

## The Inception Phase Approach

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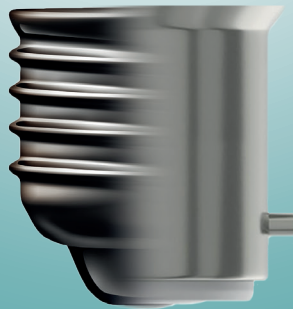
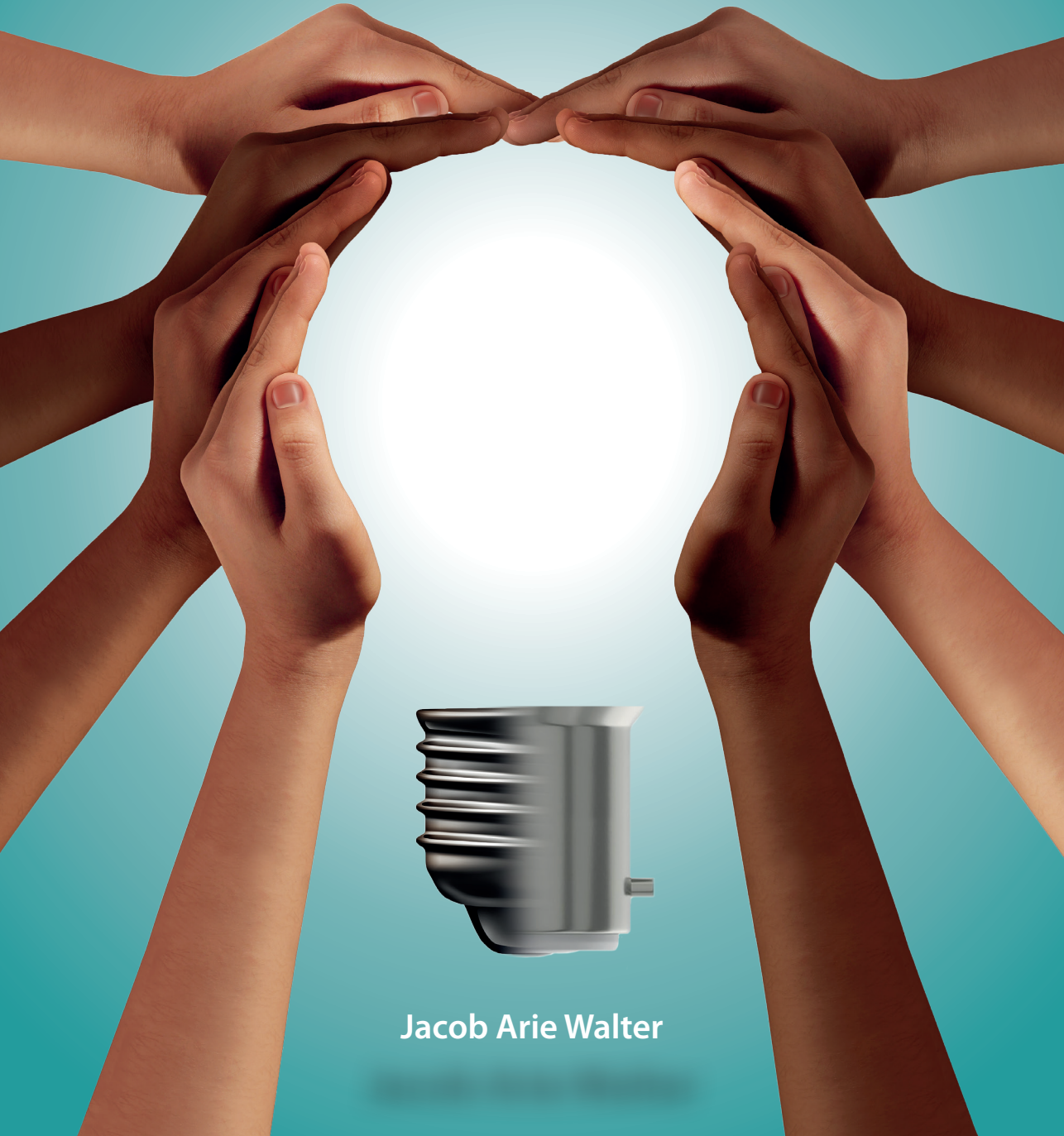
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# The Inception Phase Approach

From a multi-party opportunity to a viable multi-partner initiative



Jacob Arie Walter



# **The Inception Phase Approach**

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Het onderzoek of ontwerp dat in dit proefontwerp wordt beschreven is uitgevoerd in overeenstemming met de TU/e Gedragscode Wetenschapsbeoefening.

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# **The Inception Phase Approach**

**From a multi-party opportunity to a viable multi-partner initiative**

**proefschrift**

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*Het onderzoek of ontwerp dat in dit proefontwerp wordt beschreven is uitgevoerd in overeenstemming met de TU/e Gedragscode Wetenschapsbeoefening.*

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Designing and managing initiatives or projects asks for a professional approach. It concerns a profession that helps to create the future of organizations. The basis of this professionalism is credibility in the construction of these processes. This means competences in connecting people with ideas and designs. Sometimes, it also means postponement of decision-making or strict norms, being tolerant to parties rather than butting 'heads against each other', sticking to a tough schedule or advancing to a step-by-step approach; these approaches shape the accomplishments of our profession. While working, I became a bit jealous of doctors, engineers and lawyers. They use an evidence-based knowledge base, where my colleagues and I have 'best practices', convincing narratives and gut feeling. In the meantime, our trade-union also started some scientific research mostly focussing on the competences of the project leader. However, our society and my profession also need organizational theory about how to direct a multi-party initiative (MPI) now that most of the new initiatives are executed by more parties and many of these budding collaborations suffer. So, hop, let's go for a dissertation!

Starting enthusiastically and naively, I really must thank my promoters Mathieu Weggeman and Myriam Clodt for applying the right balance between letting me find my way and making me realistic about scientific work. Coming from a world where an important motto sounds like 'progress takes shape acting roughly' ('doe meer met ongeveer'), they demonstrated the importance of 'to know is by measuring and not by guessing' ('meten is weten, gissen is missen'). Mathieu Weggeman showed me the right way to build up a theory, reasoning in a scientific format ('concise, Jaap!'). Myriam Clodt supported me in relatively tough issues for a Ph.D. student from outside the university, like statistics, sampling and handling qualitative and quantitative research differences. I am very grateful for their close reading of my drafts, their patience especially in the beginning, their critiques and suggestions. The review sessions concerning my drafts proved useful, enjoyable and accelerating. No way would I have succeeded without them!

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numerous and pleasant discussions about the development of an idea, an important issue at the start of initiatives. However, we took a side approach: we tried to answer the question 'What is a good idea for an MPI?'. The actual question became 'How can we enhance the start of an MPI?'. The turn to a How-question in the dissertation was also a major decision. Still, no regrets, we possess a nice booklet with all the aspects of an idea and some passages in the dissertation represent the results of these meetings. Also, I like to express my gratitude to Robbin Pennings who helped me with collection of the data of the researched multi-party initiatives.

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**CHAPTER**

**1**

**INTRODUCTION**



# 1 Introduction

## 1.1 Dissertation introduction

This dissertation is about organizing emerging collaboration among independent parties focussed on realising a product or service opportunity. Parties understand that they need each other and that their emerging multi-party collaboration asks for typical tools. This dissertation elaborates several issues to help these parties to develop a viable initiative.

In Chapter One the challenge in the field is described with a first set of encountered problems. The typical questions in this context are explored and an outline for the research explained.

Chapter Two tells us what we already know about the issue. This exploration of literature pre-selects our lenses: product development theory, inter-organizational learning theory and cross border theory. Key-areas are explored as problems with coordination and cooperation, the outcome of this early phase, bias in decision makers and suggestions for interventions. But also, evidence-based insights and methods are discovered, that proved to be useful.

In Chapter Three the product of the dissertation is formulated: an arrangement of interventions that enhance the viability of a multi-party innovation initiative in the front-end phase. This opts for four partial deliverables:

- *a description of the characteristics of the front-end phase (the context)*
- *a description of the viability of a MPI*
- *an arrangement of direct and indirect interventions for the front-end phase that boost the enrichment from multi-party to multi-partner situation*
- *evidence of the intended contribution of the sets of interventions of deliverable 3*

The choice is made for the design science methodology that focusses on learning about the why and the how of solving field problems by producing design propositions. Based on the problems to be solved a set of requirements is stated that the design proposition should meet. The last part of this chapter about methodology describes the data collection by studying participants in ten multi-party initiatives, explorative and expert interviews, a survey, workshops and second literature studies.

Chapter Four elaborates on the collected data. The triangulated data show the existence of the Inception phase with viability components as outcomes: Support of partner organizations, Idea description, Fit with objectives, Cooperation, Coordination and Partitioning of work in next phase(s) and Specialized roles for integration in parent organizations. Many interventions come forward from the data. The data prompted to do extra literature studies to trust, use of organizations' knowledge, the output of the Inception phase and the job of persons responsible for the Inception phase.

In Chapter Five the design is proposed: definition, description and objectives of the Inception phase as part of the total development process, the description and



measurement of the outcome, the Intervention Box for categorization of the interventions in action/contribution combinations, the interventions and the job description for persons involved in the management of the Inception phase.

The test of the design is the topic of Chapter Six. In an alpha-test in two rounds of resp. seven and five experts the essentials and the application of the design is tested. A beta-test confirmed the value of the design but added a precondition: people responsible for the Inception phase need to be introduced to the Inception Phase Approach in order to apply it well.

Finally, Chapter Seven summarizes the findings and argues that the product development theory is becoming a bit less fuzzy by the discovery of the Inception Phase Approach to produce a viable multi-partner initiative.

## 1.2 Challenge introduction

This thesis tries to develop an action repertoire for the very beginning of the development of ideas for products and services in a multi-party setting. This perspective is based on the view that the idea to be developed and the construction of the development process are adapted and improved in an enrichment process before fixed in decisions. In the domain of product and service development this early stage is known as the '(fuzzy) front end' stated by Smith and Reinertsen (1992)<sup>1</sup> and is mostly followed by development and commercialization phases. Khurana and Rosenthal (1998) state that the front end is the process during which ideas are born and further developed, ending with the go/no-go decision for the start of a project. Unlike their research within companies, this thesis has a focus on the front end of multi-party initiatives.

Unfortunately, many multi-party initiatives perish. De Man and Duysters (2002, 2007, 2011) found that at least 50% of such starting collaborations fail. Kijkuit and Van de Ende (2007) describe the front end even as 'the Valley of Death' meaning that a lot of initiatives stagger in the phase between basic research and commercial development.

To help to diminish this problem, the intention is to develop a framework for actions and interventions to enhance the successful start of these initiatives, before they turn into a setting as project, alliance or joint venture. Therefore, the research focuses on *what* is a viable outcome of the start of an initiative, *which* activities/interventions contribute to a viable outcome and *why* these activities/interventions contribute.

There are several reasons why multi-party initiatives become more and more relevant. First, in today's world the lifecycle of products and services is becoming shorter (Cooper and Sommer, 2016, Chesbrough, 2003) so the need for new initiatives grows. Secondly, the development of backbones, platforms or knowledge for products and services

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<sup>1</sup> According to Koen (2005): 'fuzzy' describes how chaotic, unpredictable and uncertain this part of the process can be. Kim and Willemson (2002, pag. 31) define FFE as: 'when an opportunity is first considered worthy of further ideation, exploration, assessment and ends when a firm decides to invest in the idea.'

requires increasingly know-how or resources that are not available within the initiating organization (Ireland et al., 2000; Van de Vrande, Vanhaverbeke & Duysters, 2011). In addition, the risk of the organization taking care of all investments itself is significant. These needs require multiple partners that enable proper capacities for initiatives right from the start.

Many researchers have investigated existing forms of collaboration in alliances, joint ventures and consortiums, as well as the results of these collaborations. Through this research we have gained knowledge about phase transitions, strategic partner choices, co-creation in design cycles and decision-making dynamics, especially during the period when the collaboration has taken shape. Of course, each phase is important for the success of the entire development process. However, there is one phase which has not yet been studied in detail: the very beginning, when ideas for new products and new services emerge, but a viable initiative has not yet been set up (Maurer & Valkenburg (2014), Koen, 2005). Furthermore, Antons, Kleer and Salge (2016) made a study concerning product- and service development. None of the articles analyzed, found insights in their study about the very front end of service or product development in a multi-party context. Also, Eling & Herstatt (2017) did an extensive study in what they call 'the front-end innovation'. Their study reveals clusters of topics and suggestions for further research but mainly in an individual organization and not in a multi-party setting.

In my professional life as a project leader, I have been able to set up many initiatives myself and I have seen others do this as well. The question stated is: 'Jaap, could you set up this project for us?' Of course, I am always happy to oblige since working to make things better gives satisfaction. The same goes for my colleagues and many other people in my field. However, the question may be simple, but the answer is not. The very moment when the question is asked, the project only exists in someone's mind. It is often no more than an idea. In the dictionary, one of the definitions of 'idea' is 'a mental impression'. Some ideas are so appealing that dozens of parties spontaneously offer to participate, like for the initiative to create a commercial mountain in the Netherlands. This idea even triggered all kinds of supplementary ideas among speleology associations, roller coaster suppliers and businesses working on large-scale CO<sub>2</sub> storage. And yet the initiative did not get off the ground.

Whether or not failing of the initiative is a bad thing, there is a lot of frustration about 'how the process had unfolded'. I heard people say things like 'Senior management did not give the idea a chance', 'It was ruined by the calculations of the project assessment department', 'We shouldn't have made it into a project straight away' and 'We never really trusted one another'. Sometimes parties forget why they got involved in the first place. Even if a company has a solid process approach, its employees still start by 'filling in forms', simply because this is how things are done.

In the experience of myself and of my colleagues, some field problems that triggered my interest seem to repeat.

Firstly, parties seem to be eager to leave this front-end period – when the ideas still exist only in the mind – behind as soon as possible, and sometimes too soon. As illustration, I have come across detailed railway designs where it wasn't even clear whether the idea concerned was any good. This situation is described in brief in box 1.1.

An engineering firm had elaborated three alternative railway connections between two big cities, in consultation with policymakers and building contractors, and had estimated the costs at around EUR 120 million. After the elaborations and estimations, the process had slowed down, however, and the reasons for this were unclear. When I talked to the various key players, it turned out that no one considered themselves the owner of the idea – not even the two cities involved! It did not even become clear to whom the report had to be presented, but only who had paid for it. The engineering firm and the building contractor were keen to realize the design, but they were looking for a client. Returning to the drawing board to formulate the usefulness and necessity of the project, it appeared that the journeys of train passengers would be shortened by 6 to 15 minutes, but also that it was unknown whether there would in fact be any train passengers. The initiative was cancelled. Later, incidentally, other parties made the pragmatic decision to realize a bus connection via an existing road.

What happened here at the start of the process? An initiative was started, but there were no parties that were willing to carry this initiative. The question is, if the set-up had been different, would this have prevented the premature leap towards design and made the initiative more viable?

**Box 1.1** Description of a field problem as a precursor for the research question.

Also, another nasty situation may occur at the start of initiatives: the absence of proper terminology and tools. In an informal market survey, businesses indicated that they do not have a name or role for the person that is to give shape to the start of initiatives... even though this initiation process does occur regularly! In addition, inappropriate terms are often used for the front-end process, such as 'Ideation' (which really is the process of generating ideas) or 'product creation process' (which really is the entire journey). 'business development' is used as well, even though a requirement for this is that the 'value proposition' (the idea) is concrete enough to be regarded as a design. This is confirmed by Koen ea. (2001) who showed that poor development of a language for new concept development hinders collaboration. My colleagues and I use sometimes the term 'Idea Development Management'.

A third problem triggering my PhD wish is that often the central idea is not allowed to develop any further. And yet this is often necessary to make the idea, concept, prototype or protocept (Cooper & Sommer, 2016) attractive for the necessary partners. The following anecdote illustrates this. An inventor had developed a washing process in a shed behind his house. The idea was that dirty laundry was vibrated in a water container. This process cleaned the laundry nicely. We helped the inventor commercialize the idea. At a certain point the initiative ended up with a washing machine manufacturer and the following dialogue as depicted in box 1.2 occurred between the inventor and the manufacturer's strategist.

Strategist: 'It would be great to further develop your invention in our development department. Integrating it into our machines in the place of the current drum will still require some effort.'

Inventor: 'But that is not necessary at all! It will be enough to develop a good version of the container.'

Strategist: 'You need to understand that our strategic profiling in this market is based on equipment that comes in standard sizes and with a recognizable appearance. Moreover, people are used to a certain place for the addition of detergent.'

Inventor: 'Detergent? I just explained to you that this is not necessary! This is the essence of my process.'

Strategist: 'That is all good and well but let me tell you that public in general believes that it is the detergent that makes the laundry white, rather than the washing machine. Selling washing machines without the option to add detergent is an enormous risk.'

Inventor: 'This is absolutely ridiculous. I am sorry but, in this case, we cannot do business together!'

The inventor regarded his idea as completed and did not want to further enrich it for marketing reasons. And he did in fact turn out to be able to make this decision, as the idea owner. What would have made this initiative viable?

**Box 1.2** Description of a field problem as a precursor for the research question.

At the fourth place, in the beginning of an initiative the main thing is to find a fitting network for an idea or a fitting idea for a network. However, potential business partners do not know each other well and have difficulty selling the idea's long-term perspective even in their own internal network. One of the people involved in the development of a new glue told me his following experience (box 1.3):

As a business developer of a glue manufacturer, I took part in a starting initiative to produce a sustainable mattress based on the 'cradle to cradle' philosophy. After only a few weeks after the very start my own organization confronted me with questions which I couldn't possibly answer.

Controller: How much cash will it generate?

R&D: Will it increase our intellectual property?

Sales: How will it improve our contacts?

Board: Will this be in line with our strategic principles?

And my own question: What, initially, is my own interest and what is the interest of the company?

**Box 1.3** Description of a field problem as a precursor for the research question.

People around us want to see benefits quickly and are prone to the 'not invented here syndrome'. How should the business developer legitimize his participation?

These four experiences – moving on to a fixed organization too quickly, a lack of proper terminology and tools, no further development of the idea and network development problems – can be impediments to a good start resulting in all kinds of obstructions. Some examples of these hindering effects are listed in box 1.4.

- Demotivating lack of progress because participants cannot take the necessary decisions (e.g., in a situation where an SHE employee of another firm is participant in an MPI).
- Conflicts because participants are mentally in different stages of the development process. Where one person has an abstract idea in his head, another may have already thought of a design. As a result, the former will be more open to enrichment and the latter will only be open to further detailing (e.g., the business developer thinks in terms of geographical expansion and the controller in terms of additional kilograms (or Euros).
- Hesitation because of doubts as to whether relationships may be pre-competitive.
- Misunderstandings which are the result of a lack of process arrangements and room for interpretation in the idea.

**Box 1.4** Some effects in the field of poorly managed multi partner initiatives.

In what way can we ensure that the developing initiative is taken seriously? Can this part of the development process be managed? This does not concern the establishment of the idea (the creativity), which has already been studied for centuries. Think of the divine creators in mythology, creative artistic practice, Plato's archetypes from which we derive our world, and the genius of Romanticism, for instance. It is challenging to set up the

starting process in such a way that ideas and the (organization of) the initiative become more viable and gain greater support.

By conducting this study, a contribution is made to the management of new product and service development processes, especially in multi-party contexts. This study is intended to offer knowledge in the form of a solution which my peers can benefit from. This is what drives me. My 'peers' are all those colleagues who spend a considerable amount of their time on setting up initiatives: developers, people in incubators, marketeers, alliance managers, chain managers, product managers, urban developers, people working in business intelligence and business development, independent entrepreneurs and intrapreneurs, R&D people, healthcare directors, sustainability managers, consultants, project and program managers, and 'quartermasters'. They are looking for answers to questions such as pointed out in box 1.5.

- How will we direct one another?
- How will we gain a clear idea of the benefits for the participants?
- How will we set up the collaboration for the longer term?
- How will we get participants to look beyond their own interests?
- How will we realize the formation of shared opinions?
- How will we set up a shared learning process?
- How will we create safety?
- How will we assign/grant leadership?
- How will we avoid calendar dilemmas / allow other people's calendars to take precedence?

**Box 1.5** Questions of participants in an exploratory survey.

The beginning of initiatives is partly uncharted territory, even though in the field there are many ideas about the right approach. Over time my uneasiness grows about people's approach to initiatives. With Kessels (2005) who speaks about problems as interpretations of a sense of unease, my uneasiness may point to the presence of a problem: the lack of evidence-based approaches.

Until this point, mainly observations and experiences are presented. Chapter two is about what is known about the very beginning of multi-party initiatives in academic literature.

### **1.3 Focus: start of initiatives with several parties**

In the front end of innovation, the start of service, product or process development is initiated, and is usually followed by development and commercial phases. An initiative often starts formally with a project definition, a letter of intent, a collaborative agreement or another starting document. However, before this document is delivered, all kinds of formal

and informal activities and interventions have already taken place. This concerns aspects such as ideation, distribution of proceeds, information and knowledge management, forms of interaction, process design and relations with parent organizations, but also how the added value of other parties is perceived. Parties not only need to assess the added value of the idea, but also that of the (future) collaboration. The set-up of this process, during which an opportunity and/or a problem is developed into a shared idea as well as first ideas for collaboration, is the focus of my study. In this phase ideas are formulated and enriched so that they become a desired result or a concept for a product, for a service, for a process or for a different entity.

In the setting of multi-party initiatives more parties see the potential of an idea. They also realize that they need each other: they are 'potential business partners' that want to develop a 'viable business initiative'. By 'viable'<sup>2</sup>, in this case, I mean that the relevant network will give the initiative the chance to prove itself. This means that the relevant network consists of parties that have the power to obstruct the initiative further down the line in the development process. These parties have financial resources, capabilities, a powerful position and moral strength as well.

Organizations increasingly rely on external knowledge sources to innovate and remain competitive. Also, organizations start alliances with customers or suppliers to jointly develop products and technologies (Bindroo, Mariadoss, and Pillai, 2012). The setting of potential partners discussing the idea affects already its quality and its viability in the mostly informal initiation phase. This happens before the management of the interested parties take a go/no-go decision about formal participation in and allocation of resources to the initiative. Since the front end is characterized by a dynamic system (Lorenz, 1963) and by unpredictability due to minor deviations, starting points created in this very beginning may have far-reaching consequences. By the way, the start for the development of new services involves the same questions and problems as for product development (Posselt & Forstl, 2011).

#### **1.4 Context of starting multi-party initiatives**

All these aspects mentioned before, imply high uncertainty and ambiguity for parties taking part in emergent collaboration. Therefore, sense making is considered a crucial process that enables partners to function: 'the ongoing retrospective development of plausible images that rationalize what people are doing' (Weick, Sutcliffe, & Obstfeld, 2005, p. 409). The ambiguity mainly lies in several interpretations of substantive issues, such as the amount of contribution of resources, decision making rights, acceptance of partners' standards (Gulati, Wohlgezogen & Zhelyazkov, 2012, van der Krift ea., 2019).

In my exploratory interviews with people in the field, this ambiguity appeared again and again speaking about the context, all of them relating to the need to create shared meaning - less ambiguity- about several aspects:

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2 **Viability** originates from biology: individual organisms which can survive until they are able to reproduce. I transfer this ability to an initiative: the ability to maintain itself or to obtain durability.

- There are several notions of the direction in which the solution may be found.
- Multiple parties are involved, which may be organized slightly informally.
- The parties agree that there is a – possibly recurring – problem/opportunity.
- Individual parties are unable to realize a solution.
- The intentions, and therefore also the interests, of the stakeholders vary.
- The participants regard the initiative as risky.
- There are internal debates in mother organizations about subjects which are relevant for the initiative.
- At the organizations taking part in the initiative, some of the managers are highly critical of solutions realized elsewhere.
- There is no one responsible automatically for a process design of the initiative, so excluded are contexts of one dominant entrepreneur or inventor, having decisive packages of shares in other participants, customer/supplier or principal/contractor relations.

**Box 1.6** Repeating aspects in the contexts of MPI's in this study.

This context confronts the initiator with a lack of clarity, both technologically and commercially, but also with questions about the approach to the development process. A fitting description of the context in the inception is that of Schruijer, Vansina and Taillieu (1998, page 162): *'An emerging or developing work system of people who, because of their membership of other groups, institutions or social categories, come to work together on a largely self-constructed task or problem domain'*. In this case there are no hierarchical structures, protocols, standards or other arrangements. Xie (2003) adds that interventions are needed for the socialization process, the development of rules of the game, shared values and intentions. The parties taking part in the initiative usually already have formal and informal strategies, procedures and conventions that may be conflicting when imported in the initiative in which they participate. This asks for formulation of an own set on the level of the initiative, before the formalized cooperation starts and parties see each other as partners.

This study is restricted to a specific context and part of the total development process: the front end in which the idea and the set-up of the emerging collaboration are developed. In chapter three this period is marked out as part of the total development and commercialization process of products and services.

## 1.5 Objectives and preliminary research question

My objective is to contribute to a higher survival of multi-party initiatives (MPI's). Many of these initiatives perish in this early stage. Accordingly, my colleagues and I experience a great need for answers on how to handle the very first part of the development of MPI's. The lack of approaches pushes them too early to formal and fixed constructions before opportunities or problems are crystallized in shared ideas about products or services as



well in a joint approach. Many initiatives perish while the need for MPI's that create joint value grows. Maybe a lot of lessons are learned or maybe a pile of scientific information is available but not practiced. So, the preliminary aim of this study is to answer the following question concerning the field problem:

**Which interventions can be applied to help several parties with various relevant ideas at the start of an innovative initiative, to increase the viability of that initiative?**

This question is relevant during the front end, the period when parties are interacting to find out whether they want to work together to realize a shared but vague idea.

## **1.6 Relevance**

### *For theory building and science in general*

One of the objectives of this study is to reduce the gap between practice and science (Van Aken, 2004). In practice a lot of MPI's are created but it is difficult to understand why they succeed or not. This is an important reason to produce a design proposition. The PhD rulings of the university of Eindhoven define a design proposition as 'a design that is based on the use of appropriate theoretical knowledge and methods accommodated with scientific explanation and documentation. The design proposition supplies an original contribution to existing knowledge'<sup>3</sup>. So, I wish that the outcome of this study is as well based on scientific information and is user-friendly for practitioners in the field.

Secondly, the very (fuzzy) front end is one of the areas in goods and services development that is not researched extensively. This study will add theory to this very beginning by exploring the typical context and the (management) interventions in the front end of emerging multi-party initiatives.

### *For society*

Companies, knowledge institutions and (semi-) governmental organizations are becoming more and more interdependent. Actual examples are MPI's to reduce CO2 and the Corona virus. The horizontalization of society forces governmental organizations, knowledge institutions and retailer associations, for example, to collaborate in initiatives. Alliances, joint ventures, multi-partner projects and other structures are used to fulfil complex assignments. Before their mostly formal start, they all begin with these mostly low structured initiation activities (Koen, 2001) in this study proposed as an idea enrichment process. This study will facilitate the start of multi-party collaborations by creating design propositions to be used in this typical context. Use of the outcome of this research will enhance the viability of their initiatives because of the availability of a scientifically tested set of interventions for that purpose.

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<sup>3</sup> Chapter 5, art. 15.2

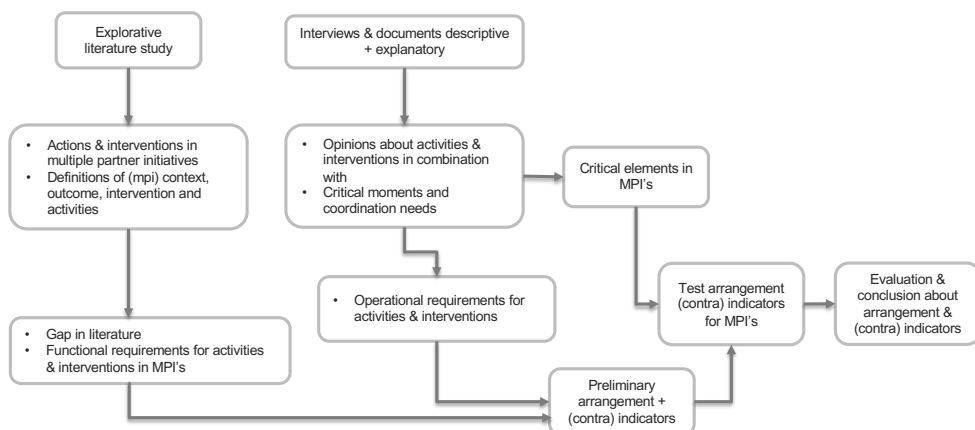
### *For people in the field*

This study aims to substantiate the present practice of starting initiatives with scientifically proven theories. Scientific research has addressed factors which are important at the start of an initiative, such as collaborative capabilities, or a lack thereof (De Man and Duysters, 2011), proper alignment with the needs of customers (Hauser et al, 2013), deployment of staff who will apply the end result and customers who will help value the distinguishing features and benefits (De Brentani, 2001). Other studies indicate that the main factor for project success lies in leadership capabilities (Kendra and Taplin, 2004, Turner, 2005). Researchers such as Reid and De Brentani (2004, page 2) note that 'a search for better processes in support of the fuzzy inception appears to be called for in order to help firms achieve greater success in their efforts to develop new products'. According to Cooper (2011, page 14) this part of the process is important: 'Of all management practices, effective idea development – as a product or service opportunity- has the greatest impact on successful product innovation.' Especially, decreasing the waste of resources is possible because decision making in the front (Eling & Herstatt, 2017) does not acknowledge viability of initiatives as relevant criterion.

The approach for the front-end phase has two users. Of course, somebody who takes responsibility for execution of this phase. His assignment is formulated as 'make sure that a viable MPI works out'. But also, consultants could benefit because their assignment reads as 'help us with a better execution of the development of our MPI, because that does not go well'. With this study I would like to help them with concepts for the management of the very beginning of an initiative for new product or new service development by several parties – and thus help reduce the failures in initiatives as well.

### **1.7 Thesis outline**

This first chapter describes the background of this study: disappointment in the field with the start of initiatives, the lack of skills, and the importance of further development of theory in the specific context of multi-party initiatives. In the second chapter we see what theory already is available in scientific literature and how it helps to answer the (reformulation of) the preliminary research question. Chapter Three discusses the usefulness of the existing literature and define the gap. Based on this, among other things, the preliminary research question will be translated into a first general design proposition. The added value of and the requirements for the research proposition are formulated as well what niche they serve in existing research. Chapter Three gives also the methodological justification. Chapter Four presents and analyzes empirical data from field studies. This means that the answers of the study draw on two 'streams': the literature stream and the field stream. Literature provides the functional requirements and solutions for interventions and activities. The field stream provides operational requirements and solutions that gives the basis for a user-friendly arrangement. See for the activity flow figure 1.1.



**Figure 1.1** Overview of the study.

Based on the findings in Chapter Three and Four, Chapter Five contains the arrangement of interventions and outcomes which people in the field may be able to use. The ‘proof of the pudding’ will be described in Chapter Six: the practical application. Both the set of interventions and the way in which they will be used will be tested, after which the definitive design – of this study – will be formulated. Chapter Seven, finally, will show the conclusions and discuss about added value for both the field and the scientific literature.

In this chapter I clarify my fascination with the repeating problems in the field of the very beginning of multi-party initiatives. The context of the field problem and its place in the total development process are explicated to create a focus of the beginning of multi-party initiatives that will be detailed out in next chapters. This focus in combination with the preliminary research question is the basis for the literature study in Chapter Two.





# **CHAPTER** 2

## LITERATURE OVERVIEW



## 2 Literature overview

### 2.1 Introduction

At the very beginning of my PhD research, I became acquainted with the topic of the approach to start a multi-party initiative, through explorative interviews with fourteen people working in the field, as indicated in Chapter One. These people were responsible for multi-party initiatives (MPI's). They were all faced with the same problems and challenges. None of them had an action plan aimed at long-term viability of their initiatives. Yet they were all looking for one.

This chapter explores the current state of literature about starting MPI's, important to understand what is known about the topic.

Creating and continuing a viable MPI is difficult and ends as a failure in over fifty percent of collaborations that started with independent partners (De Man & Duysters, 2002, 2007, 2009, 2011; Lunnan & Hauland, 2008; Kale & Singh 2009). Kijkuit & Van de Ende (2007) described the front end of starting collaborations as the 'Valley of Death'. These discouraging findings demonstrate that explanations are required and measures need to be taken to handle the hazards of (starting) multi-party collaborations. This study concerns the very beginning of the collaboration process: the (fuzzy) front end where initial product or service concepts are conceived and the follow up constructed. Therefore, the focus in this chapter is on literature that concerns activities and outcomes that lay a solid foundation for the starting collaboration. For example, individual parties team up and become partners, as a viable relationship as depicted in box 2.1. Several terms are used in literature to refer to inter-organizational collaboration, such as 'alliance' (Carson, 2009. Bindroo, Mariadoss and Pillai, 2012, Hofman, Halman and Song, 2017), '*joint venture*' (Tsang, 2000, Oxley and Wada, 2009), '*programme*' and '*partnership*' (Gulati, 1995b). Because the final organizational or juridical configuration is one of the deliverables of the phase studied, the more general term 'multi-party initiative' (MPI) is used during the early development of the initiative.

One of the main issues in the starting initiative is the transition from parties to partners, from a multi-party initiative to a multi-partner initiative. What discriminates a partner from a party? Partners unlike parties:

- Have at least one overlapping objective
- Spend actively time in the same process
- Have a formal or an informal contractual relationship
- Give priority to each other's interests
- Need and respect the contribution of other partners

**Box 2.1** Differences between partners and parties.



Firstly, the search methodology is explained in section 2.2. Secondly, in section 2.3 we will give an overview of the findings in literature explaining the problems in the development of MPI's, and what causes them: what accounts for the hazards in starting collaborations? Then in section 2.4 we will discuss interventions which are useful for a process for delivering a viable MPI. In the final section, we will summarize the learnings and the perspectives which are useful for an approach for starting viable MPI's. And in the appendix A activities stated by authors are listed which can contribute to the design of the process in the front end.

## 2.2 Literature search methodology

In this chapter, we will look for evidence-based contributions in literature by means of systematic review and research synthesis (Briner & Denyer, 2012). In this context, systematic means (Tranfield et al., 2003, Mulder, 2012):

- a) Stating of the research questions. These questions make it possible to sort out the individual academic findings. The two main questions used are:
  - What problems, and their causes, exists in the development of a viable MPI?
  - Which evidence-based insights can be derived from the literature about why and how initiators intervene to create a viable MPI?
  
- b) Stating of the search approach. This concerns the criteria for selection of academic articles, for example academic journals only. The selection of articles is based on key words for starting MPI's, more specific on the preliminary research question. This is before these initiatives develop in alliances, joint ventures, new product development, new service development and multi-partner projects. Key words in this study are: '(fuzzy) front end yes/no', 'business initiative yes/no', 'organization/management on group level yes/no', 'multi-party yes/no', 'collective sense making yes/no'. This leads to the selection of the next set of journals, found in the library of university Eindhoven and Google Scholar.

Academy of Management Journal, Journal of Product Innovation Management, Strategic Management Journal, Management Science, British Journal of Management, Journal of Management Studies, Journal of Inter Organizational Studies, Organization Science, Organization Studies, Journal of Management Studies, Project Management Journal, R&D Management.

**Box 2.2** Overview of journals selected through key words for addressing the start of multi-party initiatives.

Furthermore, finding articles according to the keywords above, the search continues actively in references of the articles found and in the finally pre-sorted theories (inter-organizational learning, boundary crossing in product/service development).

c) Evaluation and interpretation of selected literature. This concerns in this study identification of important and repeating labels in findings (Aronson, 1994). Selection is done based on fit for research questions a. The answers to the first question – about problems in the front end- are selected and clustered based on their importance in literature i.e., scientific validation and repetition in the work of several authors. This clustering offers a ranking of problems and requirements for creating viable MPI's. The answers to the second question – helpful insights - supply building blocks for creating viable MPI's. The findings for the first question are categorized using the classification of Gulati et al. (2012) who states that unclear objectives, poor cooperation and poor coordination are the main sources of problems. As explained in par. 2.3, this means that three problem areas serve as basket for problems in the front end:

- objectives – explaining 'the why' i.e. the reason for existence of MPI's,
- cooperation – explaining the availability and quality of staff, strengths of the organization and style of management
- coordination – explaining structures, routines and planning of the activities

After the argument why viability in the front end is worthwhile, findings for the second question are ordered aligned to the question:

- *what* is the viable outcome
- *which activities* need to be done in the front end to create a viable outcome

These simplified classifications contain enough information to describe the topics important for building MPI's. This classification covers main aspects of organizing, is helpful in diagnosing and designing MPI's and provides interconnections between objectives for, organization of and activities by the initiative.

d) Systematic assessment. Drawing on these findings in literature, we assess what factors contribute to the creation of a viable MPI. Selection of these factors is based on the accent of the journal in product- and service development, repetition ( $\geq 3$ ) in research outcomes and focus on practice. These findings converge in key categories that will be compared to key categories derived from the coding of interview transcriptions from people in the field in Chapter Four.

Systematic review and synthesis will prevent pitfalls such as selectivity and cherry-picking. Briner & Denier (2012) argued that qualitative review and research synthesis play a key role in explaining contextual contingencies and mechanisms through which activities generate outcomes. These explanations are important for this study, which means that systematic review is preferable to quantitative meta-analysis that serves to

accumulate validated and tested predictions of a phenomenon without explaining why this phenomenon occurs (Sivasubramaniam et al., 1996).

This study will also analyze data from interviews, workshops and surveys (Chapter Four) about the reality of interviewees, or their construction of reality, as a second information flow. Literature findings and analyzed data together are used to construct a design proposition (Chapter Five) for experimenting, testing and reflecting on what works to create viability in starting initiatives.

### **2.3 Key areas creating a viable MPI**

Looking at the front end of the development process, questions that arises are 'What is the deliverable of this part of the total process and what do we need to do for it?' Of course, the simple answer is: 'The key stakeholders decide to continue with the idea and with each other!' So which problems in the results would block continuation or mean continuing 'in bad shape'? Other questions concern flaws in the process that may cause a failure to bind a set of business parties in this early part of the process. Even though people are motivated to work on innovation in network projects, research by Maurer & Valkenburg (2014) indicates that people lack the understanding in how to turn these projects into a success. This research suggests that the problem is a lack of methods, tools, and techniques to support people in networked innovation, a repertoire that they can use in such situations. Gulati, Wohlgezogen & Zhelyazkov (2012) specify problems in poor cooperation and coordination<sup>1</sup> as the most common reasons for failing collaboration in MPI's. They define inter-organizational cooperation as *'the joint pursuit of agreed-on objectives in a manner corresponding to a shared understanding about contributions and payoff's* (Gulati et al., 2012, page 6). These contributions concern: *'the availability and quality of staff, strengths of the organizations and style of management'* (Gulati e.a., 2012, pag.12).

Furthermore, they define inter-organizational coordination as *'the deliberate and orderly alignment or adjustment of partners' actions to achieve jointly determined objectives*. This concerns *'creating structures, communication (relationships) and process management'* (Gulati et al., 2012, page 12).

Agreement on objectives – answers to the question 'what do we want?'- is important in both definitions. Objectives drive the need for resources of other parties, that offer competitive advantage when partners' tangible (talents) or intangible (close to market) resources are applied, as is pointed out in the resource-based view (Wernerfelt, 1984). So, if objectives are not aligned, this causes problems in coordination of and cooperation within activities. This will also be the case when parties aim at efficiency benefits: organizations entering into an MPI aim to reduce their future transaction costs (Williamson, 1985). In transaction cost economics unclear formalization (a coordination provision) make costs go

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<sup>1</sup> The definitions used are those of Gulati et al. (2012, pages 6 and 12, respectively): These definitions fit well here because they point at the dynamics of inter-relationships rather than intra-relationships of organizations.

up because of self-interested activities, pay-off structures getting fuzzy and transparency for objects monitored is low (Lui & Ngo, 2004).

Unpacking key variables for objectives, coordination and cooperation can give instruments to our purpose group, responsible for delivering viable MPI's but also to understand the positive and negative dynamics in starting collaboration. This makes the framework of Gulati (2012) a good lens for looking at starting collaborations. The framework gives an opportunity to state sets of actions that partners can implement in the format of their collaboration. The risk is that partners keep on collaborating, while the building blocks for the joint effort are not solid. This means that when an initiative starts, the work immediately needs to be coordinated and the parties need to cooperate. These activities in the front end should also help to give shape to and predict the coordination and cooperation during subsequent phases. This makes coordination and cooperation key categories for describing problems in the development of multi-party collaborations, as well as for describing solutions for these problems.

#### **2.4 Evaluation and interpretation of problems relating to objectives**

In both definitions of cooperation and coordination (Gulati et al., 2012), agreed-on objectives between partners in the initiatives is a key item. They act as the objectives of the initiative. For example, in the development of the Senseo coffee machine a problem existed: Philips has objectives for developing for the world market, Douwe Egberts develops for countries. This points at a main hazard rooted in the absence of shared objectives with this proposition (Sheriff, 1966), conflicting interests (Doz, 1996) or the desire to harvest everything and not share the advantages enjoyed by the party introducing the product or service to market (Suarez & Lanzolla, 2007). Or one of the partners aims only for small and medium-sized enterprises or pursues open and shared innovation primarily for market-related motives such as meeting customer demands or keeping up with competitors (De Jong et al., 2009).

In the case of a lack of shared objectives, parties assess their contribution to the initiative based on their own objectives for the collaboration. This may lead to a situation where several problem perceptions exist (Schruijer & Vansina, 2007). This means that individual parties are mostly aware of their own objectives such as higher earnings, larger market share, longer survival (Suarez & Lanzolla, 2007). They need a partner because they lack the capabilities and knowledge needed to gain market share, outperform competitors, survive, or achieve competitive advantage (Arino & De la Torre, 1998). Or they are targeting objectives which cannot be achieved by one business on its own, or not as quickly (Ireland et al., 2000; Van de Vrande, Vanhaverbeke & Duysters, 2011). Indeed, if one party has proven capabilities which the other party lacks, this offers efficiency and reduction of costs (Wemerfelt, 1984, Williamson, 1985) but the relationship may grow asymmetric. At the same time, overlapping objectives for the same market influences party's willingness to collaborate (Tucci, 2004): the more overlap the more hesitation.

The conclusion of the above findings is that agreed-upon objectives are very important. Parties do not necessarily need to have the same objectives. But it is important that the initiative serves mutually agreed-upon objectives. This makes explicit formulated objectives an outcome to be developed in the front end.

## 2.5 Evaluation and interpretation of problems relating to cooperation

Parties will try to cooperate to minimize future transaction costs and/or optimize the supplemental resources (Tsang, 2000). But they encounter all kinds of problems as pointed out in the next paragraphs.

As formulated in paragraph 2.5, cooperation concerns *'the availability and quality of staff, strengths of the organizations and style of management'* (Gulati et al., 2012, page 12). The more cooperation is intended, the more potential partners are dependent on each other's resources. Uncertainty about competences and needs of the other party (Gulati & Gargiulo, 1999) explains problems that need arrangements to cooperate. Sometimes competences are absent even in all cooperating partners (De Man & Duysters, 2002, 2007, 2011). Also, the absence of trust or insufficient confidence in others' integrity can lead to excessive contractual formality that may erode the accumulation of trust (Ghoshal & Moran, 1996). Confirming this, Levin & Cross (2004) emphasize the role of trust in knowledge exchange relationships, with problems in the strength of the relationships if discarded. Gulati et al. (2012, p. 15) propose the concept of *'relational risk'*, consisting of *unforeseen changes in partners commitments and claims in the relationship*. If cooperation is not arranged well parties may contribute less than promised (avoiding), may claim more resources or outputs (misappropriation) or negotiate asymmetric from superior position (holdup) according to Gulati & Sytch (2007). Poor implementation of cooperation hinders the development of a suitable language for new concept development (Koen et al, 2001). More areas where problems may arise concerning cooperation are listed beneath in table 2.1.

**Table 2.1.** Potential problem areas related to cooperation.

Agreement on goals, contribution of resources, sharing of benefits, acceptance of partners 'standards, sharing of proprietary knowledge, decision making rights	Gulati, Wohlgezogen & Zhelyazkov, 2012
Possibility is absent to show trustworthiness	Malhotra & Murnighan, 2002
Task uncertainty and interdependence	Gulati & Singh, 1998
Partners' diversity (creating incompatibility)	White, 2005
Losses in process execution	Carson et al., 2009
Fostering of interpersonal trust	Gulati & Sytch, 2008

The above findings confirm that parties have reasons to cooperate if availability of staff, strengths and typical management properties of other parties make it possible to reach their objectives. A lot of problems may arise creating *'relational risk'* (Gulati et al., 2012). Cooperation is important already during the front end and in later development phases.

This asks for ideas for cooperation in the front end as well for a shared view on cooperation in the phases to come: an outcome of the front-end activities.

## 2.6 Evaluation and interpretation of problems relating to coordination

Coordination is about structures, routines and process management (Gulati et al., 2012). Concerning this topic, Schrujjer (2005) pointed at a self-fulfilling prophecy. She states that without proper coordination, mistrust grows because of a lack of communication which leads to power games and a more positive assessment of one's own contributions compared to those of others.

Scott (2001) explained the regulative, normative and cultural-cognitive systems in parent organizations. When these systems are imported into the initiative by individual participants, every participant will encounter structures, habits and beliefs of others that obstruct participation or affect its legitimacy. This prevents, for example, the development of a shared language for new concept development (Koen et al, 2001). Also, in small and medium-sized enterprises organizational and cultural problems arise because of dealing with increased external contacts is the most important challenge in innovation (De Jong et al., 2009).

Because of these culture systems in the parent organizations, workers in inter-organizational situations suffer dual identification with parent and partner organization, more authority structures and difficult boundaries (Schreiner, Kale and Corsten, 2009). This all hinders proper coordination. To handle these differences Schein (1985) already emphasized to incorporate new values into basic assumptions only when embedded in desired organizational outcomes. According to Gulati (1995b) prior direct partnerships, proximity, partner status, similarity are means to cope with these cultural differences. Today there is starting evidence that criteria for partner selection anticipate on future inter-organizational coordination competencies (Schreiner et al., 2009).

It is only when stakeholders can see the benefit for themselves that new values in coordination are taken for granted and drop to the level of unconscious rules of engagement. For teams consisting of members from several organizations, this could mean that an assumption of one member, is not automatically shared by another member. This leads to distrust or misunderstanding as mechanisms for undesired outcomes, without proper coordination. Gulati et al. (2012, p. 16) designate *'the risk of unforeseen coordination costs and of coordination failures as 'operational risk'*. For example, one of the partners is not able to execute agreed-upon activities. This operational risk should be addressed in the outcome of the front end. More areas where problems may arise concerning coordination are listed beneath in table 2.2.

**Table 2.2.** Potential problem areas related to coordination.

(No) linking, meshing, synchronization or alignment of actions; negotiating about how much aligning and adjusting each partner undertakes	Okhuysen and Bechky, 2009
(No) specification and operation of information sharing, decision -making and feedback; bring order to partners 'efforts, combine partners 'efforts, joint planning and adjustment of each other's practices, compatibility of activities, adoption of rigid roles/procedures/ interfaces, responses to ad hoc problems, jeopardizing of shared goals, recognition of uncertainties, implementation of coordination mechanisms,	Gulati, Wohlgezogen, Zhelyazkov, 2012
(No) compatible timing and sequencing of actions	Palmer, 1983
(No) division of labor; allocation of production technologies, underestimation of relations between tasks and coordination need	Raveendran and Puranam, 2012
(No) management of uncertainties from internal tasks or environment	Bensaou and Venkatraman, 1995
(No) understanding of interdependencies because of cognitive limitations (bounded rationality)	Simon and March, 1993
(No) coordination creating cooperation costs	Mellewigt e.a., 2007
(No) discriminating between truly critical issues and those proximate or recent	Park and Ungson, 2001
Cultural differences between partners 'organizations	White, 2005
Cognitive differences (about tasks interdependencies and uncertainties) because of cultural differences	Berends, Garud, Debackere and Weggeman, 2011
(No) implementation of coordination provisions due to other stakeholders or colleagues	Doz, 1996
Resource stickiness constrains availability of tangible and intangible resources	Mishina, Pollock and Porac, 2004
(No) efficiency in use of partners' contributions and low level of overall risk perceived	Carson ea., 2006

The above findings show that the areas of structuring, routinizing and process management (coordination) of the activities are sources of problems. It leads to operational risk (Gulati, 2012) if not managed well. This is as well the case in the front end as well in phases to come so a clear view on the coordination in the MPI is one of the products of the front end.

## 2.7 Is a shared understanding as outcome of the front end worthwhile?

For the collaboration after the completion of the start, parties need to have governance arrangements to be able to continue with each other. Partners assess the collaboration and its future, for example in the form of a 'stage gate moment' (Cooper, 2008). Therefore, they need to have a mental model of what they are going to do and how they are going to cooperate and coordinate when going further. Does the collaboration need a legal structure, equity or even an autonomous identity? They have to deal with sources of uncertainty for potential markets and underlying technology as well as unintended knowledge transfer, which is a key concern among partners (Katila, 2008).

The main problem is the creation of a shared understanding of the joint interest, of the future coordination and cooperation of the road and of the product or service concept they may deliver. Based on these shared ideas they decide to yes or no continue with each other at the Idea gate (Cooper 2008). This is defined for mono-party initiatives, but we assume that in a multi-party context some formal or informal gatekeeper in the potential parties also makes an evaluation of the opportunity. When they continue, they decide to allocate resources to the advancement of a new idea (Eling, Griffin and Langerak, 2016)

entering via the concept gate (Cooper, 2008) phases of (concept) development. And when assessing the benefits and hazards of the collaboration, decision-makers and gate keepers face significant problems from various sources of cognitive bias, (Liedtka, 2015) as is shown in table 2.3.

