the ability to operate internationally as well (e.g. in the Euregio). As this is a whole new experience for Conclusion, it is recommended to execute a research at the abilities to operate in the Euregio. Besides this research for Conclusion as an entity, this is also an interesting research subject for the campus as a whole. Potentially, Conclusion and the campus as a whole could learn from Accenture as they have a lot of experiences operating internationally.

8.7 Finances and infrastructure

This research did not take into account the more basic principles like who is going to finance the (development of) a campus and who will realize aspects regarding infrastructure. Those aspects are seen as a step previous to search for a desirable future for a campus. Therefore, these aspects were left out of consideration in this research. However, as finances and infrastructure are important aspects towards the realization of a campus, research regarding these subjects should be done when aiming to develop a campus.

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The appendices of this report are
confidential and will not be made public.

Relationship research 1 and 2

The original management question of Conclusion was: *“How to develop the Smart Services Campus (SSC) in Heerlen in order to create value for all participants (including Conclusion itself)”*. However, as the SSC was not open for research yet, a comparable research was executed at Conclusion internally. The management question for the research internally at Conclusion was: *“How to increase the internal level of cooperation at Conclusion in order to create value (i.e. revenue and opportunities)”*⁴. It seemed that the internal level of cooperation at Conclusion was lower than desired for. The researcher assumes that value at a campus can only be created when participating organizations are capable to cooperate (internally). Therefore, the second management question was an important first step towards Conclusion’s wish to create value at the SSC.

The outcomes of research 1 provided the researcher with insights potentially relevant to create value at a campus context (e.g. the SSC) as well. Supported by the knowledge gained by research 1, the researcher decided to execute a second research. This second research –executed at Strijp-S– had an exploratory character and enabled the researcher to develop a first prototype of a SDF manual which enables stakeholder of a campus to search for a desirable future for a campus⁵. Knowing the desirable future should help stakeholders of a campus (e.g. Conclusion) to develop a campus (e.g. the SSC) in such a way that synergy takes place and value is created.

The goal of both researches was to find a solution contributing to synergy and thereby value creation. Furthermore, both researches focused on (some important aspect(s) of) ‘open innovation’ in order to create synergy. In research 1, the research context was a ‘holding structure’. In this context, cooperation (as an important aspect of open innovation) was zoomed into. The context of research 2 was a context in which organizations voluntary located themselves at the same campus. In research context two, no specific aspects of ‘open innovation’ were zoomed into. Examples of aspects discussed regarding ‘open innovation’ in context two are: knowledge sharing, cooperating, and networking.

The tendency towards open innovation seemed to be different in both contexts. The people at Conclusion for example often felt afraid not to get something in return for (internal) cooperation. The people at the campus seemed to be more trustworthy to get something in return for open innovation. The people interviewed at the campus all seemed to have the believe that open innovation was done based on the idea to create shared value which made everyone better at the end.

On the one hand this difference in tendency towards open innovation is remarkable as the people working at the operating companies of Conclusion all work for the same holding and therefore their shared value should be as important (or even more important) compared to the value gained for their own operating company. On the other hand, the difference could be explained by the type of context; in research context one, the organizations were ‘forced’ to cooperate in some way by the holding structure, whereas in research context two, the organizations voluntary located themselves at the campus (partly) with the aim to create synergy by open innovation.

In the two contexts, there is a difference in the ability to pave the way towards synergy. In research context one, the organizations can be forced up to some level to act a certain way. However, in context two, there is no structure present for (formal) guidance. This difference is reflected in the design (approach) of both researches. In research one, management was highly involved in the design (approach) as they are expected to implement and monitor the interventions and thereby stimulate the cooperative behavior of a group of people resulting in synergy (i.e. a ‘top-down’ approach). In research context two, a more ‘bottom-up’ design (approach) was searched for. This was found in the delphi method. As a result, two ‘first prototypes of a SDF manual’ were developed. These SDF manuals allow stakeholders of a campus to search for a desirable future for a campus by evaluating the

⁴ In the remaining of this document, this research is referred to as ‘research 1’.

⁵ In the remaining of this document, this research is referred to as ‘research 2’.

visions/ambitions/demands of the (future) participants on the campus. Realizing (aspects of) the desirable future is expected to result in synergy and thereby value.

The researcher believes the SDF manuals could be also of value in research context one. This way, the desirable future for the operating companies can be used in order to create synergy for Conclusion as organization. This is different from the 'bottom-up' approach in which a somehow 'predefined desirable future' (i.e. (how to) increase the level of cooperation) was provided by management. The bottom-up approach is expected to increase the intrinsic motivation of the employees at Conclusion to (together) create synergy (and thereby value). This approach fits the current and desired culture at Conclusion because of the (desire for a) low hierarchy.

Concluding, it can be stated that both researches complemented each other. Furthermore, both researches added to the literature by providing theoretical- as well as practical insights on how to create synergy in different contexts (i.e. a campus context as well as a 'holding structure' context). As the need to create synergy is vital for survival (in a lot of different contexts), both researches are evaluated to be of high value for organizations nowadays.