**Table 2.3.** Flaws in cognitive processing for innovative problem solving (Liedtka, 2015).

Cognitive bias	Description	Innovation consequences in decision makers
Projection bias	Projection of present into future	Making predictions that are too biased to the present, preventing to assess accurately the likelihood of success of novel ideas
Egocentric empathy gap	Projection of own preferences onto others	Failure to assess value-creating ideas other than they value themselves
Focusing illusion	Overemphasis on elements	Failure to generate a broad range of ideas because of overestimation of the effect of one factor at the expense of others
Hot/cold gap	Current state colouring assessment of future state	Under- or overvaluing of ideas, depending on the state, whether emotion-laden (hot) or not (cold). Bias how others will react or even they themselves, when their state is less 'hot'
Say/do gap	Inability to accurately describe own preferences	Inability to accurately articulate and assess future wants, f.e. consumers are no reliable predictors of their own purchase behavior
Planning fallacy (Self-justification)	Over optimism (Not willing to admit earlier faulty decisions)	Over commitment to inferior ideas. This tendency toward a rosy view of the future is well documented. These views only rarely include considerations of failures.
Hypothesis confirmation bias	Looking for confirmation of hypothesis	Disconfirming missed data. "People are less critical consumers of preference-consistent than preference-inconsistent information."
Endowment effect (Belief inertia distortion)	Attachment to first solutions (Temptation to ignore conflicting new information)	Fewer options considered. Attachment to what they already have (decided) causes a loss aversion that makes giving something up more painful than the pleasure of getting something new, in this case a new solution
Availability bias	Preference for what can be easily imagined	Because the familiarity of an idea is likely to be inversely related to its novelty, this leads to a preference for more incremental solutions.

To diminish the potential of these flaws as much as possible, decision makers need well formulated ideas about the MPI. The problems stated in these paragraphs remind where to put attention, make interventions or interact to strive for objectives, to deliver synergies and use resources efficiently. By the way, in the context of the development of initiatives in the field of New Service Development (NSD) a similar set of questions and problems occur compared to that of New Product Development (Posselt & Förstl, 2011). We encounter questions as: do viable MPI's need information sharing procedures, non - contractual commitments, change management approaches and even arrangements for penalties to underpin the future coordination and cooperation? Argyres and Mayer (2007) found that the design and operation of coordination is often the responsibility of lower-level managers, where design and ensuring cooperation is allocated to senior managers (resource allocation) and lawyers (overseeing contracts). Also, coordination paragraphs are usually more adjusted to the task and cooperation paragraphs more legally standardized (Vanneste and Puranam, 2010). But these lower and senior decision makers serve the same MPI. Because of this it is probably important to synchronize the decision makers concerned at the end of the front end. They need a clear view on the objectives, cooperation and coordination provisions and the activities to be done in the next



phases. So, the main problem is the creation of a shared understanding amongst decision makers around the MPI of the joint interest, of the future coordination and cooperation of the road and of the product or service concept to deliver. This shared understanding – the outcome of the front end - concerns the viability of MPI.

In paragraph 3.3 we will translate the questions and problems mentioned above in a preliminary set of requirements for the approach of the management of the front end. These requirements will act as validation parameters for the answers for the problems. In the next paragraph we will see what insights are available in literature for help in the creation of an MPI. Maybe these findings can act as building blocks for the arrangement of interventions when they meet the requirements that are abducted from the problems above.

## **2.8 Evidence-based insights derived from literature**

This second question in this literature search is intended to find out what is known about creating MPI's. Sections 2.3 till 2.7 point out that quite a range of problems occur that threaten the viability of the MPI. Therefore, do not expect to draw on one theory for solutions to these coordination and cooperation problems.

Firstly, the nature of the viability of MPI's as outcome of the front end is discussed. Then, the question is which activities produce this outcome. So, findings useful for viable initiatives are ordered into the categories:

- *outcome*, explaining the products of the front end
- *activities*, to be done in the front end.

### ***The front end of a multi-party initiative needs a viable outcome***

The challenge of this study is to enlarge viability of an MPI. Viability originates from biology and refers to individual organisms which can survive until they are able to reproduce. When this ability is transferred to an initiative: the ability to maintain itself or to fulfil its potential. This means that the relevant network will give the initiative the chance to prove itself. So, what needs to be in place as outcome of the front end to have a viable initiative?

In the first place agreed-upon objectives should be in place (Gulati ea., 2012, Schruijer & Vansina, 2007, Sheriff, 1996) as well cooperation and coordination arrangements (Gulati ea., 2012) to deliver synergies and use resources efficiently, for example a draft initial planning prior to development has a positive impact on NPD project success (Verworn, 2006).

In addition, four additional elements to be a viable MPI repeat in literature. According to Cooper (2005, p.13) '*a well-defined product concept prior to development*' should be available. In terms of Kim and Willemon (2002): the right opportunity should be selected. Probably this product concept needs to have some properties. One property, an early reduction of market and technical uncertainty, is suggested by Verworn (2006)

and Koen (2001) adds that the output should add generated intellectual property. Another important aspect of the viability is the foreseen fit with users. The research of the Standish Group (Chaos reports 2012, 2013, 2014 and 2015) shows repeatedly the importance of user fit in successful (information technology) initiatives. And according to Press and Cooper (2003) this shared vision about the idea, concept or proposition should fit its users before it materializes into products. They state (2003, page 69): 'Most design ideas are commercial failures, and the chief reason for failure is that these ideas fail to connect meaningfully or effectively with people's lives. But future users are not stable in their preferences. Hauser et al. (2013) concluded that preferences of users or customers will only be stable after they have done tasks that enable self-reflection, which is very important for market understanding and co-creation. But there is more to this criterion for viability. In addition, the empirical results found by Seidel (2007) show higher flexibility when product or service concepts were presented in elemental descriptive forms that included verbal stories, verbal metaphors, and physical prototypes. When changes were required to concepts due to new technical or market information, rather than reconsider the overall concept through iteration to earlier product definition stages, teams shifted individual concept components, with a new component replacing a component of similar descriptive form. These forms can also function as boundary objects described by Stompff et al. (2011) for facilitation of mutual learning.

In the literature review by Kristiansen (2012) about innovation, he explored what we can find in a myriad of innovation typologies: radical, discontinuous, breakthrough, new, major, architectural, modular, open, exploratory, competence-destroying and disruptive. He clustered scientific literature showing repeated issues in the development of innovative ideas. His findings show that *six components* were always relevant for new ideas: technology, market, performance, new knowledge as we have seen in the paragraphs above but also risk and time horizon.

**Table 2.4.** Repeated components in innovation approaches (Kristiansen, 2012).

Incremental innovation	Determinant	Radical innovation
<i>Existing</i>	Technology	<i>New</i>
<i>Existing</i>	Market	<i>New</i>
<i>Lower</i>	Performance	<i>Higher</i>
<i>Lower</i>	Risk	<i>Higher</i>
<i>Less</i>	New knowledge	<i>More</i>
<i>Shorter</i>	Time horizon	<i>Longer</i>

To illustrate this point, Simon offered a parable of two watchmakers, Tempus and Hora. Tempus organized his work in such a manner that if he had 'one (watch) partly assembled and had to put it down — to answer the phone, say — it immediately fell to pieces and had to be reassembled from the elements'. Consequently, every time Tempus was interrupted and forced to set aside his work, the entire unfinished assembly fell to pieces. By contrast, Hora first built stable subassemblies that he then put together in a hierarchic fashion into a larger stable assembly. Thus, when Hora was interrupted, only the last unfinished subassembly fell apart, preserving most of his earlier work.

**Box 2.3** The parable of Simon about work packages.

Despite the variation in emphasis in the innovation typologies these components were always labelled. Based on the above findings we may assume that the product-concept should somehow address the six components listed in table 2.4.

Then a fifth aspect of viability: the work package for the next phases. The reason to assume this as an aspect of viability starts with the theory of Simon (1962) who showed the principle of 'near decomposability' as a concept possessing clear evolutionary advantages. This is the case for both natural and artificial systems (Langlois, 2002). Decomposability refers to the partitioning of a system in such a way that the interactions of elements within a subassembly are greater than the interactions between the subassemblies for example individuals within a hierarchical subunit have closer, more widespread, more intense and more frequent interactions than individuals belonging to different subunits. Such decomposition reduces the complexities confronted by boundedly rational human beings in their efforts to design artefacts.

According to Simon, the differential cost of incompleteness that the watchmakers were confronted with is a specific case of a more general challenge when addressing complex problems. Reasoning by analogy, we can state that the idea should be 'assembled' according to Hora's or Tempus' methods. This means that - if possible preferable - modular or architectural configuration of the work packages – if constructed well in the front-end activities – contribute to viability.

Another viewpoint on viability is given by Mulder (2012). She showed the importance of support - the sixth criterion of viability -, built on a shared understanding about the set-up of the next part of the project, as well the commitment of interested parties and focus on the result. Emphasizing this building block for viability, executive support (or gate keeper support) has been the main success factor for many years in the repeated studies of the Standish Group about project success (Chaos Manifesto, 2013, 2014, 2015). This is confirmed by Ko & Lu (2010) who show that it adds to success if owners of the idea are willing and able to provide resources for the development cycle that follows the front end. Support concerns the display of a risk-taking and innovation-friendly attitude.

This is underpinned by Poppo and Zenger (2002) that benefits of support (a cooperative provision) are magnified by extensive contractual clauses about implementation of it (a coordination provision).

Finally, a study of Aalbers ea. (2015) delivered the seventh aspect of viability: the role of horizontal and vertical cross-ties. Findings indicate that there is reason to believe that ties to higher levels in the organization may influence a project team's innovative performance, in addition to the more common suggestion in literature that horizontal cross-unit ties fostering diversity benefit team performance and innovativeness. The role of vertical cross-hierarchy ties in fostering organizational support and managerial sponsorship has been overlooked. Project teams that perform well have more cross-hierarchy ties, but these cross-hierarchy ties should, however, be concentrated in the hands of a few team members. Representation or brokerage (Gould & Fernandez, 1989) should be the specialized job of a limited number of team members, not only vertically but horizontally as well. In addition to these findings, the study entitled 'When to Use Loose or Tight Alliance Networks for Innovation' (Hofman, Halman & Song, 2017) was intended to answer this question and provide normative insights into the appropriate innovation network configuration for modular and architectural innovations. The results of this study indicate that the relationship between the degree of organizational coupling among innovation network partners and the commercial performance of the innovation does indeed depend on the type of innovation. They found that this relationship is positive (high degree of coupling gives higher commercial performance) for modular innovations – with possibility for decomposition – and negative for architectural innovations. The explanation is that it is easier to coordinate clearly defined intermediate deliverables than architectural more complex work packages.

Overlooking these findings in literature leads to the conclusion that for assessment of the viability of the MPI a mental model shared by the partners at the finish of the front end or start of the development phases should be in place consisting of:

- *fit with objectives* of the initiative with objectives of parties
- a *feasible idea* or concept with six properties (technology, market, performance, risk, new knowledge and time horizon)
- shared *view on coordination* in the next phase
- shared *view on cooperation* in the next phase
- an *approach for partitioning the work packages* for development of the idea
- *support for the initiative* within interested parties
- *specialized tasks for horizontal and vertical integration* in parent organizations

Many authors (such as Gulati, 1995b, Khurana & Rosenthal, 1998, Brentani, 2001, Scott, 2001, Koen, 2001, Cooper, 2005, Kijkuit & van den Ende, 2007, Schrujijer & Vasina, 2008, Badir &

O'Connor, 2015, Hofman, Halman & Song, 2017) address parts or some of these aspects of viability in combination with activities to deliver these building blocks for viability. An overview of the authors for the front end is given in appendix A. The seven criteria for a viable MPI and related activities proposed by these authors are listed in appendix B.

### ***Interventions delivering a viable outcome of the front end***

#### *Interventions for crossing boundaries between parties*

Part of the solution for creating a viable MPI lies in understanding which activities are a must in a starting MPI. These direct interventions concern the primary process of this early part of the development of the product or service. Direct interventions are different from indirect (management) interventions<sup>2</sup>. A lot of research has been conducted into optimization of these activities such as *parallel processing* to achieve optimum use of resources (Bruckner et al., 1998), *fast tracking*, which involves simultaneous design and preparation of the realization (Pena-Mora & Park, 2001), working with *stage gates* to optimize decision-making (Cooper, 2008) or enhancing operational skills to keep the working capital to a minimum (Tatikonda, 2013). These approaches show variants of project-based phasing. In most cases where development is divided into phases, the initiation phase is mentioned, e.g., knowledge acquisition / concept investigation (Wheelwright & Clark, 1992, page 33), opportunity identification / idea generation & enrichment (Koen et al., 2001, page 8), discovery / scoping (Cooper, 2008, page 218) and idea generation / idea evaluation (Posselt & Förstl, 2011, page 2). These designs mainly concern the phases used to structure the development process where the front end – the subject of this study – already seems to have been completed. Not so much is known about activities in the very beginning. This is confirmed in research that shows that the initiation phase consists of a set of independent activities, whereas the subsequent phases are structured processes (Kim & Wilemon, 2002). So, which activities in the front-end help create a viable initiative?

As stated before, the overall outcome of the activities is a shared mental model for the parties involved. Amongst authors that propose a set of activities for this outcome are Akkerman & Bakker (2011). Drawing on a relatively new area of scientific literature they propose a mixture of direct and indirect interventions concerning boundary crossing between the parties. It is promising for this study, since the central topic concerns the management of the binding of two or more organizations by crossing their boundaries. Akkerman & Bakker (2011, page 8) define boundaries as 'socio-cultural differences that lead to disruption of action and interaction of parties. They suggest four sets of activities for learning by crossing boundaries:

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<sup>2</sup> Definitions: a direct activity describes what people do to contribute to the development of the criteria of viability. An indirect activity describes what people do for helping to solve a (potential) problem in the execution of direct activities

- Identification with other parties' identities by othering and legitimating coexistence. Both concern the questioning of the core identity of each of the sites leading to renewed insights how the practices relate to each other.
- Exchanging aspects of relevance by communicative connecting, making efforts of translation, enhancing boundary permeability and routinization. Doing these interventions leads to cooperation efficiency (Star, 2010)
- Reflection on differences as sources of potential by perspective making and perspective taking. Because parties start to realize and explicate differences new perspectives emerge
- Conversion of one's own work protocols into work packages, common tools or 'in between practice' for all participants by confrontation of a lack or a problem, recognizing a shared problem space or boundary object, hybridization so something hybrid arises from the ingredients of the different parties or crystallization in a boundary object while maintaining uniqueness of practices and continuous work on boundary

Boundary crossing forms a container for an important set of activities. An example of boundary crossing is given by Beverland *et al.* (2016). They dove into interpretive schemes of designers (thinking in 'shape') and marketeers (thinking in 'fit') and found activities to trigger joint sense-making: exposure, co-opting and repurposing.

The intention with exposure was to reveal the interpretive schemes of designers and marketeers towards each other. In line with existing research on sense-making, exposure involved formal and informal mechanisms, including planned interaction sessions and unprepared engagement with each other's practice. The informants deliberately co-opted each other's tools, concepts and language to enhance the credibility of their requests. This allows recipients to make sense of views different to their own interpretive schemes. The third activity – repurposing – provides the basis for joint discovery since marketeers and designers must co-create new value propositions driven by the possibilities identified in a focus group, for example.

Besides activities for boundary crossing, the use of boundary objects in collaboration is clearly described by Stompff *et al.* (2011). These objects span knowledge boundaries. The objects – representation of product or service concepts - can be observed and reflected on by all involved. Meetings are often staged around the boundary object, no matter it is a visualization, a narrative, a prototype, a sketch or a scenario.

Two other specific interventions in crossing one's own borders as party concern the handling of 'passive resistance' (Heidenreich, 2015). He found that resistance to engage in collaboration needs activities to open to the opportunity. He proposes two activities as shown in table 2.5:

**Table 2.5.** Two interventions to cope with resistance (Heidenreich, 2015).

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*Mental simulation.* Assignment: 'please refer to the product description for at least 1 minute and then imagine the following situation'. In the description it becomes clear that the product is delivered with clear contribution of the partner or it provokes a reflection about this contribution.

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*Benefit comparison.* Assignment: 'please refer to the product description for at least 1 minute and then go on to read the following text'. In the description it becomes clear that the functionality of the product is delivered with clear contribution of the partner.

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To summarize, organizations and functional groups have their own believe systems. To overcome these implicit starting points to become partners, boundary crossing activities and a boundary crossing object can be helpful.

### *Interventions for creating agreed-upon objectives and ideas*

*As showed in paragraph 2.4, lack of agreed-upon objectives of the MPI diminishes its viability. Liedka (2015) listed common interventions (see table 2.6) for formulation of objectives, which originate from and have been tested in design theory.*

**Table 2.6.** Common interventions for formulation of objectives, Liedka, 2015.

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Visualization involves the use of *imagery*, either visual or narrative. In addition to traditional charts and graphs, it can take the form of *storytelling* and the use of *metaphors* and *analogies*, or of capturing individual ideas on post-it notes and whiteboards so they can be shared and developed jointly.

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Ethnography encompasses a variety of qualitative research methods that focus on developing a thorough understanding of users by observing them and interacting with them in their 'habitat'. Techniques here would include *participant observation*, *interviewing*, *journey mapping*, and *job-to-be-done analysis*.

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Structured collaborative sense-making techniques like *mind mapping* facilitate team-based processes for drawing insights from ethnographic data and creating a common mind across team members. Collaborative ideation, using *brainstorming* and *concept development* techniques, helps generate hypotheses about potential opportunities. These tools leverage differences by encouraging behaviours as withholding judgment, avoiding debates, and paying attention to the tensions that differences create in seeking higher order thinking and creating more innovative solutions.

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*Assumption surfacing* focuses on identifying assumptions around value creation, execution, scalability, and defensibility that underlie the attractiveness of a new idea.

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*Prototyping* techniques help make abstract ideas tangible. These include approaches such as storyboarding, user scenarios, metaphors, experience journeys, and business concept illustrations. Prototypes aim to enhance the accuracy of feedback conversations by providing a mechanism to allow decision-makers to create more vivid manifestations of the future.

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*Field experiments* are designed to test the key underlying and value-generating assumptions of a hypothesis in the field. Conducting these experiments involves field testing the identified assumptions using prototypes with external stakeholders, while paying attention to disconfirming data.

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The conclusion drawn earlier that agreed-upon objectives are key in a MPI, asks for activities that make objectives with the MPI explicit before reformulation and sharing. So, a set of direct activities to produce these agreed-upon objectives are necessary in the front-end phase.

### *Interventions for creating cooperation: deployment of staff, using strengths of the organizations and a helpful style of management*

As we have seen in paragraph 2.3, poor collaboration operationalized in cooperation and coordination is the most common reason for failing collaboration in MPI's (Gulati, Wohlgezogen & Zhelyazkov, 2012). So first, which activities must be done to get good cooperation in the MPI?

Publications show a variety of angles about deployment of staff. Proper staffing should enable the MPI to understand customers' problems and needs, which is essential in fulfilling their expectations of the new product or service (Neu & Brown, 2005). This was confirmed in a study of Ottenbacher & Gnoth (2006) showing that staff evaluation from a customer's point of view helps to get the right resource quality in the initiative. Customer participation, however, has no impact on competitive superiority and sales performance and even has a negative impact on the radicalness of innovations (Carbonell et al., 2009). Interesting findings of Schweizer (2015) concern staffing with 'Technology Reflective' persons. The new easy-to-administer TR scale can be used to recruit people with high technology reflectiveness scores to contribute to the innovation process. Given these findings, also external people with high TR scores may be deployed to improve product concepts. If they are integrated into the innovation process early on, they can shape the concepts in a socially beneficial way, potentially diminishing barriers to market adoption.

Mulder (2012) emphasized the competences of the nominated project leader and project team members, and the assumption is that selection of them is a key activity.

The use of the strengths of other parties is the second element of cooperation as well in the activities in the front end as well in the phases to follow. Unique resources give a better position in the market given the assumption that capacities and resources take a long path to develop (Wernerfelt, 1984, Porter, 1990, Hamal and Prahalad, 1994). These theories deliver the argument for cooperation (activities) that a competitive advantage exists when resources that are heterogeneously distributed across organizations are brought together. The MPI especially has a need to get these strengths operationalized by partnership of with lesser dependency by supply to be able to develop a promising product or service.

#### *What are the typical management style related activities needed in a starting MPI?*

Style concerns the typical aspects in leadership behavior. When emphasized it causes a climate or culture effecting cooperation and coordination. 'In the early days' Asch (1953) suggested to create a climate of diversity so that parties experience possibilities for acting constructively and creatively. In addition to that, a certain degree of trust - based on values as honesty and transparency - between the main players needs to, Edelenbos & Steijn, 2010). Important findings by Doz (1996) that were confirmed by (2005) and Vlaar (2006) show that the initial level of (dis)trust in interorganizational collaboration have disproportionate self-reinforcing effects on the development of the collaborative relationships: this not only influences the degree of formalization and interorganizational performance but also how partners interpret the behavior of each other.

Nakata & Sivakumar (1996) formulate that a static attitude focused on the past and present, such as reciprocation, 'face', and tradition also correlates negatively with initiation. A dynamic, future-oriented attitude, persistence, hard work, fear of embarrassment and regard for relationships correlate positively.



Fiske (1992) described four behavioral models that may be useful in building cooperation, because cooperation asks for transactions. Transactions flourish according to Fiske in four ways. The Communal Sharing model shows that members of an in-group treat each other as equivalent, ignoring individual differences. Bertels et al. (2011) confirm this model: managers should simultaneously invest in increasing proficiency in dispersed collaboration and supporting communities of practice. Either one by itself is insufficient. Because of its significant direct effect, managers should also nurture an open climate favoring risk taking, trust, and open interaction. The Authority Ranking style reinforces relations ordered in a (perceived) hierarchy with higher-ranked individuals being authorized to command and lower-ranked individuals being expected to obey. The Equality Matching variant organizes relationships with reference to the degree of balance or the lack thereof: 'I take my student son to the restaurant – he takes me to the Mensa, and it is alright! Finally, the Market Pricing style organizes relationships based on common values such as money. The context of an MPI makes a mixture of Communal Sharing within the MPI and Market Pricing for the input of parent organizations preferable. Indeed, Communal Sharing is appropriate since the partners share objectives, hazards and benefits and build an equity or non-equity relationship without hierarchy. This is in line with Nakata & Sivakumar (1996), who found that in product development, power distance, masculinity and individualism correlate negatively with initiation of the new product development process. But Market Pricing is suitable as well, because inputs in the initiative can be priced by one of the parent organizations of the partners.

Finally concerning style, several articles (Schruijer, 2005, Sullivan et al. 2012) describe the need for a style called Collaborative Leadership that unites parties, works as a facilitator for interaction, shows a neutral attitude, has an eye for interests and acts independently from authorities. Raelin (2006) defines collective leadership by four characteristics. First, it is concurrent, meaning that leadership is present at more positions at the same time. Secondly, by being collective it is possible that decisions are made by whomever has the relevant responsibility. The third characteristic – mutuality – expresses the idea that a member may speak for the entire organization and finally, collective leadership is compassionate which means that dignity is preserved for everybody in the organization. By using this style action learning is facilitated. These characteristics make collective leadership feasible for a context as an MPI since the initiative is dependent on the contribution of every participant.

The above findings indicate that good cooperation activities ask for staffing the MPI at least with a customer's point of view, provide access to parties' strengths and make use of a collaborative management style.

#### *Interventions for creating coordination: structures, routines and process management*

As we have seen in paragraph 2.3, poor coordination besides cooperation is a most common reason for failing collaboration in MPI's (Gulati, Wohlgezogen & Zhelyazkov, 2012). So first, which activities must be done to get good cooperation in the MPI?

Formalization of collaboration – structuring relationships - helps partners to decompose and establish tasks, especially in MPI's where tasks must be tuned, and joint decision making is necessary (Gulati and Singh, 1998). Activities such as implementing a development committee and a project champion do help (Blindenbach-Driessen & Van den Ende, 2006). Kijkuit & Van den Ende (2007) indicated that significant activities take place before initiatives enter a firm's formal product development process. The study supports the roles of the champion, the sponsor and the gatekeeper as major actors that work together to create and promote projects before introduction into the formal process. Champions make the organization aware of opportunities by conceptualizing the idea and preparing business cases. Sponsors support the development of promising ideas by providing resources to demonstrate the viability. Gatekeepers set criteria and make acceptance decisions. The authors also show a dynamic interdependence between the key players.

At the same time, very high levels of formalization threaten interorganizational performance because they provoke 'cumbersome, overregulated and impersonal processes that enforces individuals to adhere to' (Beck and Kieser, 2003, page 794). In addition, according to Buganza (2006), a highly formalized approach, including predefined activities, phases, and time frames, is inappropriate for developing products and services in volatile environments. Market turbulence for example also impacts group collaboration, specifically for MPI's. However, a certain level of clarity in definitions and expectations of partners that originate from formalization, facilitates assessments by stakeholders of their partner's behavior (Carson ea., 2006).

Some authors argue that formalized division of labor is necessary in the organizational and job design (Gulati & Singh, 1998, Vlaar ea., 2006). This institutional school of thought proposes shared institutions to facilitate coordination and cooperation. They propose conventions for metrics and measuring, meanings by glossaries and values such as reciprocity, information sharing and feedback. They clarify their position by the situation of two cars approaching each other. Most conventions make both drivers to steer to the right: no problem. But in inter-organizational situations workers suffer dual identification with parent and partner organization, more authority structures and difficult boundaries (Scheiner, Kale and Corsten, 2009). Oxley and Wada (2009) promote the joint venture format, as it confirms focused interaction and prevents items not of interest to enter the collaboration. Tortoriello and Krackhardt (2010) show that ties to non-redundant resources enhance innovation only when the two companies are both strongly and reciprocally tied to the same third party. Another viewpoint is given by Wheelwright & Clark (2001). They point on the possibilities of integrating teams from functional departments. They argue for heavy-weight development teams led by project managers with specified skills. In addition, the emergent state of a front-end innovation, the lack of a shared context and the inability to co-shape, pass on, and physically feel artifacts otherwise used as boundary objects (e.g., a draft prototype put together on the spot), prevent tacit knowledge transfer (Bertels, 2011) unless this is countered by constructing a context that stimulates tacit learning.

As pointed out earlier, if (communication) routines – another coordination provision- in collaboration are absent, problems concerning effectiveness and efficiency arise. Luo (2005) states that installing formalized procedures (coordination provisions for problem solving, decision making, conflict resolution, performance evaluations) can create a positive spiral based on partners 'sense of procedural justice'. Then the collaboration may extend to domains that were too sensitive or too risky to share. Such positive reinforcement loops have been empirically identified (Faems *et al.*, 2008). On the other hand, the perception of shortcomings can trigger also a negative self-fulfilling prophesy. Successful collaboration depends partly also on the success of the balancing routines between exploration and exploitation in the parent organizations (Jansen, 2005). The MPI must develop routines to serve the short-term expectations of the parent organizations, probably by focusing on the fiscal year.

Other routine activities to be developed concern the knowledge system. Knowledge management is about gathering information on feasibility internally and externally, and making it available and collectively owned (Leiponen, 2005). To ensure an effective diffusion of the knowledge gathered, a free flow of information should be promoted (Van Riel *et al.*, 2004). So, development of knowledge and use within the initiative be based on new routines in and around the MPI. Chesbrough and Bogers (2014) propose an open exchange within a MPI with few partners, using a discovery register and concealment. When many partners participate, they suggest a layered exchange, using a license scheme or 'umbrella contracts' for knowledge use up to a certain level, sometime with an obligation to pay subsidy. Dyer & Nabeoka (2000) developed network-level learning principles for knowledge that is developed or resides within the network and is codified by a network-level storage system. An informal approach was suggested by Holmqvist (1999). He defined the concept of 'imaginary organization' – an arena where actors can build knowledge on a joint basis, converting their individual knowledge into inter-organizational knowledge with a collective storage mechanism. Imaginary organizations 'live' only through the interaction of actors.

Then a set of activities for the building and maintenance of trust as basis for coordination is proposed as important success factor in MPI's. Ghoshal & Moran (1996) see trust as the factor that ensures collaborative action instead of opportunistic behavior. They present the example of two hikers confronted with a tiger. One of them reaches immediately to his running shoes. On the statement of the other that he cannot outrun the tiger, he answers that he only has to outrun his mate.... Trust however, would give them long term solutions better for both as climbing a tree or lightning a fire. Schruijer (2005) pointed at a self-fulfilling prophecy. She found that when good-quality relations are dominant at the start of initiatives, the coordination develops to an effective level. Vlaar (2006) shows that the initial level of trust has self-reinforcing effects on the development of the collaborative relationships. Not only a lower degree of formalization but also higher interorganizational performance because partners interpret the behavior of each other better. Gulati & Sytch (2008) suggest implementing coordination mechanisms for changes, conflicts, decision making. If they work well, these mechanisms foster trust. Malhotra & Murnighan (2002) argue

that non-binding contracts lead to personal attributions and thus may provide an optimal basis for building interpersonal trust in a variety of situations. Dyer & Nabeoka (2000) and Levin & Cross (2004) suggest that weak ties provide access to nonredundant information, but that competence-based trust is especially important for the receipt of tacit knowledge. Klijn, Edelenbos & Steijn (2010) show that trust does matter for perceived outcomes and that network management strategies enhance the level of trust.

Other trust building activities are shown by Badir & O'Connor (2015). They indicate that parties build trust through regular and systematic interaction establishing social ties. Trust and tie strength between partners are created by choosing the right frequency and media richness for coordination of partners' communication. Badir and O'Conner found that the need for a high degree of inter-organizational learning needs frequent communication, using rich media (face to face, meeting, videoconference). Partners need to understand each other's capabilities and share their knowledge. This is especially the case for initiatives with architectural character compared with modular arranged activities. Less rich media are e-mails, letter or numeric documents. According to Daft and Lengel (1986) richness depends on possibility for immediate feedback, number of channels, degree of personalization and language variety. The relationships as stated by Badir and O'Conner is shown in the next figure 2.1.

Type of interorganizational learning	Tacit	(2) Infrequent communication using rich media (outcome: Moderately strong)	(1) Frequent communication using rich media (outcome: Strong ties)
	Explicit	(4) Infrequent communication using low media richness (outcome: Weak ties)	(3) Frequent communication, using low media richness (outcome: Moderately weak)
		Low	High
		Degree of interorganizational learning	

**Figure 2.1.** Interorganizational Communication/Strength of Ties (Badir & o'Connor, 2015).

Joint planning of activities is important at the start but also as outcome of the front end to ensure good timing and order in the interdependent activities divided over several parties (Raveendran & Puranam, 2012). Planning is more an area of coordination than cooperation since the action plan concerns priorities, change management, hierarchy of management values and decision making. Since the parent organizations have probably their own priorities and conventions about planning, the initiative – in the very beginning still an exotic phenomenon – needs to find its fit in the parent organizations. This is not always easy. Van Dijk (2008) proposed five tactical action plans (informal coordination) for countering these problems with legitimation or embedding of new initiatives in parent organizations:

1. Conformation: embedding the initiative into the existing conventions
2. Selection: looking for a supporting group that enhances legitimation
3. Transformation: introduction of new conventions that can be merged with old conventions
4. Toleration: acceptance of a combination of formal and informal strategic areas
5. Non-conformation: ignoring existing conventions ('Saying yes/no and behaving differently').

All in all, coordination is important during the front end but also as a product of the front end. Participants gain in their relationships from a certain level of structuring because it enables a positive dynamic interaction. Also (new) routines give possibilities to handle surprises with trust building possibilities where joint planning helps keeping overview of work to be done at several organizations.

The above paragraphs present the problems shown in literature about the front end of as well the suggestions for enhancing the creation of a viable multi-party initiative. Drawing on the above findings in literature, the next paragraph assesses factors that contribute to the creation of a viable MPI. This selection of these factors is based on the publications in journals with accent on product- and service development, repetition in research outcomes and focus on practice.

## **2.9 Assessment and evidence-based lessons for the preliminary research question**

What evidence-based insights can be drawn from academic literature? The problems and hazards are clear that create 'our' field problem: many multi-partner initiatives perish because they are short on viability at the start. Five learnings are derived from this literature search and highlighted in the following paragraphs.

### **Lessons learned one: lack of a general theory**

In the journey through the literature no theory was found useful for the building of a multi-party initiative from scratch. An extensive study about product and service development (Antons, Kleer and Salge, 2016) confirms this. None of the articles they studied addresses the process of the very front end of service of product development. This is an explanation for *the lack of a coherent theory for the approach of the front end* that can be used in this study to build on.

### **Lessons learned two: seven criteria for description of viability of the initiative**

One product of this study is the description of the outcome of the front end. This enables the assessment of the value of the MPI for the start of the next stage. This means that at the end some tangible and intangible outcomes must be present: a shared mental model of the (continuation of) the initiative addressing the key concerns of participants.

Learnings from literature show that the outcome of the inception phase needs to include seven components that construct viability:

1. The fit of objectives of the initiative with the objectives of the individual partners.

So, a requirement is that the initiation process must show how to create a shared objective for the MPI. The participating organizations have their own objectives (Suarez & Lanzolla, 2007) or different reasons for collaboration (Wernerfelt, 1984, Tsang, 2000, van de Vrande, Vanhaverbeke & Duysters, 2011). The front end serves to make sure that the initiative itself has objectives that fit the objectives of the participating partners.

2. A feasible idea or concept

The elaborate study of Kristiansen (2012) shows that an idea for the new service of product should address technology, market, performance, risk, (new) knowledge and time horizon, no matter the incremental or radical character of the innovation. Especially, the fit with future users is important even before materialization of the idea (Chaos reports, 2012- 2015, Press & Cooper, 2003, Hauser, 2013). It needs to be present at the end of the front end to substantiate the viability. This means that a requirement for the process in the front end is that it addresses these six characteristics of the idea.

3. The coordination of the next phase

To prevent operational risk (Gulati, 2012) the front-end phase as well the next phase(s) need to have arrangements to prevent coordination failures. This means that coordination is a building block for viability (e.g., joint planning, handling interdependencies, coordination mechanisms) resulting from activities in the front end. But coordination is as well a requirement for the approach of the coordination in the front end itself.

4. The cooperation of the next phase

We use the same reasoning for prevention of cooperation failure: the relational risk that consist of changes in partners' commitments or claims in the relationship (Gulati & Sytch, 2007). So, this is also a building block (e.g., acceptance of standards, allocation of resources, sharing of knowledge, co- promotion) in the outcome of as well a challenge for the road in the front end.

5. Specialized tasks for integration with important other players

We have seen (Gould & Fernandez, 1989, Hansen, 2002, Aalbers ea., 2016, Hofman, Halman & Song, 2017) that the representation of the initiative needs to be a specialized job, vertically and horizontally. This role handles the balancing routines between exploration and exploitation in the parent organizations (Jansen, 2005). So, the buildup of this roles should be addressed in the product of this dissertation.

## 6. An approach for partitioning the development of the idea

We saw that the discrimination between modular or architectural configuration of the work packages has consequences for the setup of the ties between partners (Simon, 1962, Badir & o' Connor, 2015, Hofman, Halman & Song, 2017). A good approach in the front end anticipates on this configuration of work packages.

## 7. The support of the parent organizations

This may be also partly a moderating variable, because some of the strategic intentions of the parent organizations are given when an MPI emerges. But explicit intentions of the parent organization may also be an outcome. In both ways it is an important variable to be present (Poppo & Zenger, 2002, Ko & Lu, 2010, Mulder, 2012, Chaos Manifesto, 2013, 2014, 2015).

The seven factors show what is presented in literature and may be the parts that together operationalize the viability of the MPI. Summarized in table 2.7:

**Table 2.7.** Viability factors.

Support of partner organizations	The initiative will be added to the portfolio of partners because it passes the Idea Gate (Cooper, 2008)
Idea with six characteristics	Immaterial thought about a solution (Cooper & Sommer, 2016) with assessment of market potential, performance requirements, technology unknowns, project risk, new knowledge and time to market (Kristiansen, 2012)
Fit of objectives	A description of fit of objectives of the initiative with objectives of partners (a.o. Gulati, 2012, Liedka, 2015)
(Inter-organizational) cooperation next phase(s)	The joint pursuit of agreed-on objectives in a manner corresponding to a shared understanding about contributions and payoffs (Gulati et al., 2012, page 6). This concerns the strengths, staff and style
(Inter-organizational) coordination next phase(s)	The deliberate and orderly alignment or adjustment of partners' actions to achieve jointly determined objectives (Gulati et al., 2012, page 12). This concerns creating structures, communication (relationships) and process management.
Approach for partitioning of work next phase(s)	Architectural improvements of subsystems that have a significant impact on the existing interface standards and interactions with other subsystems or Modular improvements of subsystems that leave the existing interface standards and interactions between the improved subsystems and other subsystems largely unchanged (o.a. Hofman, Halman & Song, 2017)
Specialized tasks for integration with parent organizations	The representation of the initiative needs is a specialized job, vertically and horizontally (a.o. Aalbers, 2016).

## Lessons learned three: requirements<sup>3</sup> for answering common problems in the front end

Clustering and translating the main problems and hazards results in the following four areas to be addressed.

*The answer should synchronize the mental position of the partners continuously.* Sometimes some of the participants seem to be in one of the development phases, while others locate themselves in one of the scoping phases (Cooper, 2008).

<sup>3</sup> 'Requirement': a functional or operational need that the answer for a field problem should meet.

*The answer should help the parties to develop ties.* By doing so they know how to create partners commitments, routines or (informal) coordination. This prevents a growing relational risk (Gulati ea., 2012, Klijn, Edelbos, Steijn, 2010) produced by a negative self-fulfilling spiral (Schruijer, 2005, Verdaas 2006).

*The answer should help parties to overcome boundaries.* Parties need to understand what to do to prevent operational risks when a partner is not able to respond to agreed-upon capabilities (Akkerman & Bakker, 2011), bad implementation of rules of engagement or cognitive misunderstandings because of cultural differences (Berends, Garud, Debackere and Weggeman, 2011).

#### **Lessons learned four: it is important to define the front end to be able to operationalize the closing out.**

This is about how to conclude that the viability of the initiative is valid. There must be a decision or another concretization stating the viability is good enough. Without this it is not possible for the initiative to leave the front end!

#### **Lessons learned five: the components of viability grow by a specific set of activities.**

Many authors have published findings concerning activities when the front end is completed. In appendix A the overview is given of authors and activities linked to the front end in literature.

## **Conclusion**

This chapter shows the problems and their effects in the front end of an MPI as described in literature. Academics also produced insights about what is important to create a viable MPI. These problems and insights are categorized with the classification of Gulati ea. (2012): objectives, cooperation, coordination and activities to be done at the start. This scattered information shows five important findings:

1. There is a lack of general theory for this front end, but many useful research findings.
2. A viable MPI presents a fit of parties' objectives with (one or more of the) six characteristics of the idea they will develop. Parties think the same about the partitioning of the work to be done and have clear tasks for communication with the parent organizations. The support in the parties' organizations is arranged as is the coordination and cooperation for at least the next phase.
3. This study should enhance dynamics on group level, synchronization of the mental position of parties, the development of ties between parties and the overcoming of boundaries.
4. There is no clear description of the process of this part of the front end.
5. A lot of activities are known but not as a coherent set leading to a viable MPI.



These findings give a view on the knowledge gap in literature. This gap enables conclusions about what data need to be collected to create an arrangement of activities that enhance the viability of an MPI. In the chapter three the gap is explicated. The methodological starting points and methods to diminish the gap are described as well the approach to collect supplementary data.





# CHAPTER 3

## DESIGN PRODUCTS AND METHODOLOGY



### 3 Design products and methodology

#### 3.1 Knowledge gap: from research question to design proposition

The field problem discussed in this study is that many multi-party initiatives perish. This is illustrated by De Man and Duysters (2002, 2007, 2011) who found that at least 50% of starting collaborations fail. Kijkuit and Van de Ende (2007) even describe the front-end collaboration domain as 'Death Valley'. In chapter one this field problem is the basis for the preliminary research question:

- *Which interventions can be applied to help several parties with various relevant ideas at the start of an innovative initiative, to increase the viability of that initiative?*

To understand what is known, literature is unravelled in chapter two for answers to two questions:

- *What problems, and their causes, exist in the development of a viable MPI?*
- *Which evidence-based insights can be derived from literature about why and how initiators intervene to create a viable MPI?*

Concerning the answers for preliminary research question one, the overall conclusion is that - based on the findings in literature - no coherent approach or set of capabilities exist for the management of the initiation of multi-party initiatives (Gulati & Gargiulo, 1999, Koen, 2001, de Man and Duysters, 2002, Cooper, 2011, Antons, Kleer and Salge, 2016, Eling & Herstatt, 2017), but parts that could help to form a theory do exist. At the same time there is a growing need for multi-party initiatives (de Man & Duysters, 2011) based on the advantage of sharing resources (Wernerfeld, 1984), reduction of transaction costs (Williamson, 1985) or other benefits as meeting customers' demands or keeping up with competition (de Jong, 2009, Bindroo, 2012). The phases that follow the initiation - in general development and delivery- are well described and researched (Pena-Mora & Park, 2001, Posselt & Forstl, 2011, Cooper, 2011, Tatikonda, 2013). Reid and De Brentani (2004) and Cooper (2011) note that it is of great importance to create an approach for the initiation of a multi-party initiative. More specific, the knowledge gap - absence of a coherent approach - also shows an absence of a description of this part of the front end including the outcome and the set of activities to produce this outcome.

At the same time partial insights - answers to the second and third question - are available in literature, which help for a coherent approach of the front end. Overview of problems are described in paragraphs 2.3 to 2.7. And various authors (Hofman, Halman & Song, 2017, Chaos Manifesto, 2015, Hauser, 2013, Gulati, 2012, Vanhaverbeke & Duysters, 2011) offer insights about the viability and outcome of the front end. Others (Beverland

ea., 2016, Liedka, 2015, Badir & O'Connor, 2015, Akkerman & Bakker, 2011, Schruijer & Vasina, 2008) suggest activities especially for the front end.

With the preliminary research question of chapter one, complemented with the description of the problems and the scattered insights of chapter two, the conclusion for the setup of this study based on the logic of Swales (1990) gives the following logic:

This chosen research question (*which interventions can be applied to help several parties with various relevant ideas at the start of an innovative initiative, to increase the viability of that initiative*) is important because lots of multi-party initiatives perish in the beginning or go into development phases with insufficient viability.

We already know much about opportunity identification and evaluation, customer involvement, cooperation between departments, behaviour in teams and innovation initiatives within organizations. Also, aspects about collaboration between organizations are known such as frequency and media of communication, boundary crossing, content of the proposition, relationship with parent organizations, handling of intellectual property and reasons to collaborate.

However, it is still unclear what to do in the process of initiating multi-party collaboration and what to deliver at the end to bind a set of parties in their pursuit of an innovation after an opportunity or problem is identified and before the initiative enters the more formalized development, commercialization and realization stages.

So, to diminish this knowledge gap, this study will propose an approach for creating a viable innovative initiative of willing partners in the front-end phase. The approach consists of a setup of concepts, activities and their outcome particularly in the front end, converging aspects of use into a coherent configuration. Therefore, given the objectives stated in chapter one, the product of this study is formulated as follows:

**An arrangement of interventions that enhance the viability of a multi-party innovation initiative in the front-end phase.**

Stated popular: create an approach to get from a multi-party opportunity to a multi-partner initiative.

Looking closer at the overall product, four partial design products from the breakdown of the design proposition come forward as outcome for this study:

*Product 1: (the description of) the characteristics of the front-end phase (the context).* The front end is an abstract and fuzzy concept. Kim and Wilemon (2002) coined this phase as the period between when an opportunity is first considered and when an idea is judged ready for development. To understand this context better, a more concrete and practical description of this part of the total development route is needed.

*Product 2: (the description of) the viability of a MPI.* In chapter one we defined viability as the capability of an individual initiative to maintain itself or to obtain sustainability. In chapter two we already sorted out seven building blocks for designing the viability of an initiative in the literature.

*Product 3: an arrangement of direct (3a) and indirect (3b) interventions for the front-end phase that boost the enrichment from multi-party to multi-partner situation.* Direct interventions – for example ‘identifying potential lead users’ - contribute directly to the viable outcome. These interventions concern also the interfaces with the eventual parent organizations or other individual stakeholders. After all, the level of analysis chosen is the group level, the individual multi-party initiative itself.

Indirect interventions – for example ‘selecting communication media and channels’ lead to enhancement of execution of the direct activities, an indirect contribution. Sets of direct and indirect interventions are already listed in chapter two as outcome of the literature search.

*Product 4: the evidence of the intended contribution of the sets of interventions of deliverable 3.* Besides the operational quality - fitting the requirements of users -, interventions also need to enlarge viability i.e., the fit with the functional requirements or the internal validity (van Aken ea. 2009). This asks for attention to rival explanations and mechanisms: can other factors be excluded as reasons why viability grows? Also, pattern matching - the pattern appears in other cases in the same context - gives an indication for internal validity. This means discovery of non-effective patterns, for example moving on to a fixed contractual approach too quickly. These patterns act not as law, as causal explanation but rather as plausible interpretation (Ropes, 2010).

To be able to deliver products two, three and four, a precise description is important of what is meant by the front end. This is elaborated in paragraph 3.2 by introducing the Inception phase. This demarcation shows what belongs to this study and what does not. In addition, choices are necessary about the research approach. Since the ambition is to deliver a design proposition, design science methodology fits the best as is argued in paragraph 3.3.



### 3.2 The Inception phase: start of the development road

A coherent set of interventions and their outcome for the front end of a MPI is not described in current literature. Since this process delivers the viable MPI, a more precise scope and description is needed to understand what belongs to it. To position this part of the development road, I propose the *Inception phase*. Inception according to the Oxford Dictionary is '*the action of entering upon some undertaking, process, or stage of existence; origination, beginning, commencement*'. The Inception phase starts with an identified opportunity or problem and ends when partners confirm to continue because ideas about the deliverables and the process to come are shared. This situates the Inception phase as the last part of what in literature is known as 'the fuzzy front end' (Smith and Reinertsen, 1992). The use of an Inception phase approach can enhance current practices where activities are done intuitively, wrong, not or executed as a routine that fits only one of the partners.

What belongs to the Inception phase? To answer this question Wittgenstein's family classification (1953) for describing phases in development processes is suitable. He states that affairs falling under a common term, such as 'phase' show overlapping similarities and resemblances rather than universal, specifiable common properties. It makes it possible to state for every phase specific concretizations of these resemblances, knowing that resemblances are applicable in all phases. For the several phases in the total development process, I propose problem, organization, focus, activities, outcome and MPI-maturity as resemblances.

Every phase has a central problem to solve before going to the next problem as challenge for the next phase. In the Inception phase this central problem is the lack of joint interest at the same moment that it starts to be clear that parties need each other. They start networking, enriching the opportunity or problem in a narrative for a product or service and in shared ideas about collaboration to develop it. At the Idea gate (Cooper, 2008) they assess the joint interest and decide to yes or no continue with each other.

The process of the creation of the idea, Ideation, is not a subject of the Inception phase (see table 3.1). Ideation belongs to the Opportunity Seeking stage (Cooper and Edget, 2008, Kim & Wilemon, 2002, Koen et al., 2001, Khurana & Rosenthal, 1998). Before the Inception phase starts, some party scouts a problem or opportunity, for example to replace ugly solar panels by designed roof tiles. When this party understands that he needs resources and starts to explore the possibilities for development together with a building contractor and an engineering consultancy firm, they enter the Inception phase of a potential multi-party initiative. In literature, this is described for mono-party initiatives, but for this study the assumption is made that in a multi-party context some formal or informal gatekeepers in the potential parties also make an evaluation of the opportunity. When they decide to continue, they allocate resources to the advancement of a new idea (Eling, Griffin and Langerak, 2016) entering via the Concept gate (Cooper,

2008) phases of (concept) development and if successful also delivery (Tatikonda, 2013, Posselt & Förstl, 2011, Cooper, 2008, Pena-Mora & Park, 2001, Bruckner et al., 1998). These (concept) development phases are not in the scope of the Inception phase. Khurana and Rosenthal (1998, page 59) defined 'the front end as being complete when a business unit commits to funding and launch of a new-product development project or decides to redirect or stop the project, a go/no-go decision about a business case, business plan or project proposal'.

This study tries to find an equivalent for the Idea gate in the front end for a multi-party initiative, on the way to a joint project, alliance, joint venture or the like. The assumption is that doing the right things in the very beginning of an MPI will produce a viable start or a prudent decision to stop. The context of this part of the front end becomes clear by scoping the beginning with a proposal for the Inception phase with its typical problem (lack of joint interest), typical questions of practitioners (such as 'how will we direct each other') and ambiguities (such as: several notions of the direction).

Phases help to make go-no go decisions for continuation. Since this study is about readiness for continuation by more parties, I propose a level of readiness as outcome of a certain phase based on content and process starting points formulated for the initiative they participate in:

- individual readiness: a party acknowledges the opportunity and wants to explore collaboration
- collaboration readiness: several parties share the idea and the follow up
- investment readiness: several partners desire the same deliverable and organize development
- delivery readiness: several partners want to scale up to routine delivery of the product or service.

An overview of development, the scope of the Inception phase and where it is situated is pointed out in table 3.1.

**Table 3.1.** Positioning of the research domain of this PhD thesis.

	Opportunity seeking	Inception (focus of this study)	Pre-MP-project	MP- Project
<b>Problem</b>	Lack of direction	Lack of joint interest	Technical and commercial lack of clarity	Lack of outlines and up-scaling problems
<b>Organization</b>	Routine departments > formal and informal procedures	Emerging collaboration > networking	Emerging formalization > cluster, project	Emerging routines > joint venture
<b>Strategic Focus</b>	Identification of business development areas	Formulation of product/service opportunities	Challenge of business model	Capital valuation, business plan, collective ambition
<b>Road and essential activities</b>	From accepted strategy or problem to opportunity	From opportunity or problem to shared ideas <sup>1</sup>	From shared ideas to desired deliverable	From desired deliverable to product or service
<b>Example</b>	Accept that current meat needs to be substituted	From 'meat substitute' to 'cultured meat'	From 'cultured meat' to 'cultured chicken breast'	From 'cultured chicken breast' to 'up scaled production'
<b>Outcome</b>	Idea portfolio and starting exploration of one or more of the ideas	Viable initiative of willing partners: yes/no. Idea gate passed in parties' organizations	Temporary organization: yes/no Concept gates passed in parties' organizations	Routine organization: yes/no several gates to routine departments in parties' organizations)
<b>MPI- maturity level</b>	Level 1: <i>Individual readiness</i>	Level 2: <i>Collaboration readiness</i>	Level 3: <i>Investment readiness</i>	Level 4: <i>Delivery readiness</i>

### 3.3 Choice for Design Science Research Methodology

To make an informed choice about the research methodology the following starting points are criteria for this choice. This study:

- is looking for events and experiences. From a social constructive epistemological position insights for 'how to' are more interesting than correlations or figures as 'how often'.
- aims at studying behavior in a chosen context but there is no possibility to compare two identical situations in a controlled way.
- has small samples of MPI's, experts and workshops as sources for qualitative data collection.
- wants to learn about the why and the how in MPI's for which a quantitative approach is less suited.
- wants to construct theory more than test hypothesis about it.

Given these starting points, literature study as well data collection will be done to find the explanations for and observable patterns in intervention–outcome relationships for which qualitative research method is more suited. Scientific research serves different viewpoints, according to van Aken & Andriessen (2011). Research may lead to the truth, only for the sake of knowledge, like understanding the behaviour of molecules. However, scientific research can also focus on *field problems*, like the negative influence of Corona 19.

<sup>1</sup> The term Idea is used but 'Proposition' or 'Concept' are also widely applied. The assumption is that at this moment in the process there is no physical representation yet.

These problems have their effect on the real world, but there is no generic knowledge to solve the problem. This applied research can have a descriptive or an explanatory character about the causes of the field problem which can be of great help in solving it.

Another research perspective in applied research is to deliver generic knowledge for designing solutions for specific field problems. This is called Design Science Research, for example how to make sure that children use 3000 words when they enter primary school, how to set up a learning program for auto-mechanics or how to clean seeds in an eco-friendly way. The key assignment of Design Science Research (DSR) is 'to develop effective activities and to give insight in their context dependent effectivity' (van Aken, page 4, 2015). DSR is driven by field problems and tries to deliver generic actionable knowledge<sup>2</sup> for persons who are responsible to cope with a field problem. The research question of this thesis also looks at a field problem: many multi-party initiatives perish. With the help of DSR we want to deliver generic actionable knowledge suited for testing and appliance in the problem context. This science-based approach, currently emerging in organization research (e.g., Van Aken, 2004; Dunbar, Romme and Starbuck, 2007; Pascal, Thomas, Romme, 2013, van Aken, 2015, Romme and Dimov, 2021) matches better with the objective to contribute to a better handling of the field problem than the descriptive or exploratory research options.

Besides driven by *field problems* and *generic solutions*, DSR has an *actor perspective*. This actor may take responsibility for the field problem. In the context of this study the actor is responsible for the management of the Inception phase. A short survey in the field shows that this assignment is recognized and executed. This makes it possible to understand the problems and wishes but also the practical solutions that are developed in the field. These learnings cluster in an overview of requirements formulated by the target group, the customers of the design proposition of this study. The design must meet these requirements. Finally, DSR is based on *pragmatic validity*. The answer to the question 'does it work' has higher priority than 'is it true'? All the above arguments lead to Design Science Research as the best option.

### 3.4 How does design research work?

The chosen methodology – Design Science Research- originates from grounded theory: a systematic methodology involving the construction of theory through the analysis of empirical data (Swales, 1990). Like grounded theory, DSR also begins with a question derived from a field problem and produces knowledge to change situations in desired ones. As researchers review literature and data collected for this research question, repeated ideas or concepts or elements become apparent. These insights into (possibly context-dependent) action-outcome relations are a key element for DSR (van Aken, 2013). These relations may become the basis for new theory. The researcher's task is to gain

<sup>2</sup> Actionable knowledge ('what can we do to improve') can be defined as knowledge that can be used in a specific and direct way to design activities, arrangements of activities, processes or systems producing desired outcomes in the real world (van Aken, 2013)

knowledge about the socially shared meaning that explains the behaviors and the reality of the participants being studied (Aldiabat, 2014). The questions the researcher asks are “What is going on?” and “What is the main problem of the participants, and how are they trying to solve it?”

The basic research strategy of DSR concerns systematic learning of experiences using case studies, in this research multi-party initiatives. Learnings are translated into design principles or design propositions. A design principle is a directive that is valid in a specific context (like negotiations or starting projects) but not concrete enough for a specific situation. For example, ‘when making an agreement participants need to feel procedural fairness’. A design proposition is a possible solution that is applicable in a specific context. For example, ‘in a project start-up, make sure that participants commit to the same assignment’. In the development, testing or application of design propositions a creative leap is needed to create actionable knowledge.

**Table 3.2.** Design principle and propositions according to van Aken and Andriessen (2011).

Design principle	A general directive to be used in a certain context but not applicable yet unless translated into a concrete action in the specific situation
Design proposition	A possible solution directly to be applied in a certain context

This is the main difference compared with descriptive and exploratory research. Designing (abduction) and not deduction is central in analysing descriptions and explanations from data. In this study the design principles to be developed will have their scientific validity in the scientific body of knowledge, as well as in pragmatic validity by practitioners (Worren, Moore and Elliot, 2002). Pragmatic validity arises when idea or problem owners imagine or try out the proposed interventions and effects to be accomplished.

DSR tries to be relevant without losing sight on the importance of being rigor as well. Action design in organizational science must be careful with the relationship between activities and outcome because this relationship is less firm than in the material world where invariant determining mechanisms work. But social mechanisms do exist (Pawson & Tilly, 1997, Davis, 2006, Pajunen, 2008, Hedstrom & Ylikoski, 2010). These authors state that social mechanisms produce context dependent action-outcome relations. These patterns originate from learning (Kolb, 1984) and produce repeated behaviour in similar contexts. This is because humans compare actual situations with previous similar situations, developing a set of actions that is based on the contribution to the outcome in the earlier situation. Of course, it is important to be careful with anecdotal evidence in DSR. Also, while learning of experiences, humans (so also managers..) have the freedom to develop progressive insights. A pattern in behaviour exists because of social mechanisms, if the issue repeats in similar context. These patterns differ from action-outcome relations in the material world, so we need to allow a certain amount of uncertainty. They are neither universal nor do they determine individual behaviour. The design proposition of this study will

propose a pattern, consisting of an outcome – the viable initiative of willing partners - and a set of direct and indirect activities, which deliver this outcome. Pawson & Tilly (1997) added mechanisms as explanations why activity-outcome patterns exist. Mechanisms trigger outcomes and are switched on by activities. For example, 'delivering tasks on time (activity) creates trust (mechanism) leading to delegation (outcome)'.

Designing in this study takes place as well by development as in application. This means that our approach for the Inception phase cannot be induced or deduced from descriptions and explanations alone but needs sometimes a creative leap to meet requirements. Peirce (1923) calls this 'abduction'. In summary in box 3.1:

Charles Peirce, a pragmatic philosopher, discriminates between three methods to reach conclusions: deduction, induction and abduction.

*Deduction:* all the beans in the can are white. This bean is from the can, so it is white. So, the what is known (elements of the problem), the how is known (patterns of relationships in the problem situation) so it is possible to predict the outcome.

*Induction:* I took ad random twenty beans from the can. They all are white, so the beans in the can are white. The what is known (elements of the problem), the outcome is known because observed, the how is not known (patterns of relationships in the problem situation). So, we can hypothesize about the how (patterns of relationships in the problem situation).

*Abduction:* I took ad random four beans from the can. Three are white, one is black. Studying the beans, I develop the hypothesis that the bigger beans in the can are white. Peirce's opinion is that abduction is not 100% logical but holds an element of guessing. This means that the design is a hypothesis about as well the what as the how (a frame) that must be tested.

**Box 3.1** Three ways of reasoning (van Aken and Andriessen, 2011).

For creation of design propositions, all three logics may be used. Deduction from existing theory, induction from data from practice, abduction to propose new theory. This leads us to learnings and theory that fit the requirements that we state for the four deliverables of this study: (the description of) the Inception phase, (the description of) the viability of an MPI, a list of direct and indirect activities, the evidence of the contribution (mechanisms) of the set activities.

Earlier was presented that literature about development of products and services implies findings mainly about the development process after formalisation of the collaboration such as in programmes or joint ventures. Furthermore, research shows that the main

problem areas in early multi-party initiatives concern the sharing of objectives, the cooperation and the coordination. Also, research findings contain pieces of solutions for relevant topics as stabilizing preferences (Hauser, 2013), description of attributes of products and services (Kristiansen, 2012), support of gatekeepers (Eling, 2017), importance of crossing the borders of the participants (Beverland, 2016), use of boundary objects (Stompff, 2011) or interventions for formulation of objectives (Liedka, 2015). This research may deductively be used to either build or extend theory. But the series of activities of creating a viable multi-party initiative is not well specified, asking for an imaginary theoretical framework with known and new explanations. This means that based on literature and collection of data also abduction (our imagination) may be used. In that case the design proposition is still a hypothesis. But being eclectic, the above-mentioned research findings are helpful in building a general theory for the very beginning of multi-party initiatives: a theory concerning the activities and outcome of the Inception phase. According to van Aken en Andriessen (2011) we need to mobilize existing knowledge as well develop new knowledge ('knowledge stream'). At the same time, we aim at concrete and applicable knowledge for this field problem ('practice stream'), because the objective is to enlarge the knowledge about this topic. But the objective is also to help practitioners dealing with a field problem. Both sets of learnings - from literature and practice - lead to insights for the knowledge gap to be closed.

Summarizing, the research design for this study based on the DSR approach is:

1. formulation of the field problem, objectives and the preliminary research question
2. inventory of what is known about problems and insights for solutions in literature
3. formulation of the desired product(s) of this study and justification of the research approach
4. qualitative and quantitative empirical studies for explanations and observable patterns
5. formulation of design principles and design propositions
6. testing and improving the design

Now the knowledge gap, the demarcation of the context, the research products and the choice for DSR are clear. In the next paragraphs the other elements of the research design are explained: the unit of analysis, use of literature and practice, epistemological position, the CIMO-logic, requirements for the research products and the methods for data collection.

### **3.5 Group level as unit of analysis**

The group level is chosen as unit of analysis i.e., the level of interaction of the parties starting to work together. These persons produce the outcome, they make sure the activities are being done and they experience (the effects of) interventions. This means

that explanations derived from individual factors are not emphasized as object of this research, for example demographic or educational background. On the other hand, the factors explaining the position and development of the parent organizations is one level of analysis up and not part of this study either, for example customer tactics or products/services strategy. The only requirement is that parent organizations have independent positions, for example not being a shareholder in another participant. By the way, a parent organization may be small or even exist out of one person, such as an entrepreneurial architect. Of course, the environment of the multi-party initiative matters as context and sometimes as moderating variable - but there is no need to state requirements for individuals or for parent organizations. In practise, the assignment to manage the Inception phase is allocated to a (group consisting of) for example a business developer, a consultant, project leader, ICT professional, MT member, an urban planner, a marketer and/or an entrepreneur. Concerning this target group, I would like to discriminate between two kinds of practitioners. One who is a member of one of the parties and has interest to make his ideas prioritized. I would like to call this figure 'the shepherd'. The shepherd can be perceived by the other members of the initiative as working for his own or his party's interests, (mis)using his mandate to organize the Inception phase. The other position is 'the hireling'. The hireling serves no other interest than a smooth process and can take a plural responsibility more easily. Most of the time the complexity of the assignment asks for a professional, a collaborative leader as we saw in chapter two. He and his group members will use the outcome of this study for the benefit of the MPI.

### **3.6 Literature and practice data**

Findings in literature describe general theory that may not fit directly on the specific field problem. This asks for contextualization of generic solutions found into effective activities to deal with the specific field problem. Operating in 'the high ground of theory' we try to establish what is MPI specific and what is a pattern throughout the MPI's. Within the same reasoning problems found in literature are formulated as requirements that the design should meet (see also paragraph 3.9). Solutions fitting in this context already can be part of the design proposition. Van Aken (2015) calls this transfer to a typical context 'science of the particular'.

Beside findings in literature data are extracted from MPI's, from the practitioners as they solve problems in 'the swamp of practice'. Yin (2013) notes that case studies are helpful for discovery of the why and the how of social behaviour in situations where behaviour cannot be observed in controlled environments. MPI studies enable 'reverse engineering': the dynamics in the MPI's are taken apart to understand how the MPI's work. This makes it possible to assemble a design based on the requirements found. Furthermore, building up insights by iteration throughout the MPI's ('cross case analysis') allows to understand the efficacy of design principles and propositions. The repetition of positive or obstructing



dynamics give insight in the indications and contra-indications of application of the design (van Aken, 2004).

### **3.7 Epistemological position**

The above-mentioned pragmatic starting point shows the epistemological position held in this study, which is a mixture of social constructivism and pragmatism. Design research develops knowledge in the *service* of action (Romme & Enderburg, 2006). We need to know the individual reconstructions of reality about how to act successfully (Lincoln and Guba, 2000). In these views the social reality is constructed and given meaning with ideas. Plato - in ancient Greek times- uses the idea as the representation of original form, to be distinguished from the copy that humans make. Aristotle uses the idea to describe all similarities e.g., the idea 'horse'. This research project will use the idea as an immaterial thought, as *'a high-level view of the solution envisioned for the problem or opportunity identified'* (Koen ea. 2001, p.7). The idea discriminates from a concept. A concept has a defined form, including both a written and visual description, which includes its primary features and customer benefits combined with a broad understanding of the technology needed. Ideas are triggered by problems or ambitions<sup>3</sup>. The idea is receptive: it has the possibility to transform Immaterially. The idea will change several times in the total development process: from idea > viable idea > artist impression > desired deliverable > concept > design > prototype > physical deliverable (> raw material and hopefully not > garbage). This study has a hypothesis as outcome of the Inception phase: ideas that meet the opportunity or problem and are shared as well understood by the partners. The elaboration of ideas and how their acceptance is created are of great interest in the constructive and pragmatic position. This is not the position of the positivistic view that there is a reality that exists independently of the person. This concerns being, facts and theorizing about explanation of things. Constructivism is about becoming, artefacts and framing problems to build theory for changing existing situations in preferred ones (Romme & Dimov, 2021). Both views – positivism and constructivism - agree on the existence of a physical reality independent from men. This can be of interest when ideas in initiatives materialize in prototypes, cross border objects or other physical appearances. This concerns the transformation to the material world where the idea starts to be implicit. For example, the coffee machine carries the idea of making coffee fast and easy for individuals, the thermal heat pump carries the idea of warmth without CO2 emission.

### **3.8 DSR and the CIMO- or CAMO-logic**

Based on literature and expertise of professionals in the field a first version of the four deliverables that compose the approach for creating a viable multi-partner initiative will be developed: the design proposition, suited for this field problem and this context. This

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<sup>3</sup> Many synonyms for problem and ambition are used. But where in organization literature these concepts have different meanings, they all give the answer on the question "why do we need a viable idea".

design proposition will be described in the pragmatic CIMO-logic (Denyer, Transfield & van Aken, 2008). This chain of reasoning starts with the field problem (in Context, for example, how to improve a geographical distributed team). The I stands for the intervention(s) to

be done (for example, face to face kick off) and this intervention triggers a Mechanism (for example, collective insight in the team task) that will produce (part of) the Outcome (for example, effective team). For this study the *overall* CIMO-reasoning is:

- As internal or external practitioner with an assignment for management of the Inception phase (**C**ontext)
- use these igniting activities (**I**nterventions)
- which trigger evidence-based changes in perceptions (**M**echanisms)
- that create willingness to continue in a viable multi-partner innovative initiative (**O**utcome)

So, In the CIMO-format, explanations are formulated as the mechanisms that are triggered by the interventions and help to produce the desired outcome that is stated already. Mechanism based information can answer what – if questions (Ylikoski, & Kuorikoski, 2010). It is an isolated piece of causal knowledge that makes a relevant difference in the outcome. For example, creating transparency in top salaries triggers the mechanism of relative deprivation: I compare myself with for me relevant other persons. And if their salary is higher, I feel deprived, even if my situation is OK. Of course, mechanisms do not show deterministic but probabilistic relationships suited for organizational settings as part of human life. It is important to collect empirical evidence about assumed activities, their properties and relations to change possible mechanisms into plausible mechanisms. Important are the conditions in the context as for example the absence of other intervening factors. The above-mentioned design proposition will be tested and evaluated by the evaluation approach developed by Pawson and Tilly (1997). This process delivers new data for further redesign and development of the approach. This style of creating Evidence Based Practice is described for the first time in *The Reflective Practitioner* (Schön, 1983).

It is likely that CIMO's will be formulated at a greater level of detail, for example: a proposition about which igniting activities (interventions) are needed to get the fit with objectives (piece of outcome) or to get an approach for partitioning the work in the next stage (piece of outcome): the design principle becomes a design proposition changing from a general guideline into a practical handle (see table 3.2) . CIMO's collected in the literature study are listed in appendix C.

Romme and Dimov (2021) codified a different format for the CIMO-logic: the CAMO-logic. They argue (page 7) that *'the CIMO-logic leaves the agent dimension somewhat unspecified by merely describing the intervention/action (and not who the agent is behind the*

*intervention*)'. So, the difference is that they replace intervention by 'agency'. They propose (page 8) '*agency as the capacity of the actor to act in a given context*' for which the logic is applied. The agent incorporates as well normative explanations informed by learnings in the past as well his capacity to recognize and prescribe these learnings for the framed field problem that has to be solved. So, it is not only the action that triggers the mechanism but also the quality of the actor that intervenes with this action. This combination creates the agency that provides a really plausible explanation for a successful intervention.

The (pragmatic) validity of an intervention is based on the explanation that the intervention triggers a mechanism that makes it plausible that the outcome is produced. For example, the intervention 'execute a team start-up' will lead to effective collaboration (the outcome) only because the team start-up triggers a shared understanding of the assignment (the mechanism) that helps when collaboration takes place. It is easy to assume the negative consequence for the collaboration when this shared understanding was not evoked during the team start-up. The design science research group led by van Aken and Andriessen in the Netherlands studied mechanisms and proposes a boiled down overview of mechanisms that are evoked by all kind of interventions.

- Affective mechanisms: the actor feels differently
- Multi-perspective mechanisms: the actor looks through the eyes of somebody else.
- Explicating mechanisms: the actor becomes explicitly aware of something
- Locus of control mechanisms: the actors get different power relationships and/or the actor must do something that he did not do before.
- Reflective mechanisms: the actor reflects on his own behavior
- Efficiency mechanisms: the actor does something more easily

This overview can be useful for persons with responsibilities in the Inception phase because these descriptions give also an indication what kind of intervention is needed, given the relationship of the mechanism with the outcome.

### 3.9 Design requirements for the research products

Functional requirements specify the performance of the outcome: this has to be done in the Inception phase and this can be done to enhance the execution of direct activities.

This performance is derived from the objectives of this study: to enlarge the body of knowledge about and to help practitioners with enhancing the viability of the MPI. Operational requirements specify the use of the research products. In DSR problems - elucidated in the literature study - are reformulated as requirements. If the design meets these requirements the validity of the design grows. In the following paragraphs requirements are listed that are found in literature as well in 'the swamp of practice', from exploratory interviews and the literature search. Requirements from literature are based in academic insights. The overview of requirements for the design is given in tables 3.3 to 3.6.

**Table 3.3.** Requirements product 1:(description of) characteristics of the Inception phase.

From Literature	1.	Characteristics must belong to the same 'family' as found for other phases (Wittgenstein, 1953)
	2.	Corresponds with level of analysis: group level with interfaces to parent organizations and characteristics of individuals
	3.	Must prevent that participants think that they are in the (next) development phase (Cooper, 2008)
	4.	Need to make assessment possible of the collaboration and its future, for example in the form of a 'stage gate moment' (Cooper, 2008).
	5.	Must operationalize the closing out of the Inception phase (Cooper, 2008)
From practice	6.	Must help in selecting initiatives

**Table 3.4.** Requirements for product 2: (the description of) the viability of an MPI.

From Literature	1.	Description of viability is based on literature
	2.	Need to have a shared mental model of how partners are going to cooperate and coordinate when going further (Verworn, 2006, Gulati, 2012, Badir & O'Connor, 2015)
	3.	Need to have a shared mental model how to deal with sources of uncertainty for potential markets and underlying technology (Verworn, 2006)
	4.	Need to have a shared mental model how to deal with unintended knowledge transfer, a key concern among partners (Katila, Rosenberger, Eisenhardt, 2008)
	5.	A 'defined product concept (protocept) prior to development' should be available (Cooper, 2005, Koen, 2001, Kim, 2002, Kristiansen, 2013, Cooper, 2016)
	6.	A foreseen fit with users' needs to be described (Cooper, 2003, Hauser, 2013, Standish Group, 2015)
	7.	A view on the decomposability of the concept should be available (Simon, 1962, Langois, 2002, Hoffman, 2017)
	8.	Support is available built on a shared vision about the set-up of the next part of the project (Popo 2002, Ko, 2010, Mulder, 2012, Standish Group, 2015)
	9.	A view on how cross-hierarchy (vertical and horizontal) ties be concentrated in the hands of a few team members (Gould, 1989, Hansen, 2002)
	10.	A description of fit of goals of the initiative with objectives of partners (Doz, 1996, Suarez, 2007, Schrujjer, 2007, de Jong, 2009, van de Vrande, 2011, Wohlgezogen, 2012, Gulati, 2012, Liedka, 2015)

**Table 3.5.** Requirements for product 3a) a list of direct interventions.

From literature	<ol style="list-style-type: none"> <li>1. Needs to make clear to partners if they work on a 'resource-based view' (Wernerfeld, 1984, Tsang, 2000, Carson, 2006, Wohlgezogen, 2012) or on a 'transaction cost-based view' (Williamson, 1985) or other added value base (de Jong, 2009)</li> <li>2. Should stimulate the joint pursuit of agreed-on objectives in a manner corresponding to a shared understanding about contributions and payoffs (Wohlgezogen, 2012, Gulati et al., 2012).</li> <li>3. Must enable to create an artefact of the idea that functions as cross boundary object (Akkerman, 2011)</li> <li>4. Should align or adjust partners' activities to achieve jointly determined objectives (Okhuysen, 2009, Wohlgezogen, 2012, Gulati et al., 2012)</li> <li>5. Need to make sure that partners objectives fit with the goals of the initiative they participate in (Doz, 1996, Suarez, 2007, Schrijver, 2007, de Jong, 2009, van de Vrande, 2011, Wohlgezogen, 2012, Gulati, 2012)</li> <li>6. Must encounter risks: such as avoidance, misappropriation, holdup, excessive contractual formality, relational risk, unforeseen changes in partners commitment, import of each partner own believes and routines, jeopardizing of shared goals, underestimation of relations between tasks and coordination need, resource stickiness (Ghosal, 1996, Scott, 2001, Levin, 2004, Mishina, 2004, Gulati, 2007, Mellewig, 2007, de Jong, 2009, Scheiner, 2009, Berends, 2011, Gulati, 2012, Raveendran, 2012)</li> <li>7. Must discriminate between critical and/or recent issues (Park, 2001)</li> <li>8. Must give partners the possibility to show trustworthiness (Malhotra, 2002)</li> <li>9. Must help the partners to develop ties that enable them to handle relational risk (Klijn, 2010, Gulati, 2012)</li> <li>10. Must address the competences and need of partners (Gargiulo, 1998, de Man, 2011)</li> <li>11. Must bring order to partners' efforts, combine partners' efforts, joint planning and adjustment of each other's practices, division of labour (Mellewig, 2007, Raveendran, 2012, Gulati, 2012)</li> <li>12. Must foster interpersonal trust (Levin, 2004, Tucci, 2004, Gulati, 2008)</li> <li>13. Must stimulate implementation of coordination mechanisms (Gulati, 2012)</li> <li>14. Need to show how to handle cognitive bias of decision makers when assessing the benefits/hazards of the collaboration (Liedka, 2015)</li> <li>15. Need to allocate responsibilities for coordination (mostly lower level) and cooperation (mostly senior level), (Argyris, 2007)</li> <li>16. Need to specify information sharing, decision making and feedback (Gulati, 2012)</li> </ol>
From practice	<ol style="list-style-type: none"> <li>1. Direct activities should be categorized by contribution to a building block of viability</li> <li>2. Need to be formulated as if in the task description of a person responsible for the Inception phase</li> <li>3. Must help participants to develop a joint glossary</li> <li>4. Must help to find the right partners for the follow up</li> <li>5. Must help to gain clear sight on the benefits for the participants</li> <li>6. Must help to make participants look further then their own interests</li> <li>7. Must help to create a joint learning process</li> </ol>

**Table 3.6.** Requirements for product 3b) indirect interventions .

From literature	<ol style="list-style-type: none"> <li>1. Must prevent adoption of rigid roles/procedures/interfaces, responses to ad hoc problems (Gulati, 2012)</li> <li>2. Must handle partners diversity (White, 2005)</li> <li>3. Must make bargaining positions symmetric (Reuer, 2002, van de Krift 2019)</li> <li>4. Facilitating activities should be categorized in the domain's cooperation and coordination (Gulati, 2012)</li> <li>5. Must help the partners to develop ties that enable them to handle relational risk (Klijn, 2010, Gulati, 2012)</li> </ol>
From practice	<ol style="list-style-type: none"> <li>1. Need to be formulated as if in the task description of a person responsible for the Inception phase</li> <li>2. Must synchronize participants to the same starting point for the next activities/steps*</li> <li>3. Must help to create the atmosphere that the idea may develop (is loose) until a decision is made (is fixed)</li> <li>4. Must help to direct each other without hierarchical lines</li> <li>5. Indirect activities need to be coupled with one or more direct activities</li> <li>6. Must help to make parties feel comfortable and safe</li> </ol>

**Table 3.7.** Requirements product 4: the evidence of the contribution of the set interventions.

From literature	1.	Rival explanations should not be excluded (Campel, 1963)
	2.	Relationship between activities and viability repeats in different context dependent cases (van Aken, 2013)
	3.	The relationship between activity and an element of viability is verifiable (Denyer, 2008)

### 3.10 Data collection approach

In paragraph 3.1 we formulated the overall research assignment as:

#### **Deliver an arrangement of activities that enhance the viability of a multi-party innovation initiative in the Inception phase.**

Furthermore, breaking down this assignment, four parts are deducted:

1. (the description of) the Inception phase.
2. (the description of) the viability of a multi-partner initiative.
3. an arrangement of direct (3a) and indirect (3b) activities for the Inception phase.
4. the evidence of the contribution of the sets of activities of product 3.

By posing the CIMO- format from paragraph 3.8 on these products, the overall reasoning is:

As internal or external practitioner involved in in starting multi-party initiative (**C**ontext/product 1) use these direct and indirect activities (**I**nterventions/product 3) because they trigger changes in agents (**M**echanisms/product 4) leading to shared ideas about the viability of the initiative concerning support, objectives, ideas for product/service, collaboration agreements, fitting work packages and specialized roles (**O**utcomes/product 2).

Given this 'mother - CIMO', we need to collect data to validate and formulate concretizations of the above four products for further development of knowledge and use in practice. The next data collecting methods are used to understand the topic of creating a viable MPI more deeply.

#### **a Study of participants in MPI's**

In this study, semi-structured interviews with participants acting within the MPI are used to explore the (in)direct activities done and explain the positive or negative effects on the viability of the MPI. The semi structured interviews consist of a specified set of questions, accompanied by instructions or guidelines for follow up questions and for interpretation and scoring of responses (Patton, 2002, Blessing & Chakrabarti, 2009, p.271). The development of the MPI's is analyzed from the various perspectives of three participants involved *within* one MPI and also *across* the ten MPI's.

*Why this method?*

Firstly, MPI studies are the preferred option when behavior during the study cannot be influenced: experimentation is not possible. Secondly, the conditions imposed by the context play an important role and must therefore be part of the study. Thirdly, it is impossible to vary in time with interventions within a single MPI. Therefore, a longitudinal study design is not an option. This means that the approach opted for is a comparative study design. When conclusions are drawn for one MPI, it is possible to review other MPI's and find overlaps (an analogy with cross case analysis). This analytic induction means searching for similarities that may lead to common patterns. Once a hypothetical explanation has been formulated further MPI's are examined. If any one of these examinations does not confirm the hypothesis, either the code is reformulated, or the original formulation is disjunct. It is a form of binary counting: variable is present or not. What's more, not all possible variables are known in advance. This demands an open mind in a well-defined domain. Therefore, this method of interviewing participants of multiple MPI's provide 'detailed descriptions and analyses of the problem, its context and the actions and outcomes involved' (van Aken, 2015, p. 5).

Participants in MPI's try to answer questions in the interviews that concern their emerging collaboration. These semi-open questions (box 4.1) aim at the passage through the Inception phase, the development of partnership and a shared ambition for the MPI, the ideas about viability and activities to be executed, including obstructing factors. All questions have a link with the deliverable of this study: an arrangement of activities that enhance the viability of a multi-partner innovation initiative in the Inception phase.

- How did the initiative look like in the beginning?
- What is the objective/assignment of the MPI?
- How do you describe relationships and roles?
- What are ways to enhance collaboration.
- How do you realize shared opinions?
- When is the MPI viable?
- Which activities do you do and how to tune these?

**Box 4.1** Lead questions in semi structured interviews with persons in the same MPI.

*How to select the MPI's?*

Very important aspect is the comparability of the MPI's. Therefore, the data collected concern the same contexts, defined in chapter 3.1 as the Inception phase. This enables systematic comparison between MPI's to identify aspects that reinforce the literature findings for the same field problem. The chosen field problem assumes a free choice for parties to start collaboration. To emphasize the independence of the parties from each other all partnering organizations in the context of the MPI's:

- are independent in their routine operations
- have their own idea- or product-portfolio
- have different knowledge bases
- allocate persons to the MPI to collaborate in the inception phase themselves and
- these persons work at the interface between the partnering organizations

Another selection criterion concerns the three possibilities in the use of case- (here MPI-) studies (Yin, 2003): it is exploratory (intended to find questions and hypotheses), explanatory (intended to link an event to its effect) or descriptive (intended to illustrate events in their typical context). In this study, the examination of the MPI's is done in an exploratory and explanatory way. By doing so, the understanding of the dynamics in intervention- mechanism- outcome relationships is enhanced. And it possible to explain better the theory that we know from literature as well to explore for new insights. For this purpose, for example, we distinguish between stimulating and obstructive activities. Using these insights, both old and new theories will be used to create actionable knowledge in chapter five.

A third selection reason is the suitability (George & McKeown, 1985). Suitable means that the willingness of parties to participate in the research and provide the desired information is without doubt. This concerns finding the time to take part in interviews, but also making certain documentation available. These suggestions of authors mean that the MPI's are selected because of the possibility of systematic comparison fitting the same context, because of the possibility they offer to explore the viewpoint of partners - engaged in the same initiative - and find explanations about patterns and parties are willing to share information.

This kind of studies is often defined as 'a research strategy which focuses on understanding the dynamics present within single settings' (Eisenhardt, 1989, page 534). Answers are mainly found to the questions of 'how' and 'why' in this respect (van Aken, 2015).

#### *How to elaborate the data?*

After selection of MPI's (see appendix D), interviewing participants and transcription of the interviews, data are coded and analysed. As Strauss and Corbin (1990) describe it, this process involves after identifying a setting of interest (in this study the context of getting viable MPI's):

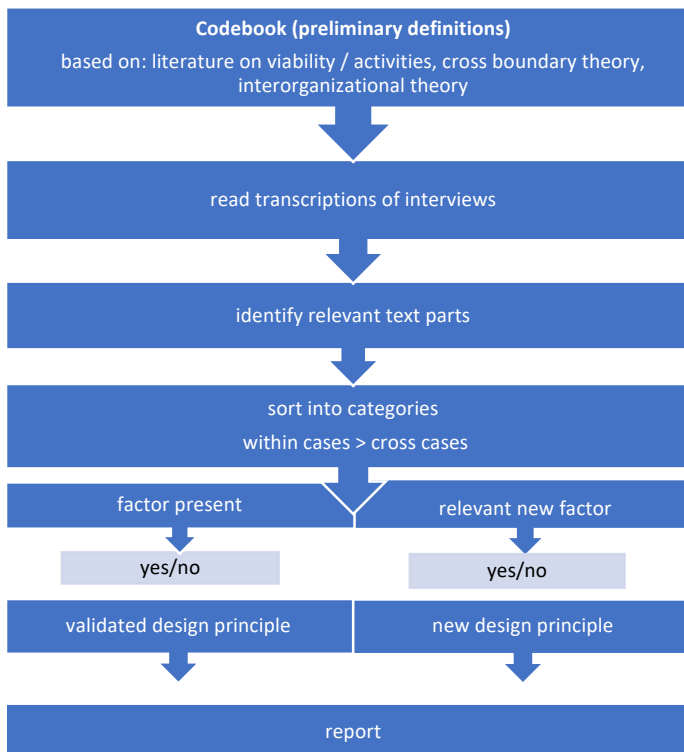
- ✓ Identifying and coding principles or process features (in this study limited to direct and indirect activities, mechanisms and outcome) in the transcriptions
- ✓ Open coding: the process of identifying, breaking down, comparing, conceptualizing, and categorizing new data, besides the preliminary data/codes (see table 3.1).
- ✓ Axial coding: the connecting of category and subcategory. For example, the interactions of persons as reaction on an intervention. This may lead to 'key- categories'
- ✓ Finally, integration of the data showing a central theme, preliminary design or story to generate theory.



But firstly, we decide to discriminate in the coding process between theory already known from literature and factors that seem to be new. Existing theory used as categories will be validated by confirmation by the data. These categories were found in the literature study in chapter two and summarized in paragraph 2.8.

Secondly, after executing a within-MPI analysis for confirming existing categories and identifying new (sub)categories a cross-MPI analysis makes it possible to compare codes previous found in the earlier studied MPI's. It concerns a going back and forth in the other MPI's between proposing and checking codes. For example, open coding for discovery of items and their stimulating or obstructive quality. After exploring several MPI's a new version of the code book could be made. The next step, axial coding, is used to discover the combination of activities and the mechanism(s) they trigger. Finally, the confirmation of key-categories found in the first literature study, creation of new categories or even action-mechanism-outcome relations will be consolidated.

The persons in the MPI's are categorized as follows: 1.1 is MPI 1/person 1, 1.2 is MPI 1, person 2, 2.1 is MPI 2/person 1, 2.2 is MPI 2, person 2 etc. In this way patterns can be found throughout the persons but also throughout the cases. So, the format of steps is as in figure 3.1.



**Figure 3.1.** Representation of qualitative analysis of data from MPI's.

## **b Interviews**

### *b1 Explorative interviews.*

At the start of the study exploratory descriptive interviews were done amongst persons with responsibilities in front of initiatives: to explore the context, their wordings for the phase, the roles involved, central problems and their questions. Names and background are stated in appendix D.

### *b2 Experienced champions*

These interviewees are selected on their proven experience with the delivery of viable MPI's. The ten respondents and their characteristics are described in appendix D. A set of questions derived from the questions in the MPI interviews is used, not so much the descriptive questions but particularly the questions about approach, their opinion on viability and the working mechanisms. The interviews are conversations about what the respondents see as success factors and why these factors work positively. The conversation is free to vary, and the questions are very open. The interviewee may choose what to emphasize if the topics chosen are explored. Interviews can also provide information about what cannot be observed. Specifically, this characteristic of the method gives the possibility for in-depth investigation of mechanisms and other explanations why participants behave as they do.

Responses are analyzed and coded with NVivo, searching for typical approaches, interventions and explanations about the way experienced persons execute their responsibility for creating multi-party initiatives.

## **c Survey**

The survey is used to check the insights about interventions from literature with practitioners and find priority in importance in practice. A questionnaire (see appendix F) is sent to seventy-two persons. These respondents were found in the network of the researcher and his colleagues. Criteria are they belong to the target group and are familiar with earlier or current responsibility for creating an MPI in the front end (Inception phase). Respondents represent a great variety of branches: product development, applied research (TNO), housing cooperatives, knowledge valorization, regional development, governmental facilitation for entrepreneurs (RVO), city development, creating strategic perspectives, sea protection etc. The data are elaborated statistically with variance analysis (Frequency, Co-variance, Principal Component Analysis, Cronbach's Alpha for reliability). This group scores thirty-four items on a unilateral scale (1 very unimportant <> 5 very important). The items concern interventions in the process of developing a multi-party initiative, in this study defined as an activity that is executed to solve a problem (Andriessen and van Aken, 2011). These items are selected in the literature study based on corresponding findings of several authors. If several authors give same insights, this supplies reliability and priority for items that could be key elements in the design. The

data supply answers for two questions: 1) are the items in the questionnaire reliable and 2) which priority between the items is stated by the target group. Four dummies were added for control of internal consistency. If dummies show great variance or atypical scores they indicate the seriousness of the respondents.

To answer question one about the reliability, a test with Cronbach's Alpha is executed in SPSS (Statistical Package for Social Sciences) for internal consistency. Cronbach's  $\alpha$  is a function of the number of items in a test, the average covariance between item-pairs and the variance of the total score.

The second question is: do the respondents give priority to some of the items? The reasoning for answering this question is as follows. Because the items are selected from significant research findings the scores should be on the right (towards 'very important') side of the scale: the target group agrees with the authors that produced research findings collected in the literature (chapter two). So, we look at the skewness of the data around the mean. The second assumption is that the smaller the variance, the more the respondents agree with each other. This coefficient of variation is a standardized measure of dispersion of frequency distributions in probability theory.

#### **d Workshops**

Explorative workshops provide extra sources for data to build up validity. The supplemental data give an opportunity to triangulate data about definition of the context and description of viability.

d1) In workshop one, practitioners with responsibility for starting initiatives within several companies such as Philips, Yes Delft, Teijin Aramid, Heijmans and Foodresult answered the question: 'which activities are stimulating or obstructive for idea development in general in multi-party situations. They wrote down their answers on flip-overs in subgroups after a plenary clarification and discussion.

d2) In workshop two, practitioners at Rijksdienst Voor Ondernemend Nederland (RVO) responsible for MPI's get the following questions: what are characteristics of (the context of) starting initiatives and what do you think- in one sentence- is a viable initiative? They first answer the questions individually. Then they are busy in subgroups diverging and analysing their own current MPI, before they converge in each group to a consolidated answer on both questions. RVO facilitates multi-party initiatives with funding and knowledge.

d3) In workshop three persons responsible for MPI's at Innovation Quarter get the following question: what is a viable initiative? The same approach is used as in workshop one. The Innovation Quarter is an organization of the province of Zuid-Holland that facilitates multi-party initiatives with staff and funding.

## e Second literature study

The first literature study aims to find problems, activities and design starting points in the specific context of starting multi-party initiatives. This search provides aspects concerning the outcome of the Inception phase. Also, some explanations formulated as the mechanisms that are triggered by the interventions. These mechanisms help to produce the desired outcome that we know. The second literature study focusses on three aspects to find evidence in generic knowledge produced by research.

Firstly, the mechanisms as explanations for the relationship between interventions and outcomes as stated in the CIMO- reasoning. We adopted the design science approach. Important element in this approach concerns mechanisms. They serve as explanations for the relationship between interventions and outcomes as stated in the CIMO - reasoning. So, we will look for mechanisms related with the preselected theories: cross boundary theory, theory of communal sharing and market pricing of Fiske and theories about interorganizational networking.

Secondly, the enrichment of the set of activities with actual literature that we need for building a viable outcome, more specific the seven criteria of viability defining this outcome.

Third aspect is a review of the findings of chapter two for better discrimination between interventions and mechanisms. Key words – corresponding with the CIMO's - are viability, willingness to continue/trust building, social or generative mechanism, start/end of the front end, activities for producing the former factors.

In that way, the second literature study helps to find completing evidence for generic knowledge produced by research.

### 3.11 Validity and reliability

The choice for DSR research methodology is made because it aims at developing and constructing actionable knowledge for handling the field problem. This is in line with the epistemological position that social and organizational reality is constructed.

As pointed out in paragraph 3.1 we need a qualitative research methodology since it is not possible to compare two identical situations in a controlled way. Nor do we have the possibility to compare the outcome with the situation at the start of the initiative. Transferability or replicability needs to be based on the quality of arguments, triangulation and quality confirming actions as academic discussion, panels and supervision. So, data collection is done to find the explanations for observable patterns in intervention-outcome relationships or to change possible mechanisms into plausible mechanisms that work and meet the requirements stated in par. 3.9.<sup>4</sup>

Validity is often defined as the degree of concurrence between the research outcome and reality. Reality here is the context for which the design claims its validity is outlined. Design Science faces the threat of rival explanations (Campbell, 1963) when looking at the

4 Design science takes a different view on validity. Pragmatic validity means that 'the design works' or 'the design meets the design requirements' (van Aken & Andriessen, 2011, page 114)

validity and reliability of the research outcomes. Rival explanations are other conclusions that can be drawn from the same data set (Cook, 1983). This study uses the following approach to minimize the threat of rival explanations:

- **Pragmatic validity by meeting design requirements**

The operational and functional requirements reflect the quality of the design. Also simulating and testing the design against these requirements will contribute to the validity.

- **Internal validity through triangulation**

Do the interventions that trigger the mechanisms in fact make the difference in the context researched? The answer is shown through triangulation: the repetition of the patterns throughout several sources: literature, interviews, workshops, member checks and MPI's (Baumgartner, 2003), explication of my epistemological position (Husen, 1999) and clearly showing how the explanatory theory works with generative mechanisms (Yin, 2013).

- **Statistical consistency**

The quantitative part of the research uses a test for internal consistency of the items. Cronbach's Alpha is executed in SPSS (Statistical Package for Social Sciences) for internal consistency. Cronbach's  $\alpha$  is a function of the number of items in a test, the average covariance between item-pairs and the variance of the total score.

- **Expert panel**

We review research findings with members of the target group. They get a presentation about the essentials of the design about the Inception phase and will discuss/answer the following questions:

- do you find the definition useful? Please give your score and remarks.
- do you think that these objectives make the Inception phase worthwhile? Please give your score and remarks.
- do you recognize the components for viability of the MPI? Please give your score and remarks.
- will the navigation-tool through the interventions help to enhance the process design? Please give your score and remarks.
- do you find the description of the tasks of somebody with responsibility for the process design appropriate? Please give your score and remarks.
- would you apply this approach in your next assignment to help the start of multi-party initiative? Please give your score and remarks.
- The panel member himself scores a five-point scale. A high score means a high face validity.
- the researcher says thanks and asks the panel member to hand over the form or to send the outcome by e-mail after checking his scores and remarks

- the researcher sends the overall outcome and his conclusions of round 1 resp. round 2 to panel members for their information and give them the possibility to check and correct.

Each method of data collection will add to the development of (requirements for) the design and the design propositions/ CIMO's. So continuous reflection and realistic evaluation and synthesis into next versions will be important in this phase of the study. Box 3.3 shows a summary.

**Table 3.8.** Overview of data collection and data analysis.

Question	Data collection	Data-analysis	Sources
<b>What are problems and solutions?</b> (Divergention)	Exploratory interviews and literature study	Open inventory and consolidation	Journals and interviews with target group
<b>What are the most important items?</b>  (Divergention)	Surveys MPI's Second literature study	Cronbach's Alpha Clustering/consolidating Abductive reasoning: abstraction of design principles	Target group 30 – 50 persons in context Pre-sorted theory
<b>Do we have a preliminary design/test version?</b>  (Convergention)	Pre-sorting factors  Expert panel Member check	Axial coding Define design propositions: Conjoint design approach Judgement of the validity (credibility) of findings	Selected information of literature and practices First version of the design Interviewees in the cases
<b>Do we have a valid design?</b>	Alpha and Beta test	Search for 'saturation'	Multi-party-initiatives

### *The presentation of the data*

As illustrations of the analysis of and the conclusions from the data the reader will find in the texts, besides the appendices with overall summaries:

- a code book (see appendices B, H and I) and overviews of the texts out of the transcriptions underpinning these codes.
- overview of takings of the individual MPI's and overviews of cross-MPI insights in tables and texts
- 'proof quotes' corresponding with the theory elaborated in text ('Well, that person has an answer for all those technical problems. Then I have confidence that the technical challenges ahead will be solved also...')
- 'power quotes' in the text ( ...'and we just trust each other, then nothing else comes close...').
- a figure for building theory: in chapter 5.2 a figure is proposed with sets of activities (partly) from Cross Border theory: taking initiative and invitation, identification, exchange, reflection, conversion on the bottom of the figure. On the side the seven factors that constitute viability. This figure - the design proposition- has cells for example 'Identification activities/Fit of objectives. The theory will be constructed

using these cells as paragraphs. Each paragraph will converge to one sentence with great value for somebody responsible for the process design of an MPI.

To get more reliability in the data it is important that articles used are all reviewed in settled journals. Others have referred to these articles. And many of the design principles are underpinned by several researchers: adopted reliability (Denyer, Tranfield and van Aken, 2008). Another building block are the member checks: persons that delivered data in an earlier stage will be asked to check their outcome. This all gives an indication of the stability of the research outcomes.

### **3.12 Summary**

This chapter shows the step from the gap in existing literature to the desired research product: an arrangement of activities that enhance the viability of a multi-party innovation initiative in the front-end phase. Furthermore, arguments are presented to choose the Design Science Research approach as alternative for a descriptive or exploratory approach, since the aim is to deliver actionable knowledge to be used in a repeating field problem. Given the approach four research products are described as outcome of this study: the Inception phase as context, the criteria for a viable outcome of the Inception phase, a set of activities to be used in the Inception phase and the mechanisms that are triggered by the activities to produce the outcome. Besides the insights from literature the approach for further data collection concerning these research products is explicated, as well the way the validity and the reliability of these products is considered. The reader will find the description of the data collection and the interpretation of the data in Chapter Four.







# CHAPTER 4

## EMPIRICAL STUDIES: DATA COLLECTION AND ANALYSIS



## 4 Empirical studies: Data collection and analysis

### 4.1 Introduction

Chapter Three has addressed the field problem, the missing knowledge, the overall design proposition, the study's desired deliverables and the methodological choice for design science as an approach. Also, we have reasoned that a Design Science Research approach is needed to create a solution for the downfall of many MPI's. Design science is based on the creation of a tentative theoretical framework with known and new explanations (van Aken, 2015). This means that, based on literature and empirical data, the design proposition will show a recognizable pattern as a solution for our problem-in-the-field. In Chapter Two, many suggestions from literature have been collected; however, these have still a scattered character instead of a recognizable pattern. Nevertheless, based on findings that confirm each other, the first building blocks for the design proposition are present. To supplement the literature, it is important to look for confirmation of these findings in "the swamp of practice" where many MPI's are busily trying to flourish. The data collected from some of these MPI's will validate the literature. These data will give opportunity for triangulation, enhancing their reliability. This reliability emerges when parts of the design are based on research of academics, the analyses of MPI's, workshops with practitioners and interviews with very experienced practitioners. The data collection and analysis will underpin the four deliverables of this study: a description of the Inception phase, the viability of an MPI, an arrangement of direct and indirect interventions for the enhancement of the Inception phase and the evidence of the sets of activities' contribution. Moreover, it is quite possible that, in addition to the confirmation of existing theory, theory may be extended, or new theory may be presented.

This chapter is a circumnavigation through the opinions of many practitioners trying to discover patterns in an area that is full of jargon such as "the fuzzy front end" or "the valley of death". Data collection and analysis will proceed in three steps. First, data collection involves a variety of actions. A small survey is conducted to understand the jargon used in practice for this part of the development and for the naming of the functions involved. Also, transcriptions of semi-structured interviews with participants in MPI's are coded, analyzed and grouped in categories useful for an arrangement of interventions. The same is done with interviews with the target group but analysis is more directed at their approach, interpretation of viability and opinions on how interventions work. To understand the importance to and the priority of practitioners, a questionnaire is distributed with academic findings to statistically test the agreement between academics and practitioners. Furthermore, data is collected in workshops with individuals who start MPI's. Secondly, findings will be divided both in terms of confirming the literature or presenting new factors – thereby providing two layers of reliability. Some findings will

appear very important but at the same time will not be sufficiently argued. This situation will call for further study of these findings in the literature.

Thirdly, Chapter Five will address the consolidation of all findings for building the design. These findings will help to design the Inception phase and its sets of direct and indirect interventions leading to a viable MPI.

## 4.2 Collected data

### 4.2.1 *Studies of participation in MPI's*

The MPI's were chosen because they represent the context studied: emerging cooperation of independent parties and formulation of a product/service opportunity that only can be realized by continued collaboration. They met the criteria stated in Chapter Three: parent organizations are independent in their routine operations; have their own idea- or product-portfolio; have different knowledge bases; allocate individuals to the MPI to collaborate in the inception phase with these persons working at the interface between the partnering organizations.

Since we are interested in the factors leading to viability, there is no need to describe the MPI's completely. We limit the description to a short introduction of the MPI, the validation of data for the sub criteria for viability and new findings by comparing the MPI's. This information provides the basis for CIMO-reasoning about enhancing interventions. Also, obstructive and stimulating interventions are noted because including these in the literature could help inform future interventions. These interventions are listed in Appendices B, F and G. All the MPI's were analyzed for the factors leading to a viable MPI. In a few cases, MPI's consisted only of an informal series of meetings. Moreover, some of the MPI's failed to reach a next development stage. Only two of them reached the final stage of routine production for the market. Although it was tempting to add these outcomes to the study, this information did not fit the objective, the desired results and the structure of the data collection. So, it is important to keep in mind that the data is a mixture of accounts about what actually occurred and/or remarks about what participants would have done differently next time based on their learning. This analysis was based on the interviews of MPI participants listed in Table 4.1.

**Table 4.1.** Overview of MPI's studied.

Name	Description
1. New Glue	Development of glue for automotives. Partners: Saba Adhesives, Glue Academy, Matt
2. Gas expansion	Saving of gas by reduction of pressure. Partners : Gasunie, Chemelot, Entrepreneur, RVO
3. Groengelinkt	Commercial institute for educational materials on sustainability. Partners: Ministry of Agriculture and Nature, Kennisnet Foundation, IVN, Mindmatters
4. M(eer)J(aren)A(fspraak) Energie Efficiënte	Re-use of warmth in glass production. Partners: RGS, Ardagh, NCNG

**Table 4.1.** Continued.

Name	Description
5. Netherlands Circular	Enabling sustainability in processes. Partners: MVO, Nuovalente, Klik nl, Spark design, het Groene Brein, Sustainable finance lab
6. Zero energy houses	Development of houses with no need for external energy. Partners: Engineering company, Construction company, Architect studio
7. Duurzaam Door	Facilitation of circular business cases. Partners: Entrepreneurs, Ministry of Economics, Science Institute, Energy cooperation,
8. Platform Biodiversity, Economics and Ecology	Support for enterprises in innovation. Partners: VNO, DSM, UCN and others
9. Solar Integrated Solutions	Beautiful solar roof tile. Partners: entrepreneurs, construction company
10. Cruise	New heat pump in energy production innovation. Partners: Cosun, Tata, construction companies

### *Qualitative data collection and analysis*

Data were collected in semi-structured interviews of fifty to seventy minutes per person with two to four persons from the same MPI but working for different parent organizations. The data were coded in the process described on page 58. Interviewees actively contributed by explaining their activities in the MPI. Their roles in the parent organisations vary from specialists in different disciplines (e.g., marketer, polymer expert, architect, business developer, subsidy allocator, gas pump engineer, environmental specialist) to general roles (e.g., research manager, entrepreneur, program manager, director, project leader, head of technology process, product manager, company construction manager). For one interview, the recording failed and one meeting was cancelled, resulting in two MPI's with fewer than three interviews. In total, 10 MPI's were selected and 29 interviews were held, as described in Appendix D.

Below, in sections 4.2.1.1 to 4.2.1.10, short narratives provide an account of each of these MPI's during the Inception phase addressing the following:

- a) validation of pre-sorted theory
- b) new findings emerging from the data
- c) learning curve with analysis of the MPI's

#### *ad a) Presentation of validation and findings of pre-sorted theory from literature study*

We extracted a selection of outcome criteria and (clusters of) interventions from literature (see paragraph 2.8; for the summary 2.9) to help us determine if these criteria and interventions would be validated in the data. Firstly, we were guided by the outcome criteria of the Inception phase: support of parent organizations; idea description with six characteristics; fit of objectives; next-stage coordination, next-stage cooperation, next-stage partitioning of work; and specialized tasks for integration with parent organizations. Secondly, we drew from the cross-boundary theory for a classification of direct interventions in the Inception phase: initiating; identification; exchanging; reflection;

and conversion activities. And thirdly, we label indirect interventions to complement the direct ones. The findings for the pre-selected criteria for viability will be confirmed by the interviewees using quotes and explanations. These highlight the validity of these literature-based findings as design principles. The findings concerning the viability criteria and the (in)direct interventions are presented in Appendices H, I and J. The data on direct interventions enrich the thinking about the viability criteria of the MPI. Additionally, some indirect interventions facilitate direct interventions. This relationship is shown in Table 4.2, which demonstrates the set-up of the mother-matrix.

**Table 4.2.** Pre-selected categories for interventions and viability criteria.

Pre-selected from literature: the clustering of direct interventions derived from boundary crossing <sup>1</sup>						
Initiating	Identification	Exchanging	Reflection	Conversion	Pre-selected criteria for viability	Subcriteria for viability
1A	2A	3A	4A	5A	A Support of partners	
1B	2B	3B	4B	5B	B Idea with six characteristics	F.e. market potential
1C	2C	3C	4C	5C	C. Fit of Objectives	
1D	2D	3D	4D	5D.	D Cooperation next phase	Staff, Style, Strengths
1E	2E	3E	4E	5E	E Coordination next phase	Routines, Structure, Planning
1F	2F	3F	4F	5F	F Partitioning of work	Modular or architectural
1G	2G	3G	4G	5G	G Specialized tasks for integration with parent organizations	

I : Partly pre-selected from literature: set of indirect interventions to facilitate the direct interventions.

After analysis of the MPI's, Table 4.2 cells will contain interventions from literature and remarks by interviewees confirming theory or suggesting an extension of theory. For example, an intervention for cell 3D is given by Gulati (2012) *"make the availability clear of staff (Exchange/intervention) so a shared understanding about contributions (mechanism) leads to viable cooperation"* (Cooperation/outcome). An example of another suggested by Beverland (2016) for cell 4B: *"use repurposing in co-creation (Reflection/intervention) because it provides the basis for joint discovery (mechanism) leading to new value propositions (Idea/output)"*. Literature addresses indirect interventions too, for example (Badir & o'Connor, 2015): *"use rich media in high frequency (indirect intervention) because this builds trust (mechanism) leading to strong ties between participants (General outcome)"*. These interventions as solutions for MPI's will be confirmed or elaborated by interviewees.

The use of Table 4.2. leads to the question: what is the value of numbers in the cells, besides providing qualitative information? Regarding "counting' the number of remarks," Pratt (2009) sees five risks by quantifying qualitative data:

<sup>1</sup> These clusters are based on Boundary Crossing theory except the set Initiating activities

1. it may trigger a quantitative/deductive mind-set among reviewers
2. it may be misleading (e.g., small changes in responses corresponding to large changes in percentage counts)
3. it may overlook “taken-for-granted meanings”
4. it may do “violence to experience,” inadequately representing the voices of the individuals studied
5. it may simply create the “worst of all worlds”: not enough of a sample for a statistical test, and too anaemic a representation to adequately represent rich data

Being fully aware of these risks, mitigation of each of them is possible:

Ad 1: description of data sources shows that induction and deduction is undertaken with qualitative data.

Ad 2: Table 4.2 is first used for the 29 MPI personnel. However, wherever possible, it is also used for 26 individuals in exploratory talks, 11 in expert interviews, 23 in workshops and 68 respondents in the survey. As these individuals were chosen for their ability to shed light on the research question, items repeated in their responses constitute evidence for answers.

Ad 3: This risk is mitigated because theory will be built on labels based on academic literature and comparative analysis.

Ad 4: Using direct quotations will adequately represent the interviewees.

Ad 5: Only findings based only on a reasonable number of interviewee remarks will be handled as a credible assumption or as a rival explanation.

The aforementioned means that collected data are used for the following reasons:

- validate the seven criteria for viability of the outcome of the Inception phase
- validate the sets of direct activities that enhance viability in the Inception phase
- explore new findings for viability and indirect stimulation and obstruction interventions

*Ad b) Presentation of findings about new factors relevant for the Inception phase*

Furthermore, we explore the data for other important results. By iterative analysis of the MPI's accounts, we can identify new factors of interest for our research question. This leads possibly to supplementary CIMOs, clues, indications and assumptions about what (not) to do to develop a viable MPI. Analysis will also identify obstructing factors. While, of course, our aim is to find stimulating factors for creating a viable MPI, identifying both obstructing and stimulating factors are important because they respectively hinder and accelerate the direct activities. This is because they produce negative or positive feedback loops. For example, an indirect intervention such as “*making the process visible*” contributes to facilitation because it is easier to understand what the next step is. On the other hand,



negative feedback loops, such as when a partner puts his partners at the risk, is obstructive as these partners face growing restraints which create more barriers to progress.

The overall findings of each MPI are described in the summary of each individual MPI, section 4.2.2. The new sub criteria for viability are presented in Appendix H, new factors for the Inception phase in Appendix I, new CIMOs in Appendix J and new indirect (obstructing/stimulating) activities in Appendix K.

#### *Ad c) Learning curve with analysis of the MPI's*

Although much more information is available in the data of the MPI's, the choice was made to treat only data fulfilling the wish to construct a theory for the four deliverables: (description of) the Inception phase, (description of) viability of the MPI, a set of activities in the Inception phase and the mechanisms that explain the successful execution of the Inception phase. Still, some of the new codes could be helpful to describe the Inception phase such as the code "input for the Inception phase" and sub-codes for viability, as in "form of the idea". Also, a restriction was made to sample only those direct interventions that contribute to these criteria for viability and can be clustered for their cross-boundary characteristic. (Criteria for viability and cross-boundary clusters were respectively addressed as lessons two and three in Chapter Two, section 2.9). Doing so led to the preliminary design with 35 cells of Table 4.2: a matrix with criteria for viability on the Y-axis and clusters of activities on the X-axis. The cells contain direct activities, assumptions or mechanisms.

#### *4.2.1.1 Findings regarding MPI 1: New Glue*

These first interviews concern participants in the development of a special glue for use in broad markets such as automotive, mattresses and the automotive industries where workers were being educated to use the glue. The development of glue was the former idea of the Glue Academy chairman who saw a growing opportunity when the oil companies created a need by starting to use glue in the coupling of pipes. The application of glue would substitute for the welding parts and pipes, in the development of the first "cradle to cradle mattresses" and of a certified curriculum for gluing pipes, cars, trains and other products. Three interviews were conducted with the participants of Saba (producer of adhesives and sealants), of Matt (producer of mattresses) and of the Glue Academy (Knowledge Institute interested in cooperation and research).

## Validation of pre-sorted theory from literature study

Clustering the data of the MPI New Glue from the individual participants for the viability criteria of an MPI provides the following results and CIMOs.

### *Confirmation of sub-criteria for viability*

Five of seven criteria for viability are confirmed by the MPI New Glue. Participants are easily able to describe the incorporation of these criteria in their practices, as shown in Table 4.3. This provides validation for these criteria as important intermediate results in the total development process. This means that these criteria are subscribed to by academics as well as by practitioners in this MPI. However, this is not the case for the criteria “Partitioning of work” and “Specialized communication tasks for parent organizations”. A plausible explanation for this absence is that the MPI ended during its starting phase. So, there was no need to reflect about work allocation or communication channels for the next phase(s). This suggests a certain sequence for direct activities performed in the Inception phase. Ideas for partitioning of work and for communication channels belong to a later set of activities. This suggests a design proposition:

- At the start of a MPI (C), implement interventions for support, fit of objectives, the idea, coordination and cooperation before interventions for the other criteria (I) because this makes participants aware of viability (M) leading to motivation for specifications of work packages and links with parent organizations (O). Referring to Table 4.2, this information concerns the cell 3E: Exchanging/coordination.

The criterion “Fit for objectives” is presented in two sub-criteria: ‘short-term objective’ aiming at the first decision (about entry into the MPI) by the parent organizations together with the ‘long-term objective’ as relating with the objectives of the parent organizations. such as repeat business. This is nicely illustrated in the following quotes of respondents 1.1 and 1.3:

*“Anticipate what is to be expected at the first gate”*

*“Formulate shared reason, directly linked to participants’ interests to go on together”*

*“Give participants a common goal for the short term while objectives of parent organizations should fit for the long term”.*

Also, it is not the glue itself but particularly the characteristics of the idea that are important for both short- and long-term perspectives: the possibility to serve different markets (students, construction companies, companies with circular strategies). This suggests the following CIMO:

- When starting an MPI (C), formulate the characteristics of the idea in line with objectives of parent organizations (I) because this makes decision makers aware of

the added value of the MPI (M) leading to support in parent organizations (Outcome)  
> cell 4A: Reflection/ support.

### **Validation of direct interventions can be clustered according to cross-boundary theory**

The clustered data of this MPI give an overview of direct interventions that fit Initiation, Identification, Exchanging, Reflection and Conversion clusters. Participants confirm the usefulness of these sets of direct interventions by recognizing them and supplying evidence for them. This validates the four sets of interventions from the cross-boundary theory and the added set of Initiation interventions.

Interviewees suggest special emphasis on particular steps within the set of Initiation interventions: invite individuals with clear immediate interest, representing a whole branch because their presence represents a lot of parties. That added value was stated by a respondent:

*‘When streetcar and train builders and later car builders started to be interested, our initiative got a push, in addition to the pull of the pipelines of Shell.’* These suggestions and the quote led to another CIMO:

- At the start of an MPI (C), invite participants representing a branch with immediate interest (I) since a whole group with the same interest gets involved (M) leading to acceleration in getting support (O) > cell 1A in Table 2.4: Initiation/Support

Also, certain items such as advantages at the end, fit with current trends, gains and pains for participants and non-participating parties receive priority in the set reflection interventions. This is because when participants show mutual interest for these items, trust is built. Or, as the three respondents stated:

*“Put conflict of interest on the table to understand each other”*

*“Share what was important in collaboration in the past”*

*“Make (dis)advantages for parties clear so they can be guarded”.*

The above assumes the following as a design proposition:

- In a starting MPI (C), make sure that participants understand each other’s gains and pains, (I) so trust between them is developed (M) leading to progress also in difficult times (O) > cell 2A: Identification/support

## **Exploring new findings for outcomes and interventions in the Inception phase**

### *New sub-criteria for viability and new factors in Inception phase*

The former paragraphs address the viability criteria and the interventions extracted from literature. However, the MPI 1 data demonstrates also that the viability criterion needs to be supplemented with a characteristic that was not mentioned in literature – a characteristic that remains unaltered during the enrichment of the idea because this part of the idea is very attractive for participants.

Respondents formulate this characteristic in a slogan form: *'the welding rusts, glue does not'*. Since this characteristic resembles the attractor in the chaos theory, "attraction" fits as an extra sub-criterion for the idea, building more viability if present. This sub-criterion allows for a design proposition:

- At the start of a the MPI (C), formulate the attraction in the idea (I) because it supplies an intrinsic appealing element (M) leading to ties of participants (O) > cell 4A: Reflection/support

Another new category of remarks in MPI 1 that is not mentioned in literature is 'Input in the initiation'. Not everything emerges from the Inception phase; some is output from the preceding opportunity seeking phase. Respondents state that inputs are already present at the Initiation, like *"an idea owner"* (staff) or an *"internal support group in a parent organization"* (coordination) -- both representing work already completed. However, also *"questions about technology to be answered"* (idea) as input demonstrates hesitation. These quotes are an expression of increasing interest, providing the first level of viability if handled well.

Formulated as design proposition:

- In the first meeting of the MPI (C), gather existing input for the Inception phase and questions about viability criteria (I) because these represent beliefs and doubts about participation (M) leading to motivation to continue if used or answered (O). > cell 1(A-E) Initiation/all viability criteria.

These inputs may influence all seven viability criteria and gathering them is an activity in the initiation. Depending on the kind of input, gathering input enriches possibly all viability criteria in the Initiation. In this case, one of the parent organizations had already structured the monitoring of their contribution (support and coordination). Another input concerns existing confusion about the idea. Also, it is imaginable that other MPI's' input could be available for kinds of machinery (important for Partitioning of work), internal procedures (Specialized communication with parent organizations) or doubts about contribution (Fit of objectives). So, these questions at the start can involve all the viability criteria.

### *New Indirect stimulating and obstructing interventions*

Themes mentioned as stimulating or obstructing – mostly as suggestions and findings :

- are priority interventions in content: tempo (*'Keeping up tempo triggers attention'*), quality of participants (*'Keep out participants who need a lot of explanation'*), symmetry in collaboration and club-feeling.

The data show the possibility of linking an indirect intervention to the direct ones. For example, the use of the indirect intervention *'making analogies with other branches'* prompted direct (reflection) activities needed for enrichment of the characteristics of the glue (Idea). One respondent illustrated this by stating that *'searching for trends in the European Welding Federation produced advantages/analogies which would work also in the train and car branches'*. This helped reflection activities for enrichment of the idea. Another example of an indirect intervention supporting direct interventions is the remark *'make a fit between the planning horizon of the MPI and parent organizations'*. This refines the coordination on both sides. Linking indirect with direct interventions enhances the value of the direct interventions, prompting the set of helpful indirect interventions added to Table 4.2.

The above remarks suggest a general indirect intervention in CIMO terms such as the following:

- At the start of a MPI (C), have a set of available indirect interventions linked to the viability criteria (I) because they enlighten participants (Mechanism) leading to enhancement of direct activities (O). In Table 4.2 the cell I: indirect interventions.

The obstructing activities are mostly formulated as a factor, but they may easily be interpreted as not-executed activities. For example, the remark *'too many persons without technical understanding so it stayed too abstract'* suggests *'invite a proportional number of persons that understands the technology'*. In this way, obstructing factors can be reformulated positively as preventive actions without losing the meaning communicated by participants. Obstructions also trigger mechanisms observed in a sighing respondent: *'the growing feeling that somebody is a profiteer hampers one's own contribution'*. This means that, positively formulated, obstructive activities may lead to design principles. The following example is based on the quoted lament of our respondent:

- In a starting MPI (C), make sure that everybody contributes (I) preventing the feeling that someone is a profiteer (M) leading to motivation of participants to take a fair share > cell: 3F: Exchange/partitioning of work.

The overview of stimulating and obstructing interventions of the other MPI's are collected in Appendix K and analyzed for possible CIMOs.

The above findings are only from the analysis of MPI 1. After reviewing the following MPI's, we will see if there are also key points from cross-MPI analysis that present patterns throughout the MPI's.

### Summary of findings from MPI 1

1. The criteria for viability are confirmed by the accounts of practice, except for Partitioning of work and Specialized communication tasks for parent organizations because the MPI stopped before thoughts for the next phase were necessary.
2. Participants confirm the usefulness of sets of direct interventions: they use them and are able to supplement them with comparable interventions from their own practices.
3. New sub-criteria for viability are proposed for Idea (Attraction) and new factors for start of the Inception phase (Input in the Inception phase and Questions at the start of the Inception phase).
4. Indirect activities are useful for suggesting priority interventions within the idea, tempo, use of methods, quality of persons, symmetry in collaboration and club feeling.

4

#### 4.2.1.2 Findings regarding MPI 2: Gas expansion

This case concerns the development of the idea that the expansion of gas at the end of the pipeline can save heating expenses as well as provide cooling. The idea was formulated

#### The idea

'I think that producing force during the pressure trap in the distribution of natural gas is possible physically. No need to warm up the natural gas for expansion of gas and besides force the production of cold air. This idea has been submitted to the Benelux bureau for intellectual property and now I want to transform the idea in a 3-step project'

**Box 4.1** Example of Input in the Inception phase.

by an entrepreneurial expert who did most of the calculations about feasibility. Organizations present in the four meetings were Gasunie, Chemelot, Alliander, Hollander Techniek, the entrepreneur, city of Apeldoorn, Aviko and RVO. Interviews were conducted with participants of Chemelot, RVO and the entrepreneur. The initiative stopped after several meetings because of lack of Support.

### Validation of pre-sorted theory from literature study

#### Confirmation of sub-criteria for viability

All three interviewees understood the mentality as level 2 Collaboration readiness (*'Wants to share the risk in the MPI'*) for Support. However, they did not speak about their own attitude! A clue could be that the very technical presentations of the expert entrepreneur

triggered only more technical questions: a form of standstill. Almost nothing was mentioned about the criteria Coordination, Cooperation, Partitioning of work and Specialized Communication. The obvious explanation is that the context of gas use in the Netherlands had changed dramatically which made the initiative come to an early halt, before other Reflection activities like the 'selling by the entrepreneur' were undertaken.

### **Validation of direct interventions can be clustered according to cross-boundary theory**

Coding and clustering the data of MPI 2 concerning direct interventions confirms the clusters Initiation, Identification, Exchanging, Reflection and Conversion activities. Some of them are listed in the overview shown in Appendix H. Respondents suggest letting Initiation activities aim at making lists and invitations for individual persons with certain qualities (*'knowledge of companies interested', 'important in the eyes of others', 'understand consequences'*). They presume that, in the first meeting, these qualities make success possible. Other activities aim at gathering as many people as possible, as one respondent expressed it: *'leave messages all over the place'* and *'quit after 2 to 3 times calling'*. The following CIMO is induced from the above statements:

- At the start of a MPI (C), invite many parties with useful qualities (I) because a sense of feasibility is activated (M) facilitating a transformation from attendee to supporter (O)  
> cell 1A: Initiation/Support.

The Identification activities in this MPI search for a problem or a key to fit the solution (*'check idea on all kinds of policies'* or *'understand important undercurrents'*). The idea of the entrepreneur needs to be sold still! Only a few abstract Exchanging activities are uttered (*'Put item on agendas.'*) Reflection activities have an opportunity-searching character: (*'Reformulate the idea within domain of relevant supporter'*). Also, the Conversion activities are more suggestions than deeds executed: (*'Give initiative a name'*). So, the absence of Exchange activities and the number of suggested activities shows that the MPI never really started to organize itself.

### **Exploring new findings for outcomes and interventions for the Inception phase**

#### *New sub-criteria for viability and new factors in Inception phase*

Also, in this MPI, the factor Questions at the start is salient. These questions - such as *'How do I get support in the world of gas companies'*- communicate the need to start with direct, enriching activities to get answers. Of course, this factor should deliver answers for the criteria of viability.

A second factor coming forward is future activities. Respondents look far ahead when they want to *'Show how test installation and up-/down scaling is arranged'* and *'arrange the connection with the gasnet'*. Do these activities belong to subsequent phases -- for example, after the MPI passed the idea phase? It is interesting to see if participants in other MPI's anticipate situations further away. These two new factors may become important if present throughout the other MPI's, as is shown in the overall findings for the Inception phase in paragraph 4.2.2., section c.

#### *New indirect stimulating and obstructing interventions*

Also, in this MPI, interviewees suggested positive interventions for enhancing direct activities aiming at themes like tempo (*'keep it up'*), method (*'scrum'*), mutual confirmation (*'stimulating each other to continue'*) and visibility (*'making the initiative visible'*). However, most of the indirect activities trigger negative mechanisms. The very technical presentations by the entrepreneur produce no support but, in fact, mostly negative mechanisms (*'Important players not present, payback period seen as too long, use of other criteria for weighing initiatives neglected, people present get the idea that only part of the problem is solved'*). Also, other mechanisms seem to produce spectators instead of supporters (*'let nobody take the lead, invite parties not familiar with the issue, allow parties to be a listener'*). The following summarizes these obstructing elements in a positively-worded CIMO:

- In a starting an MPI (C,) prevent focus on only one characteristic of the idea (I), so discussions stay comprehensible for all attendees (M) leading to accurate evaluation of their possible contribution (O) > cell 2B: Identification/Idea

#### **Summary of findings from MPI 2**

1. Respondents emphasize the criteria Support of partners, Idea with characteristics and Fit of objectives only. The explanation is that, firstly, the context of the use of gas in the Netherlands changed dramatically to low priority and, secondly, the agenda's mainly about complex technology triggered negative mechanisms, stopping the MPI.
2. Respondents acknowledge that the sets of direct activities are demonstrated in these activities.
3. One new factor repeats for the second time (Questions at the start of the Inception phase). Also, the factor Future activities emerges when the Inception phase is a part of the development process if it ends with a go/no-go decision.
4. Interviewees acknowledge the importance of indirect interventions for tempo, mutual confirmation and visibility. They warned against obstructive intervention-mechanisms, hindering the development of the MPI. These are added to the overview in Appendix K.



#### 4.2.1.3 Findings regarding MPI 3 Groengelinked

This MPI handles the integration of many databases into an information system for nature and environmental topics in the Netherlands. Leading organizations include MindMatters, Rijksdienst voor Ondernemend Nederland, Institute for Education and Sustainability (IES), Kennisnet, Twijnstra & Gudde, University of Wageningen and Finalist IT. Interviews concern the view of the RVO coordinator, the program manager from MindMatters and a participant of IES support. The information system 'Groengelinked' has gone live recently and has established routine operations.

#### **Validation of pre-sorted theory from literature study in MPI 3**

##### *Confirmation of sub-criteria for Viability*

MPI 3 confirms the presence and interpretations for six of the seven criteria for viability except for Specialized tasks with parent organizations. Three criteria are addressed by all three interviewees: Idea, Fit of objectives and Approach for partitioning of work. They present a powerful combination: a clear problem of fragmented information broadly felt in the field as input for the Inception phase plus an Idea for a centralized webtool as embryonic solution plus an objective to improve the accessibility as legitimation. As this was an attractive idea that responded to a serious problem and fit the objectives of participants, it was easy to get support for it. As illustrated by one of the respondents: *'We saw rather quick, ok, we will get them on our wagon, and we will persuade them mainly by creating an attractive perspective. Then, we focus on those organizations that see that perspective and show them that it works creating an oil stain in the field'*

The above elicits the following CIMO:

- In the setup of an MPI (C), respond to a pervasive problem with an idea that fits the objectives of the potential participants (I), so they feel united around a solution as problem owners (M) leading to a starting group of innovators/early adapters (O) > cell 1A: Initiation/Support

Interviewees identified a basis for Support. They define support as 'a state of mind that expresses investment readiness'. This state of mind is based on the emerged trust of the supporting steering committee observing the clear deliverable for the MPI. So, a next CIMO is formulated as follows:

- At the start of a MPI (C), co-create a deliverable for the near future (I) because this promotes trust in the steering committee (M), so the steering committee enable its execution (O) > cell 4E: Reflection/coordination

Furthermore, all participants state clear views without contradiction concerning the Partitioning of work (*'first for the most important target group' and 'work divided in plateaus'*)

completed with clear views of the program manager on Coordination (*'Steering committee makes high level decisions'*) and Cooperation (*'staff: teachers, ICT-workers, members of user organizations'*). These remarks confirm these criteria as viability factors.

The absence of Specialized tasks for communication with parent organizations is explained by the stand-alone character of the MPI and the voluntary use of the webtool by customers. This explanation became clear when, after delivery, this stand-alone character caused financial problems for the continuity of the operational tool, since no users gave support with financial contributions: support in principle is not the same as support as a future user.

### **Validation of direct interventions can be clustered according to cross-boundary theory**

Clustering the data of MPI 3 concerning direct interventions gives an overview fitting the clusters Initiation, Identification, Exchanging, Reflection and Conversion. These interventions can be found in Appendix K.

Initiation activities in this MPI aim at inviting the target group with a presentation of a solution combined with a list of wishes and expectations about the idea as well as questions about capacities and joining the core team.

The Identification activities concern core-team discussions to identify the critical contributions (management, technical, finances, people with cross-boundary skills) by important partners.

In *Exchanging*, all three interviewees emphasize the early role of end-users: *'think about end users'*, *'be very serious about end users'* and *'involve end-users as early as possible'*. They point out *'that remarks of end-users enrich applicability'*. The remarks result in the next CIMO:

- At the start of a the MPI (C), invite users in an early stage (I) since they make applicability explicit (M) urging participants to be realistic about the idea (O) > cell 1B: Initiation/Idea.

In this MPI, Reflection in the beginning concerns activities for the outline of the approach in addition to activities to understand what is allowed with the idea in this specific context. The fifth cluster, conversion activities – presented by the interviewees – demonstrate the creation of capacity and budget on MPI level: a lot of delegation for coordinators to minimize consulting of partner organizations. This makes a high tempo possible but produces only moderately firm ties with organizations in the field. Despite the risk of high-speed progression, the following CIMO is presented:

- In the context of the setup of a MPI (C), make sure to have time and money budgets including delegated authority on MPI level (I) because this minimizes cross-vertical coordination (M) making high tempo proceedings possible (O) > cell 5E: Conversion/coordination.

Finally, it is worthwhile mentioning the introduction of an innovative collaboration contract to avoid mandatory tendering: the initiative could start immediately with a newsletter for the countless organizations in this field.

### **Exploring new findings for outcomes and interventions for the Inception phase**

#### *New sub-criteria for viability and new factors in Inception phase*

The data of this MPI show Attraction as sub-criterion for the idea again. As one respondent expressed: *'One click to get your info'*. Also Input in the Inception phase repeats for the third time, worded, for example, as existing problems like *'interested people cannot find information about sustainability'* or the solution: *'label the information as a sectoral interest'*. Input in the Inception phase is a factor encouraging the launch of the Inception phase and helping to formulate the assignments for the emerging initiative or giving participants reasons to act. Translated in CIMO terms:

- In the context of the setup of a MPI (C), make sure to collect relevant input (I) because this legitimizes the start of the MPI (M) leading to preliminary support (O) > cell 1A: Initiation/Support.

Concerning the staffing of the MPI, a pledge is made by respondents for a certain style of leadership. They express a need for a leadership that considers the summation of the contributions (*'able to add up inputs of participants'*) but also organizes the interaction (*'organizes tightly, points on sentiments'*). This repeats in other MPI's and will be considered in paragraph 4.6.4.

#### *New indirect stimulating and obstructing activities*

The stimulating activities concern the use of methods for enrichment of the idea. Also, these can be simple (*'scrum', 'role play', 'ask in the first meeting for a show of hands who wants to join'*) or extensive (*'organize a symposium for the whole branch'*) activities for getting support. In addition to these methods, respondents appreciate visualization of the idea, highlighting the Form of the idea as illustrated by: *'the make of the Talkboard with current processes on A0 with the target group, made content and process communal'*. This remark about the form of the idea suggests the next CIMO about an indirect intervention:

- At the start of a the MPI (C), work with a visualized idea (I) because this gives a shared insight in the actual status of the idea (M) leading to an equal starting point for next activities (O) > Indirect/Idea.

In this MPI, formalization is experienced as obstructive because it means reporting about budgets in the (different) systems of parent organizations, consuming a lot of (indirect) hours. Also, the tendency of looking at details or being critical is seen as hindering. This provides a CIMO formulated as follows:

- When starting an MPI (C), resist the urge for formalization and details (M) because these must fit with compelling systems in parent organizations (M) leading to spending a lot of indirect hours (O) > Indirect/coordination

These stimulating and obstructing activities are listed in Appendix K. This oversight becomes a source for indirect CIMOs extracted from the data of all MPI's in par. 4.2.2.

### Summary of findings of MPI 3

1. All criteria for viability were confirmed except Specialized tasks in communication with parent organizations. Its absence is explained by the stand-alone character of the MPI.
2. All sets of direct interventions are acknowledged. Of note is the immediate participation of (end) users and suppliers, where users are in the core team and suppliers are not. (The use of a collaboration agreement to prevent tendering is an innovative intervention).
3. Three new codes repeat: the attraction (2nd), Input in the inception phase (2nd) and Questions at the start of the Inception phase (3rd). Another new code is leadership, expressed in tasks as submitting the contributions and stimulating interaction. This kind of leadership is very important knowing that the MPI exists for realizing an idea by using participants' strengths.
4. Respondents suggest simple effective indirect interventions like scrum and role play. They warn against activities leading to formalization and discussions about details leading to consumption of many hours that are not spent in direct activities. These indirect interventions are added to the overview in Appendix I.

#### 4.2.1.4 Findings regarding MPI 4 Reuse of heat in glass industry

This MPI concerns the development of a panel to invert heat into electricity. Participants are RGS Development, Ardagh Glass Packaging, RVO and National Committee of Glass Industry in the Netherlands. Interviews were conducted with participants of RGS, RVO and Ardagh. In general, all the criteria for viability as well as the clusters of interventions fitting the cross-boundary theory were validated. Besides this, new sub-criteria for viability and new indirect activities were identified. In the meantime, the MPI became successful: the panel is produced and sold in the market. The findings in this MPI are provided in the next paragraphs.

### **Validation of pre-sorted theory from literature study**

#### *Confirmation of sub-criteria for viability*

All respondents gave clear evidence for specific support (*'decision to continue, a party will be launching customer, position of supporters in line of command'*). Clues appear also in the description of the characteristics of the idea as well as in the formulation of the objectives within the MPI's. As expressed by respondent 1: *'To save costs'*; by respondent 2: *'To be ahead of factories in other countries within our concern'*; by respondent 3: *'To serve superordinate goals from users'*. In reviewing the former MPI's, the same themes arise, especially for Idea and Fit of objectives. This is notable because it underpins the assumption that the MPI itself does not need its own objective. Participants may have different objectives with the MPI, but specific characteristics of the idea serve these different objectives enough to support the MPI. For example, the participant with the objective of cost-saving emphasizes the payback time as characteristic and the participant with the objective to enhance his image in the market looks at broader applications as characteristic of the same collaboration. In other words:

- In a starting MPI (C), formulate the characteristics of the idea in relation to the different objectives of participants (I) because this makes the individual interests salient (M) leading to support (O) > cell 2A: Identification/Support

Participants in this MPI are very clear about coordination and work division: the builder is (patent) owner and project leader; the (future) customer is advisor and tester; the supplier is (material) advisor. No formal arrangements for buying or delivering were made, but everybody knows informally that it means commercial preference if the collaboration is realized.

- In a starting MPI (C), allocate work based on the future roles (I) because this makes the individual interests clear (M) leading to long-term support (O) > cell 3A: Exchange/Support

### **Validation of direct interventions can be clustered according to cross-boundary theory**

Clustering the data of MPI 4 confirms the codes Initiation, Identification, Exchanging, Reflection and Conversion activities.

In the initial stages of this MPI, activities combine invitations and potential support in non-competitive companies (*'same processes > melting above 1500 Celsius and more'*) with formulating the best idea to work on (*'process, product or system; fantasize about final situation'*). This leads to the shared interest and awareness needed to start together. In CIMO terms:

- At the start of an MPI (C), highlight in the invitation how the idea fits the shared processes of invitees (I) because this activates awareness of a shared interest (M) leading to broader support (O) > cell 1A > Initiation/support

Identification activities aim at locating gatekeepers (*'supporters in line of command'*) as well as those engaged in its application (*'waste heat, near motor of in ship'*) or future owners (*'who will get the IP'*) because the MPI develops significance for these individuals.

As a CIMO:

- In starting an MPI (C,) identify persons at the (decision) phases, persons linked to application and future owners of the know-how (I) because they see the possibilities first (M) leading to the best input for the idea (O) > cell 2B: Identification/idea

Exchanging activities produce an informal organization (*'it is easier to spend hours, not money'*) concerning decision-making (*'about progress, priority, information sharing'*), execution of activities (*'project- or working group with constant members'*) with emphasis on technicians (*'they have shared interest; easier to be pre-competitive'*) and dossier building (*'managing growing information'*). By illustrating these rules of the game, the respondents suggest the following CIMOs:

- In a starting MPI (C), appoint a stable working group with technical persons (I) because this facilitates pre-competitive atmosphere based on same pastime (M) leading to stability in cooperation (O) > cell 3D: Exchange/cooperation

and

- In a starting MPI (C), come to an agreement within the MPI about allocation of hours (I) because this avoids the complicated coupling with money (M) leading to informal and easy decision-making about priority, progress, sharing the growing information and staffing > cell 3E: Exchange/coordination.

Reflection in this MPI concerns mainly the idea and its application, but also the search for stimulating context factors (*'the environmental perspective'*).

Conversion interventions prepare for a more formal follow-up (*'change into more legal/business like; 'formulation of activities in organization of end-user'*).

Furthermore, respondents explain some outcomes themselves in CIMO terms:

- apply (pre)tests in the organization of the user (I) so the user organization experiences the positive effect (M) and is inclined to act as a partner (O) > cell 4A: Reflection/Support

- make sure that the idea fits the superordinate goals of the branch (I) because when the idea fits their 'spirit of the time' (M) they are willing to test (O) > cell 2D: Identification/ Cooperation

### ***Exploring new findings for outcomes and interventions for the Inception phase***

#### *New sub- criteria for viability and new factors in Inception phase*

New sub-criteria and factors of previous MPI's repeat: Attraction, Input in the Inception phase and Questions at the start. And others emerge from this MPI: Form of the idea, Style of leadership, Mental position of participant and Context.

Form of the idea may give the participants the possibility to understand the last version. There is no misunderstanding for which version the next enriching activities are done. In MPI 3, participants spoke about a visual which enabled them to stand around it while working. In this MPI, they use a mock-up or demonstration, the visibility of which enables the search for sponsors and ideas about testing.

Style of leadership emerges. It is a sub-criterion of cooperation as an outcome of the Inception phase, but these respondents propose it as a factor during the Inception phase (*'connector who has insight in more branches; 'has ability to recite'*) a contribution that was also highlighted in earlier MPI's (*'there is a partisan': MPI 1, 'nominate a chairman who functions informally': MPI 2, 'ability to add up the inputs of participants': MPI 3*). Of course, leadership is an enormous issue in literature, but it is worthwhile to observe its emphasis in MPI's to come.

Typical context factors in this MPI point to the importance of drivers for the whole branch (*'1200 companies with agreement to get 2% more energy efficiency'*), internal competition in parties (*'ideas in other countries within same company are more competitive'*) and the availability of finances to start (*'subsidy available means possibility for demonstration innovation'*). These new factors are grouped in Appendix I and serve as building blocks for indirect interventions in the design.

#### *New indirect stimulating and obstructing activities*

*'Organize the learning'* is an indirect intervention assuring continued insight. It is significant as it is close to the very reason of the MPI's existence. It is plausible to assume a link with the form of the idea that makes findings visible and exchangeable. A file with updated and relevant information can facilitate growing insights. As a CIMO:

- In a starting MPI (C), organize the findings through accessible files (I) because this assures the collaboration (M) leads to an exchange of progressive insight for all (O) > cell: Indirect/idea. Also, these insights are added to the overview tables in the appendices, giving the basis for the proposition in Chapter Five.

### Summary of findings from MPI 4

1. The criteria for a viable outcome of the Inception phase are not only confirmed but also more specific for Support, Idea and Objectives. We found that the parent organizations' various objectives are linked with certain characteristics of the MPI Idea. The clarity of this relationship is important for the development of Support. The criterion Work partitioning is based on future relationships: development work is for the future owner; advisory work is for the user in the future.
2. All clusters of interventions based on cross-boundary theory were confirmed and incorporated.
3. An interesting new factor is the Form of the idea: a mock-up, demonstration or a drawing galvanizes participants. The form facilitates the discussion about enrichment and enables supporters to be convinced. Furthermore, comparing with previous MPI's, we see the emergence of new codes such as Leadership (2e), Attraction (3e), Input in the Inception phase (3e) and Questions at the start (4e). Also, some new elements were found to enhance the description of the Context of MPI's as well as a new factor, Mental position, from which the participant sees his contribution.
4. Indirect interventions like the use of files should stimulate exchange and learning. Obstructing activities are differences between partners concerning their routines for budget cycles and estimated payback time.

#### 4.2.1.5 Findings regarding MPI 5 Circular Economy

Participants in this MPI embrace the idea to gather and propose to all organizations that help the transition to a circular economy: creation of business through circular design. The earliest participants are Nuovalente (innovation and start-up), MVO (Maatschappelijk Verantwoord Ondernemen), the Groene Zaak (branch of sustainable Entrepreneurs), het Groene Brein (network of scientists), Sustainable finance lab (circular business models), Klik.nl (network of designers) and Spark design (Innovative products). Interviewees are the program manager and participants of MVO, Nuovalente and Het Groene Brein.

### Validation of pre-sorted theory from literature study

#### Confirmation of sub-criteria for viability

In this MPI, six of the seven criteria for viability are incorporated in subcategories and again, we see a great variation in remarks. An explanation for this variation is that participants see this initiative as a marketing tool to collectively sell their own strengths (*'Division of work focuses on own interest instead of on collaboration; 'participants start with their own ideas about what is to be done'*). They have no other primary process in the MPI except for collaboration on task/budget division and communication to the market. Participants serve the same market (*'we all focus on companies already interested in circular production'*). That is why they share the idea of *'forming a circle of companies with a high-level objective: to*



*make companies more circular minded'*. However, in terms of propositions to customers, the participants stay close to their routine products and objectives. This allows for one profile in the MPI (*'one style for the logo'*) but not the same starting points (*'we do not share the contact data bases'*). This raises an interesting question for the definition of collaboration in this context: do we in- or exclude collaboration when parties work together only on secondary processes?

This MPI has a clear criterion for dividing the work: if an assignment contains the specialization of a participant, the participants' company is in the lead. A customer can be handed over between the associated partners in the pool: one participant educates product designers in circular product design, then the company is handed over to the partner that helps with developing a circular business model: a clear modular choice. This explains also why the participants have nearly no arrangements for communication with parent organizations as they use their own routine arrangements.

### **Validation of direct interventions can be clustered according to cross-boundary theory**

Clustering the data of MPI 5 concerning direct activities confirms the codes Initiating/invitation, Identification, Exchanging, Reflection and Conversion activities.

This MPI was initiated by a representative of the government that wanted to create a method to manage all questions in the upcoming circular policies. The fit with the objective to enhance the circular economy - is the main criterion in selection of partners. Some were invited by accidental encounters (*'They invited me via Prince Carlos' or 'I accidentally met a former relative at a book presentation'*). Others were invited because they *'speak business'* and have focus on circular issues. Identification interventions are important to understand each other's core competences, but also to distinguish between one's own and shared interests. Exchanging interventions concern ideas about working together (*'in pairs, with persons and not with institutions'*) and routines (*'cross-pollination, frequency of meetings, capturing findings'*). Since the division of work is very modular, focus of reflection activities concern target groups for the MPI (*'companies and designers'*), searching assignments and coordinating the allocation of tasks and budgets. One of the participants came up with a spontaneous CIMO:

- In a MPI (C), interact as quickly as possible with the market (I) because creating validating feedback about happiness of a customer (M) gives a feeling of success/fit (O) > cell 4B: Reflection/Idea.

In conversion activities, we see that – similar to MPI 3 – the assignment for handling questions about circular economy was not tendered but handed over to the partners in the MPI in a Collaboration Agreement. The representative of the government did not

become a principal but rather one of the partners, mostly as financier. The individual partners get the lead in an assignment by the MPI based on the dominant issue in the client's question. So, below is expressed this policy of the respondents in CIMO form:

- In a MPI (C), give the work to the best-suited party even if it does not fit your own short-term interest (I) preventing you from a short-term orientation (M) so you stay focused on the final result (O) > cell 3F: Exchange/partitioning of work.

### ***Exploring new findings for outcomes and interventions for the Inception phase***

#### *New sub-criteria for viability and new factors in Inception phase*

Very clear – again - is the factor Questions at the start. Most of these questions concern the degrees of freedom for the partners as they have not a shared primary process in the MPI, but a portfolio of assignments from which to select their individual share. A second factor is also repeated: Organizing of learning by reflection of individual participants.

#### *Indirect stimulating and obstructing activities*

It is notable that most of the indirect interventions – stimulating as well as obstructing – have an Exchange character that mostly helps facilitate Coordination of the next stages. This identifies a pivotal role for this cell: stimulating the building of bridges between participants (Exchanging) by developing a construction for how participants relate (Coordination) in the emerging initiative. This must be expressed in the design in Chapter Five.

### **Summary of findings from MPI 5**

1. All viability criteria are confirmed and expressed in subcategories except Specialized tasks for communication with parent organizations: participants work individually on projects under the umbrella of the MPI. So, the collaboration concerns only secondary processes.
2. The direct activities mentioned covered all cluster codes as derived from cross-boundary theory.
3. One emerging factor (*Questions at the start*) is repeated for the fifth time and another, *Organizing learning*, appears for the first time. This new factor will gain importance for the design in Chapter Five when it repeats in other MPI's.
4. The majority of the indirect interventions concern stimulation for increasing urgency and facilitating immediate collective action. These are the result of obstructions: slow progress, individualistic decision-making, different expectations of the role of financier and friction about the allocation of work based on own interests.

#### 4.2.1.6 Findings regarding MPI 6 Zero Energy Houses

The MPI 'Zero energy houses' started when a real estate owner wanted to be one of the first to succeed in this field of sustainable housing. He invited a construction firm and a technical equipment firm that worked on his earlier projects. Later, an architect also joined. They aimed at first at learning how to renovate four inhabited houses. After this, they would scale up to twelve and hundred houses. However, the initiative suffered from two main problems from the beginning. Firstly, the technical regulations issued by the government developed during the MPI and were becoming stricter, until the technical and financial ideas of the MPI could not respond to them anymore. Another emerging problem was that the initiator became more and more a principal - and not a partner - seeing the process as an assignment for a deliverable. In the meantime, he transferred the risks to his 'contractors' who defined the assignment as an experiment. This resulted in the MPI coming to an end, finally. Interviews were conducted with the director of the construction company, a management team member of the technical firm and the architect.

#### **Validation of pre-sorted theory from literature study**

##### *Confirmation of sub-criteria for viability*

Six of the seven criteria for viability were addressed. The fact that the seventh (Support) was not present hampered the collaboration seriously. Some reasons for the lack of support follow:

- In the initial stages, this MPI invited homeowners whose houses could be the object for sustainable renovation: 'launching customers'. Their behavior (opening windows, use of warm water) would make a difference. However, these homeowners did not really participate which led to a lack of Support from them. This was obstructive since one objective was to find an innovative approach for the houses while inhabited.
- Another sign of low Support by the initiator was that sometimes a delegate of his organization appeared in a meeting because *'he had no other work'* but disappeared when he was on another assignment. This neglect of the special character of this initiative may have suggested that the initiator viewed the MPI as just another project to make money.
- Also, in this MPI we see different horizons of objectives. The architect, the construction partner and the technical firm first committed to learning about renovation with the four inhabited houses. After this, the plan was to scale up to twelve and later on to hundred houses so the production routine could be established (the final Idea). During the MPI, a misunderstanding remained implicit: the government and then the initiator interpreted "zero on the meter" as a longer-term deliverable: the Idea itself. However, the other participants saw 'zero on the meter' as a longer-term objective

and developed the Idea to deliver Energy Efficient Houses. Two Ideas in the same MPI with different risk and cost profiles undermined the support of the participants.

- These differences made the goal of the MPI for the longer term (*'To get ready for the new market'*) in the background.

This difference in short-term objectives and the lack of a shared long-term objective/idea calls for the following CIMO:

- In a new MPI (C), make sure participants identify objective(s) for the longer term (I) so their motivation is based on the future (M) and risks for short-term support are compensated (O) > Cell 2C: Identification/Support.

Since the wish to enter a future market (Objective) and create chemistry between three of the four partners (Cooperation) were the driving forces, Exchange and Reflection activities with the estate owner (the fourth participant) and inhabitants were hampered. The withdrawal of two participants prevented Conversion. Suggestions by interviewees indicated that, in the beginning, relevant people of the parent organizations should also meet. Because when they discuss their objectives and possibilities for the idea, these the gatekeepers could synchronize their position, thus reinforcing Support for the MPI. For example, respondent 6.2 stated: *'Show your motives and your obstructions and what to do in the case of conflicts, or if things become fuzzy or the project changes. These motives are not clear from the start till the end. Because we are connected on several levels, this means that project members but also the directors should meet to discuss dilemmas. And if you understand each other, you don't quit at the first problem, but the collaboration grows. Being together at the entry of hell without releasing hands creates basis for new collaboration, based on a feeling of safety.'*

This quote illustrates the importance of the next CIMO:

- In a starting MPI (C), ensure at the start that relevant people of the parent organizations discuss their objectives and possibilities of the idea (I) because this synchronizes the gatekeepers (M) and reinforces support for the MPI (O) > Cell 2A Identification/Support.

### **Validation of direct interventions can be clustered according to cross-boundary theory**

Clustering the data of MPI 6 concerning direct activities confirms the codes Initiation, Identification, Exchanging, Reflection and Conversion activities.

The initiator was not present in the first meeting for MPI 6. Invitations for this meeting were based on technical skills (*'they know me and my skills'*) of participants which led to an agenda without reflection on getting to know each other, contracting, financing

and performing. The question for the invitation was very open (*'Would you join to think about energy friendliness of houses?'*). With reflection on technical solutions and the wide interpretation of the assignment, participants started designing instead of enriching an idea, without having clear rules for exit or financial coverage. The MPI lost its focus for the longer-term objective – to be ready for a new market – and stumbled on the risks for renovating the first four houses. This opts for a CIMO addressing this point:

- In a starting MPI (C), make getting to know each other, contracting, financing and performing also on the agenda (I) because this prevents thinking only technically (M) leading to integral decision-making (O) > Cell 4D: Reflection/coordination

Identification of suitable parties is difficult when the idea is moving. Does the MPI need contractors, innovators, venture capitalists, clients, suppliers or principals? The following exchange activities suggested: *'make a team of all parties involved; synchronize on the latest version of the idea; enrich the idea (not fixed) instead change the idea (fixed); make sure that parties see each other according to the assignment e.g., as innovators or as contractors.* These remarks lead to the next CIMO:

- In a starting MPI (C), make sure that identification interventions are based on a tentative assignment (I) so actual participants are aware that the idea is still changing (M) leading to understanding that participation in the MPI is not fixed either (O). Cell > 2A: Identification/support.

Speaking about reflection activities, respondents emphasize formulation of shared starting points (e.g., *'Make sure that quality and finance go together'*) so the informal bond is strengthened, and (the need for) a juridical contract does not hinder deficits. In a CIMO-formulation this sounds as follows:

- In a starting MPI (C), agree on starting points about what to do (I) so you, your principal or other initiators see the same assignment (M) which leads to a shared view on the process (O). Cell > 4F: Reflection/Partitioning of work.

Typically, the participants neither reported nor suggested interventions for Partitioning of work and Specialized tasks of communication to partner organizations. At the same time, they stated that the work and risks were divided asymmetrically, and one partner went in another direction.

### ***Exploring new findings for outcomes and interventions the Inception phase***

#### *New sub-criteria for viability and new factors in Inception phase*

Three new sub-criteria are becoming quite familiar as they show up in several MPI's: Attraction, Questions at the start and Input in the Inception phase. With their experiences behind them, the respondents see the different Attractions they focused on (*'zero on the*

*meter'* and *'a backbone in the shell with extras'*). Most of the remarks in Questions seem to refer to investment issues in follow-up phases (*How to handle the pressure if participants need to do all the investments by themselves?*). This is because they feel it difficult to enter Development phases including high expenses without a decision about a viable Idea. According to respondents, input for the Inception phase concern includes contextual starting points from parent organizations (*'the assignment must be clear'*) and from the government (*'the overall/legal preconditions should be fixed'*).

A notable new code is the Type of process. It is likely the nature of the process is derived from the assignment and formulated by an initiator or participants themselves. If participants agree to work in the same process such as idea development or renovation processes, maintaining a uniform attitude in activities will be easier.

*New indirect stimulating and obstructing activities.*

As may be expected in a stranded MPI, many opinions were given on obstructing factors. One of the respondent's insights reflected on the obstructions:

- In a MPI (C), 'let participants elaborate on each other's contribution (I) so 'it clicks' between them (M) which makes them team up' (O). Cell > Indirect/Cooperation.

Immediately at the start, the open assignment led to different views on the nature of the process (*'less gas/renovation'* or *'all electric/innovation'*) that finally threatened actual commercial relationships and profiles in the market, which made the MPI come to a halt. An obstruction that also had negative consequences was the fixation of the idea too early (*'forced to use an impossible business case'*) which led into a cluster of designing reflections producing an ill-suited proposition. Furthermore, insufficient converging in exchanging activities produced different starting points and different pressure for individual participants, ending up in an asymmetric informal structure. Finally, we see bias in reflection activities: over-optimism based on one viability criterion only (*'We want to enter the new market'; Objective*).

### **Summary of findings from MPI 6**

1. The seven criteria for viability were acknowledged.
2. The clusters of direct activities were recognized in the activities mentioned.
3. Three new sub-criteria and factors are becoming important: Attraction (4th time), Questions at the start (6th) and Input in the Inception phase (4th). Another new factor is Type of process, a label that is given to the shared assignment leading to obstruction if participants have different ideas about the type of processes they need to execute.
4. Indirect activities mentioned aim mainly at mitigation of problems: evaluating connection with contextual developments; synchronizing participants on starting points; facilitating decision-making, reflection on interaction.

#### 4.2.1.7 Findings regarding MPI 7 Duurzaam Door

Duurzaam Door is an initiative of the Ministry of Economic Affairs to develop networks of municipalities, institutes and companies to stimulate a green and sustainable economy. It has a two-layer character. The MPI informs about successful projects and smart working methods for realizing biodiversity, social innovation and energy transition. By doing so, they want to speed up and scale up sustainable projects and initiatives. For example, they focused one year on projects and initiatives about biodiversity in cities, industrial parks and healthcare, initiatives stimulated by the MPI.

Three participants gave their opinion based on their experiences with the start of this MPI: a director of an energy cooperation, the secretary of GDO (an organization for sustainable development of municipalities) and a consultant. Duurzaam Door is live ([www.duurzaamdoor.nl](http://www.duurzaamdoor.nl)) and has reached an established production routine.

### Validation of pre-sorted theory from literature study

#### *Confirmation of sub-criteria for Viability*

All criteria for viability are confirmed by the respondents in this MPI.

Support is expressed in a contribution for at least the next step, complemented by supporters and allocation of (core) members to the MPI. Remarkably, while in this MPI the objectives differ on MPI level or sub-initiatives level, the idea is abstract enough to cover all kinds of diverse ideas (*'Gardens without pavements, biodiversity in industrial parks, climate adaptive cities, citizens produce less waste'*). In CIMO terms:

- In a starting MPI (C), make sure that characteristics of the idea fit objectives of parties (I) so every participant sees possibilities (M) and keeps on supporting (O). Cell > 2A: Identification/Support

A warning is hidden in the discussion on selection of staff. The advice of interviewees is to select persons without strong ties in their parent organizations to prevent hindering dependencies. This suggests also a CIMO like this one:

- In a starting MPI (C), select key persons with less rigid ties to the parent organizations (I) because they have higher degrees of freedom to act (M) so the MPI stays free from hindering dependencies (O). Cell > 2E: Identification/Coordination

Also, a suggestion concerns recruiting resources from the five Os (in Dutch: *onderop, overheid, ondernemingen, onderwijs, onderzoek*) In English, these are bottom-up, government, enterprise, education, and research. The explanation by respondents is that because of the five Os, all the knowledge, people with cooperative and hinder power and procedural skills are on board to accomplish societal objectives. This leads to a specific CIMO:

- In a starting MPI (C), scan the neighborhood for the five O skills needed (I) because parties with local interests have stronger ties (M) making the MPI profit from existing and experienced connections (O). Cell > 1A: Initiation/Support.

Explicitly mentioned is learning in Cooperation (*'Learning by doing as thinking style'*) and Coordination (*'Shared experiences in a learning history'*) because participants need to discover and save new insights. Translated in CIMO terms:

- In a starting MPI (C), install a learning attitude combined with a written learning history (I) so experiences are explicit for participants (M) making new discoveries and insights shared (O). Cell > 3E: Exchange/coordination.

Partitioning of work in this MPI is formulated by allocation of budgets or the line up in contracts. This follows the two-layer character of the MPI where each participant organizes his own cluster of initiatives. Finally, the suggestion is to nominate one person without operational activities in the MPI to communicate about the financials with sponsors; this is logical because the MPI is not directly financed by the initiatives and projects they intervene in. This corresponds with academic suggestions to have a specialized role for communication with parent organizations as part of viability.

### **Validation of direct interventions can be clustered according to cross-boundary theory**

Clustering the data of MPI 7 concerning direct interventions confirms the codes Initiating, Identification, Exchanging, Reflection and Conversion.

All respondents state the relevance of these domains of direct activities. However, again – as in other MPI's – activities for delivering Partitioning of work and Specialized communication tasks with parent organizations are rare. This is explained by the observation that participating parties never integrate in a new entity. The parent organizations themselves facilitate the launch of a website, exchange of persons and knowledge and maintenance of networks. The individual partner takes the lead in a new project, often because the project is nearby geographically. Also, here, a typical variant 'the two-layer MPI' shows up. This variant has a first layer that is formed by the initiating participants. This MPI itself does not produce products or services for the market but facilitates sub-MPI's who develop ideas for and want to deliver to the market. In this MPI Duurzaam Door, the first layer is the MPI of the Ministry of economics, GDO and a consultancy firm delivering a program organization. This program organization facilitates the individual 'second layer' MPI like the production and placement of 'Nature Storehouses' or 'Wasted', to collect and re-use plastics.



### ***Exploring new findings for outcomes and interventions in the Inception phase***

#### *New sub-criteria for viability and new factors in Inception phase*

Attraction: Also, like other MPI's, this MPI has a nice slogan for an enduring characteristic of the idea: '*a second life cycle*'. The idea is about the creation of '*an industrial area for recycling enterprises*'. The proposed characteristic of the area is expressed by '*a second life cycle*'. Why is this slogan an attraction? Well, the reason is that the description is appealing, creates identity and provides an umbrella for all kinds of enterprises to settle in this area with the objective to create a garbage-free region.

Input in the Inception phase: also, in this MPI, participants suggest a central facilitating person. They see this person as the bridge between the former phase and the Inception phase safeguarding the essentials of the embryonic starting points while igniting the Inception phase.

Viable: some of the descriptions confirm the definition as adopted in Chapter One, 1.2: the ability to maintain itself or to obtain sustainability. However, one participant chose a very simple viewpoint: viability exists the moment that parties start to work on a product or outcome. This reflects a more action-oriented view!

#### *New indirect stimulating and obstructing activities*

Suggestions are made for typical stimulating working methods ('round tables', 'inspiration sessions') probably because these interventions bring participants outside their routines – necessary for innovation. Also, tools for communication to large amounts of people (website, communication to employees of - potential - supporters) are mentioned. This seems to express a more marketing than sales orientation and is necessary for acquiring new clients constantly.

Respondents had experiences with obstructions in identification, exchange and conversion activities. Weak identification with long-term objectives gives room for hindering opportunistic behavior and threatens trust. When exchange interventions lead to unclear support for participants who make the MPI dependable and to whom responsibility is allocated, high coordination costs and hinderances enter the picture. Finally, respondents warn against changing key persons on the passage to a new phase: too much implicit strength will be lost. Likewise, the introduction of strong coordination frameworks ruins the development because these frameworks hinder the informal flexibility that is seen as a success factor. This flexibility diminishes when, for example, Prince 2 is applied in the approach.

### **Summary of findings from MPI 7**

1. The seven criteria for viability were acknowledged but not used. An explanation is that when an MPI has no need to transform itself into a new entity, Partitioning of work and Specialized tasks for communication with parent organizations in the next

phase are not necessary. This is the case when the MPI serves other initiatives. We saw this also in MPI 5.

2. For the same reason mentioned above, not so many conversion activities are necessary.
3. Two new codes are gaining more and more importance: Attraction (5e time) and Input in the Inception phase (5e).
4. In this MPI, indirect interventions concern working methods and tools for enhancing direct interventions. Here and throughout the MPI's emerge two sources: the lack of or bad execution of interventions as proposed in the clusters of direct interventions (*'activities lead to unclear support'*) or that rise autonomously (*'high costs for coordination'*). The last type of obstruction could be a reason for typical risks in the Inception phase.

#### 4.2.1.8 Findings regarding MPI 8, Platform Biodiversity, Ecosystems and Economics

The Ministry of Economic Affairs (EZ), the International Union for Conservation of Nature (IUCN) and the Dutch Employers organizations (VNO/NCW) started to work together to create and facilitate a Platform BEE for the domains of biodiversity, economics and ecology. This MPI sought to facilitate all kinds of business developments in companies along the same river, in fragile environments or in development of tools and training. Later, the MPI served also as agent for coupling businesses – organizers of conferences and publicity. The idea is that the combination of subsidy and terms of reference stimulate companies to participate in developments in this area, such as life cycle analyses of their products or processes. Later the MPI also engaged with databases of BEE-topics. One interviewee was allocated from Rijksdienst voor Ondernemend Nederland (RVO) as project advisor in the MPI and the second participant came from the IUCN. The interview with the participant of Economic Affairs did not take place because of agenda problems. The activities of the MPI ended, but the solutions it produced are still available.

### **Validation of pre-sorted theory from literature study**

#### *Confirmation of sub-criteria for viability*

All criteria for viability were mentioned, in the sense that they were missed in the MPI. It is expected that supporters have an active role both inside the MPI (*'defend priority for the initiative'*) and outside the MPI (*'allocates really capacity'*). Support not only means a longer commitment for themselves (*'the same persons who starts the initiative forms the support later'*) but also to preventing others from leaving (*'prevents circulation of persons'*). In CIMO terms:

- In a starting MPI (C), make supporters commit themselves for a long active role (I) because this makes their contributions of capacity solid (M) preventing circulation of other persons in and around the MPI (O). Cell > Exchange/Cooperation

The idea of this MPI is to create a platform that facilitates sub-initiatives to realize products or services. The abstraction of the objective (*'to make industrial chains greener'*) gives room for a lot of opportunities and Inception phases. Informally, other objectives were mentioned that were more political driven (*'bridging the gap between politics and industry'* or *'to confine the effects of growing economy'*). Because of this indirect character and the different informal objectives, cooperation was not a priority for two of the parties. The facilitating character expresses itself in the delegation of supported initiatives to other parties and the installation with the most active secretary of a special communication line for sub-initiatives about issues and payments. However, the informal (real) objectives and internal problems of one of the parties made the governance of the platform more and more a responsibility of the Ministry. Exchanging, Cooperation, Coordination and Portioning of work ended up as a routine for granting and monitoring of initiatives of other initiators twice a year. Surely viability assumes mutually realistic expectations. So, the MPI stopped when the end date of the contract was reached.

### **Validation of direct interventions can be clustered according to cross-boundary theory**

Clustering the data of MPI 8 concerning direct activities confirms the grouping of interventions in Initiation, Identification, Exchanging, Reflection and Conversion. An overview of all these activities appears in Appendix K.

The MPI developed in a way that demonstrated declining support. During the initiating activities, the CEOs produced visionary policies as intermediate results. Then, the three secretaries of the chairman started to collect and initiate ideas on a lower level than the MPI itself. The MPI became a sponsor for sub-initiatives. Because of absence of reflection activities, the MPI did not achieve a clear fit between the interests of the IUCN and the VNO/NCW and the objective of the MPI: the support diminished. This, in fact, made (the representative of) the Ministry the driving force in selecting and choosing sub-initiatives that informally did not fit the interests of the (lobby of) the other parties.

That again separated the IUCN and VNO/NCW even more, so a negative spiralling took place, preventing the initiative to undertake reflection let alone conversion activities. The MPI *'lived' through financing the initiatives of others within the domain allocating subsidy of the Ministry'*. The MPI could not reach viability because the platform had no real added value for the parent organizations and served only short-term pragmatic objectives.

### **Exploring new findings for outcomes and interventions for the Inception phase**

*New sub-criteria for viability and new factors in Inception phase*

Attraction: the naming or even framing of the initiative (*'Dream deal'*) promises an attractive future. Reflecting on their experiences, interviewees proposed a process to reach the

Dream deal when the start of the initiative is tendered. In fact, this is a selection process at the start of the Inception phase. One respondent explained this process: *'expression of interest > long list > propositions > position paper > start'*. It is possible to see this as an alternative for the initiation and identification activities. The difference is that these activities are to be undertaken by the future parent organizations of initiatives selected by the Platform.

Questions at the start: especially in contexts where parties initiate the Inception phase, it is important to understand the (potential) conflicts between the supporting parties. The MPI will suffer dual loyalty. Trouble in the parent organizations should be on the agenda in the identification activities.

Type of process: normally the assignment in the Inception phase is an enrichment process, but, in this MPI, it ended finally as a selection process: the work of the MPI proved to be selecting initiatives serving only the objectives of the Ministry. It was a two-layered MPI: the selecting platform as the first layer and the selected initiatives the second layers.

#### *New indirect stimulating and obstructing activities*

Interviewees identified many obstructive factors and activities corroding the viability criteria support, objectives, coordination and cooperation. Improvising, for example, leads to financing the most active participant just because he is doing the most work which is not necessarily the work with highest priority. Accepting mottos like *'I'll scratch your back, you'll scratch mine'* or *'condemned to cooperate'* in identification of participants creates bias and hinders the ability to enrich the idea and facilitate cooperation. This is especially the case when objectives are so fuzzy that (informal) objectives may prevail.

Some of the participants experienced unfairness due to a crooked division of benefits, so their support decreased. For example: In a MPI (C), if one party has the biggest influence on the development (informal I), frustration by the other parties builds up (M) leading to weakening ties between the parties (O). Cell > Indirect/cooperation

The same diminishing effect on support arises when a participant changes his representative 4 to 5 times: the others interpret this as low interest.

An obstruction that must be solved in exchanging activities is differences in the DOA's (delegation of authority) of MPI participants because this makes decisions on MPI level problematic – effecting coordination and cooperation negatively.

Another negative effect – if not solved in exchange activities – concerns different tempo in contribution because it makes the party with the highest tempo the irritating chaser of the other parties.

Finally, informal pragmatic or political objectives have a negative impact on (the quality of) reflection activities when they are more important drivers than the longer-term-oriented formal objectives of the MPI. One of the respondents suggested a CIMO:

- In a starting MPI (C), *'make detailed agreements about the work packages (I) so every participant understands the use of the budget (M), preventing a situation where one of the participants emphasizes mainly his own interests('O)*. Cell > 3D Exchange/Cooperation

### **Summary of findings from MPI 8**

1. Only support, idea, objectives and coordination are acknowledged as criteria for viability. An explanation is that when an MPI has no need to transform itself into a new entity or start to disintegrate, Cooperation, Partitioning of work and Specialized tasks for communication with parent organizations in the next phase do not develop. This was observed also in MPI 5 and 7.
2. Only initiation and a few identification and exchange interventions have been executed since support started to lag in an early stage. Other interventions were suggested in the interviews. For the same reason, the participating parties almost did not engage in reflection and conversion activities.
3. Two new codes are gaining more importance: Attraction (6th time) and Questions at the start (7th). Another new code Type of process shows up for the second time.
4. Indirect interventions (*'Party A has to chase parties B and C continuously)* or factors (*'the MPI was political driven')* are obstructive and not tackled by stimulating indirect interventions. They also trigger negative mechanisms producing negative outcomes.

#### *4.2.1.9 Findings regarding MPI 9 Solar Integrated Solutions*

Initiated by consultants with a broad network, participants came together for developing Building Integrated Photovoltaics, in this case enriched to 'Beautiful Solar Panels' because they had the feeling that a market would respond to panels that were not the 'ugly' traditional rectangular panels. Early participants came from a construction company (van der Maazen), an energy research institute (ECN) and a company making plastic components (Wicro). After the initial period of discussion, they focussed on solar roof tiles and enriched the idea into *'a demonstrator'*, followed by proto phase, pilot phase and currently the launch phase, successfully entering the house construction market with a company called Solinso. Interviews were conducted with the director of the construction company, an entrepreneur from ECN and a dedicated employee of Wicro.

### **Validation of pre-sorted theory from literature study**

#### *Confirmation of sub-criteria for Viability*

The criteria of viability were very much confirmed in this successful MPI.

According to interviewees, Support means that partner organizations are very active in contributing to the MPI – not only in words – but with finances (*'Willingness to provide cash'*), machines (*'access to machines'*), room (*'provides test location'*) and staff (*'allow persons to participate 100%'*). This pledge could be easily translated into a CIMO:

- In a starting MPI (C), demand that partner organizations actively contribute finances, machines, room and/or staff (I) because this enhances the level of their involvement (M) leading to an understanding of the level of support needed (O). Cell 2A > Identification/Support

Respondents are very explicit about the Idea at the end of the Inception face: it must have a form either as *'a 3D drawing'* or as a *'demonstration'*. The viability of the Idea includes statements about the performance (*'affordable price'*) but also about the trial tests of these performances and risks. Their remarks produce an explicit CIMO:

- In a starting MPI (C), deliver the idea as a demonstration including evaluations of performance (I) because this allows testing for suitability (M) making the idea more viable (O). Cell > 4B Reflection/Idea

Partners have a considerable overlap in their objectives, formulations ranging from *'first in the market'* to *'getting new business'* or *'getting profile in the market of durability'*. The MPI recruited thoroughly on strengths needed for the enrichment of the idea (*'specialist in synthetics'*), identifying desired staff corresponding to the expected relevant domains. Preferred too is an informal style based on trust. One of the respondents explained his philosophy as follows: *'I start first trusting intuitively (can I work together with this person), then making some agreements and then depending on what happens (is he opportunist/pragmatist) you take your measures'* or transferred to CIMO reasoning:

- In a starting MPI (C), make agreements based on first experiences with other parties (I) because the less one sees a reason for a formal contract (M), the more flexibility for adjustments is optimal (O). Cell > 3E: Exchange/Coordination.

This above presented style allows speed, fewer hurdles in Intellectual Property and flexibility in the changing reality of a starting MPI. If coordination is built up at the end of the Inception phase, participants see detailed activity planning into the next phase, a juridical entity (*'a Limited'*) but also a routine to exit the MPI. Speed is still important to keep investment costs low so work packages (modular arranged) are planned in parallel. The communication with the parent organizations is mainly about the main decisions (*'go/no-go issues'*) and preparing the parent organizations to become shareholders if they want (*'meetings are like shareholding meetings'*).

### **Validation of direct interventions can be clustered according to cross-boundary theory**

Clustering the data of MPI 9 concerning direct activities confirms the codes Initiating, Identification, statements about the end of the (Inception) phase offers a new CIMO:

- In a starting MPI (C), deliver for the next phase a detailed modular work planning, a juridical entity and a routine for exit (I) so participants understand clearly the responsibilities entering the next phase (M) leading to low coordination costs (O). Cell > 5F: Conversion/Partitioning of work (O)

and

- In a starting MPI (C), organize decision-making with parent organizations only about main issues (I) because parent organizations will start to feel like stakeholders (M) leading to support for taking on this role (O). Cell > 3A: Exchange/support.

#### *Exchanging, Reflection and Conversion in MPI 9.*

Invitations were made by someone who knew that invitees were busy with the same question: how to integrate PV panels in the roof. Therefore, these pioneers did not need activities to formulate shared objectives. They already had overlapping objectives and complementary skills so identification as partners was easy. One of them was very critical about partners (*‘Invite somebody who runs for you and for himself’*) knowing from experience that he would spend a long and, often, tough time with them. In the beginning, they already identified partners for the future (*‘search outside your routine channels for a machine builder’*) because this prevents slack time.

- In a starting MPI (C), make sure that partners understand their overlap in objectives (I) since this creates awareness of the shared direction (M) making initiation and identification almost redundant (O). Cell > 2A: Identification/support.

The exchange activities in this MPI have their basis in trust so not everything has to be explained to each other, but openness (*‘Make sure that participants put all their cards on the table’*), verbal agreements, a shared view on the steps to take, and thinking about who is on the core team make it possible to put all the effort in direct activities with few meetings. So, participants spend most of their time on reflection activities about a broad range of topics: requirements, allocation of benefits, materialization and form of the idea (*‘design for a demonstration in 3dCat model’*), entering the market, conventions and roofs, use of a demo house, price and certifying institutes enriching the idea at low cost. For enrichment about the market side of the idea, participants visited houses of potential end-users asking their opinion about the idea and the price they would pay. They used role play: the constructor stated requirements as an applier, the others stated solutions as developers.

The conversion activities produced arrangements for the next steps, formulating agreements about start of a company, revenues and benefits as related to amount of effort and ownership. They agreed about *‘give the launching customer a discount for future purchases so he sees his advantage clearly and supports the initiative’*. This credo formulates as a CIMO:

- In a starting MPI (C), give the launching customer a discount for future purchases (I) so he sees his advantage clearly (M) and supports the initiative (O). Cell > 3A Exchange/Support.

Also, the participants formulated process-oriented agreements in a business plan addressing the qualification of the product, exit scenarios, overview of tasks, purchase of materials and selection of suppliers, and starting to act as a business – or in CIMO terms:

- In a starting MPI (C), agree on modular work packages for deliverables to come (I) so participants start to see clear tasks (M) which leads to less coordination effort (O). Cell > 5E: Conversion/Coordination.

### **Exploring new findings for outcomes and interventions for the Inception phase**

#### *New sub-criteria for viability and new factors in Inception phase*

The factors 'Questions at the start, Input in the Inception phase in Attraction' and suggestions for selective interpretations of them appear again in this overview. An interesting newcomer is 'decision at the Inception gate'. What incorporations of the viability criteria could be delivered as basis for a go/no-go decision? This MPI proposes a *'demonstration developed enough to show suitability for the market'*. A further option is *'a business plan that holds'*. 'Holds' could mean acceptable descriptions of the other viability criteria including *'positive perspective on certification of the materialization of the idea'*. In CIMO formulation:

- At the end of the Inception phase (C), collaborate on a business plan with the criteria of viability including a demonstration (I) demonstrating to the decision makers suitability for the market and positive perspective on certification (M) leading to a sensible go/no-go decision. Cell > 5E: Conversion/coordination.

#### *New indirect stimulating and obstructing interventions*

Interviewees propose stimulating exchange activities with benefits for coordination (*'planning and meetings'*) and finance (*'pay not for hours but for materials, check crowdfunding and subsidies'*), and engage in informal identification with partners (*'Go for a drink after a meeting'*).

Obstructions are described in style (*'being dishonest or too perfect'*), in warnings (*'too much attention for technology hinders market ideas'* and *'initiator chooses too early for a technology platform'*). One of them suggested a CIMO:

- In a starting MPI (C), *'speak out about clashes (I) reaching the understanding that there is always respect for opinions (M) supporting continuity when the going gets rough'* (O) Cell > Indirect/Cooperation.



### **Summary of findings from MPI 9**

1. All criteria for viability are acknowledged. Most of them had to be developed except for Objectives, because these were synchronized early on by the way the MPI recruited.
2. Initiation and sometimes identification were already accomplished 'in the head of the initiator'. So, most of the interventions concerned (informal) exchange and reflection. It is important to state that conversion started when support was granted, the idea tested in a demonstration, objectives synchronized, and cooperation proven. So, this is evidence for similar sequence seen in earlier MPI's.
3. New codes are gaining more and more importance: Attraction (7th time) and Questions at the start (8th) and Input in the Inception phase (6th). An interesting new code is Inception gate as the concrete go/no-go moment to the next development phase. Respondents suggest subcategories for Inception gate such as decisions about possibilities for a demonstration, an assessment of suitability for the market, or certification for the idea if present or about whether the business plan is viable.
4. Indirect interventions focus on progress planning, ways of financing and informal identification. Obstructions mentioned concern characteristics of persons affecting cooperation and the failure of reflection resulting negatively on the enrichment of the idea.

#### *4.2.1.10 Findings regarding MPI 10 Heat pump Innovation*

This MPI consisting of Royal Cosun (Biobased products), Tata (Steel), two device construction companies. Also, in the background, Dow Chemicals and Douwe Egberts aim to develop a heavy-duty heat pump to reduce costs and to diminish dependency from gas and coal. It was initiated and coordinated by ECN (technology) and the project leader of one of the construction companies (device). The MPI was facilitated by the Institute for Sustainable Process Technology (ISPT). Interviews were conducted with the Principal Technologist of Cosun and a duo interview was held with process technologists from Tata.

### **Validation of pre-sorted theory from literature study**

#### *Confirmation of sub-criteria for viability*

The criteria for viability are also confirmed in this MPI. Support is identified as playing an active role in both decision-making and making investments. In terms of support, interviewees make a distinction between levels of participation with the term 'in-kind support', defined by one of the participants: *'In-kind support: contributing hours to discuss about performance, market, ideas, tests and advice as well as contributing finances to show interest and to make subsidies possible for private investment'*

Stated as CIMO:

- In a starting MPI (C), give an end-user possibility for in-kind support (I) so he can sell the idea internally (M) to be allowed to act as partner (O). Cell > 2A: Identification/Support

The idea should be enriched to a concept at the end of the Inception phase which would allow assessment of the performance if it materialized. Since heat pumps are not core business for Cosun and Tata, they formulated their objectives as requirements for the device. In the MPI, they are partners but their contribution is from a customer point of view: no commitments to buy, but helping to formulate performance, doing (internal) market research, contributing hours for enrichment of ideas, making available test opportunities and allowing IP and ownership to the construction companies who take the real risks (in-kind support). Cooperation at the end of the Inception should include all relevant parties including system integration and production. For coordination, they foresee a clear project structure with developers, advisors and launching customers and facilitating organizations with strong networks. The work packages are modular (the components, test locations and certification) but also architectural (design and system integration). The MPI must help potential-customer gatekeepers (gatekeepers at purchase departments, coordinators in process development and decision makers in business units) communicate effectively and have these specialized communication structures organized.

### **Validation of direct interventions can be clustered according to cross-boundary theory**

Clustering the data of MPI 10 concerning direct activities confirms the codes Initiating, Identification, Exchanging, Reflection and Conversion activities.

At the start of this MPI, one individual from Dow, helped by ECN, took the initiative for a meeting. ECN has a governmental assignment in energy transition and organizes meetings concerning heat pumps. They targeted companies with a lot of energy consumption, a shared problem and trustworthy persons. In the meetings, they discussed interests and the level of participation needed and exchanged knowledge on the market (identification). They looked for concrete possibilities for uniting theory and practice. At the end of the Inception phase, participants from practical, theoretical and application worlds should be on board. This leads to a CIMO:

- In a starting MPI (C), invite those device builders and end-users (I) that experience pre-competitive interests for the same market (I) so they will be inclined to reinforce each other (O). Cell > 1D: Initiation/cooperation

Identification activities force participants to be very clear about their drivers, both for the short- and long-term, because of a rough estimate that a lot more devices need to be sold to others than participants to break even. Particular attention was given to the attitude of the developers: this was not business-as-usual incremental innovation but a big leap to reach 50% energy reduction. So, another CIMO for Identification is as follows:

- In a starting MPI (C), make the long- and short-term interests of partners clear (I) so they understand their responsibility to each other (M) and stay motivated to work together (O). Cell > 3E: Exchange/Cooperation.

Exchange activities focus on three issues: getting information from the end-users and gatekeepers, breaking down the idea in terms of components/responsibilities and keeping everybody on the same priority scheme because everybody understands the risk of wasting money without results and the temptation to go into side paths. In CIMO terms:

- In a starting MPI (C), share the agendas of end-users and gatekeepers (I) to understand the risk of burning money (M) so everybody stays on the same priority scheme (O). Cell > 3E: Exchange/coordination.

and

- In a starting MPI (C), break down the idea into coherent responsibilities (I) understanding their relationship with wasting money (M) so everybody stays on the same priority scheme (O). Cell > 3E: Exchange/coordination.

In reflection activities, participants try to incorporate other innovations to extend the value. At the same time though, they thought about integrating existing components to keep the cost price as low as possible. To stay focused between these alternatives, they put comparison of options on the agenda regularly. This can be reasoned as a CIMO:

- In a starting MPI (C), compare all options continuously while reflecting on adding new components (I) to prevent bias or creation of misinformation (M) leading to low-cost pricing (O). Cell > 4B: Reflection/idea.

There were almost no conversion activities since the initiative divided roles linked with the project's parent organizations (project leaders, project members, advisors, communicators, launching customers). At the end, the developers were to be given ownership as the project finishes once it enters routine production. Those in user roles made *'an informal commitment to buy if requirements are met'*.

## **Exploring new findings for outcomes and interventions for the Inception phase**

### *New sub-criteria for viability and new factors in Inception phase*

No new sub-criteria or factors, but confirmation of Questions at the start.

### *New indirect stimulating or obstructing interventions.*

The MPI uses a new input-oriented planning technique: time boxing. This means that one agrees to take a certain amount of time and when the time is up, the product delivered within that period is a starting point for next steps. Another indirect intervention is that parties agree to play roles in reflection based on the future situation: customer, producer, user, owner, salesman. This roleplay functions also as the basis for the project organization, work breakdown and communication within the parent organizations. Stimulating interventions also take care of the 'part-time' participants' workload. Formulating these combined suggestions of participants results in CIMO terms:

- In a starting MPI (C), make sure that an end-user does not need to work continuously for the MPI (I) so he can measure out his contribution in addition to his work in parent organization (M) which makes it convenient for this contributor (O). Cell > 3E: Exchange/Coordination

A warning was given to pay attention to legal issues. As illustrated by one respondent: *'do not use a NDA or competitive conditions in the beginning because others than the initiators can take over and unclear future obligations paralyzes collaboration'*

Juridical departments become hinder because they end up on the 'critical path' making the MPI dependent on the tempo of their contribution. To translate this warning in a CIMO:

- In an MPI (C), do not use an NDA or competitive conditions in the beginning (I) because others (linked to NDA) than initiators take over (M) leading to a situation in which unclear future obligations paralyze collaboration (O). Cell > Indirect overall

### **Summary of findings from MPI 10**

1. All criteria for viability are acknowledged. Furthermore, the criteria are expressed in clear descriptions of the situation at the end of the front end.
2. Initiation and identification activities target high-potential developers and users at the same time. Exchange and reflection activities focus mainly on task structuring and communication based on the breakdown of the idea's components.
3. *Questions at the start* was again a salient factor in this case. This factor shows up nine times in ten cases.
4. Indirect activities introduce timeboxing for scheduling direct activities. Furthermore, respondents suggest identification of participants in future roles. These identities can be used for allocation of direct activities, structures and communication. These

suggestions are added to the consolidated suggestions for indirect interventions in Appendix I.

#### 4.2.2 Overall findings from the cross-MPI analysis

Which validated or new design principles can be extracted by iteration through the MPI-data? To answer this question means confirming findings with existing theory or to position findings as new. Findings of this iteration are summarized in the following five sets:

- a. Validation of the sub-criteria of viability in extended theory (Appendix H)
- b. New sub-criteria of viability relevant for the Inception phase as new theory (Appendix H)
- c. New factors and indirect stimulating/obstructing activities for the Inception phase as new theory (appendices I and K)
- d. Direct interventions can be compared with direct interventions from literature (Appendix B)
- e. The new CIMOs integrated as extended or new findings (Appendix J)

##### *a) Validation of the criteria of viability in extended theor*

Seven criteria for defining the viability of the MPI as outcome of the Inception phase were extracted from academic literature. The presence of these criteria in the data throughout the MPI's is shown in Table 4.3. Given the analysis of the MPI's, the following conclusions about the subcriteria for viability are drawn.

**Table 4.3.** Overview of presence of preselected viability criteria throughout the MPI's.

MPI	Presence of viability criteria in interviews						
	Support of partner organizations	Idea description	Fit of objectives	Coöperation	Coördination	Partitioning of work	Specialized tasks for integration in parent organizations
1.	V	V	V	V	V	-	-
2.	V	V	V	-	-	-	V
3.	V	V	V	V	V	V	-
4.	V	V	V	V	V	V	-
5.	V	V	V	V	V	V	-
6.	-	V	V	V	V	V	V
7.	V	V	V	V	V	V	V
8.	V	V	V	V	V	V	V
9.	V	V	V	V	V	V	V
10.	V	V	V	V	V	V	V

a1) Two of the criteria (Idea description, Fit of Objectives) are acknowledged in the data of all, three (Support of partner organizations, cooperation, coordination) in nine, and one (partitioning of work) in eight and one (Specialized tasks for integration in parent

organizations) in six of the above MPI's, with explanation for the lack of the last criterion appearing in several MPI's. No contra-indications for use of these criteria were found. This means that these criteria have both a basis in literature and the field. The conclusion is that these criteria are valid to apply as outcomes of the Inception phase. In terms of an overarching CIMO, the following is stated:

- In a starting MPI (C), include the seven criteria of viability on the agenda (I) because they develop a sense of continuity in key players (M) leading to a viable MPI (O) > cell Overall Interventions.

a 2) The criteria Idea Description, Fit of Objectives and Support of Partner Organizations receive more emphasis in the beginning of the initiative because they are conditional for the other four criteria. Difficulties in defining these three criteria have a negative effect on the formulation of the other four criteria since a sense of continuity is lacking. This sense of continuity is especially important for the will to start conversion activities leading to ideas about partitioning of work and communication with parent organizations. Concluding this in CIMO-terms:

- In a starting MPI (C), give Idea Description, Fit of Objectives and Support of Parent Organizations emphasis in the beginning (I) because they create a sense of continuity in key players (M) leading to motivation for developing ideas about next phases(O) > cell Overall Interventions.

a 3) The validity sub-criteria drawn from literature were explicitly mentioned by the participants in the MPI's, except for three sub-criteria under Idea Description: risk, new knowledge and time to market.

**Table 4.4.** Number of remarks made in MPI's about pre-selected academic sub-criteria .

Criteria	Sub-criteria from literature and number of remarks made in MPI's					
Idea	Market 14	Technology 9	Performance requirements 17	Time to market 3	Risk 1	New knowledge 0
Cooperation	Staff 19	Strength 13	Style 12	-	-	-
Coordination	Structure 25	Planning 5	Routines 10	-	-	-
Partitioning of work	Modular 12	Architectural 8	-	-	-	-

Based on the frequency inventory shown in Table 4.4 drawn from the qualitative data, the assumption is plausible that there is no indication to question the findings from literature for the sub-criteria, except for Risk, New Knowledge and Time to Market. These sub-criteria are based on academic findings. To conclude in CIMO wordings:

- In a starting MPI (C), use market, performance requirements and technology as measures for the Idea; staff, strength and style as measures for cooperation; structure, planning and routines as measures for Coordination; and modular and architectural

as measures for Partitioning of Work (I) because elaboration makes key players aware of viability (M) leading to support for the MPI (O) > cell Overall Interventions.

a 4) The expectation that MPI's formulate objectives for themselves was not confirmed by the data. This absence of a common objective for the MPI is explained – as we see in the descriptions of the MPI's – by the wish of participants that the several characteristics of the idea fit their different objectives instead of formulating an objective for the MPI. For example, the heat panel – the idea of MPI 4 – serves an objective of the glass company (to save energy costs) as well an objective of the technical company (to be the first on the market) as well an objective of the glass industry (to improve the image). So, the fit of the MPI Idea characteristics with the objectives of the parent organizations increases the viability of the MPI. Concluding in CIMO terms:

- In a starting MPI (C), make sure that the characteristics of the Idea serve the objectives of the parent organizations (I) because this creates interest for the key players (M) leading to support for the MPI (O) > cell 4A: Reflection/Support.

*b) New sub-criteria for criteria of viability as new theory*

After analysis of the individual MPI's and integration of the data, some new sub-criteria emerge (see Appendix I). These supplemental sub-criteria for viability are nested within the criteria for viability and are detailed in the following paragraphs.

*b1) 'Power' and 'Actual role' within Support of partners.*

A new sub-criterion for Support of partners is Power of the person supporting the initiative. Many remarks throughout the MPI's addressed the power connected with the position in the parent organization – for example *'gives in-kind support'* or *'authorized for budget'*. Power concerns the ability to allocate resources, but also provide test possibilities or make agreements with other parties. The viability of the MPI increases if Power is an attribute of the supporting persons in the parent organizations.

Another sub-criterion found is the Actual Role of participants in and around the MPI. The data indicate that, in addition to the initiator, an end-user and a launching customer should be on board. Suppliers, gatekeepers in the parent organizations, future resource managers and members of steering committee should at least be connected.

*b 2) 'Attraction' and 'Form' within Idea with characteristics.*

Many remarks pinpointed a unique and stable strong point of the Idea. The label for this Idea sub-criterion is 'Attraction' since it provides an intrinsic appeal to the key players and identifies a unique selling point of the future product or service. This sub-criterion became apparent not only in the MPI's but also in former exploratory interviews (see box 4.2).

- Only three boxes for the whole packaging of products (Unilever)
- Welding rusts, glue does not (New glue)
- Easily individual coffee (Senseo)
- Lost warmth turns into electricity (Thermagy)
- To make a hit without being hit (Sniping)
- Less whey in our dairy products (Friesland Campina)
- One click to get your info (Integrated Information system)
- Zero on the meter (Zero energy houses)
- A second life cycle (Stimulation of green economy)
- Beautiful, not ugly PV-panels (Solar panels)

**Box 4.2** Examples of attraction as characteristic of an Idea.

A second new sub-criterion is the *'form'* of the idea. It is not intended as the design or prototype that will be made in later phases. Participants talk about narratives, drawings, mock-ups or 'a visual with possibility to stand out'. Even as the idea itself is abstract, some materialisation of it helps give concerned participants a consolidated form to continue with. This prevents different starting points for the follow-up. It is in line with what Cooper & Sommer (2016) call a 'Protocept'.

b 3) *'Short-term and long-term objectives'* in Fit of objectives.

Data indicate that objectives are to be formulated for both the short-term for participants (*'pass the first gates'* or *'a common goal'*) and the longer term for their organizations (*'objectives of parent organizations should fit for the long-term'*). These objectives vary in horizon. Short-term horizon descriptions concern the criteria of the parent-organization project portfolio or the initiators' financial possibilities. Long-term objectives concern, for example, improving the parent organizations' profile, creating repeat business or reducing structural costs. So, the presence of both short-term objectives as well as long-term objectives increases the viability of the MPI.

Supplementing the CIMO-reasoning for these sub-criteria lead to an overarching CIMO:

- In a starting MPI (C), use:
  - power and actual role as measures for support of partners
  - short-term and long-term descriptions as measures for the fit of objectives
  - market, performance requirements, technology, attraction and form as measures for the Idea,
  - staff, strength and style as measures for Cooperation,
  - structure, planning and routines as measures for Coordination
  - modular and architectural as measures for Partitioning of work (I)



In some MPI's, sub-criteria are formulated as CIMOs themselves. For example, in MPI 3, the form of the idea (visualization) leads to the CIMO:

- At the start of the MPI (C), work with a visualized idea (I) because this facilitates sharing the actual status of the idea (M) leading to a common starting point for next activities (O) > Indirect/Idea.

Another interesting reinforcing factor are the superordinate objectives that are manifest in the branch of participants like *'1200 companies in the glass industry agreed on becoming 2% more energy efficient'*. This gives room for a next CIMO reasoning:

- In a MPI (C), ensure that the idea connects with the superordinate objectives of the branch (I) because when the idea fits the 'spirit of the time' (M) participants from that branch become willing to contribute (O) > cell 2D: Identification/Cooperation.

### *c) New factors for the Inception phase.*

The data indicates that it is important to attend to two factors at the start of the Inception phase: 'Input in the Inception phase' and 'Questions at the start'.

Input in the Inception phase concerns the output of the former phase. This may be one of the parent organizations' starting points ('discussion about market opportunity is finished') or the presence of an idea owner plus his first inklings of the idea, a description of the field problems that need solving, or even the assignment of sponsors or already-allocated resources. This means that the MPI is not empty at the start and needs a list of the initiation activities to consolidate this input as was indicated in six of the MPI's.

The second new factor – emergent from data of nine MPI's - is Questions at the start. These questions almost always refer to one of the viability criteria (*'how do I get support in the world of gas companies?'* or *'what would be a concept for renovation for energy neutrality?'*) as well as to the set-up of the Inception phase (*'what needs to be clear first?'* or *'do we need a joint contact base in the MPI?'*). The participants do not have the design proposition of this study at their disposal! It is reasonable to state that the questions at the start of the MPI's reflect the research question of this study. Both factors in CIMO terms:

- In a starting MPI (C), make an inventory of the available input for or interpretation of the viability criteria (I) because it establishes the participants' actual opinions (M) leading to a shared view of (maybe different) starting points (O). Cell> Initiation/overall.
- In a starting MPI (C), make an inventory of questions for and about the MPI (I) because it reveals the participants' uncertainties (M) leading to a prioritization of actions (O). Cell > Initiation/overall.

*d) The direct interventions contributing to viability*

Throughout the MPI's, interviewees suggested direct activities that would contribute directly to viability of the MPI. The overview of the numbers of suggestions is presented in Table 4.6. Most of the initiation activities concern the search for and first interactions with individuals with immediate interest, such as potential customers and suppliers, looking for support for the MPI. The expectation is that those groups' wishes create a pull and push for the initiative. Most identification interventions concern the (sometimes secret) assessment of the competences – the worthiness of the support -- of the parties with major interests.

**Table 4.5.** Total number of direct activities in 10 MPI's.

Initiation	Identification	Exchanging	Reflection	Conversion	< Direct activities v Criteria for viability	
56	24	13	4	1	A Support of partners	98
8	16	14	31	0	B Idea with characteristics	69
3	13	4	10	0	C Fit of Objectives.	30
4	9	19	6	2	D Cooperation next phase	40
3	4	47	16	21	E Coordination next phase	91
0	0	1	4	9	F Partitioning of work	14
0	0	2	0	4	G Specialized task for integration in parent organization	6
74	66	100	71	37	Total	348

Both initiation and identification activities are completed when partitioning of work and communication with parent organizations are on the agenda. Participants take a psychological step and suppose that the others will become partners. The low number of activities for partitioning of work and organizing communication with parent organizations can be partly explained by the early endings of some of the MPI's. A rival explanation is that these activities are seen as belonging to the criterion coordination.

The combination of these findings from practice and studies suggests the following overall design principles in CIMO-logic:

In the context of a starting MPI (C):

- use a set of initiating activities (I) to ignite a shared interest in relevant persons (M) so they support follow-up activities (O)
- use a set of identification activities (I) to learn about the identity of participants (M) so the fit of objectives and the proposition becomes clear (O)
- use a set of exchanging activities (I) to create insight on how practices relate to each other (M) leading to efficient collaboration (O)
- use a set of reflection activities (I) that prompt understanding the assignment (M) leading to insights on the participants' contributions (O)

- use a set of conversion activities (I) to develop a shared view on new in-between practices (M) enabling coordination and work packages in the next phase's specialized tasks (O) > Overall

*e) The indirect stimulating and obstructing interventions integrated*

Participants of the MPI's report (left out) interventions that stimulate or have a negative influence on the development of a viable MPI. These indirect interventions do not contribute directly to the outcome of the Inception phase but facilitate the interventions that do. Stimulating indirect interventions produce positive feedback loops reinforcing the execution of direct interventions. The overview extracted from the individual MPI data (Box 4.3) emphasises facilitating identification and exchange activities for enrichment of support, cooperation and cooperation.

**Identification/Support**

Organize symposium for branch, distinguish between principal and partner, go for a drink after meeting

**Identification/Cooperation**

Make participants a member not a representative

**Exchange/Support**

Push tempo (2x), coach each other

**Exchanging/Coordinating**

Organize learning, make milestone planning, use online tools, visualize approach (2x), build website for community, make plans, plan progress meetings, do not pay hours, arrange subsidy, influence supporters indirectly e.g., by other employees

**Exchange/Cooperation**

Work in the same room after a meeting

**Methods:** scrum 2x, pay in advance, timebox, roleplay 2x, show of hands for decision-making, placemats to work on, white boards, formulate problem as dilemma, use round tables, imagine, think in concepts, crowdfund,

**Box 4.3** Stimulating indirect interventions suggested in MPI's.

Interviewees also suggested methods that would help enhance the enrichment of the MPI as alternative for discussion. Why the suggestions concern mainly identification and exchange is a difficult question to answer, but an indication is that most MPI's did not have an explicit set of initiation, reflection or conversion activities.

Obstructive factors create negative feedback loops that hinder the execution of the Inception phase. Quite a lot of these were experienced and mentioned by the interviewees (box 4.4). Most of these obstructing interventions are risks or warnings, for example '*parties with different motives talk differently*' (negative identification) and '*when a lot of explanation is necessary*' (negative attraction).

**Initiation/Support**

Important group not present, invite party without connection to problem

**Initiation/Idea**

Not having the (governmental) starting points, too many degrees of freedom

**Initiation/Objective**

Some see an experiment and others a fixed deliverable, lack of clear objectives/deliverables give fuzzy ideas about parties

**Identification/Support**

Party speaks of 'no objection', participant does not understand technology, principal withdraws from risks, parent organizations do not show shared support, new people create new dependencies

**Identification/Idea**

No view on business case, parent organizations serve the same customers, see objective as deliverable

**Identification/Objective**

Payback time too long/different between parties, assignment is threat for the current relationships, lose sight on longer term, 'I'll scratch your back, you'll scratch mine' as reason for cooperation, suppliers want to go to the market before end-users

**Identification/Cooperation**

'Condemned to cooperate'

**Exchange/Support**

Too busy with own business, create no urgency, fixed answer on a developing assignment, different assumptions cost/benefit, supporters come only once or twice together

**Exchange/Coordination**

Formalizing and formal reporting, deciding year budgets, ownership to participants with indirect interest, they have no focus, allocated budgets hinders communication/meetings, changes in MT parent organizations, unclear in the beginning what is expected, different pressure on individuals, several sources of starting points, nobody can decide on starting points, imbalance between evaluation of work and of cooperation, individually responsible for output team, too many costs for exchange, one party does not feel benefits, 4 to 5 changes of representatives, emphasizing standards and current contracts, choosing allocation to work based on misinformation, different delegation of authority schemes

**Exchange/Cooperation**

Different frame of reference, old frame of reference, rudeness causes irritation, allow other criteria, rules, chairman must do everything, nobody has lead, parties are afraid to speak, parties are listeners instead of participants, early participants are critical or micromanager, think that financing means collaboration 2x, protect own domain

**Box 4.4** Obstructing indirect interventions suggested in MPI's.

concerning data and findings, a party takes too much from the revenues, big difference in decision-making firmness, one party has to chase the others, asymmetry because one party does more, a person is not honest or lacks integrity, no trust arises so I will not share not patented IP, try to do the work perfectly

**Exchange/Partitioning of work**

Division of tasks based on own interest 2x, work in isolation, start with their own ideas about what is to be accomplished

**Reflection/Idea**

Solve only part of problem, a push-idea without a launching customer, price competition too low, technical solutions are more costly than other solutions, division of modular work packages for technicians is too dominant, reflection about marketing/putting it in the market tends to be neglected, choice too early for a technology platform, idea concerns niche market or hobby project, no need to show how it works

**Reflection/Objectives**

Using different objectives: comfort or zero energy, changing starting points, use only one criterion for viability

**Conversion/Cooperation**

Change people who were on board from the beginning, pre-financing before cash-flow  
Method: use Prince 2

**Box 4.4** Continued.

Some obstructing factors are simply the opposite of stimulating ones and can be reformulated as stimulating. For example, *'Too busy with own business gives no urgency'* can become helpful as *'free participants by transferring their routine business to colleagues'*.

Interestingly, remarks on obstruction constitute a much greater number of remarks (77 vs.18, without the cluster Method). Maybe this is culturally explained: the Dutch are more skilled in naming fail factors than success factors.

### 4.3. Interviews

#### 4.3.1 Exploratory interviews

At the study's start, an initial set of exploratory interviews were conducted with ten individuals responsible for initiatives with several disciplines or parties. They work at Abbot, (maintenance), Friesland Campina, (technology), Philips, (Senseo), Flikflak (top sport) as initiator, University Nijmegen as valorization manager, Yes Delft for solar panels on offices, Paperfoam for circular packaging, Research Albemarle for new catalysts SIOO for professional development. The description of their (multi-party) contexts, problems and questions are described in Chapter One and were used for context description.

### 4.3.2. Expert interviews

A second set of interviews was conducted with experienced MPI-leaders for supplemental information about their approach, their opinion on viability and the working mechanisms they use.

The interviewees – described in Appendix D - fit the target group very well because they take responsibility more than once for creating multi-party initiatives such as: Luggage Handling, Blended Culture Fermentation, Verbond van den Bosch, Weg van de Toekomst, Green Deal, research for MPI Competences, a development company, a chain initiative and Tutti Foodi. The data on their opinion about success factors – analysed with help of NVivo software - are addressed in the next paragraphs.

#### *The approach for starting MPI's*

Respondents see this phase as precontractual and characterize it as a search for support. They suggest splitting this phase in three parts:

- exploration for persons willing to join
- imagination or discovery without obligations for the future and
- articulation of views about each other.

Exploration and imagination are very short-term oriented (*'actions for next meeting'*). In the articulation of views on each other, it is important to explain the conditions of participation, express trust and become personal.

Interviewees find the formulation of the objective important for the type of approach: as one interviewee points out, it is difficult to oppose *'all meat sustainable'* and this formulation triggers *a problem-solving process*, as a joint challenge. As one respondent stated: *'Had the objective been 80% of the meat sustainable, it would have triggered a horse-trading situation'*; a negotiation process. Interviewees demonstrate their development approach from an informal start to formal agreements: decision-making is mostly about making new commitments, attracting new capital, agreeing on who is in charge, establishing deadlines and discussing how to manage cohesion. At the start, division of tasks and roles form spontaneously. Later in the process, decisions become clear starting points, giving the MPI an increasingly formal character.

Concluding the above remarks in CIMO reasoning:

- In an MPI (C), use objectives or problems while starting exploration and discovery (I) encouraging an informal problem-solving process (M) leading to collection of formal starting points on participation conditions and on mutual views of participants' contributions (O) > cell Overall

According to respondents, most people in MPI's are interested in the business aspect and in bringing the product or service to the market, but these are not the correct approach.

The correct approach should be: *'what kind of organization is created and how valuable does it appear in the longer term'*? Because this gives continuity by creating a leading position in the market and possibilities to create new applications (like *'new kind of fermentations'*). This demands an approach delivering a viable entity instead of ending the initiative by delivering one product. So, the approach is more a program than project: *'by managing the MPI as a project, it dies after delivering the result'*. Viability is heightened by creating a *'collaboration through which a number of products can develop'*. For example, one MPI (Verbond van den Bosch) in the food chain delivered *'Tomorrow's Chicken'* and then it felt apart immediately. As one respondent said: *'It was a big mistake not to deliver an entity instead that could produce also other quality meat products, like 'Tomorrow's Pig'*". One other respondent confirmed this approach:

*'If you state that this innovation has a broader meaning, then it is possible to continue because it is only the first application. If it fits organic waste streams maybe it fits cleaning streams too. By doing this, a much richer future emerges compared with bringing only the innovation to the market. That is what many people do: chase a meagre situation. So, starting with development of a biotechnical ingredient, we changed the ambition to deliver consumer products based on the ingredient coupled with the food issue in the world.'*

Concluding in CIMO terms:

- In the context of a MPI (C), use an approach that aims for an organization with the possibility to develop more applications (I) enabling longer term ambitions (M) leading to the MPI's more viable future (O) > cell Reflection/Idea.

#### *The interpretation of viability*

Summarizing the interviewees, the idea to be developed contributes as viability factor if it really fits the value system of future users (*'safety for bicyclists is important for residents'* or *'ecological balance is important for environmental organizations'*). Therefore, the presence of a powerful user within the starting initiative is preferable. Also viability means that there is understanding of both the relevant factors and the mechanisms constituting the idea's quality and potential: *'because we knew these factors and the potential, it was possible to work on the business case a bit'*, *'check continuously on assumptions for costs and what is already in the market'* or *'the chance for a patent is big'* or *'the MPI can generate its own working capital'*.

In addition to highlighting the importance of understanding and mastering the basic principles in the idea (*'it was thrilling to see nerds writing a whole whiteboard with formulas'*), interviewees warn against developing the mechanism(s) or principles further, only the idea itself. This excludes telling big stories in the market (*'mostly this is contrary with the wish of idea owners, scientists or inventors'*). Mastering the basics is very important for substantiation of the other parts of the initiative and mitigation of risks in a follow-up with bigger volumes (*'it is easier to do interventions in a tube than in big clots during the*

*pilot*). A respondent advises that another way of establishing the viability is to *'make the idea work with as little working capital as possible before scaling up'*.

This offers in CIMO terms the next statement:

- In a starting MPI (C), make sure to fundamentally understand the basic principles of the idea in connection with future users (I) enabling low risk follow-up (M) leading to a more viable idea with little use of working capital(O)> cell Reflection/idea.

Furthermore, viability means that parties have the intention to formalize the initiative in a program, alliance, joint venture or other kind of collaboration. This formalization means a decision to participate in and take responsibility for the total initiative, the investment, a minimal set of agreements, rules of engagement and the wish to deliver a design, as results of the initiating phase. At the same time, too much dependency on many stakeholders contradicts viability, because this dependency eliminates the freedom of decision-making on the MPI level, keeping direct participants synchronized. As respondents state: *'it is not clear anymore who the owner of the MPI is'* or *'they are not able to organize such a broad spectrum of adherents and the speed slows down too much'* and *'with too much dependency on parent organizations, they become service inhibitors'*. If these remarks are translated in a CIMO, it expresses the following:

- In formalizing the government of the MPI (C), invite a select group for decision-making about formalization (I) because this gives a small locus of control (M) leading to a restricted dependency on shareholders (O). Cell > 5E: Conversion/coordination.

### *Working mechanisms*

These experienced managers also provide some explanations why some interventions work. They do not use the word mechanism but formulate in terms of explanation or clarification. Throughout the interviews, three working mechanisms to establish viability emerged: connecting persons, staying free from obligations and choosing partners. They also advanced indirect interventions that keep the MIP going. In the next paragraphs, these perspectives are illustrated.

#### *a) Connecting*

The notion *'that they will not succeed alone'* is important for starting the search for partners. According to the specialists interviewed, *'many people responsible for initiatives lack instruments to build a community ('using WhatsApp or a skybox in a football stadium to create ties')*. In their responsibility for structuring the process, respondents see their independence as helpful because it is easier to connect with all participants; one calls this *'plural sided'*. It is important to ask *'which movement do I want to start with: the new understanding, the idea, the insight'*? This is because innovation is not only a different look but also a different way to deal with the matter (*'we try to have impact for Africa'*). In



building an organization, an identity is also built (*'by stating these are the participants, this is the market to play on with this technology'*). Because when it is possible for somebody to identify with it, it is not a trick to solve, but creation that has meaning and continuity, as expressed in the next quote by respondent 1:

*'Now that everybody has a clear view what is necessary for our goal, nobody submits issues in the periphery, so no bullshit anymore, and every week or two, everybody brings important items that are worthwhile to do, to discuss or to park.'*

The above considerations opt for a CIMO-reasoning about connecting as mechanism:

- In starting a MPI (C), formulate the movement in terms of goals, participants, market and technology (I) to enable connection with the meaning of the MPI (M) leading to high identification with the MPI (O) > cell 2C: Identification/fit of objectives.

#### *b) Keeping MPI free from early obligations*

It is good for the MPI members to be able to block decisions (*'we could not say what to do, but we could block'*). This helps because it forces the other contributors to check with them before continuing. Respondent 3:

*'If the scientists had 51% of the control, they would have continued to develop the idea instead of stabilizing it, which would have been a problem because the opportunity to test in the market is not possible then.'*

This consent is particularly important when the initiative concerns a new product in a new market, a high-risk MPI. Respondents handle introducing a new product to new market by asking for requirements and readiness to participate from potential customers if the initiative delivers a stable business case. These potential customers utter no objection as long as they are given a lead in the market. However, respondents also warn against making exclusive deals with potential customers preventing the loss of freedom in the initiative. In CIMO reasoning about staying free from obligations as mechanism:

- In a starting MPI with a new product (in a new market) (C), ask partners for requirements or other contributions without obligations for or from them (I) so they can give their information frankly (M) leaving the initiative with the freedom to control (O). > cell 4E: Reflection/coordination.

#### *c) Choosing partners*

Corporate participants or gatekeepers are difficult to deal with because these individuals are afraid to defend their participation to their own boss, according to some respondents. (*'even I have underestimated how much resistance also exists in this kind of organizations against doing something really different'*). This background makes their action speed low (*'the hug-of-death'*). It is better to look for investors without this problem, who monitor or bring added value by their participation. This choosing of partners or investors relies on early appraisals while working together. Also, the experience of working together helps

form an impression about integrity and trust. This mechanism of choosing partners is formulated in CIMO terms:

- In a starting MPI (C), choose parties that add value and speed (I) trusting your first appraisals and your experience (M) leading to better evaluations of your appraisals during later actions (O) > cell 2D: Identification/cooperation.

*d) Indirect mechanisms in CIMO terms:*

In the interviews, participants advocate the following intervention-mechanism combinations when asked which indirect interventions they use when responsible for the development process.

When responsible for an MPI (C):

- create a platform with residents via breakfast session, workshop, exploring meeting, idea generation (I) so the project reflects their values (M) leading to higher support (O)
- explain a problem caused by an outside party (I) so the MPI becomes aware of a common challenge (M) leading to focus within the group (O)
- organize communication outside-in (I) so external parties feel acknowledged (M) leading to a positive image of the MPI (O)
- let parties 'sniff' at each other (I) so the opportunity arises to generate trust (M) leading to better cooperation (O)
- include small and big parties first (I) to get power/money and room to maneuver with few conventions (M) leading to speed (O)
- identify concurrent initiatives (I) so the possibility occurs to reflect or compare (M) leading to enrichment of the MPI (O).
- create a very safe environment, even, if possible, arrange for an exit (I) so parties feel comfortable (M) leading to better cooperation (O)
- make sure competences for creating a MPI are on board (I), so participants understand the relevant issues (M) preventing problematic issues in this precontractual phase (O)
- make the professionalism of parties visible (I) so they start to trust each other (M) leading to speed in activities (O)
- introduce a rule that everybody can step out without sanction (I), so everybody is aware of the possibility to leave (M) leading to relaxed presence (O)
- find a launching party (I) so he explains what is going to be important in the future (M) leading to focused anticipation (O)
- ask an opposing party which conditions would make them positive (I), so participants get a clear view (M) leading to good decision to adapt the initiative or drop that party (O)
- relieve participants of their normal job duties (I) so they can dedicate themselves to the assignment (M) leading to less distraction (O)

- make sure that participants share 'a dream' (I) so they strive explicitly for the same goal (M) leading to getting along (O)
- be very explicit about criteria for staff ('brilliant, gritty') (I) so selection is very careful (M) leading to deep understanding (O)
- keep the idea inside the MPI arena (I) so it stays under the radar (M) preventing tearing apart by political wolves (O)

Acknowledging the above suggestions for indirect interventions, they are added to the list and an overarching CIMO reasoning follows:

- In a starting MPI (C), execute indirect interventions (I) so positive changes in (the interaction of) the parties emerge (M) leading to positive process outcomes like speed, focus, support, respect, decisions and understanding (O) > cell Overall interventions

Interviewees state also spontaneous direct interventions:

- *'invite parties that are already busy with the issue to formulate the problem to solve'* > *Initiation/objectives*
- *'investigate which factors will help e.g., price level movement or development in raw material'* > *Reflection/idea*
- *'ask about how to bring the product/service to the market'* > *Reflection/Idea*
- *'formulate an exit rule'* > *Exchange/coordination*
- *'leave at least 30% of the budget for the next phase unnamed'* > *Conversion/partitioning of work*
- *'formulate a lot of delegation for the MPI to prevent hinderance from parent organizations'* > *Conversion/partitioning of work*
- *'make sure that somebody communicates explicitly with market or parent organizations other than individuals from product/technology and the inner organization'* > *Conversion/specialized communication*

These remarks fit as direct interventions without CIMO reasoning and, therefore, will not be used in the design in Chapter Five that only draws on interventions explained by CIMO reasoning.

### **Overall conclusions concerning the opinions of experts**

The experts opt for an approach oriented on informal problem-solving processes. Appraisals of each other's contribution are formed based on the growing experience with each other. The phase ends with deciding on starting points for follow-up. These respondents put emphasis on three criteria for viability: support, fit of objectives and idea.

- Support is not so much about the quality of the support but about intentions and responsibility to construct (conditions for) an entity that will change the idea into a design.

- They suggest longer-term objectives by looking for an entity that can produce more applications than only one product.
- Furthermore, they emphasize deep understanding of the idea before taking the next development steps. An understanding concerning the connection of the idea with customers and the technical aspects engenders predictability.

They suggest three important mechanisms to be triggered by a variety of interventions:

- connecting persons with the initiative (by identifying with goals, other participants, market and technology)
- keeping the MPI free from obligations (by asking for requirements and contributions without obligations, showing competitive advantages in the future for contributors)
- choosing partners (by being very careful with corporates, looking for added value and speed). Also finally, they have a repertoire of indirect interventions that influence the interaction between parties and execution of activities which positively impact speed, focus, support, respect, decisions and understanding.

#### 4.4. Surveys

Two surveys were conducted. One explored the jargon used in the field during the starting and creating phase of the MPI. The other sought the opinions in the field about research findings on interventions.

##### 4.4.1 Survey for name of the phase and the person responsible

A short exploratory survey was done by telephone and a five-minute talk. Since no specific terminology for this part of the development process is known in literature – except for ‘fuzzy front end’, it is worthwhile to understand the jargon used in the field. Persons working in companies involved in initiatives – sometimes with multi-party character – answered two questions. The first one: what name do you use for the process in the front end of an initiative? And the second question: which title do you give to the person that is responsible for this process?

No respondent stated that a specific formal name is present in their organization for the very beginning of a multi-party situation. At the same time, they pointed out that the process existed most of the time! When asked what an appropriate name for this part of the process would be, suggestions would be *‘Initiative, Business Development, Incubator phase, Couveuse phase or Idea development phase’*. Also, nobody uses a specific name for the role for managing the process of this phase. People report common names as project leader, marketeer, business developer and champion. The conclusion of this short exploratory survey is that no common name for the phase and the responsible person(s) is used in the field.

#### 4.4.2 Questionnaire about interventions from literature

A second survey – a questionnaire - was conducted concerning interventions -- defined for the purpose of this study as an activity that is executed to solve a problem (Andriessen & van Aken, 2011). The questionnaire reached the target group – individuals with earlier or current responsibility for creating an MPI (Appendix F) – as an attachment in an e-mail. Respondents represented a great variety of multi-party situations: product development, applied research (TNO), housing cooperatives, knowledge valorization, regional development, governmental facilitation for entrepreneurs (RVO), city development, creating strategic perspectives, sea protection etc.

The questionnaire contained thirty-four interventions that were found in the literature study. Respondents were to rate these items' level of priority for MPI's on a five-point Likert scale.

Seventy-two questionnaires were submitted, and fifty-nine returned with valid responses.

##### *Internal consistency*

The items of the questionnaire concern interventions in the process of developing an MPI. These items are selected in the literature study based on corresponding findings of several authors. When several authors provided similar insights in combination with confirmation in the field, those items were deemed reliable and became items of priority for inclusion as key elements in the design in Chapter Five.

	< Not important			Very important >	
	1	2	3	4	5
1. Incorporation of the history of partners	1	2	3	4	5
2. Discussion of market overlap between the parties	1	2	3	4	5
3. Use of interventions to develop shared objectives	1	2	3	4	5

**Box 4.5** Example of questions in questionnaire.

Four dummies with nonsense scales were added for control of consistency and rhythm of scoring. The scale is unilateral (1 not important <> 5 very important). A test with Cronbach's Alpha was executed in SPSS (Statistical Package for the Social Sciences) for internal consistency. Cronbach's Alpha is a function of the number of items in a questionnaire, the average covariance between item-pairs and the variance of the total score. An alpha higher than 0,7 is generally accepted as indicator for internal consistency. This reliability indicator gave a score of 0,76 for this questionnaire which means that the items - as described in Appendix F - measure a single unidimensional construct. The scores of the dummies gave a deviating pattern confirming the reliability of the other items.

Now, the answer to the question: do the respondents give priority to some of the items? The reason for this question is as follows. Because the items are selected from significant

research findings that indicate that these items have great importance in enhancing the creation of MPI's, the first assumption is that scores of the respondents from the field should be on the right (towards 'very important') side of the scale. If that is the case, the target group agrees with the authors in the literature. If that is not the case and scores tend to the middle or the left side of the scale, respondents have other opinions about the importance of the item for their practice, demonstrating a decreased concurrence of priority.

The second assumption is tested by the variance in the scores of the respondents: the smaller the variance on an item, the more the respondents agree with each other on that item. This coefficient of variation is a measure of dispersion of a frequency distribution in probability theory and statistics.

So first, we look at the skewness of the data around the mean. It is generally accepted (Mallory, 2010, Field, 2009) that skewness is significant (with  $\alpha \leq 0,05$ ) differing from zero when higher than 1,96 (skewness/standard error skewness). If that is the case, the median instead of the mean is more suitable for answering the second question. In our data, thirteen of the items show a higher value than 1,96 including three of four dummies. Further analysis shows a consistency percentage of - 95,93 for the coefficient of variance of the mean as well - 94,64 for the median. This means that the higher the score the lower the difference between the respondents using both the mean and the median. The median is used because grouping (ranking) is easy based on the discrete scores of the median on the scale. Within the groups, a rank is made based on variance: the lower the variance (V), the higher the rank. To get the overall ranking within the group who scored 5, 4 etc. we calculated:  $1 - V + 600$  for the group with score 5,  $1 - V + 500$  for the group with score 4 etc. delivering the overall ranking, as shown in Tables 4.7 to 4.10. The dummies rank 29, 32, 34 and 38 out of 38 items, ranking in the lowest group, having a broad variance and a skewness not leaning to the right - very important - side of the scale.

## Conclusions

After analyzing the outcome of this survey, the conclusion is that practitioners confirm the outcome of academic research for nineteen of the thirty-four items. This means that as well academics as practitioners value these nineteen interventions and that they are valid for use in the design of Chapter Five. Data show four interventions with very high priority and high validity, compared with academics (the inventory of par. 2.8). This is indicated when the median = 5 and the standard deviation divided by the mean or the median is  $< 0,21$  (see Table 4.6).

**Table 4.6.** Very important interventions according to academics and practitioners.

	Intervention with median score of 5	Standard deviation/median
1	To give opportunity to build trust	0,1120
2	To make clear which activities are needed	0,1772
3	To set up the decision-making process	0,1864
4	To discuss amount of overlap in the market between the parties	0,2072

The importance of these interventions compels CIMOs as design principles, when the explanations of the academic authors are added:

- In a starting MPI (C), provide the opportunity to build mutual trust (I) because then personal attributions become clear (M) leading to self-reinforcing effects in the collaboration (O).
- In a starting MPI (C), make clear which activities are needed (I) because this creates common insight for the short term (M) making coordination and cooperation possible (O).
- In a starting MPI (C), set up the decision-making process (I) because this gives a sense of procedural fairness (M) leading to positive spiralling even in sensitive domains (O).
- In a starting MPI (C), discuss market overlap of parties (I) because objectives for the same market diminishes parties' willingness to collaborate (M) leading to less contribution (O).

Furthermore, fifteen interventions get high priority by practitioners and have high validity (when the median = 4 and the standard deviation divided by the median is  $0,21 < > 0,30$ ), as they are significant for practitioners and academics. This concerns the next set in Table 4.7.

**Table 4.7.** Important interventions according to academics and practitioners.

	Intervention with median score of 4	Standard deviation/median
5	To get the right people/skills on board concerning customers	0,1970
6	To distinguish between important and unimportant issues	0,2008
7	To synchronize actions of partners	0,2270
8	To set up the sharing of information including giving feedback	0,2293
9	To make sure that participants identify with both the MPI and the parent organizations	0,2370
10	To make sure that everybody contributes	0,2535
11	To create instruments for steering the initiative	0,2543
12	To check the selection of new parties	0,2590
13	To make sure that parties' capacities are deployed for the benefit of other participants' objectives	0,2625
14	To assure the efficiency of the use of the parties' contribution	0,2628
15	To make sure that values are shared	0,2630
16	To make choices about frequency of communication	0,2668

**Table 4.7.** Continued.

	Intervention with median score of 4	Standard deviation/median
17	To pay attention to handling contractual formalities	0,2785
18	To guard handling restricted material and immaterial resources	0,2798
19	To pay attention to the (collaborative) style of leadership such as mutual accountability, making differences disappear, balancing interests	0,2798
20	To guard equality (e.g., with decision-making or talk time) during negotiations between parties	0,2895
21	To elaborate ideas about technology, market, performance, risk, new knowledge and time horizon <i>simultaneously</i> for the new product or service	0,2993

With addition of explanations by the academics who identified these interventions, the following CIMOs have the distinction of being well appreciated by both academics and practitioners:

- In a starting MPI (C), get people on board who understand customers (I) because this leads to understanding of all the needs (M) leading to fulfilment of expectations (O).
- In a starting MPI (C), distinguish between important and unimportant issues (I) because this makes issues clear for each party (M) leading to less inter-party rivalry and fewer coordination costs (O)
- In a starting MPI (C), synchronize actions of partners (I) so perceptual distance is minimized (M) leading to the same starting points (O)
- In a starting MPI (C), set up the information and feedback sharing (I) because this facilitates interaction (M) leading to the best formalization level(O)
- In a starting MPI (C), make sure that participants identify with both the MPI and parent organizations(I), so they do not suffer dual identification(M)leading to proper coordination (O)
- In a starting MPI (C), make sure that everybody contributes (I) preventing the feeling that someone is a profiteer (M) leading to participant motivation to take a fair share(O)
- In a starting MPI (C), evaluate the selection of new parties (I) so selection criteria become explicit (M) preventing the use of unsuitable criteria (O)
- In a starting MPI (C), make sure that capacities of parties are utilized for other participants' objectives (I), so parties see clearly the benefit (M) leading to self-reinforcing effects in collaboration (O)
- In a starting MPI (C), make sure that values are shared (I) so parties experience constructive possibilities (M) leading to efficient cooperation and coordination (O)
- In a starting MPI (C), make choices about tools and frequency of communication (I) because this establishes social ties (M) leading to a high degree of inter-organizational learning (O)
- In a starting MPI (C), pay attention to the (collaborative) style of leadership (I) because plural-sided accountability facilitates learning (M) leading to united parties (O)



- In a starting MPI (C), guard equality (e.g., in decision-making and talk time) during negotiations (I) so needs for resources and capabilities become clear (M) leading to access to them (O)
- In a starting MPI (C), elaborate ideas about technology, market, performance, risk, new knowledge and time horizon simultaneously (I) so the total picture becomes clear (M) leading to the best possible assessment of the idea (O)

However, a number of the respondents has different opinions from the academics about the next interventions (when the median is 4 or 3 and the standard deviation divided by the median is  $0,3 < 0,41$ ): Table 4.8.

**Table 4.8.** Very important interventions according to academics and practitioners.

	<b>Intervention with median score 4 or 3</b>	<b>Standard deviation/median</b>
22	To stimulate parties to cross partners' boundaries like understanding partners identity, exchange of people, reflection on differences as opportunities, common work packages, joint creation of meaning)	0,3015
23	To pay specific attention to bias in decision makers	0,3093
24	To intervene for creation of joint objectives	0,3103
25	To push for using an activity scheme	0,3150
26	To make the history of parties clear for each other	0,3360 (dummy)
27	To translate prevailing norms, terms and values at partner organizations to a specific set within the initiative	0,3720

And finally, a set of interventions for which the data indicate very different opinions between practitioners and academics (when the median is less than 3 and the standard deviation divided by the mean is  $> 0,41$ ): Table 4.9.

**Table 4.9.** Unimportant interventions of academics according to practitioners.

	<b>Interventions with median score 3 to 1</b>	<b>Standard deviation/median</b>
28	To develop routines within the initiative	0,3753
29	To take care for planning of uncertainties	0,3770 (dummy)
30	To choose between communication means	0,3897
31	To make a set-up with as many standalone work packages as possible	0,4083
32	To make arrangements with uninvolved individuals	0,4083 (dummy)
33	To make partners accept each other's standards such as for technology, purchasing, rewarding	0,4133
34	To discuss which instruments are relevant for the marketing campaign	0,4180 (dummy)
35	To visualize the costs of coordination of the initiative	0,4323
36	To make agreements for unintended knowledge transfer	0,6310
37	To propose a routine for ad hoc problems	0,6920
38	To stop other investments at partners	0,8600 (dummy)

Why is there a difference in scores for nineteen of the items of Table 4.9 between academics and practitioners in the survey? The limitation of the survey is that no questions for explanation were added to the survey. A plausible assumption is that respondents and academics may have a different starting point in mind about the phase the initiative is in. This is possible because no clear description of the front end and its characteristics is used by academics. This was different for practitioners. The survey asks the respondent to score the intervention in terms of importance for the enhancement of activities leading to the MPI's viability. Maybe this prompts a different mental position about the status of the initiative compared with academics. For example, one academic may regard reflection about the idea as designing while somebody else see it as just formulating the idea: two different positions in the development phase. By considering only the data of Tables 4.6 and 4.7 as very relevant, it is possible to avoid the unexplained differences between practitioners and academics.

Another explanation can be that the shared characteristic of items in Table 4.9 is the attempt for routinization. This could create practitioner resentment about these interventions in this informal stage of the development: respondents see it as a plus to keep their degree of freedom high. Also, the toll will be mainly the spending of scarce hours, so trying to understand the costs of coordination or developing routines for use in a later stage is excessive in a pre-investment stage. However, again, since no significant explanation is available, only the data of Tables 4.6 and 4.7 will be used for the design in Chapter 5.

To explore the data further, a factor analysis was undertaken. This is a multivariate statistical technique that has the possibility to identify latent variables within the observed variables. These non-observed latent variables are called factors. Because factors explain almost the same variation as the observed variables, factor analysis is used for data reduction and to get other views on the structure of the data set. Three factors were found that explained a high degree of variance between variables that are presumed to correlate. However, no translation could be made to new variables. See Table 4.10:

**Table 4.10.** Yield of the factor analysis.

Variables and rank in Tables 4.7 - 4.10	Variation explained	Possible factor?
Use of an activity scheme (25), Get coordination costs visible (35), Simultaneous elaboration of components of the idea (21), Make choices about frequency of communication (16)	0,754, 0,645, 0,541, 0,534	Make a work plan?
Agreement about unintended knowledge transfer (36), Attention to handling contractual formalities (17), Make history of partners clear (dummy, 26), Set up of sharing information (8), Distinguish between importance of issues (6)	0,687, 0,646, 0,591, 0,520, 0,517	Handling knowledge depending on earlier behavior?
Identification with initiative and parent organization (9), Make sure that values are shared (15), Creation of joint objectives (24), Make partners accept each other's standards for technology, purchasing, rewarding, etc (33)	0,739, 0,716, 0,638, 0,582	Create a level of collectiveness?

**Overall findings from the surveys**

a) The process of preparing a new initiative is recognized in the field. At the same time, no specific term is used to identify this process or to identify the responsible person(s). The conclusion is that this part of the development process has largely an informal character.

b) Furthermore, the target group recognizes thirty-four of the interventions that were identified as important by research findings. At the same time, they assort a subgroup of twenty-one items as most relevant. These are highly validated items: the outcome of scientific research as well as confirmed and ranked by the target group of individuals responsible for MPI's. Within these twenty-one, four items are very important in literature and in the field: building trust, making clear which activities to do, setting up of decision-making and discussing overlap in the market. Since the survey had no questions for the explanation of the scores, it is worthwhile to look for explanatory mechanisms in the corresponding literature for the design of CIMOs.

**4.5 Expert workshops**

These exploratory workshops provide extra sources for data to build up validity. These supplemental data provide an opportunity to triangulate data concerning context definition and viability description.

**4.5.1 Exploratory workshop one**

A meeting to exchange experiences in front end processes included twelve individuals with responsibility for starting initiatives within several companies such as Philips, Yes Delft, Teijin Aramid, Heijmans and Foodresult. The criterion for invitation was that attendees spend more than 60% of their time as an individual or representative in some kind of MPI. The question addressed was: 'which activities are stimulating or obstructive for idea development in general in multi-party situations?'

The analysis of the results (presented in Appendix L) leads to three conclusions:

- the answers allow for the same clustering for interventions suggested by the cross-boundary theory and informed by viability criteria from literature (as demonstrated in Table 4.2). This, however, is not the case for the cluster conversion interventions and the viability criteria 'partitioning of work' and 'special communication with parent organizations.' The explanation for this could be that participants were not present at the very beginning of these initiatives. For example, it is possible that they themselves were object of conversion activities. Still, however, this confirms the validity of the clusters initiation, identification, exchange and reflection interventions in combination with support, idea, fit of objectives, cooperation and coordination as viability criteria.

Although the answered question does not distinguish between direct and indirect interventions, further analysis of the data shows that this is possible. For example, *'put the initiative apart from the parent organizations'* is an indirect intervention and helps the direct interventions because it enables a higher degree of freedom in execution. And *'apply current technology on commodities'* contributes directly to the development of the idea, one of the viability criteria.

#### 4.5.2 Exploratory workshop two

Present were eleven individuals with the responsibility to create business with companies, knowledge institutes and governmental organizations through initiation of innovative initiatives. They work at the Rijksdienst Voor Ondernemend Nederland (RVO). Coming together to discuss improvements concerning their work, they responded to two prompts of interest for this study:

1. try to describe – in one sentence - when an initiative starts to be viable.
2. describe your organizational interventions to influence positively the initiative's viability

Summarizing the conclusions from the data (presented in Appendix L):

Ad question 1). The outcome confirms the viability criteria support, idea, objectives and coordination as found in literature. However, there was no confirmation for cooperation, partitioning of work and special communication with parent organizations. A possible explanation is that respondents fulfil mainly an initiating role leaving the MPI to organize itself after initiation, checking in only six months later for the follow-up.

Ad question 2). All the interventions fit the classification of cross-boundary theory, with a great emphasis on exchanging interventions. A plausible explanation is that their main job is to organize interaction between parties. The initiation and identification activities could be undertaken by the participating parties themselves or by some sponsor(s). The interventions from this workshop align with interventions already coded because of their shared jargon or content.

#### 4.5.3 Exploratory workshop three

Seventeen persons with responsibility for business development came together to optimize their way of working. They work for Innovation Quarter, a unit of the province of South-Holland that is responsible for the creation of business consortia. They label their work by the following phases 'Calling attention, Explore, Chase and Realise'. In particular, the sets of activities Calling attention and Exploration resemble the clusters of activities in the (definition of the) Inception phase. Also, decision-making uses a similar Idea gate after Exploration and a Concept gate after Chasing. The consortia partners themselves mostly engage in the realizing step since the consortium can continue without the managerial and financial facilitation of Innovation Quarter. During this meeting, they answered the questions 'what are the characteristics of the context' and 'when do you think an MPI

reaches viability?’ The answer of the first question is used in the formulation of the context of MPI’s in Chapters One and Three.

The conclusion of ‘the boiled answers’ for question two confirms the criteria objectives of idea, coordination and cooperation as important for viability, leaving out support, partitioning of work and special communication with parent organizations. There is no obvious explanation for the missing of support since the respondents initiate themselves. Maybe they see the fit with objectives or the allocation of personnel as indicators for support. Also, the absence of partitioning of work and special communication with parent organizations is difficult to explain. It is plausible to assume that workshop participants are not aware of the importance. Another explanation is that they see it as an implicit responsibility of the parent organization representatives.

### **Overall findings from the workshops**

1. The forty persons in total confirmed the use of four of the criteria for viability: fit of objectives, idea, coordination and cooperation. Support and cooperation are acknowledged in two of the workshops. The criteria partitioning of work and special communication with parent organizations were not mentioned.  
Why are partitioning of work and special communication with parent organizations not mentioned? One assumption is that respondents put their greatest effort into the beginning of the MPI while these two viability criteria are elaborated mostly at the end of the Inception phase. Another assumption is that they are simply not aware of these factors.
2. Also, the sets of direct interventions are recognized in the workshops, except for conversion. This is in line with the role of the workshop participants: initiating the MPI by showing the interdependencies for realizing objectives and ideas and chasing the parties for coordination and cooperation. If their part is accomplished without entering a new phase, there is no need for conversion of the MPI in a new entity.
3. Although participants of workshops one and two do not distinguish between direct and indirect interventions, analysing them shows that they use both of them in their fields. These interventions are added to Appendix K
4. All experts in the workshops do not use gates for decision-making on the level of the MPI. However, their own/corporate reference frames are decisive for continuity of their presence in the MPI but unknown to other participants. This opens the possibility that there are as many decision processes for continuity as there are parties. This makes decisions about viability on the level of the MPI rather fuzzy.

### **4.6 Second literature study**

These paragraphs add extra research findings to the literature study and are useful to the conclusions drawn above. Four topics are found to be relevant for MPI’s. Firstly, trust

is found to be very important for intervention-outcome relationships in the MPI studies, interviews with experts and questionnaire responses, so it is necessary to understand this construct better as building block for the design in Chapter Five.

Close in the ratings to trust is the use of knowledge in the MPI. A question by one of the participants is how to transfer this knowledge to the MPI: does literature suggest something?

A third theme is the output of the Inception phase, both the form and the overall description. It is worthwhile to see if it is possible to describe the output of the Inception phase more concretely with the support of academic suggestions.

Furthermore, the job of the person(s) responsible for the execution of the Inception phase is identified as important in the workshops and interviews. Concepts as 'Plural sided' and 'Style' still require further detail.

#### 4.6.1 Trust

As stated in Chapter Two, scientific literature names trust as a success factor in MPI's. Low trust is one of the reasons for excessive formality in collaboration or deterioration of coordination and cooperation (Ghoshal & Moran, 1996). In the survey described in paragraph 4.4.2, trust rates significantly as important in the top four of thirty-four factors. Also, experts (56%) and participants in MPI's (55%) interviewed in this study state more or less spontaneously that trust is an important mechanism for creating positive effects (*'trust means speed because we dare to trust in the professionalism of parties'* or *'trust prevents unexpected ending of collaboration'* and *'trust brings the feeling that it will be all right, when problems arise'*). To create trust, they use a variety of interventions at the objectives level (*'apply a joint perspective'*, *'create openness about own motives'*), on the coordination level (*'exchanging working methods, uncoupling routine jobs from a job in the MPI'*) on the cooperation level (*'pay attention to differences in personality'*, *'propose rules of engagement'* or *'invite authorities'*) and on the idea level (*'visualise the 'cross-boundary object'* or *'ability to propose technical solutions'*).

However, the following questions remain open: 1) where in the process to begin building trust, and 2) is trust part of the Inception phase outcome? The answer can be an important CIMO.

To answer question one, the study of Vlaar, Van den Bosch, and Volberda (2006) is useful; after an extensive literature study, they selected the definition of trust forwarded by Mayer et al. (1995) because it fits a starting collaboration: *'the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party'* (p. 712).

Vlaar et al. state that the development of (dis)trust relates with interpretation of the performance of the other party leading to certain level of formalization of coordination and control. They argue that starting conditions - consisting of initial levels of trust and

distrust - leave strong imprints on the development of collaborative relationships. Starting conditions not only influence the degrees of formal coordination and control and the levels of performance achieved in early stages of cooperation, but they also affect how managers interpret the behavior of their partners. As a result, trust, distrust, and formalization tend to develop along self-reinforcing paths. In summary, the development of trust should already have a prominent place in the early activities of the MPI development.

At the level of formalization of coordination and control lies part of the answer to question two: is trust part of the outcome? Trust itself – in line with the above definition of Mayer et al. – is not explicit in the outcomes, but implicit in support and coordination. If the level of formalization is high, it is an expression of low trust leading to acceptance of high coordination costs. This outcome is mostly a balance between trust and a juridical framework. As Badir and O'Connor (2015) state: the outcome of activities that create trust are 'good social ties'. Concluding this discussion as a CIMO:

- In a starting MPI (C), make interventions on the level of objectives, idea, coordination, cooperation right from the start (I) that create 'willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor' (M) leading to durable agility in the collaborating parties (O) > overall level.

#### 4.6.2 Use of each other's knowledge

Guidance concerning control on knowledge is provided by Bogers, Bekkers and Granstrand (2012). To a certain degree, knowledge sharing will be necessary in the context of an MPI. When transfer of implicit knowledge is inevitable and explicit knowledge is necessary to provide yields, the opportunity for piracy is present. Bogers et al. suggest an open exchange with possible co-ownership of patents, the use of inventor-registration meetings or a non-disclosure agreement. If the collaboration is layered – for example with very modular work packages – they suggest a licensing scheme for involved parties or a non-disclosure agreement for parties outside the collaboration. The aforementioned arrangements promote tangible outcomes of trust issues and the intangible 'good social ties. Practitioners define these ties as readiness to take risks, to continue in an informal collaboration as long as possible, to acknowledge doubts, to keep objectives of others in mind, to accept open-end obligations and to bridge tough times without halting.<sup>2</sup>

The above leads to the CIMO:

- In a starting MPI (C), make agreements about an open or layered exchange of knowledge (I) so knowledge owners trust the use as beneficial for the collaboration (M) leading to a low level of coordination costs (O).> Cell 3D: Exchange/coordination.

<sup>2</sup> To define the totality these behavioral outcomes the suggestion is to use durable agility. Durable agility is an attitude and outcome of interventions that create trust

### 4.6.3 Inception phase output

Does literature suggest a tangible output for the Inception phase? Partners assess the consolidation of their efforts. Therefore, they need to have a shared mental model of the viability criteria. And looking ahead, they have to deal with sources of uncertainty for the potential markets and underlying technology as well as unintended knowledge transfer, which is a key concern among partners (Katila, 2008). Based on these shared ideas, partners decide whether to continue with each other. Cooper (2008) suggests the Idea gate for this decision. He defined this for mono-party initiatives, but it is applicable in a multi-party context where a formal or informal gatekeeper in the potential parties makes an evaluation of the opportunity. When they continue, they decide to allocate resources to the advancement of a new idea (Eling, Griffin & Langerak, 2016) on their way to the concept gate (Cooper, 2008) – the next step in the development process. Project management literature suggests a decision document as form, normally developed with the decision to take the yield up until now and undertake the approach for the next process step in detail. The former could be used as form and content for decision-making as a deliverable at the end of the Inception phase.

However, what remains answered still is the reason for undertaking all this effort in the Inception phase. For this, Van der Krift's study (2019) is helpful. In this study, the concept of Perceptual Distance (PD) is elaborated. PD is defined as *'Differences between collaborating partners' perceptions of key issues in their relationship'* (Van der Krift et al., 2019a, p. 2). To reduce perceptual distance, the Inception phase is adapted to create high viability at the end. According to Van der Krift (2019a), PD is a predictor for the performance of the collaboration based on information (a) symmetry and social (non)identification. It is a reasonable assumption that when the seven viability criteria are clear and shared, the PD should be small.

Concluding the discussion above, one of the very reasons for the existence of the Inception phase is to deliver a context where PD is minimized, with a decision document as the tangible product. So, it is plausible to state that minimizing the PD in the Inception phase is not an outcome but an objective. Formulating the aforementioned as a CIMO:

- At the end of the Inception phase (C), deliver a stage gate document for the Idea gate with the elaborated viability criteria (I) so perceptual distance is minimized between supporters becoming aware of the viability of the initiative (M) leading to a shared go/no-go decision for continuity (O) > overall level.

### 4.6.4 Person(s) responsible for the Inception phase

Who takes the lead in the Inception phase? The analysis of the data show that participants and interviewees emphasise the importance of the presence of the collaborative leadership. Authors like Schrujijer, (2005) and Sullivan et al. (2007) describe the need for collaborative leadership that unites parties, works as facilitator for interactions, has a neutral attitude and eye for interests and acts independently of authorities. Kramer and Crespy (2011) suggest a set of skills to operationalize these capabilities.



- Formulate collaborative philosophy
- State a desire to have collaborative relationships
- Questions as 'why are you here' and 'how do you feel about your role'
- Ask permission to try something (different)
- Use questions to start collaboration
- Make evaluative statements
- Give feedback on deliberate or accidental experiments

**Box 4.5** Collaborative skills according to Kramer & Crespy.

In a more formalized organizational setting, roles are more explicit than in a starting MPI, especially at the beginning. This is because conversion activities have not yet taken place. So, it is preferable to speak about the presence of capabilities that enable participants to cross the boundaries between them. Akkerman and Bakker (2011) define boundaries as 'socio-cultural differences that lead to disruption of action and interaction of parties. Boundary-crossing capabilities enable dialogues of actors from different domains. For example, the engineer encounters values of his profession and his company and of the MPI. By doing this, boundary crossers negotiate multiple perspectives, one of which could be their own. Boundary crossers belong equally to all the domains and none of the domains, as does the boundary object. This capability gives differing opinions, facts, practices and perspectives a place in the initiation, identification, reflection and conversion interventions. By doing so, these opinions and facts integrate, develop and get new meaning (Morse 2010), crystallizing in formulated viability criteria.

In one of the viability criteria (cooperation), style is a sub-criterion. Given the emphasis in the data, it is important present these capabilities in the design of Chapter Five. Or as the CIMO states:

- In an MPI (C), make sure that collaborative leadership capabilities are present (I) so different opinions and perspectives are elaborated well (M) leading to new meanings (O) > cell 3D: Exchange/cooperation

#### **4.7 Conclusions of Chapter four**

In this chapter, data were analyzed from ten MPI's, ten expert interviews, fifty-nine questionnaires and three workshops. Furthermore, further literature search was undertaken for the themes of trust, knowledge transfer, kind of output of the Inception phase and collaborative capabilities. This analysis leads to several conclusions with consequences for the design of Chapter Five.

*1) A split must be made between knowledge confirmed in both literature and in empirical data and knowledge from only literature or empirical data.*

Data with a basis in findings from academics as well as from several practitioner sources have a higher reliability than those only from literature or only from field data. The design

of Chapter Five will be based on the findings with high reliability. Depending on the design's needs, the remainder will be developed by adding relevant data from the field or from literature. Alternatively, the remainder will serve as hypothesized (extended) findings.

2) *Findings from literature that is confirmed for use by empirical data concerns:*

- the seven criteria for viability of a MPI can be used as outcomes
- elaboration of the viability criteria Support, Idea and Fit of objectives is conditional upon the wishes of participants to elaborate Coordination, Cooperation, Partitioning of work and Communication with parent organizations
- market, technology, performance requirements are sub-criteria of viability for Idea; staff, strength, style are sub-criteria for Cooperation; structure, planning, routines for coordination and modular or architectural work packages for Partitioning of work
- the Idea must act as a cross-boundary object: it belongs to nobody and to everybody in the MPI; this object needs to have a kind of form that synchronizes participants continuously such as a narrative, a demonstration or a drawing
- the persons taking the lead to structure the process of the Inception phase demonstrate a style characterized as Collaborative Leadership
- Fit of objectives means that the Idea characteristics meet the parent organizations' objectives
- the objective of the Inception phase is to create a small perceptual distance between participants
- the Inception phase ends at the Idea gate with a go/no-go decision based on the description of the viability of the MPI with seven criteria
- trust must be guarded from the very start to prevent self-fulfilling negative development
- in the case of critical knowledge, use an open or a layered exchange, keeping the juridical consequences on a low-profile level

3) *Findings from literature but not yet confirmed by empirical data concerns:*

- thirteen direct interventions in CIMO term
- the MPI must have its own objectives
- sub-criteria for the Idea are also Time to market, Risk and New Knowledge

4) *Findings from empirical data but not yet confirmed by literature:*

- fourteen interventions in CIMO-terms on the general level of the MPI
- seventy-two direct interventions in CIMO-terms to make the viability criteria concrete
- twenty-two indirect interventions in CIMO-terms to help the execution of direct interventions

- new sub-criteria of viability for Support: power and actual role, for Idea: attraction and form, for Fit of objectives: short-term and long-term objectives
- two new factors for the Inception phase: Input in the Inception phase which concerns the output of activities that are already accomplished. Also, Questions at the start that refer mostly to (one of) the viability criteria and are important for potential supporters in the parent organizations
- four hundred and eight overlapping interventions not in complete CIMO-terms to make the viability criteria concrete. The mechanisms are not found yet in the empirical data
- one hundred and fourteen obstructive activities not in complete CIMO-terms that obstruct the execution of the direct interventions

*5) The character of the interventions as consolidated in paragraph 3.8 is confirmed*

The spread of the mechanisms in the CIMOs over the proposed clusters is shown in Table 4.12.

**Table 4.11.** Type and number of mechanisms in CIMOs.

Mechanism	Affective	Multi-perspective	Explicating	Locus of control	Reflective	Efficiency
Numbers proposed	35	20	48	14	9	24





# CHAPTER 5

## THE INCEPTION PHASE APPROACH



## 5 The Inception Phase Approach

### 5.1 Introduction Inception Phase Approach design

This chapter presents a design for enhancing the viability of a multi-party initiative (MPI), based on literature and empirical findings. This is useful since we found (see chapter two and four) that multi-partner initiatives perish due to a lack of collaborative capabilities, own interpretation of ambitions, no proper alignment with the needs of customers, erosion of trust, missing of staff who will apply the result and different interpretation of substantive issues such as the amount of contribution of resources, decision making rights or acceptance of partners' standards.

We have also seen the starting situation and the multi-party characteristics mark the context. Parties have the notion of needing each other in this specific initiative where they normally function independently from each other.

The design presented in this chapter is called the 'Inception Phase Approach (IPA)'. It is the phase where collaboration is emergent and not based on a collaborative agreement or other document yet. Initiators are confronted with a lot of ambiguities and uncertainties whilst developing shared meaning about the short- and long-term future. IPA aims at helping these initiators.

- To build up the IP-Approach the following steps are taken:
- Listing the evidence-based lessons learned in chapter two
- Describing the desired products of this study with their requirements formulated in chapters two, three and four.
- Resuming CIMO's and in new CIMO's from chapter two and four.
- 'Assembling' an IP-Approach, first version by induction, deduction and abduction
- First Iteration with experts (see paragraph 6.3 and 6.4)
- Enrichment of the first version with outcome of alpha-test one, resulting in second version
- Second Iteration with experts (see paragraph 6.5 and 6.6)
- Enrichment of the second version with outcome of alpha-test two, resulting in third version
- Third Iteration with application in practice (see paragraph 6.7, 6.8 and 6.9)
- Enrichment of the third version with outcome of the beta-test, resulting in version described in paragraph 5.3 and appendix M
- Finally, stating the (contra-)indications of IPA



## 5.2 Requirements and lessons learned for the design

The lessons learned are the starting points for the design to successfully accomplish the Inception phase. In the following paragraphs these starting points are listed as lessons learned to apply or comply within the design.

**Lesson one:** there is a lack of a coherent theory for the approach of this specific part of the front end, the first part of the development route for a new product or service. Theory for this front end needs to consist of a description of the inception phase, an operationalization of the viable outcome and information based direct and indirect interventions to produce this viable outcome.

**Lesson two:** this part of the development process concerns an emerging work system of people who, because of their membership of other groups or social categories, come to work together on a largely self-constructed task or problem domain. The process which they need transforms an opportunity or a problem into ideas for a product or service and instantiates the very beginning of collaboration. This is an inception process ending with a go/no-go decision for the start of the next step in the development process

**Lesson three:** use seven components (see table 5.1) to describe the viability of the outcome of the activities in the Inception phase. These components form - if consolidated - the viability state of the MPI and make it possible to decide to continue the MPI. Some of these components are broken down further, as shown in table 5.1.

**Table 5.1.** Viability components: together they form the outcome of the Inception phase.

Viability component	Definition	Further breakdown suggestions
Support of partner organizations	The initiative will be added to the portfolio of partners because it passes the Idea Gate	Power of and Actual role of the supporter
Idea with six characteristics	The thoughts about a solution with assessment of market potential, performance requirements, technology unknowns, project risk, new knowledge and time to market	Leave out project risk, new knowledge and time to market; Add Attraction and Form
Fit with objectives	A description of fit of the initiative with objectives of partners	Fit with short- term (the Idea gate) and long-term objectives
(Inter-organizational) cooperation in next phase(s)	The joint pursuit of agreed-on deliverables in a manner corresponding to a shared understanding about contributions and payoffs.	
(Inter-organizational) coordination in next phase(s)	The deliberate and orderly alignment or adjustment of partners' actions to achieve jointly determined deliverables.	
Approach for partitioning of work in next phase(s)	Architectural (for improvements of subsystems that have a significant impact on the existing interface standards and interactions with other subsystems) or Modular (for improvements of subsystems that leave the existing interface standards and interactions between the improved subsystems and other subsystems largely unchanged).	
Specialized tasks for integration with parent organizations	The representation of the initiative, vertically (in hierarchy) and horizontally (to other organization parts), a specialized job	

If one or more of these viability components lack in the viability state, one of the following risks may arise for the next phases:

- support risk: the will to provide resources proves to be low
- direction risk: parties harvest mainly driven by own objectives
- target group risk: users do not see a link of the idea with their lives
- relational risk: parties avoid promises, claim too much, behave asymmetric
- operational risk: unforeseen coordination costs/failures show up
- composability risk: it becomes difficult to make changes in work packages
- orphan risk: a parent organization becomes unaligned

**Lesson four:** the theory of boundary crossing is useful for clustering interventions. The clusters are Identification (explaining identities/relationships and legitimating coexistence), Exchanging (communicative connecting, making efforts of translation, enhancing boundary permeability and routinization of transfer), Reflection (making perspective and talking about the idea as boundary object) and Conversion (confrontation of shortcomings leading to common work packages and tools for all participants, recognizing a shared problem space or boundary object, application of strengths from different participants, imbedding in current practices, use of other's practice uniqueness and developing 'in between' entities).

One cluster needs to be added due to the context of the starting MPI: Initiation filled with interventions for nomination, first meetings and introductions.

**Lesson five:** the proper set of requirements to define the quality of the design. These requirements push the creation of the design in the right direction because they define the performance and use of the design needed. The first set of requirements define the performance: to solve our field problem. Which is why this is called 'functional requirements set'.

The second set of requirements is of interest from the operational point of view. Users appreciate the user-friendliness of the design, expressed in a set of requirements defining the appliance of the design. The functional and operational requirements are listed in table 5.2

**Table 5.2.** Overview of functional and operational requirements for the design.

Nr.	Functional requirements for <i>(description of) the Inception phase</i>	Origin
1	The collaborative capabilities must be explained	De Man (2011)
2	Makes effective idea development possible	Cooper (2016)
3	Prevents waste of resources	Eling (2017)
4	Shows a discrete end	Cooper (2016)
5	Shows a family classification with other phases	Wittgenstein (1953)
6	Must operationalize the closing out of the Inception phase	Cooper (2008)
7	Keeps participants' mental position in the same (Inception) phase	Cooper (2003)
8	Makes assessment possible of the collaboration and its future	Cooper (2016)
<b>Operational requirements for <i>(description of) the Inception phase</i></b>		
9	For use in the process management on group level, with interfaces to parent organizations (one level up) and characteristics of participating individuals (one level down)	Deken (2014)
10	Must help in selecting initiatives	Practitioners find it hard to discriminate between viable and non-viable starting initiatives
<b>Functional requirements for <i>description of the viability of the MPI</i></b>		
11	Shows a shared mental model of how partners cooperate and coordinate when going further	Verworn (2006), Gulati (2012), Badir (2015)
12	Shows a shared mental model how to deal with sources of uncertainty for potential markets and underlying technology	Verworn (2006)
13	Shows a shared mental model how to deal with unintended knowledge transfer, a key concern among partners	Katila (2008)
14	Shows a defined product concept ('protocept', cross border object') prior to development phase	Koen (2001) Kim (2002), Kristiansen (2013), Cooper (2016)
16	Shows a foreseen fit with users' needs	Hauser (2013), Standish group (2015), Cooper (2016)
17	Aligns with needs of customers possible	de Brentani (2001), Hauser (2013)
18	Importance of participation of front-end staff	De Brentani (2001)
19	Importance of certain leadership capabilities	Kendra (2004), Turner (2005), Raelin (2006), Kramer & Crespy (2011) Sullivan (2012)
20	Proposes a view on the decomposability of the idea	Simon (1962), Langois (2002), Hoffman (2017)
21	Shows support is available built on a shared vision about the set-up of the next part of the project	Popo (2002), Ko (2010), Mulder (2012), Standish Group (2015)
22	Shows how cross-hierarchy (vertical and horizontal) ties are concentrated in the hands of a few team members	Gould (1989), Hansen (2002)
23	Gives a description of fit of the initiative with objectives of partners	Doz (1996), Suarez (2017), Schruijer (2008), de Jong & van de Vrande (2009), Wohlgezogen &, Gulati (2012), Liedka (2015)
24	A unique appealing characteristic of the idea is clearly formulated	Data from practitioners
<b>Functional requirements for <i>direct interventions to create viability</i></b>		
25	Makes clear to partners if they work on a 'resource-based view', on a transaction-cost based view or other added value base	Wernerfeld (1984), Williamson (1985), Tsang (2000), Carson (2009), Wohlgezogen (2012),
26	Should stimulate the joint pursuit of agreed-on objectives in a manner corresponding to a shared understanding about contributions and payoffs	Wohlgezogen & Gulati (2012)

Table 5.2. Continued.

Nr.	Functional requirements for <i>(description of) the Inception phase</i>	Origin
27	Must enable to create an artefact of the idea that functions as cross-boundary object	Akkerman & Bakker (2011)
28	Should align or adjust partners' activities to achieve jointly determined deliverables	Okhuysen (2009), Wohlgezogen, Gulati (2012)
29	Must encounter risks: such as avoidance, misappropriation, holdup, excessive contractual formality, unforeseen changes in partners commitment, import of each partner own beliefs and routines, jeopardizing of shared goals, underestimation of relations between tasks and coordination need, resource stickiness	Ghosal (1996), Gulati (1998), Scott(2001), Levin (2004), Mishina (2004), Mellewig(2007), de Jong (2009), Scheiner (2009), Berends (2011), Raveendran (2012)
30	Must discriminate between critical and proximate and recent issues	Park (2001)
31	Must give partners the possibility to show trustworthiness	Malhotra (2002)
32	Must foster interpersonal trust	Gulati (1995b), Levin (2004), Tucci (2004)
33	Must stimulate implementation of coordination mechanisms	Gulati (2012)
34	Patterns of interventions act not as law, not as causal explanation but rather as plausible interpretation	Ropes (2010)
35	Intervention is formulated in CIMO-terms, discriminated between validated or non-validated	Van Aken (2015)
36	Must address competences and needs of partners	Gargiulo (1999), de Man (2011)
37	Must bring order to partners ' efforts, combine partners 'efforts, joint planning and adjustment of each other's practices, division of labour	Mellewig( 2007), Raveendrn (2012), Gulati (2012)
38	Must help parties to overcome boundaries	Akkerman & Bakker (2011), Berends (2011)
39	Need to show how to handle cognitive bias of decision makers when assessing the benefits/hazards of collaboration	Liedka (2015)
40	Need to allocate responsibilities for coordination and cooperation	Argyris (2007)
41	Need to specify information sharing, decision making and feedback	Gulati (2012)
42	Must mitigate the risk of leaving objectives unshared	Schruijer & Vansina (2008)
43	Must mitigate the risk of overlapping objectives for the same market	Tucci (2004)
44	Should help parties to develop ties preventing a negative self-fulfilling spiral	Gulati (1995b, Schruijer (2005) Verdaas (2006) ), Klijn, Edelbos, Steijn (2010)
<b>Operational requirements for direct interventions to create viability</b>		
45	Need to formulate task description of a person responsible for the Inception phase	From data of practitioners, who find themselves in fuzzy assignments
46	Direct activities should be categorized by contribution to a building block of viability	Walter (2021)
47	The Idea must act as cross-boundary object, synchronizing parties	From practitioner's data, showing that the idea must be perceptive for participating parties
48	Must help participants to develop a joint glossary	Practice, de Man (2011)
49	Must help to find the right partners for follow up	From practitioner's data, showing that non-relevant criteria for partners count also
50	Must help to gain clear sight on the benefits for participants	From practitioner's data, showing that this stay hidden
51	Must help to make participants look further than their own interests	From practitioner's data, showing this risk

Table 5.2. Continued.

Nr.	Functional requirements for <i>(description of) the Inception phase</i>	Origin
52	Must emphasize the viability criteria Support, Idea and Fit with objectives from the start	From practitioner's data, showing their strong preference
53	Must help to create a joint learning process	From practitioner's data, showing that learning is fragmented
54	Must handle to transfer critical knowledge in open or layered exchange, on a low-profile level or transfer the juridical consequences to next phase(s)	From practitioner's data, showing that nuances are important
<b>Functional requirements for indirect interventions to enhance the execution of direct interventions</b>		
55	Must prevent adoption of rigid roles/procedures/interfaces, responses to ad hoc problems	Gulati (2012)
56	Must handle partners diversity	White (2005)
57	Must make bargaining positions symmetric	van de Krift (2019), Reuer (2020)
58	Facilitating activities should be categorized in the domain's cooperation and coordination	Gulati (2012)
59	Must help partners to develop ties that enable them to handle relational risk	Verdaas (2006), Klijn (2010), Gulati (2012),
<b>Operational requirements for indirect interventions to enhance the execution of direct interventions</b>		
60	Need formulate the task description of a person responsible for the Inception phase	From data of practitioners, who find themselves in fuzzy assignments
61	Must synchronize participants to the same starting point for subsequent activities/steps	Practice, Cooper (2003)
62	Must help to create the atmosphere the idea may develop (is loose) until a (fixed) decision has been made	From practitioner's data, showing that the idea must be perceptive for participating parties
63	Must help to direct each other without hierarchical lines	Practice, Schruijer (2008)
64	Must help to make parties feel comfortable and safe	From practitioner's data, showing that these feelings are very important for collaboration
<b>Requirements for the evidence of the contribution of the set activities</b>		
65	Rival explanations should not be excluded	Campel (1963)
66	Relationship between activities and viability repeats in different context dependent cases	Van Aken (2013)
67	The relationship between activity and an element of viability is verifiable	Denyer (2008)

**Lesson six:** the passage into the Inception phase is fluent. Questions about viability are already stated in the parent organizations and some contributions are already allocated. These questions and input - on the agenda of the MPI - help the initiation of the MPI. They help create a buy-in of persons in the parent organizations which uttered these questions and inputs earlier.

**Lesson seven:** the components of viability become enriched by direct interventions which are ordered by the clusters of cross boundary theory and contribution to viability outcomes in the Intervention Box. These direct interventions are informed in two ways: by primer (literature)/second (practice)- order data and by level of evidence, conform CIMO reasoning. These direct interventions are as well descriptive-explicating as prescriptive-

normative. Empirical data revealed without evidence but based on plausible assumptions will be used in the design with plausible explanation between brackets. Two kinds of interventions correspond with two kinds of outcomes. General interventions help the MPI by giving a general process design, binding the parties in a common approach and reducing uncertainties without irrevocable obligations. Direct interventions enrich innovative thoughts about products or services and the multi-party collaboration which must emerge for production. Also, a third group of interventions are indirect interventions, facilitating the execution of general or direct interventions.

To increase the readability only some of the available interventions are presented below. The overview of all one hundred forty-seven interventions is presented in appendix N.

### **Examples of general interventions:**

- plan the Inception phase (I) so hazards and benefits of collaboration become explicit (M) leading to a small cognitive bias gap (O)
- immediately start building mutual trust (I) as it will show integrity (M) preventing excessive contractual formality (O)
- use boundary crossing activities (I) to reveal the interpretative schemes of parties (M) which facilitates mutual learning (O)
- use objectives or problems whilst starting the MPI (I) which invites an informal problem-solving process (M) leading to collection of formal starting points about conditions to participate and to mutual views of participants' contributions (O)

### **Examples of direct interventions with priority :**

- make sure participants understand each other's gains and pains, (I) thus trust builds up (M) leading to progression also in difficult times (O)
- choose high frequency communication with rich media (I) as these develop trust and social ties (M) which leads to a high degree of inter-organizational learning and low opportunistic behavior (O)
- discuss market overlap of parties (I) because objectives for the same market diminishes party's willingness to collaborate (M) leading to less contribution (O)
- implement collaborative leadership (I) because it facilitates presence of leadership in more positions (concurrent), decision making by everyone feeling responsible (collectively), expressing everybody may speak for the entire MPI (mutual) and to dignity preserved for everyone in the MPI (compassionate) (M) leading to high-speed progress and learning (O)

### Examples of direct interventions without priority<sup>1</sup>

- make a competences and party needs inventory (I) as it reduces uncertainty (M) leading to effective arrangements for cooperation (O)
- present product or service concepts in elemental descriptive forms (which includes verbal stories, verbal metaphors and physical prototypes) (I) for the team can shift in individual concept components (M) resulting in flexible changes required due to new technical or market information (O)
- use methods as mental simulation or benefit comparison (I) so contribution of partners become clear (M) which leads to supporting party collaboration (O)
- do not use NDA or competitive conditions in the beginning (I) because other (linked to NDA) initiators take over (M) leading to the situation which unclear future obligations paralyze collaboration (O).
- give an end-user possibility for in-kind support<sup>2</sup> (I) so the user can sell the idea internally (M) to be allowed to act as partner (O).
- introduce a rule everybody can step out without sanctions (I), so everybody is aware of the possibility to leave (M) leading to relaxed presence (O)
- make agreements about an open or layered exchange of knowledge (I) so knowledge owners trust the use to benefit the collaboration (M) leading to a low level of coordination costs (O)
- agree on modular work packages for deliverables (I) so participants start to see clear tasks (M) which leads to less coordination effort (O).

**Lesson eight:** the interventions show a character which confirms the classification of interventions as developed in the Design Research Group and described in par. 3.8. Members argue that an intervention is a combination of action plus mechanism triggered by the action. The spread over the types of intervention mechanisms is presented in table 5.4:

**Table 5.3.** Type of mechanism in the interventions of lesson seven.

Type of mechanism	Number
Affective mechanisms: the actor feels differently	35
Multi-perspective mechanisms: the actor looks through the eyes of somebody else.	20
Explicating mechanisms: the actor becomes explicitly aware of something	45
Locus of control mechanisms: the actor gets different power relationships and/or the actor must do something that he did not do before.	14
Reflective mechanisms: the actor reflects on his own behavior	9
Efficiency mechanisms: the actor does something more easily	24

<sup>1</sup> As indicated by practitioners (chapter 4, par. 4.4.2)

<sup>2</sup> 'In-kind support means contributing hours for talking about performance, market, ideas, tests and advice as well some financial contribution to show interest and to make subsidy possible that calls for also private investment

These eight above-mentioned lessons - triangulated with other findings pushing up the pragmatic validity - will be used to develop an approach to enhance the viability of starting MPI's. This approach is built up starting with paragraph 5.3.

## 5.3 Inception Phase Approach

### 5.3.1 Parts of the Inception Phase Approach

The Inception Phase Approach as presented in paragraphs 5.3.2 to 5.3.8 leads from a starting multi-party initiative to a viable multi-partner initiative.

The clarification of the IP-Approach starts with the description of two general topics: context and objectives. These explain the place and the reasons for the IP-Approach in the total development process of products and services. Afterwards the viability operationalization is given, the outcome of the Inception phase which enables the assessment of the value of continuation of the MPI. Next paragraphs present the (ordering of) available interventions which help to formulate the viability. Its character and its contribution to viability places an intervention in a certain section of the Intervention Box, the container for the action repertoire in the Inception phase. The last paragraph explains the navigation tool which facilitates the user of the IP-Approach to find those interventions which are relevant for the next steps in the Inception phase.

So, the paragraphs with the Inception Phase Approach contain successively:

- The Inception phase as context: definition and description of this phase as particular part of the total development process: a starting multi-party initiative transforms into a viable multi-partner initiative.
- The objectives of the Inception phase: the why of the Inception Phase.
- The outcome of the Inception phase: a viable MPI, operationalized in seven viability components: support of parent organizations, idea with specific characteristics, fit with objectives, coordination of the next step, cooperation in the next step, work partitioning and specialized roles for integration with parent organizations.
- The Intervention Box with the sets of general, direct and indirect interventions to enhance viability. The design of the Intervention Box is illustrated with examples in the sections to maintain readability. The total overview of interventions allocated in the Intervention Box is presented in appendix M and in the automated Navigation Tool (par. 5.4.5).
- A tool for navigation through the interventions. This tool offers answers linked to the actual wishes of the practitioner. This leads him to (sets of) interventions that fit his wishes.
- Finally, during the build-up of the design some conclusions are drawn concerning the task of persons with responsibility for the Inception phase. This task description is described completely in paragraph 5.4.3.



The application of the IP-Approach will enhance the viability of multi-party initiatives in the front-end because it makes sets of interventions available informed by design science. The quality of the approach is based upon requirements, lessons learned and CIMO's as described in paragraph 5.2. This relationship is explicated by referring between brackets to the number of the requirements stated in lesson five in paragraph 5.2.

### 5.3.2 Inception Phase as context

The Inception phase as the end stadium of the front end is positioned at the beginning of the development cycle as shown in figure 5.1.

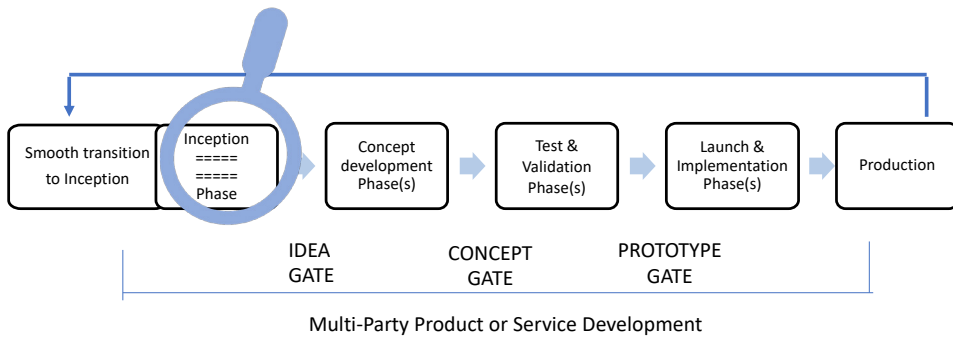


Figure 5.1. The place of the Inception phase.

Holmquist (1999) coined the concept of 'imaginary organization': an arena where actors can build knowledge on a joint basis, converting their individual knowledge into inter-organizational knowledge with a collective storage mechanism. Imaginary organizations 'live' only through the interaction of actors.

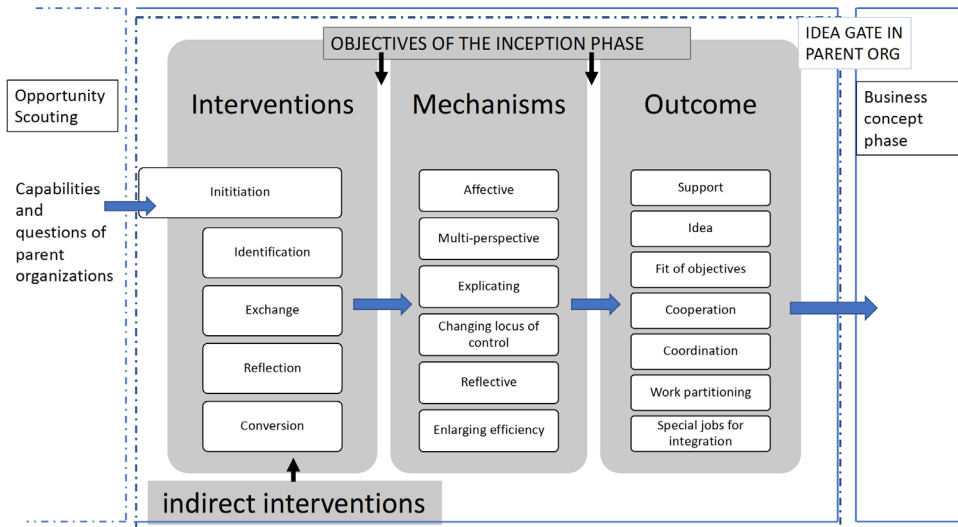


Figure 5.2. The inception phase.

This is close to the situation in the starting MPI when actors begin their discovery process by adding all kinds of ideas and solutions to create a viable initiative resulting in an imaginary organization with a storage of ideas. The factors for enhancement of the viability of a multi-party initiative in the Inception phase are depicted in figure 5.2.

These general notions lead to the overall part of the task description for the Inception process management (44,60):

- You, as internal or external practitioner with an assignment for management of the Inception phase (Context)
- pick out those igniting activities (Interventions)
- which trigger evidence-based changes you need (Mechanisms)
- leading to viability and continuation of the multi-party innovative initiative (Outcome)

Part one of the task description of Inception process management.

The parts of the task description are derived from the individual elements of the IP-Approach. They assemble the total task description in figure 5.2.

### 5.3.3 Inception Phase has specific objectives<sup>1</sup>

Why is the Inception phase necessary? Because in the beginning of a MPI typical uncertainties exist as found in literature and the empirical data. These uncertainties concern the trustworthiness of the other parties, different views on technology and markets or compliance of skills and priority in parent organizations. These topics need interpretation by several parties who know that they need each other. Typical for this phase, parties need to see the benefit to continue with each other and need to diminish cognitive bias in decision makers. So, one important objective of the Inception phase is:

- to minimize the perceptual distance between potential partners (7,37,38).

Perceptual distance is defined as ‘differences between collaborating partners’ perceptions of key issues’ (Van der Krift et al., 2019a). In IPA, the key issues are support, idea, fit with (personal) objectives, coordination, cooperation, work partitioning and integration with parent organizations. So, synchronization of partners (46,61) on these items before they make big irrevocable commitments is important.

At the same time, many MPI’s perish while suffering from all kinds of risks, being already in formal collaborations or busy with developmental activities without proper orientation on the key-issues. To prevent parties waste resources (3) as much as possible, a more informal

<sup>1</sup> Many synonyms exist for objective such as intention, purpose, reason, legitimation, mission, ambition, motivation etc. All these words are all correct in this context if they are used to express ‘the why’.

start with low working capital needs is preferable. This leads to the second objective of the Inception phase:

- to maximize the chance for success with low toll for participants (3, 20, 49).

The foregoing leads to the next part of the task description for the Inception management (44,60):

Make sure that the two objectives of the Inception phase are shared by key-parties.

Part two of the task description of Inception management.

Now that it is clear why the Inception phase is important in the real world, the next part concerns the description of this phase, providing the road for the contributing parties.

#### **5.3.4 Inception Phase is a new part in the development process**

The Inception phase is an in-between phase as came forward from the empirical data. It starts with an identified opportunity or problem and ends when partners confirm to continue (or not). They make this decision because ideas about the deliverables and about the process to come are shared and assessed positively (or not). The Inception phase is anticipated by a period which discovers or produces problems and/or opportunities. When the Inception phase ends, it is followed by phases which prepare for materialization and eventually routine reproduction of the product or service. So, the first part of the description of the Inception phase is:

The phase which concerns the process in which a problem or opportunity is transformed into ideas about what to produce (4,5,7).

In the context of this study the notion is present that the problem can only be solved in collaboration with more complementary parties. This is the same for capturing an opportunity. Yet in the beginning of the Inception phase, no joint interest in each other is present yet. So, not only the problem or the opportunity but also the view on the collaboration needs to be developed. It means the initiative must be underpinned by figures for allocated hours, working capital and knowledge exchange and by sponsors who believe in the initiative viability. This results at the end of the Inception Phase with a hopeful positive decision to go on with each other as configuration partners, knowing other opportunities are still available. Adding these notions to the definition, it says:

*The phase that concerns the process in which a problem or opportunity is transformed into shared ideas in a group about what to produce and about how to organize the complementary partners, who decide about the viability of the initiative compared with other possible initiatives (3,4,5,6,7,9,10).*

Given the high number of uncertainties, a typical and coherent set of activities is needed for the transformation of the problem/opportunity into desired outcomes and an effective collaboration of partners. Typical, because these activities intervene in actual views of people leading to advancing insights concerning vitality of the initiative. Coherent, because the set of activities should fit the repeating class of inception problems concerning ‘actions of entering upon some undertaking, process, or stage of existence; origination, beginning, commencement’ as stated by the Oxford Dictionary explaining the meaning of inception. Adding these elements to the description, gives the following definition of the Inception phase:

*The Inception phase is the phase in which an arrangement of interventions is used by a group to transform a problem or opportunity into shared ideas about what solution to produce and about how to organize the complementary partners, who advance in seeing the viability of the initiative compared to other initiatives (2,3,4,5,6,7,8,9,10).*

The above mentioned adds the next part of the task description for the Inception process management (44,60):

Convince the present parties that the first challenge is to transform the opportunity or problem into shared ideas about what to produce and how to organize the collaboration. (And convince them also that you know how...)

Part two of the task description of Inception management.

Having the objectives and the definition, the next important part of the design is answering the question what the Inception phase must produce.

### **5.3.5 Inception Phase delivers the viability state of the initiative**

As argued, the objectives of the Inception phase are to minimize the perceptual distance between participants and to maximize the chance on success with low toll. What must be produced to underpin these objectives?

Minimizing perceptual distance asks for deliverables which are synchronized and concrete. Synchronized means perception by participants of the status of the MPI at the same time, concrete means understanding the status with a minimum of misinterpretation. Synchronization takes place by continuous actualization of the viability components for example in a narrative with the enriched descriptions of ideas as concrete as possible. At the end of the Inception phase these synchronized ideas form the input for the decision at the Idea gate.

Maximizing chance on success asks for deliverables which address those items that are precursors for the success of the MPI and delivery as efficient as possible. With low

toll means mainly cost for hours, for example meeting rooms and IT-services in parent organizations and (almost) no expenses for consultants and other external experts.

The above-mentioned starting points are operationalized in deliverables which makes understanding of viability possible. At the end of the Inception phase the initiative is granted to carry on proofing itself, based upon the constructed viability state. As defined in table 5.2 the following deliverables represent viability:

a) support in parent organizations, b) an idea with certain characteristics, c) fit with (personal) objectives, d) cooperation and e) coordination next phase(s), f) partitioning of work and g) specialized tasks for integrating in parent organizations.

The next part presents these deliverables in more detail, operationalized in measures. These measures make it possible to assess the viability. The scores express 'Holds essential information': 1) strongly disagree, 2) disagree, 3) agree nor disagree, 4) agree, 5) strongly agree, expressing the quality of the components on a moment of their consolidation.

*Ad a) Support* as deliverable supposes a person or group in the parent organizations allows and helps the initiative to go on. Viable means this person has the power to do so, as depicted from the delegation of authority scheme, for example to prioritize resources. But also, power as ability to act as a launching customer in the future or to involve important persons. The role describes the contribution that the supporter makes by picking up a clear stimulating set of activities (a role) in the initiative for example as sponsor, fellow initiator or helping gate keeper. These power and role factors help to enter a next phase with confidence for example by passing an Idea Gate in the protocols of parent organizations (20). So, support emerges in these measures, to be assessed at the Idea gate.

**Table 5.4.** Assessing the support.

Viable support					
Power position	1	2	3	4	5
Stimulating role	1	2	3	4	5

*Ad b) The idea* as deliverable, with a form being a drawing, a narrative, a mock-up, a protocept or Cross Boundary Object (14), is the embryonal solution for a future product or service.

Concretization means that in any case parties share concrete ideas about the kind of technology, fit with user values and performance requirements (15,16). Also, concretizations as measures for risks, view on time to market and approach for knowledge unknowns are useful (12) to understand viability. It helps when an attraction is formulated, a unique characteristic such as '*glue does not rust*' (23). So, building up the viability while the MPI advances, the idea emerges with several characteristics, all adding to this component of viability.

**Table 5.5.** Assessing the Idea.

Necessary viable characteristics of the Idea						Preferable viable characteristics of the Idea					
About technology	1	2	3	4	5	About attraction	1	2	3	4	5
About fit with user values	1	2	3	4	5	About time to market	1	2	3	4	5
About performance requirements	1	2	3	4	5	About knowledge unknowns	1	2	3	4	5
About short- and long-term risks	1	2	3	4	5	About form	1	2	3	4	5

*Ad c) Fit with (personal) objectives* expresses the displayed link between the (characteristics) of the idea and the objectives of the participants.

Operationalization shows awareness of the admission criteria to the formal or informal portfolios of the parent organizations for development activities (22). This expresses the short-term objective: to pass the Idea gate or other more informal barriers. The second fit concerns the explanation of the value of the (characteristics of) the idea for the more strategic intentions of the parent organization for the long run. This leads to two measures:

**Table 5.6.** Assessing the fit of objectives.

Viable fit with (personal) objectives					
With admission criteria	1	2	3	4	5
With long term intentions	1	2	3	4	5

*Ad d) The cooperation in the next phase(s)* is the description of joint pursuit of agreed-on deliverables in a manner corresponding to a shared understanding about contributions and payoffs.

The way contribution is operationalized asks for concretization of the strengths of participants (1,11), of the effort of staff allocation (17) and of the typical cooperative style (18). The assessment at the end of the Inception phase will express the satisfaction of the ratio between the foreseen contribution by and the payoff for the different parties (59).

Strengths are the organizational skills that a party has built up and add value for the MPI. They refer to all kinds of aspects which the MPI needs and the other partners lack, such as market entrance, test facilities or production equipment. A new strength can grow within the developing MPI. The second factor, effort of staff allocation, expresses the quality ('boundary crossers') and quantity of personnel who will contribute to the execution of work packages. It is about hours which are really allocated, not only on paper. An implicit quality of allocated staff is the right motivation to contribute to an MPI-context with all its ambiguities. The last measure for cooperation is the behavior necessary in inter-organizational cooperation: a style that keeps interests of each partner in mind, uses rich communication tools, accepts the differences in routines, takes responsibility for partners and so on. So, in measurable terms, cooperation concerns three measures:

**Table 5.7.** Assessing the cooperation to come.

Viable cooperation					
Input of strengths	1	2	3	4	5
Input of staff	1	2	3	4	5
Ability for collaborative style	1	2	3	4	5

*Ad e) The coordination of the next phase(s)* as deliverable is the description of the deliberate and orderly alignment or adjustment of partners' actions to achieve jointly determined deliverables (11).

Concretization focusses on creating structures and communication (routines) as well planning. This is a balancing act between making agreements and holding flexibility which is important to maneuver. Neglected coordination gives room to mistrust and leads to power games, while too much coordination – formalizing rules of engagement - triggers the crowding out mechanism that diminishes the power of informal expectations and adjoining behavior.

Structures are operationalized by allocation of work to persons and defining responsibilities, including (future) ownership. If convenient, juridical constructions such as joint ventures and knowledge transfer are part of this ownership (13). Communication is necessary to compensate splitting up work and stay synchronized (61) in the learning history of the emerging viability components. Planning concerns priority for interventions, horizons to aim at and parallel processing of interventions. Thus, assessment of viability of coordination concerns:

**Table 5.8.** Assessing the coordination to come.

Viable coordination					
Level of structuring	1	2	3	4	5
Presence of communication routines	1	2	3	4	5
Clearness of planning	1	2	3	4	5

*Ad f) The approach for partitioning of work* is reported as the argued division of activities (19) in architectural and/or in modular layout in the next phase(s).

Architectural work division puts activities together which emphasizes the consequences for the interfaces of the parts of the product/service, such as process control or design. Modular layout of activities concerns mainly the content of the parts, such as work packages per theme as finance or certification. So, it helps viability when the approach for work partitioning is clear, especially in combination with cooperation and coordination.

**Table 5.9.** Assessing the partitioning of work.

Viable partitioning of work					
Architectural work packages	1	2	3	4	5
Modular work packages	1	2	3	4	5

*Ad g) The integration with parent organizations* is the arrangement for horizontal and vertical representation and communication by specialized persons.

This component of viability emerges scarcely from literature. A plausible explanation is, that this component is seen as part of coordination agreements. Arranging this well is logical in the light of literature about communication with several bosses, building relationships, dual identification problems, clear task division and allocation to suited persons. Some authors (e.g., Aalbers, 2016, Hofman, Halman & Song, 2017) state it is one of the success factors to organize the flow between the MPI and persons who have no operational responsibility to initiate yet are important for MPI such as sponsors, (future) shareholders or financial reports. This need is amplified by incidents in practice where line managers (the functional managers of team members in the MPI) start to behave as principles, only the financing party is reported to or individuals in parent organizations use by-passes for cherry picking. Therefore, explicit arrangements, as expressed with this component need to be part of the viability outcome. In the interaction with sponsors or (future) shareholders it is important to discuss only go-no go issues because this makes these persons grow in their roles instead of becoming an informal co-worker (20). So, it fosters also organizational support. It is important to share learnings or consult (informally) in more horizontally arranged relations. The specialization of these contacts in a few hands helps in building up trust and relationships (21).

**Table 5.10.** Assessing integration with parent organizations.

Viable integration with parent organizations					
Continuity in personal relationships established	1	2	3	4	5

Concluding this part of the design leads to a piece of the task description for the Inception process management.

Convince the present parties to assess the future viability of the initiative by the seven components, optimizing the chance on success and preventing waste of resources.

Part four of the task description of Inception process management.

At the end of the Inception phase, parties assess at 'the Idea gate' the viability state of the initiative is clear enough to continue with each other (6) yes or no. If yes, they probably start preparations to formalize the initiative as partners.



### 5.3.6 Intervention Box as tool for clustering interventions<sup>2</sup>

The person(s) with responsibility for the start of MPI's should have general management skills, such as planning, description of ideas, formulation of decisions, chairing meetings etc. Yet these necessary abilities are not part of this study which aims at a subset of interventions, specifically for starting multi-party initiatives (1). To deliver the mentioned viable outcome of paragraph 5.3.5, the viability components become enriched by interventions which produce advanced insights, synchronized in a consolidation (36,45): the viability state. This consolidation forms the input again for the next interventions which take care further enrichment (figure 5.3).

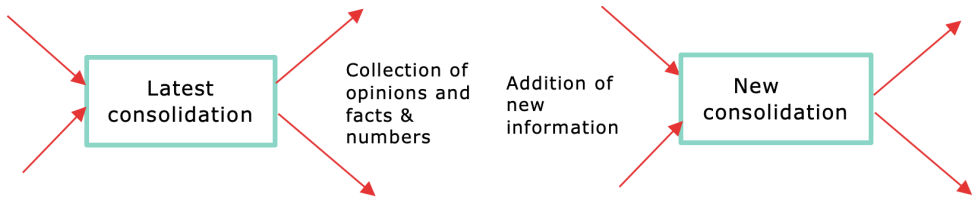


Figure 5.3. 3 Enrichment steps.

Thanks to the cross-boundary theory, it is user-friendly to cluster the interventions based on type of work and on contribution to viability (36, 44). Looking at the type of work, five clusters (28,43, 51) are used:

1. initiating by looking for partners, inviting them and organization of start-meetings (40,41,42)
2. identification of partners by exposing other's qualities and concluding about the fit (23, 24, 40, 48)
3. exchanging aspects relevant for the management of standards, know-how transfer and coordination structures (26, 27, 31, 36, 39, 50, 52)
4. reflecting about use of differences/similarities as sources for new perspectives on key-issues (25, 26, 45).
5. conversion in common work packages and organizational agreements for follow-up (45)

<sup>2</sup> The word intervention is used instead of activity because: 1) the definition implies also the presence of a working mechanism that connects the intervention with the outcome in this context ( $I > M > O$ ) and 2) mostly the intervention is used to change the current situation or view in a desired one, which is close to the original meaning of intervention

**Table 5.11.** Definitions of grouping of interventions derived from literature.

Direct intervention (In Inception phase)	An activity which describes what people do to contribute to the development of the criteria of viability (Walter). It is a designed configuration of a verb and a generative mechanism (Andriessen & van Aken, 2015)
Indirect intervention in the Inception phase	An activity which describes what people do to help to solve a (potential) problem in the execution of direct activities (Andriessen & van Aken, 2015)
Initiation	Set of direct activities for nomination, first meetings, introduction (Walter)
Identification	Set of direct activities to understand each other and legitimize co-existence in a MPI (Akkerman & Bakker, 2012)
Exchanging	Set of direct activities to routinize communication, handling the boundary object and creating transparency (Akkerman & Bakker, 2012)
Reflection	Set of direct activities to create individual and common perspectives and potential (Akkerman & Bakker, 2012)
Conversion	Set of direct activities to crystallize entities, work packages, recognizing shared challenges, accepting several agenda's (Akkerman & Bakker, 2012)

For combining these clusters of interventions with the various viability components an Intervention Box (figure 5.4) is designed to help the practitioner to choose interventions (43,46) depending on the priorities for enrichment on a certain moment in the MPI. Normally, initiating interventions are to be done first (50) and conversion interventions in a later stage, yet the sequence of interventions is not linear over MPI's. For example, it is possible when the current participants reflect on the product/service, a new party is needed. Thus, initiation or identification is on the agenda again. In another situation it is possible parties have tight ideas about future organization which means conversion interventions will be on the agenda early in the Inception phase. This need for flexibility within the same context is illustrated in the next analogy.

Suppose you are a young man looking for a girlfriend and you think the disco is the best place to get connected with a girl. So, the first evening when you enter, you notice immediately less girls are present than you've expected and most of them are part of a night-out with colleagues. The second evening, a lot of potential girlfriends are around but the music is too loud therefore hardly possible to chat, which is one of your strong points. The third evening, the disco plays the exact music for your moves yet there is no girlfriend around who could introduce you to one of the unknown girls. The fourth evening, you enter the disco with a bunch of your friends who announce they all want to help you to find a nice girlfriend, but you know that this is more a threat than a chance. The fifth evening ... We see it is not wise to use the same repeating protocol every evening because the situation varies although the context stays the same: a boy wants to find a girlfriend in a disco. But a box with the possible interventions fitting the possible challenges for this repeating context will be helpful for the young man.

**Box 5.1** Example of a non-linear management process according to Weggeman

Despite this non-linear character, in a regular MPI trespassing from Opportunity Scouting into Inception, the first clusters of interventions must concern enrichment of the Support,

the Idea and the Fit with objectives (37, 44, 50) since it creates a sense of continuity leading to willingness to discuss the other viability components.

To help users (44, 46), the Intervention Box is proposed which categorizes interventions (figure 5.4). The basis for the design is that interventions are ordered in sections corresponding with two axes. The first axe concerns the clusters the intervention belongs to: initiation, identification, exchange, reflection and conversion (1 – 5).

The second axe represents the viability components the intervention contributes to: support, idea, fit with objectives, cooperation, coordination, partitioning of work and the integration with parent organizations (A -G). These sections A1 to G5 are filled with direct interventions, for example box 4B (Reflection/Idea) *'make sure that the characteristics of the idea are also formulated by users because a meaningful connection with people's lives leads to commercial successes.*

Two groups of interventions form their own section. One section contains interventions with a general character which helps to develop the overall view on the process, for example *'use a set of initiating activities so a shared interest in relevant persons is ignited leading to their support for follow up activities'*. The other section contains the indirect interventions which help direct interventions to be executed more efficiently, for example *'organize learnings through accessible files because this facilitates the exchange leading to advancing insights for all.'*

This grouping of the interventions is represented by the Intervention Box of figure 5.4.

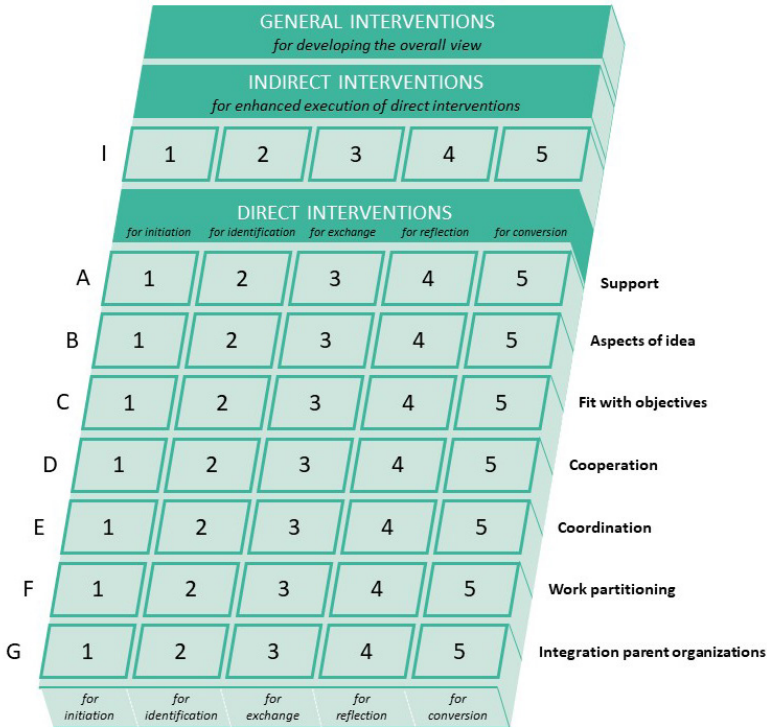


Figure 5.4. The intervention box for the Inception phase.

The Intervention Box adds the next sentences of task description for process management:

Select those sections in the intervention box which are linked with those enriched components in the next process step(s). The choice depends on your need: creation of a process approach (general), elaboration of a specific action/outcome combination (direct) or a helpful method (indirect).

Part five of the task description of Inception process management

Now the context, the definition, the objectives, the outcome and the intervention box for the Inception phase are clear. The next part of the approach concerns the interventions or in other words, the action repertoire. This repertoire is presented in the next paragraph 5.3.7 in line with the intervention box sections.

### 5.3.7 Interventions of IPA in the sections of the Intervention Box

In these paragraphs the interventions listed in par. 5.2 are allocated to the sections of the Intervention Box. Allocation is based on two criteria: the specific cluster of work which the intervention belongs to as well the contribution to one of the seven viability components. So, the user asks himself continuously three questions:

- Do we have the latest consolidation of the seven viability components available as starting point?

For example, the latest meeting was about market aspects of the idea (section B4: Idea/Reflection) and the contributing strengths of the present parties (section D2: Cooperation/Identification). This led to a new actual description of the idea and an actual view on the possible contribution of partners in the upcoming cooperation.

- Which of the seven viability components do we need to enrich in the next step(s)?  
For example, we assess that it is important to enrich the contribution of partners further (component D: cooperation) and that we need to explore the fit of the consolidation of the market aspects with the objectives of the participants (component C: fit with objectives).

- Do we need initiation, identification, exchanging, reflection or conversion interventions?

- For our example, we choose for enrichment of component cooperation 'deliver the idea as a demonstrator including statements of performance to add more viability for the idea' (subset 4: reflection) and for enrichment of component fit with objectives 'participants understand each other's gains and pains to also progress in difficult times' (subset 3: exchange).

By doing so, (part of) the agenda in the next step is done in section D4 and in section C3.

Two important decisions are made for the presentation of the Intervention Box to maintain the readability.

Firstly, all the validated interventions (32, 33, 66, 67, 69) were presented in CIMO-logic in par. 5.2. Since it is clear the interventions are all specific for the context of starting MPI's, the Inception phase, the C (Context) is left out from the formulation of the interventions in the design. Furthermore, the M (mechanism) is not presented since this link between the intervention and the outcome is already explained in chapters two and four and presented in the list of 5.2. This leaving out of the validated 'C and M' makes the representation of the intervention/outcome combination more user-friendly. It helps to navigate through the sections of interventions.

Secondly, in the next paragraphs the sections with general, direct and indirect interventions are presented. However, the great number of interventions hinders the readability of the sections in plain text. So, to present the design of the Intervention Box in a more reader-friendly way every one section of the box is described and illustrated

with only one fitting intervention. The Intervention Box with all allocated interventions is presented in appendix M. To capture this problem of the number of interventions an automated Navigation Tool is developed which makes it possible to zap through the Intervention Box and skip unnecessary interventions. For the navigation tool see paragraph 5.4.5. and appendix Q.

## The section general interventions in the Intervention Box

GENERAL INTERVENTIONS  
*for developing the overall view*

General interventions for the general process design, helping to bind parties to a common approach and reducing uncertainties without irrevocable obligations.

5

Example:

Give Support of parent organizations, Idea description and Fit with (personal) objectives emphasis in the beginning, leading to motivation to develop ideas about Cooperation, Coordination, Partitioning of work and Integration with parent organizations.

The general interventions underpin the following part of the task description of process management.

Use general interventions (36,43) to help you and other key-parties to start MPI by giving it a general process design, binding the parties in a common approach (46, 51) and reducing uncertainties without irrevocable obligations (28, 30, 41,43). You assess the collaboration readiness of parties for the amount and detail of application of interventions. You prioritize general interventions above detailed enrichment of viability components.

Part six of the task description of Inception process management

## The sections with direct interventions in the Intervention Box

Direct interventions minimize the perceptual distance between potential partners and maximize the chance for success with low toll for participants. By applying these interventions users enrich innovative thoughts about products or services and the multi-party collaboration which emerges. This adds to the task description:

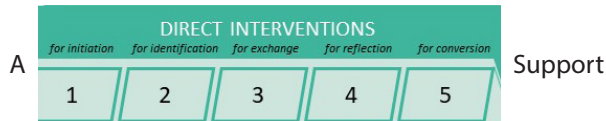
Choose one or more interventions for the next process step(s) to enrich one or more of the viability components.

Ask yourself two questions: what kind of component do I/we want to enrich and what kind of intervention do I/we need (43, 60)? You choose intervention/outcome combinations before each process step (44) given your assessment of the current viability state. You make sure these interventions are executed in a group consisting of persons from the participating organizations due to the cross-boundary character of the initiative. Depending on the number of persons some interventions can be done parallel in two or more groups. After each intervention you assure the outcome is consolidated so parties get synchronized (45, 51, 61, 62) even when the same intervention must be done again.

Part seven of the task description of Inception process management

Users have five clusters of interventions to their disposal: initiating the initiative, identifying the parties, exchanging routines, reflecting about potential and conversion in a more concrete entity. These interventions in the clusters attribute to the seven components of viability and are listed corresponding to the sections in the Intervention Box.

### The sections with interventions for Support



#### Section 1A: Initiation > Support

Direct interventions for nomination, first meetings, introduction (Cluster Initiation)

Example:

Show how the idea fits the shared processes of invitees in the invitation leading to broader support

#### Section 2A: Identification > Support

Direct interventions to understand each other and legitimize co-existence in a MPI (Cluster Identification)

Example:

Discuss differences, similarities and consequences with parties leading to legitimation of collaboration

#### Section 3A: Exchange > Support

Direct interventions to routinize communication, handling the boundary object and creating transparency (Cluster Exchange)

Example:

Allocate work based on the future roles leading to long term support

#### **Section 4A: Reflection > Support**

Direct interventions to create individual and common perspectives and potentials (Cluster reflection)

Example:

Make sure the characteristics of the Idea serve the objectives of the parent organizations leading to support for the MPI

#### **Section 5A: Conversion > Support**

Direct interventions to crystallize entities, work packages, recognizing shared challenges, accepting several agenda's (Cluster Conversion)

Example:

Demand partner organizations are very active to contribute to finances, machines, room and/or staff leading to understand the level of support

### **The sections with interventions for (the aspects of) the Idea**



#### **Section 1B: Initiation > Idea**

Direct interventions for nomination, first meetings, introduction (Cluster Initiation)

Example

Invite users in an early stage leading to participants being realistic about the idea

#### **Section 2B: Identification > Idea**

Direct interventions to understand each other and legitimize co-existence in a MPI (Cluster Identification)

Example

Formulate explicitly why collaboration is worthwhile leading to a resource-based, transaction-cost based or other added value-based (for example. higher earnings, larger market share, longer survival) enrichment process.

#### **Section 3B: Exchange > Idea**

Direct interventions to routinize communication, handling the boundary object and creating transparency (Cluster Exchange)

Example

Make sure which idea to work on > system, process or product leading to jointly reasoning from whole to parts



**Section 4B: Reflection > Idea**

Direct interventions to create individual and common perspectives and potentials (Cluster reflection)

Example

Use boundary objects as prototyping technique to bridge knowledge boundaries

**Section 5B: Conversion > Idea**

Direct interventions to crystallize entities, work packages, recognizing shared challenges, accepting several agenda's (Cluster Conversion)

Example

Embed ideas in current practices because this facilitates operationalization leading to low-cost introduction

**The sections with interventions for Fit with Objectives**



**Section 1C: Initiation> Fit with (personal) objectives**

Direct interventions for nomination, first meetings, introduction (Cluster Initiation)

Example

Invite organizations to enter the MPI to focus on efficiency benefits

**Section 2C: Identification > Fit with (personal) objectives**

Direct interventions to understand each other and legitimize co-existence in a MPI (Cluster Identification)

Example

Put own objectives or problems on the agenda of start-up meeting leading to start topics about conditions for participation and mutual views of participants' contributions

**Section 3C: Exchange > Fit with (personal) objectives**

Direct interventions to routinize communication, handling the boundary object and creating transparency (Cluster Exchange)

Example

Participants understand each other's gains and pains to also progress in difficult times

**Section 4C: Reflection > Fit with (personal) objectives**

Direct interventions to create individual and common perspectives and potentials (Cluster reflection)

Example

Let partners understand their overlap in objectives which almost makes initiation and identification redundant

### **Section 5C: Conversion > Fit with (personal) objectives**

Direct interventions to crystallize entities, work packages, recognizing shared challenges, accepting several agenda's (Cluster Conversion)

Example

Describe a common market leading to common interest

## **The sections with interventions for Cooperation**



5

### **Section 1D: Initiation > Cooperation**

Direct interventions for nomination, first meetings, introduction (Cluster Initiation)

Example

Invite device builders and end-users with pre-competitive interests for the same market

### **Section 2D: Identification > Cooperation**

Direct interventions to understand each other and legitimize co-existence in a MPI (Cluster Identification)

Example

Make an inventory of competences and needs of parties leading to good arrangements to cooperate

### **Section 3D: Exchange > Cooperation**

Direct interventions to routinize communication, handling the boundary object and creating transparency (Cluster Exchange)

Example

Make the availability of staff, strengths and typical styles clear to realistically cooperate in activities

### **Section 4D: Reflection > Cooperation**

Direct interventions to create individual and common perspectives and potentials (Cluster reflection)

Example

Deploy parties' capacities for the objectives of other participants to self-reinforce collaboration effects

### Section 5D: Conversion > Cooperation

Direct interventions to crystallize entities, work packages, recognizing shared challenges, accepting several agenda's (Cluster Conversion)

Example

Take participants away from their normal job so they can work dedicated on the assignment to distract less

### The sections with interventions for Coordination



### Section 1E: Initiation > Coordination

Direct interventions for nomination, first meetings, introduction (Cluster Initiation)

Example

Immediately arrange coordination of change - and conflict management as well in decision making leading to growth of trust

### Section 2E: Identification > Coordination

Direct interventions to understand each other and legitimize co-existence in a MPI (Cluster Identification)

Example

Select key persons with less strict ties in the parent organizations to hinder dependencies for the MPI less

### Section 3E: Exchange > Coordination

Direct interventions to routinize communication, handling the boundary object and creating transparency (Cluster Exchange)

Example

Agree about an open or layered exchange of knowledge (with discovery register) leading to a low level of coordination costs and to effective diffusion of knowledge (52)

This Intervention eight may have two options:

- a) Open exchange: in case of limited number of participants, big potential and new knowledge emerging from collaboration. If a patent by one inventor is problematic, co-ownership of patents is helpful as is the use of an Invention Register in Meeting. Also, an NDA can be added.
- b) Layered exchange: in case of many partners with partial work packages a common license scheme or cross licenses are useful (partners take a onetime license without royalties). Another possibility is the 'umbrella agreement' (use of knowledge till

the level needed, only during collaboration, perhaps with an obligation to return subsidies). Non-disclosure agreements for external parties.

#### **Section 4E: Reflection > Coordination**

Direct interventions to create individual and common perspectives and potentials (Cluster reflection)

Example

Work out formalized procedures (for problem solving, decision making, conflict resolution, performance evaluations) to collaborate in domains which were too sensitive or too risky

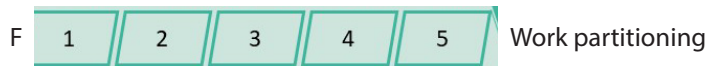
#### **Section 5E: Conversion > Coordination**

Direct interventions to crystallize entities, work packages, recognizing shared challenges, accepting several agenda's (Cluster Conversion)

Example

Try alliances with customer and/or suppliers to jointly develop products/technologies to innovate and to remain competitive

### **The sections with interventions for Partitioning of work**



#### **Section 1F: Initiation > Partitioning of work**

Direct interventions for nomination, first meetings, introduction (Cluster Initiation)

Example

Make sure to synchronize actions of partners leading continuously to joint starting points

#### **Section 2F: Identification > Partitioning of work**

Direct interventions to understand each other and legitimize co-existence in a MPI (Cluster Identification)

Example

Agree on modular work packages for future deliverables leading to less coordination effort

#### **Section 3F: Exchange > Partitioning of work**

Direct interventions to routinize communication, handling the boundary object and creating transparency (Cluster Exchange)

Example

Give the work to the best suited party even if it does not fit your own short-term interest to stay focused upon the result

**Section 4F: Reflection > Partitioning of work**

Direct interventions to create individual and common perspectives and potentials (Cluster reflection)

Example

Make work packages for the idea/CBO in order of materials > modules > panel > system > equipment leading to the least rework

**Section 5F: Conversion > Partitioning of work**

Direct interventions to crystallize entities, work packages, recognizing shared challenges, accepting several agenda's (Cluster Conversion)

Example

Transfer own work protocols to work packages and common tools to all participants because it supports action and interaction leading to bigger participants' ties

**The sections with interventions for Integration in parent organisations**



**Section 1G: Initiation > Specialized tasks for integration in parent organizations**

Direct interventions for nomination, first meetings, introduction (Cluster Initiation)

No interventions formulated here due to this very early stadium.

**Section 2G: Identification > Specialized tasks for integration in parent organizations**

Direct interventions to understand each other and legitimize co-existence in a MPI (Cluster Identification)

Example

Organize decision making with parent organizations only about main issues to support picking up the role of stakeholder

**Section 3G: Exchange > Specialized tasks for integration in parent organizations**

Direct interventions to routinize communication, handling the boundary object and creating transparency (Cluster Exchange)

Example

Use confirmation, selection, transformation, toleration or non-confirmation as tactics to fit in the parent organizations

**Section 4G: Reflection > Specialized tasks for integration in parent organizations**

Direct interventions to create individual and common perspectives and potentials (Cluster reflection)

Example

Think about how to integrate independent MPI operating and communication with parent organizations leading to best progress

**Section 5G: Conversion > Specialized tasks for integration in parent organizations**

Direct interventions to crystallize entities, work packages, recognizing shared challenges, accepting several agenda's (Cluster Conversion)

Example

Deliver a stage gate document for 'the Idea gate' with the elaborated viability criteria so perceptual distance is minimized between supporters becoming aware of the viability of the initiative at the end of the Inception phase leading to a shared go or no-go decision for continuation

**The sections with indirect interventions in the Intervention Box**

Indirect interventions help in the execution of direct interventions. When integrated in the inception assignment this adds the next part to the task description:

Use indirect interventions to prevent rigidity in adoption of roles, procedures, interfaces and responses to ad hoc problems (54, 58, 64) or to keep bargaining positions symmetrically, given the diversity of parties (55, 56).

Part eight of the task description of Inception process management

Because indirect interventions link with certain direct interventions (64) they are listed together with those clusters.

**Section I.1: helping direct initiation interventions**

Example

Give priority to low-risk activities leading to positive interaction

**Section I.2: helping direct identification interventions**

Example

Use methods as mental simulation or benefit comparison to support for collaboration with these parties

### Section I.3: helping direct exchange interventions

Example

Promote initial face to face contacts and shared cyber spaces leading to openness

### Section I.4: helping direct reflection interventions

Example

Work with a visualized idea leading to synchronization and an equal starting point for next activities

### Section I.5: helping direct conversion interventions

Example

Formulate the relation of objectives and the idea of the MPI in the Intention Agreement to take each other into account

## 5.4 The application of the Inception Phase Approach

### 5.4.1 IP-Approach differentiations

The combination of available time (the speed set for the process) and number of participants (toleration for number of persons/parties) assessed by the initiator(s), gives four possible roads as presented in table 5.12 for the Inception phase: the regular lane, the fast lane, the circus lane and the cloister lane.

**Table 5.12.** Typification of Inception phases.

Time available	Toleration for # persons	
	+	-
	+	Regular lane
-	Circus lane	Fast lane

### The regular lane

With no constraints in time or in number of parties to invite, this lane enables creativity and full execution of the Inception phase interventions, minimizing risks for perceptual distance and maximizing chance on success by high viability. For example, this could be the case when new opportunities as a nutrition ingredient or a battery for ships which would fit in more applications, are available. At the same time the initiative should stay critical: are there really no constraints, is it wise to cut some sub-processes and how many options may stay open until the Idea gate? Initiation, identification, exchange, reflection

<sup>3</sup> Cloister and Circus for describing familiar kind of processes were used by van der Heiden & Spaans, 1993

interventions for support development, fit with (personal) objectives, characteristics of the idea and coordination get full attention from the beginning creating motivation for follow up. Divergence can be broad and options can be worked out in parallel but still, the management of this road should converge once in a while and maybe even propose decisions before the idea gate is reached. So, the interventions in the regular lane could be (a selection of) all general, direct and indirect interventions. With no limitations for use of interventions, because no restrictions are present for the time and number of parties, selection of intervention would cover ideally a diagonal through the Intervention Box as indicated in table 5.11

## Direct interventions

Initiation	Identification	Exchanging	Reflection	Conversation	
●	●				Support of partners
●	●	●	●		Idea with 6 characteristics
●	●	●	●		Fit of objectives
	●	●	●	●	Cooperation next phases
		●	●	●	Coordination next phases
			●	●	Approach for partitioning work for development phase
				●	Specialized tasks for communication with parents organizations

**Table 5.13.** Emphasis in direct interventions in the Regular Lane.

## The fast lane

This lane has not much time available and a very limited number of persons gets access. This is mostly the case when a threat or short opportunity window in the market makes development speed necessary (*'mouth cap for new world virus'*). These necessary limitations allow a higher risk profile. To minimize the perceptual distance between potential partners is a more important objective than to maximize the chance for success with low toll for participants, because these circumstances allow for higher costs in the business case.

Time and capacity lack for all enrichment interventions for support, fit with objectives, coordination and specialized communication leading to a profile with support, direction, operational and orphan risks. The expectation is these risks will have less impact because (top)management of parent organizations is (assumed to be) on board and will appreciate short communication lines and toughness in interventions, mitigating some risk.

In this scenario a select set of interventions is chosen before entering the concept phase: mainly initiation/support, reflection/idea, identification/fit of objectives, identi-



fication/cooperation, exchange/cooperation and conversion/cooperation, exchange coordination and exchange/partitioning of work. This choice diminishes above all the target group risk, the relational risk and the composability risk. Special attention is needed for interventions for cooperation since relational quality is very important when time consuming coordination is not possible.

The necessary interventions in the Fast Lane concern:

*General interventions for the Fast Lane:*

- propose the use of an Inception phase leading to a small cognitive bias gap in participants
- check the index of the first decision document if the seven viability components are present because this makes them explicit leading to better assessment of viability
- propose common measures for viability (power and actual role for support of partners, short term and long-term benefits for fit of objectives, market, performance requirements, technology, attraction and form for the Idea, staff, strength and style for cooperation, structure, planning and routines for coordination, modular and architectural for partitioning of work) to support MPI
- begin to work on immediate trust leading to positive (inter-organizational) collaborative behavior (see for direct interventions concerning trust 3c.1, 2d.4, 2d.6, 1e.1, 1e.2, 3e.1, 3e.8, 4e.4, I1.1, I1.5)
- introduce a transaction style based on communal sharing and market pricing to share objectives, hazards and benefits build on a non-equity relationship and priced inputs
- reflect on Idea description and identification/exchange of Cooperation emphasis in the beginning leading to speed and risk taking on Support, Fit of Objectives, Coordination and Communication with parent organizations

## Direct interventions

Initiation	Identification	Exchanging	Reflection	Conversion	
1, 2, 5	2,4,8	1		1	Support of partners ( <i>Tolerated risk</i> )
1	4	1	1, 5, 6,7,9	1	Idea with 6 characteristics
1	1,2,3,4	1			Fit with objectives ( <i>Tolerated Risk</i> )
1, 3	1,2,4,8,9	1, 5, 6,7	1	2, 3	Cooperation next phases
1,2	2	1, 5, 9	1, 4,	4, 6	Coordination next phases ( <i>Tolerated Risk</i> )
			1, 2, 3	1	Approach for partitioning work for development phase
				1	Specialized tasks for communication with parents organizations ( <i>Tolerated Risk</i> )

**Table 5.14.** Emphasis on direct interventions in the Fast Lane.

*Indirect interventions*

- have regular and systematic interaction using rich media ties to build up trust (initiation)
- make sure participants share a 'dream' or (identification)
- show a problem caused by an outside party leading to focus within the group (identification)
- promote (initial) face to face contacts and shared cyber spaces leading to openness (exchange)
- organize the learnings through accessible files leading to progressive insights for all (exchange)
- beware of longing for formalization and details leading to spending a lot of indirect hours (exchange)
- use boundary crossing activities leading to facilitation of mutual learning (general)

**The circus lane**

In the case of the circus lane there is not much time available, yet all persons/parties may perform with others 'in the public'. This is the case when the initiative must promote itself and wants to make the participants' organizations interested and proud. Arriving at the Idea or Concept gate is an orchestrated moment. This for example can be seen when - after the Inception phase - the concept phase ends with tendered contracts or local development companies' collaboration (*'from zero to 1500 public charging poles or 'thinking about solutions for traffic jams around our city'*) with nice photos in the newspaper. To minimize the perceptual distance between potential partners is a less important objective than to maximize the chance for success with low toll for participants. So, preparations need to be strict with optimization of exchange with all those parties. This asks for emphasis on interventions for initiation/support, conversion/support, identification/fit of objectives, initiation/idea, identification/cooperation, exchange/cooperation and exchange/coordination. This means support, directional, operational and orphan risks get the attention. Target group, relational and composability risks get noticed yet taken care of in next phases.

The necessary interventions in the circus lane concern:

*General interventions for the Circus Lane:*

- propose the use of an Inception phase leading to a small cognitive bias gap in participants
- check the index of the first decision document on presence of the seven viability components because this makes them explicit leading to better assessment of viability

- put the seven criteria of viability on the agenda of the Inception phase leading to a best viability assessment
- make an inventory of what is already available as input for or interpretation of the viability components leading to a shared view of (maybe different) starting points.
- propose common measures for viability (power of partners, short term benefits for fit of objectives, market, technology, form for the Idea, staff and style for cooperation, structure, planning and routines for coordination, modular and architectural for partitioning of work) to support MPI
- introduce a transaction style based on communal sharing and market pricing leading to sharing objectives, hazards and benefits build on a non-equity relationship and priced inputs
- give Support of parties, Fit with (personal) objectives and Coordination emphasis in the beginning leading to speed and risk taking on Idea description, Cooperation, Partitioning of work and Integration in parties.

## Direct interventions

Initiation	Identification	Exchange	Reflection	Conversion	
1, 4, 7, 9	2,3,5	3	3	1	Support of partners
1,2		1	1		Idea with 6 characteristics ( <i>Tolerated risk</i> )
2,	1,3,5	1		1	Fit with objectives
	2,5	3, 4	1	3	Cooperation next phases ( <i>Tolerated risk</i> )
2,3	1	1,2,3,4,5,7,10	1,3,5		Coordination next phases
1	2			1	Approach for partitioning work for development phase ( <i>Tolerated risk</i> )
	2	1	1	1,2	Specialized tasks for communication with parents organizations

**Table 5.15.** Emphasis on direct interventions in the Circus Lane.

## Indirect interventions

- use boundary crossing activities to facilitate mutual learning (general)
- use visualization, ethnography, collaborative sensemaking, assumption surfacing and field experiments to formulate objectives/ideas to leverage differences (initiation)
- give priority to low-risk activities leading to positive interaction (initiation)
- make sure participants share a 'dream' or (identification)
- introduce a rule everybody can step out without sanction to relax presence (exchange)
- install a learning attitude combined with a written learning history to share new discoveries and insights (exchange)

- work with a visualized idea leading to synchronization and an equal starting point for next activities (reflection)
- formally go/no-go at a kind of Idea gate (assumption: because this forces parties to consider their role seriously) leading to serious support

### **The cloister lane**

With no real deadlines the emphasis is on the process and outcome quality but with a very selected set of parties. This is helpful in politically driven initiatives (*'from kilo smasher to justified meat'*) and specific research initiatives (*'circular production process'* or *'climate tables'*). The creation of a shared idea and especially its characteristics is key before going into concept phases. To minimize the perceptual distance between potential partners is a more important objective than to maximize the chance for success with low toll for participants. Process management focusses on initiation, identification, exchange and reflection about support, as well identification, exchange and reflection about fit of objectives and idea. Of course, interventions for coordination, cooperation, work partition and communication lines are necessary yet can be taken care of at the moment they are needed in the follow up if a strong base is reached without risks in support, fit with (personal) objectives and (characteristics of) the idea. The necessary interventions in the cloister lane concern:

#### *General interventions for the Cloister Lane:*

- propose the use of an Inception phase leading to a small cognitive bias gap in participants and low risk profile for follow up
- check the index of the first decision document on presence of the seven viability components because this makes them explicit leading to better assessment of viability
- put the seven criteria of viability on the agenda of the Inception phase leading to a best viability assessment
- give Support of parent organizations, Fit with (personal) objectives and Idea description emphasis in the beginning to motivate idea development about Cooperation, Coordination, Partitioning of work and Communication with parent organizations
- propose common measures for viability (power and actual role for support of partners, short-term and long-term benefits for fit of objectives, market, performance requirements, technology, attraction and form for the Idea, staff, strength and style for cooperation, structure, planning and routines for coordination, modular and architectural for partitioning of work) leading to underpinned decision to continue MPI
- immediately build trust leading to positive (inter-organizational) collaborative behavior
- introduce a transaction style based upon communal sharing and market pricing to share objectives, hazards and benefits build on a non-equity relationship and priced inputs

- make an inventory of what is already available as input for interpretation of the viability components leading to a shared view of (maybe different) starting points.
- intervene on the level of objectives, idea, coordination, cooperation right from the start leading to durable agility in the collaborating parties

## Direct interventions

initiation	Identifi- cation	Exchan- ging	Refle- ction	Conver- sion	
1,2,3,5	1,2,3,4,6,9	1,3	1,2,3		Support of partners
1	1, 2, 3	2,3	1,2, 3, 6, 7,10, 11	2	Idea with 6 characteristics
2	1,3,4	1,2	1	1	Fit with objectives
4	1,3,	3, 6	1	1	Cooperation next phases <i>(Tolerated risk)</i>
		3, 6, 9	4	5	Coordination next phases <i>(Tolerated Risk)</i>
	2		3	1	Approach for partitioning work for development phase <i>(Tolerated risk)</i>
				1	Specialized tasks for communication with parents organizations <i>(Tolerated Risk)</i>

**Table 5.16.** Emphasis on interventions in the Cloister Lane.

### Indirect interventions

- use boundary crossing activities to facilitate mutual learning (general)
- use visualization, ethnography, collaborative sense making, assumption surfacing, field experiments to formulate objectives/ideas to leverage differences (initiation)
- give priority to low-risk activities leading to positive interaction (initiation)
- make sure participants share a 'dream' or (identification)
- introduce a rule everybody can step out without sanction to relax presence (exchange)
- install a learning attitude combined with a written learning history to share new discoveries and insights (exchange)
- work with a visualized idea leading to synchronization and an equal starting point for next activities (reflection)
- formally go/no-go at a kind of Idea gate (assumption: because this forces parties to consider their role seriously) leading to serious support

These four lanes describe the emphasis which is present in the assignment of those responsible for the process of the Inception phase. Because of the restrictions in time or parties, certain sections and interventions are preferable. Before every next process step, the latest consolidation shows the current state of viability development and risk profile of the MPI. Given this consolidation, responsible persons for the process must assess the situation before deciding which interventions from (other) sections may be still necessary.

### 5.4.2 Assessing risk profiles in application of IPA

The context of the front end is full of uncertainties, leading to coordination costs and waste of resources if not managed well. The best contribution of those responsible for the process design is reduction of these uncertainties, which may show up as risks during follow up. Application of IPA will help to keep the risk profile of the initiative as small as possible by anticipating on the following risks:

1. support risk: the will to provide resources proves to be low
2. direction risk: parties harvest mainly driven by own objectives
3. target group risk: users do not see a link to the idea with their lives
4. relational risk: parties avoid promises, claim too much, behave asymmetric
5. operational risk: unforeseen coordination costs/failures show up
6. composability risk: it becomes difficult to make changes in work packages
7. orphan risk: a parent organization becomes unaligned

The differentiations of the Inception phases for the Regular, Fast, Circular and Cloister lanes show different risk profiles. These risks may be necessary and the decision makers may be aware of them, thanks to the evaluation of the viability at the end of the Inception. Action can be taken to mitigate risks in a later stage of the MPI.

### 5.4.3 Practicing task description for applicants of IPA

To take care of the Inception phase, the task description of the user of IPA is build up in paragraph 5.3. Altogether it states:

*As the person(s) responsible for application of the Inception Phase Approach:*

1. Transform the given opportunity or problem into ideas shared by key-participants about what solution to produce and how to organize collaboration with two objectives in mind: to minimize the perceptual distance between potential partners and to maximize the chance for success with low toll for participants.
2. Help the present parties to assess future viability of the initiative by focusing on seven components (support, the idea, fit with (personal) objectives, cooperation and coordination in next phases, partition of work and integration with parent organizations).
3. Select those interventions in the Intervention Box which are linked with the viability components enriched in the next process step(s). The choice for interventions depends on your need:
  - a to create a process approach: general interventions.
  - b to elaborate on specific viability components: (subsets of) direct interventions.
  - c to be supported by a helpful method: indirect interventions.

*Ad a: Use general interventions to help you and other key-parties to start the MPI by giving it a general process design, binding the parties in a common approach and reducing uncertainties without irrevocable obligations. Assess collaboration readiness of parties. Give general interventions – to understand the common assignment - priority above detailed enrichment of viability components.*

*Ad b: Use direct interventions to enrich one or more viability components. Ask yourself two questions: what kind of intervention do I/we need and what kind of outcome do I/we want? Choose sections of intervention/outcome combinations before each process step with help of the Navigation Tool. Execute these interventions in a group consisting of persons from the present parties because of the cross-boundary character of the initiative. Depending on the number of persons and work partitioning, some interventions can be done parallel in two or more groups. After each intervention, assure the outcome is consolidated to synchronize parties.*

*Ad c: Use indirect interventions to facilitate direct interventions preventing rigidity in adoption of roles, procedures, interfaces and responses to ad hoc problems or to keep bargaining positions symmetrical, given the diversity of parties.*

The users of the above task description form the target group of this study. As elaborated in 3.8, Romme and Dimov (2021) propose the use of CAMO instead of CIMO. The A stands for agency. They argue the combination of action and actor should really generate the mechanism which produces the desired outcome. This notion was not object of this study. However, the task description itself defines a skill of the agent which will trigger the mechanisms. This forms a plausible concretization of the agency character of suited actors responsible for the Inception Phase. Also, the collaborative leadership style as skill seems to discriminate between a compliant or not compliant agent.

#### **5.4.4 Making an interim evaluation about the level of viability**

If a MPI has started already, it may need an interim evaluation. The design will help to understand and, if necessary, adjust the actual situation by applying the following actions:

*Evaluate the actual status quo by:*

Step 1) consolidate the MPI by collecting the latest results: decisions made, consolidations so far and intended actions.

Step 2) ask individual participating key persons of the MPI:

Step 2a) what is/are the actual objective(s) of their current activities and

Step 2b) desired outcomes of their current activities

*Afterwards compare with the viability checklist by*

Step 3a) Comparing the individual answers to question 2a) with the two objectives of the Inception phase:

- to minimize the perceptual distance<sup>4</sup> between potential partners  
Individual position by assessing score of key-players:  
totally not driven by 1 2 3 4 5 totally driven by this objective
- to maximize the chance for success with low toll for participants  
Individual position by assessing score of key-players:  
totally not driven by 1 2 3 4 5 totally driven by this objective

And step 3b) Comparing the individual answers to question 2b) with proposed outcomes of the Inception phase. Are respondents currently doing work for:

**a) Support:** person or group in the parent organizations allows/helps the initiative to go on. Assessed by the score on very small to very great:

Measures					
Power position	1	2	3	4	5
Stimulating role	1	2	3	4	5

**b) The idea and its characteristics:** the embryonal solution for a future business product or service (appearing as a drawing, a narrative, a mock-up, a concept etc... Assessed by the score on presence:

Necessary measures						Preferable measures					
About technology	1	2	3	4	5	About attraction	1	2	3	4	5
About fit with user values	1	2	3	4	5	About time to market	1	2	3	4	5
About performance requirements	1	2	3	4	5	About knowledge unknowns	1	2	3	4	5
About risks (short/long term)	1	2	3	4	5	About form	1	2	3	4	5

**c) Fit with objectives:** the link between the (characteristics) of the idea and the objectives of the participants. Assessed by the score on presence:

Measures					
With admission criteria	1	2	3	4	5
With long term intentions	1	2	3	4	5

<sup>4</sup> Defined as: the differences between collaborating parties concern the perception of key- issues in their relationship (v.d. Krift. 2019)



**d) *The cooperation in the next phase(s):*** the description of joint pursuit of agreed-on deliverables in a manner corresponding to a shared understanding about contributions and payoffs.

Assessed by the score on presence:

Measures					
Input of strengths	1	2	3	4	5
Input of staff	1	2	3	4	5
Ability for collaborative style	1	2	3	4	5

**e) *The coordination of the next phase(s):*** the description of the deliberate and orderly alignment or adjustment of partners' actions to achieve jointly determined deliverables.

Assessed by the score on presence:

Measures					
Level of structuring	1	2	3	4	5
Presence of communication routines	1	2	3	4	5
Clearness of planning	1	2	3	4	5

**f) *The approach for partitioning of work:*** the argued division of activities in architectural<sup>5</sup> or in modular<sup>6</sup> layout in the next phase(s).

Assessed by the score on presence:

Measures					
Architectural work packages	1	2	3	4	5
Modular work packages	1	2	3	4	5

**g) *Specialized tasks for the integration with parent organizations:*** the arrangement for horizontal and vertical representation and communication by specialized persons.

Assessed by the score on presence:

Measure					
Continuity in personal relationships established	1	2	3	4	5

Step 4. Assess based on answers to question 1 in a different color the actual situation in the MPI by scores on the same scales.

Step 5. Evaluate which components are over- or undervalued

<sup>5</sup> Architectural improvements of subsystems which have a significant impact on the existing interface standards and interactions with other subsystems

<sup>6</sup> Modular improvements of subsystems which leave the existing interface standards and interactions between the improved subsystems and other subsystems largely unchanged

And concluding, if necessary, which adjustments must be made for viability including necessary interventions

Step 6. Formulate the risk profile of the MPI and choose interventions to adjust for viability improvement.

Risk factor	Risk	
	High	Low
Support risk: the will to provide resources proves to be low		
Direction risk: parties harvest mainly driven by own objectives		
Target group risk: users do not see a link to the idea with their lives		
Relational risk: parties avoid promises, claim to much, behave asymmetric		
Operational risk: unforeseen coordination costs/failures show up		
Composability risk: it becomes difficult to make changes in work packages		
Orphan risk: a parent organization becomes unaligned		

Step 7. and adjust the actual situation with correct interventions, depending upon the character of the MPI: regular, fast, circus or cloister lane.

#### 5.4.5. Navigating through interventions by the user of IPA

The sections of the Intervention Box contain one hundred forty-seven interventions partitioned in general, direct and indirect ones. The user does not need them all at once, but at the same time it is impossible to overlook the sections and make a good choice. The number of interventions prompted to present the design of the sections of the Intervention Box with only one intervention as illustration. To overcome the problem of reading through the whole text over and over again, a Navigation Tool was developed. This tool guides the user to choose the right interventions for the next step(s) of the process in the Inception phase. The design of the Navigation Tool is based on questions from the user point of view such as 'Do you have a need for supplemental general interventions yes/no?' The automated tool itself is not part of the dissertational design, but already available at [www.Coenwalter.nl/navtool/](http://www.Coenwalter.nl/navtool/). The structure of the questions in the tool is built up as follows.

Step one: the first decision layer. After the introduction of the tool, the user of the Navigation Tool is challenged to check if he is really into the start of the Inception phase by questions about the context, he is in. If yes, he may proceed.

Step two checks the objectives of the process to start. If the objectives of the Inception phase are (becoming) relevant he may proceed to step three with questions leading him to sets of interventions of the regular, fast, circus or cloister lanes or to the rest of the general interventions.

These questions in step three concern the presence of limitations in time or in number of parties. The answers lead to differentiations: The Regular Lane (no limitations), the Fast Lane (time and parties' limitations), the Circus Lane (time limitation) and Cloister Lane (party limitation). These differentiations are explained in paragraph 5.4.1. Furthermore, the user encounters questions about special topics as trust: 'do you need specific interventions for trust, yes/no?' or as interim evaluation of an ongoing Inception phase. The last leads to a tool for evaluation check-up, to produce the actual risk profile of the initiative.

The tool allows for loops through these decision layers with iterations through general, direct and indirect interventions. Furthermore, every single screen has a button for the main menu allowing to click directly to subsets of relevant interventions concerning identification, exchange, reflection and conversion of viability components. The user iterates through these sections, choosing those interventions which suit specific need to enrich viability component(s) at that moment. Appendix R shows some print screens of the Navigation Tool.

## **5.5 Indications and contra-indications**

### *Indications*

As presented in chapter one and two, the IP-Approach should be used when multiple parties agree there is a – possibly recurring – problem/opportunity and understand they are unable to realize a individual solution. The solution could be found in several directions. No one is automatically responsible for a process design of the initiative. The parent organizations are independent in their routine operations and have their own idea- or product-portfolio. They allocate persons to the MPI to collaborate themselves in the inception phase and these persons work at the interface between the partnering organizations. So, not only an emerging collaboration of independent parties is necessary but also a formulation of a product/service opportunity.

### *Contra-indications*

- *When parties are not independent from each other.*

For example, if one party owns shares in one of the other parties, the degree of freedom of this party may be limited and relationships could become asymmetric due to this dependency. Preferences for technology or coordination may be also arranged in other loci of control than in the management of the MPI. This makes pre-sorting of ideas and directions in the MPI difficult, leading to spirals of distrust.

- *When suppliers have too much influence*

If a supplier demands contractual arrangements, and use of current technology, equipment of other resources are part of the problem. The starting MPI will receive an

informal supplier report and serves as a problem solver for this supplier rather to act as an innovative group.

- *When one of the parties wants to start contractual agreements*

One of the main advantages of going through the Inception phase is informal interaction and to possibly identify the other parties as real potential partners. One of the lessons learned is the future collaboration has so many uncertainties which start with juridical exclusions and obligations which leads to participants who negotiate (representatives) instead of collaborating (partners). This prohibits use of knowledge and personal attributions which are necessary for entrepreneurial contexts.

- *When one or more of the parties have a prescribing method for service or product development*

Many of the risks in multi-party collaboration origin from norms, beliefs and conventions which hinder boundary crossing developments. If - maybe solemnly for the Inception phase - the MPI may not deviate from these starting points of the parties, many problems with standards, reporting communication and progress will show up frustrating the participants. The MPI needs, at least until the idea gate, degrees of freedom to manage its own process.

- *When one of the parties does not want to decide about revenues*

Parties participate because they see benefits linked to their objectives. They know all the participants will do their fair share to invest before revenues can be divided. It is important to agree on some game rules of dividing the expected revenues to concretize the balance between 'pains and gains' for participants. If one of the parties does not agree, this means a possible conflict about the very reason to participate is pending continuously. This will hinder the growth of trust and collaboration.

- *When the number of participants is too high?*

Literature concerning organizational decision making, suggests a maximum of 8 persons for sound decision making. In this study the minimum number of parties in cases for collection of empirical data was three, but from the maximum number of parties was no topic found in literature nor did it emerge from the data. Some practical examples of delegated authorities to a steering committee or umbrella organizations exist in the case of existing collaboration. Yet in the context of the Inception phase, it is still an open question.



# CHAPTER 6

## TESTING THE DESIGN



## 6 Testing the design

### 6.1 Introduction

The outcomes of the literature study and the empirical studies about the very beginning of multi-party initiatives served as the input for the Inception Phase Approach (IPA), as presented in chapter 5.3 and 5.4. This chapter describes tests with IPA. Paragraph 6.2 explains the ins and outs of the alpha test as a validation by experts who belong to the target group of users. These expert panel members function, for example as project leader, innovative strategist, venture generator or design leader in MPI's. The scores and remarks by expert panel members are described in paragraphs 6.3 and 6.5. Paragraphs 6.4 and 6.6 reflect about the consequences of the alpha tests. Paragraph 6.7 shows the protocol of application of IPA in a starting MPI with reflections of this application in paragraph 6.8. and 6.9.

### 6.2 Expert panel protocol

Testing by an expert panel is called an alpha test to uncover flaws and inconsistencies in the design. The questions in this test focus on the validity of the Inception Phase Approach in practice. Would the application of the Inception Phase Approach facilitate the assignment to develop a process design for the beginning of MPI's? This validation of the Inception Phase Approach was arranged as follows:

#### *Selection of expert panel members*

Panel members were chosen from the professional network of the researcher and his colleagues. They belong to the target group of users of the approach, have experience with at least three multi-party initiatives, willing to participate and act as reflective practitioner. Their roles and experiences are described in appendix Q.

#### *Invitation of expert panel members*

Panel members were invited for an individual - mostly digital- meeting (see appendix P for the invitation). The restrictions because of the Coronavirus, prohibited a physical meeting with a group. Yet, on the upside, this way of meeting participants also mitigates the risk of 'group-think'. The sequence in two iterations with respectively seven and five persons allowed for two updates of IPA.

#### *Protocol*

Participants got the latest user-friendly version of the approach – a PowerPoint with voice-over (appendix Q) - by e-mail one week before the meeting. The testing was operationalized in seven questions about: a) definition of the Inception phase, b) the place in the development cycle, c) the objectives, d) the viability components, e) the navigation



through the sections with 147 interventions, f) the task description of persons responsible for the process design and g) the eagerness to use the approach (see appendix R).

In the (digital) meeting the agenda was as follows:

- the researcher presented the objective of the meeting and some research background. In the digital meetings by email, he answered questions of the panel member and sent or handed the agenda with seven questions and belonging clarifications. Afterwards the panel member scored the five-point scale himself. A high score means a high face validity. Respondents made additional written or typed remarks.
- question one: do you find the definition useful? Please give your score and remarks.
- question two: does the image clarify the place of the Inception phase in the development cycle of services/products? Please give your score and remarks.
- question three: do you think these objectives make the Inception phase worthwhile? Please give your score and remarks.
- question four: do you recognize the viability components of the MPI? Please give your score and remarks.
- question five: will the navigation-tool help to enhance the process design through the interventions? Please give your score and remarks.
- question six: do you find the task description of the responsible person for the process design appropriate? Please give your score and remarks.
- question seven: would you apply this approach to help the start of multi-party initiative in your next assignment? Please give your score and remarks.
- the researcher thanked and asked the panel member to hand over the form or to send the outcome by e-mail after checking his scores and remarks
- the researcher promised to send the overall outcome and his conclusions of round 1 and round 2 to inform panel members and give them the possibility to check and correct.

### **6.3 Alpha test 1 outcome**

Seven panel members scored the seven questions as presented in appendix R. The answers of these expert panel –members - depicted in appendix S - are elaborated beneath, respectively for round one (persons 1 – 7) and round two (persons 8 - 12).

Based upon the quantitative and qualitative remarks, to conclude the definition, the position in the development cycle, the objectives of the Inception phase, the importance of the viability components and the description of the task for somebody taking responsibility for the Inception phase is considered as very useful. All seven expert members state they will most certainly use the IP-Approach. Less enthusiasm was seen for the Navigation Tool (average score 3,6).

In this alpha test we found a shared comment that descriptions of the practical version should be in easier language to understand. This was the reason for a set of remarks leading to adjustments in the latest version of the design as explicated in the next Alinea's.

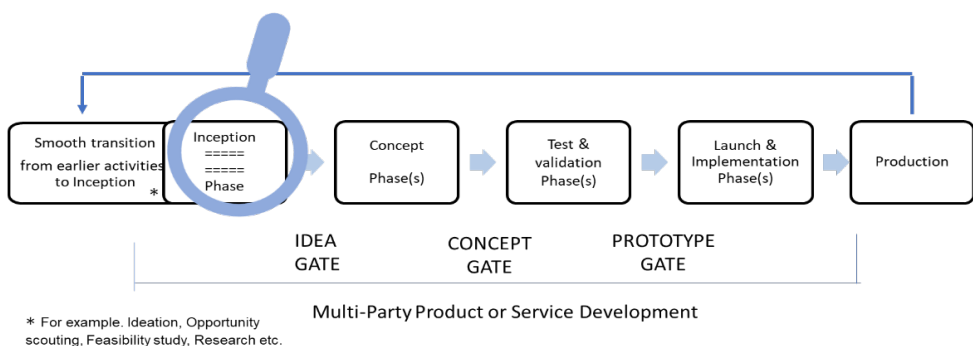
*For the definition:* the solemn use of the definition by the initiators was too restricted. So, 'a group' instead of initiators was proposed. Also was proposed to add 'solution' to the definition, because this is what it is all about. With other small remarks this led to the next version of the definition:

The Inception phase is the phase in which an arrangement of interventions is used by a group to transform a problem or opportunity into shared ideas about what solution to produce and about how to organize the complementary partners, who advance in seeing the viability of the initiative compared to other initiatives

*For the place of the Inception phase:* panel members considered the smooth transition from previous phase(s) into the Inception phase as not clear enough. They state Ideation for example, is overlapping with Inception in daily practice. At the same time, it is important to discriminate between earlier activities and inception because the sets of activities have different objectives and results. This notion leads to an adjustment in figure 5.1: also showing smooth transition into the Inception phase.

Furthermore, panel members doubt if everyone is familiar to work with gates or with the term Business concept? Opportunity Scouting is not the same as Problem Finding or other names for previous phases. These concepts distract. So, the Business Concept phase is changed into Concept phase and phase in phase(s). These adjustments give the other phases a more abstract character to less distract of the Inception phase place. Yet the possibility to decide to continue or not is important and confirms stage gate thinking.

The remarks mentioned above lead to the next version of figure 5.1:



*For the objectives of the Inception phase:* Especially with start-ups, these intentions are not usually in the head of the entrepreneur/inventor who takes a great personal risk and takes an all or nothing path according to some panel members. If this attitude does not tolerate the set-up of an Inception phase, it becomes a contra-indication (paragraph 5.5). It also fine-tunes the description in box 1.6 of the context in which the IP-Approach can be applied.

Also, one panel member stated: are the objectives of equal order? Is it 'to minimize in order to maximize'? This suggestion is interesting because it assumes a short term and a long-term emphasis. Yet both objectives legitimate the short-term horizon of the Inception phase, so no adjustment was made.

*For the components of viability:* the panel stated: this set components is in any case important and will remain a common thread in subsequent phases. E.g., the benchmark 'fit with user values' is permanent throughout the entire process. Other possible suggestions in the eyes of the panel members concerned the anticipation on predictable risks for the long-term, such as problems with assurance and certification. This opts for the adjustment: the measure 'risks' became 'short-term and long-term risks'.

Another fine-tuning remark was about fit of the objectives of participants. Is it more about the fit of the objectives with the (characteristics of) the Idea? Panel members found the component Partitioning of work very recognizable. A check was made whether 'Architectural' can be replaced by 'Integral'. In common speech Integral would be better, but in organization science the concept of architectural or modular division of tasks is a well-accepted difference.

*For the Navigation Tool:* the number of interventions is seen as inconvenient, making the Tool useful for shortening search time, for execution of evaluation or for finding the right intervention. The following changes were suggested: the search time diminishes substantially by adding the interventions immediately behind the navigation questions. This is possible within a Word document using the 'cross-reference' function. Another suggestion was to put those interventions which are very similar on a reserve list so that the number of interventions becomes smaller. However, this adjustment was already done for version one. The suggestion of adding the possibility of a mid-term evaluation of an ongoing Inception phase was accepted. This is integrated in the navigation tool. Typical from a user point of view was the wish to clear the differences between overall interventions and direct interventions. An adjustment was made in the text in 5.4.3. of the task description by adding: 'general interventions help you and other key-parties to start the MPI by giving it a general process design, binding the parties in a common approach'.

*For the task description:* although seen as very adequate (score 4.3), some modifications were suggested and adopted:

A panel member tried to make sentence one simpler: 'pick those interventions from the Intervention Box by using the navigation tool which leads to interventions you need at this moment'. But it kept on being abstract, leading to the decision to leave this part out of the task description. Panel members state the person(s) who pick up this description have not been appointed as responsible but are guided by their desire. Are they skilled? Is it possible for example to add some knowledge transfer by a MPI-Start-Up? Another point is it must be clear this approach is intended for a context with equal partners who need each other (3 tankers or 3 speedboats). This is added into the job description and description of the context in box 1.6. To take the role as responsible for the design of the Inception phase returns in the discussion chapter 7.

#### **6.4 Consequences of alpha test one for the design of IPA**

Round one resulted in adjustments as described in boxes 1.6 (description of context), paragraph 3.5 (description of level of analysis) and paragraph 5.5 (contra indications). Furthermore, the panel members of round 2 tried the version with the modifications of PowerPoint introduction, an adjusted version of the definition (question one), an adjusted overall view (question two), some small adjustments in the measures of the viability components (question 4), a new version of the navigation tool (question 5) and some adjustments in the formulation of the task description (question 6).

#### **6.5 Alpha test 2 outcome**

Five new panel members scored seven questions, including the modifications of round one. Their remarks are given in appendices P and Q. The conclusion is that the scores are on the average higher than in round one and the suggestions were less critical, also for this version of the Navigation Tool. The Inception Phase Approach will most certainly also be used by these expert panel members. Some minor adjustments were made.

Concerning the objectives, one panel member pointed out it is important to understand 'to minimize perceptual distance' does not mean 'creating expectations. Also 'minimizing the perceptual distance' does not mean 'getting the same opinion': IPA is useful to uncover opinions – different or not different- in this early stage and agree on them.

Furthermore, the suggestion to change 'To maximize success' into 'To optimize success' is tempting, but the rhythm of 'To maximize' and 'To minimize' combines better. Also 'Perceptual proximity' sounds more positive than 'Perceptual distance' yet the latter is a scientifically proven concept, better suited for this information-based approach.

Support as component is very recognizable. Panel members revealed concretizations from practice of the criterion 'stimulating role' such as '*being able to sell internally, hand over, delegate one's own role, beware of autocratic behavior*'. Interesting comment on the component Fit with objectives by a panel member is being part of an ecosystem enables

the MPI to gain a high form of 'Communal Sharing'. This means it is easy to exchange knowledge and personnel outside the MPI but inside the ecosystem. This is interesting enough to discuss in chapter seven.

The suggestion personal objectives also count, is adapted. So, the adjustment will be: Fit with (personal) objectives.

The adjusted version of the Navigation Tool is seen as very useful and applicable. This version was better received than version 1. However, the tool is still extensive and the call for more simplicity is also heard in this group. Some text adjustments were made to discriminate better between the abstraction levels of general interventions and direct interventions.

The panel members see the task description as very adequate. The suggestion to adjust 'Shared ideas' into 'Shared ideas about a solution' is adapted because this part of the task description is derived from the - also adjusted - definition of the Inception phase.

## **6.6 Alpha test two consequences for IPA design**

According to these panel members the current definition applies to, the development cycle and the objectives of the Inception phase. The components which form the viability of the MPI fit their practical needs, although coordination and partitioning of work may have less emphasis in this phase. The component Fit with objectives is also enriched with personal objectives. Version 2 of the modified navigation tool was higher appreciated than version 1. The task description with a small adjustment fits. Consequently, these panel members would also certainly apply IPA.

## **6.7 Application beta- test protocol**

The design of the IP-Approach was applied in a MPI, which already had its first meetings under the umbrella of the Institute for Sustainable Process Technology (ISPT). This MPI aims at chemical dispersion techniques: *Electrodialysis, membranes and isolation of small organic acids*.

The process manager of this MPI used a logbook with effects and reflections about the application. The protocol was arranged as follows.

1. The researcher invites the process manager.
2. After acceptance of the invitation, the researcher introduces IPA to the process manager by a PowerPoint narrative, a summary and the full text of the design. The researcher explains he would have no interference with the application.
3. The researcher and the process manager have a digital meeting to answer some questions about the approach. Furthermore, they agree about one or two progress meetings and one final meeting after 6 weeks.

4. The researcher sends the navigation tool, version 3.
5. The process manager uses and reflects on IPA at least once a week answering four questions in a logbook:
  - Which elements<sup>1</sup> have been used from IPA with what reason for use?
  - How did I/we use the elements?
  - What reactions did I see in participants?
  - What kind of other effects did I notice in the MPI?
6. The process manager sends a logbook covering June and part of July 2021 and prepares a meeting in September. This gap between July and September is caused by holidays of participants. The process manager and researcher held one digital progress meeting and one digital final meeting.
7. The researcher consolidated the information in 6.6. This consolidation was approved by the process manager.

## 6.8 Beta test outcome

### 1) The MPI from the logbook before IPA introduction

Before introduction of IPA, the initiative had three (digital) meetings. First, two key-players in the field selected six dispersion techniques. Afterwards, four persons – familiar with the key-players - from big financing industries prioritized various available technologies. In parallel, the initiative was also offered to medium/small businesses and knowledge institutes for subscription via Google Forms. Because budget owners prefer one project, a meeting was held with fifteen interested persons who decided - based on fit for own processes- to combine Electrodialysis and Membrane Filtering in one project.

Participants in the core-group uttered wishes such as learning from each other, working together and objectives such as making processes more sustainable and cheaper, also as personal objectives. What was to be dispersed in the streams remained to be seen. Yet an abstract wish existed to make the technology better for 'molecule A or B'.

Many of the participating persons knew each other from earlier assignments, only some were (from) new (companies). One person - selected on content expertise - took the assignment to describe the actual idea in the form of a pitch. The idea is the pitch should function as starting point to divide the idea in parts and to allocate these parts to partial project leaders soon. At the aforementioned meetings it was unknown how the relationship was with the parent organizations, yet participants had no mandate to decide. This would be done at a 'gate' within the companies as well between the decision makers in the 'Top sector Kennis en Innovatie (TKI)'.

The following descriptions in a (table 6.1), b, c and d were given by the process manager, using the logbook and the progress meeting with the researcher.

<sup>1</sup> Place and objectives of the Inception phase, the seven components of viability, the measures for the components, general, direct and indirect interventions, the navigation tool and the task description.

## a) Overview which elements from the IP-Approach are used from IPA

**Table 6.1.** Elements used in beta-case before introduction of IPA.

Elements	Explanation
The place of the Inception Phase	By pre-selection of technologies by 2 key-players, 4 industrial companies and the Google form preceded Opportunity scouting the initiative. Not explicitly but a plan for a proposal seems to aim at some kind of Gate as next step, starting a kind of Concept development. Many interventions of the Inception phase were visible, informally, in this initiating phase.
The objectives of the Inception Phase	Mainly linking to 'the maximization of success (with low toll)' that is to increase sustainability or to make processes cheaper. Or more abstract for the short term: to learn from each other.
The components of viability	Slightly Fit with objectives Mainly the component Idea (of dispersion of acids; fit within the operations of the company) and Cooperation in an informal way Not noticeable: Support, Coordination next phase(s), Partitioning of work, Integration in parent organizations
The measures for the components	Corresponding the addressed components: measures of the Idea: (available) technology, TR-level and form (pitch). Informal short term viability criterion: must be one project. No mentioning of potential clients nor was this topic on the agenda, possibly leading to target group risk.
Generic interventions	Within ISPT routines: transition in an informal Inception phase by tendering for parties within a cluster: Industrial Fluids Processing
Direct interventions	From Initiation sections 1A, 1B and 4B
Indirect interventions	Yes, from I 1
Navigation through the interventions	Yes, until pre-selection of the Regular Lane
The definition of the Inception phase and the Task description of those responsible for the process design	Not used

## b) In which way did I use/were elements of IPA used?

The component Fit with (personal) objectives was mentioned to understand the possible gains for the parent organisation. This mainly concerned the possibility to make processes cheaper with technology. It was explicitly linked with a still abstract Idea (separation of acids). Informal identification actions made Cooperation in the next phase explicit by wishing to work with people we already know and have similar production processes.

Own general ('routine') interventions were executed by ISPT such as asking around for existing technologies and more emphasis on industries than medium/small businesses and Knowledge Institutes. One general intervention used, familiar with the IP-Approach was *'make interventions on the level of fit with objectives, idea, coordination, cooperation*

right from the start leading to durable agility in the collaborating parties. Also many direct interventions from the IP-Approach were (partly) recognizable as indicated below:

#### *Initiation/support*

- 1A.3: invite participants representing a branch with immediate interest to accelerate receiving support (*in th. case invite 100 participants from a cluster*)
- 1A.6: show in the invitation how the idea fits the shared processes of invitees leading to broader support (*in this case processes of 5 industrial, 2 middle/small businesses and 4 knowledge institutes*)
- 1A.9: Invite parties which are already busy with the item leading to correct priorities for the MPI (*in this case a pre-selected cluster of 10 organizations*)

#### *Identification/support*

- 2A.6: make sure characteristics of the idea fit objectives of parties to keep support (*in this case short term learning from each other, making processes cheaper and more sustainable*)

#### *Exchange/support*

- 3A.1: allocate work based on the future roles leading to long term support (*in this case to a representative with the highest knowledge to do the pitch uttering assumptions that future work would be modular*)

#### *Initiation/idea*

- 1B.2: ask around at universities leading to good selection of parties (*in this case selection of known institutes from earlier activities*)

#### *Reflection/Idea*

- 4B.2: present product or service concepts in elemental descriptive forms (*in this case 'a pitch'*) leading to flexibility in changes required due to new technical or market information (*in this case only technical information*)

#### *Conversion/Integration in parent organizations*

- 5G.1: deliver a stage gate document for 'the Idea gate' with the elaborated viability criteria so perceptual distance is minimized between supporters becoming aware of the viability of the initiative at the end of the Inception phase leading to a shared go or no-go decision to continue (*in this case a kind of project proposal*).

#### *Indirect/identification*

- The use of Google Forms and a white board for reason divergence to participate



**c) What did I notice in the reactions of participants?**

Parties were willing to be present in meetings but detached to participate. They took ample time to hand their specific interest. Not until the third meeting parties gave their opinion which parties were missing and needed to be invited.

**d) What kind of other effects did I notice?**

Not all invited companies replied to the invitation for the mass-meeting, but parties replied fast on invitation for the first meeting. It seems the explicit link between the idea and the production processes of the fast respondents works as a trigger. Parties show a preference to go on only with an overlap in goals. The wish to invite more and other parties is seen by the initiators as collaboration readiness, based on the desire to exchange knowledge more as an identification test than an informal collaboration agreement. They seem to understand the exploratory character of this phase.

**2) The MPI from the logbook after IPA introduction.**

A fourth (digital branch) meeting was organized to interest more parties.

Branch Meeting agenda

1. Welcome
  1. Overall 'project leader' presents actual ideas (consolidation)
  2. Discussion about the technology matrix
  3. What is your position concerning technology?
  4. What makes technology interesting?
  5. Exchange of ideas about routines, end date (delivery of plan) and a next meeting

However, with approximately one hundred persons from businesses with relevant processes invited, forty-five were present, resulting in one extra person in the core-group.

Agenda fifth meeting, a workshop:

1. Objectives: formally prompt more parties (became informal to create idea commitment/to allocate activities)
2. Choice of technology/technologies (name DISCO: (Downstream Isolation of high-value Components))
3. Final product (a project plan according to TKI standards)
4. Commitment (hour commitment until the project plan)

Agenda upcoming meeting in September

1. Need and offer inventory (such as test locations) of participants to explicate in the project plan
2. Nomination of partial project leaders in parallel project plan work (based on their experience, expertise and willingness)
3. Missing partners for Electrodialysis with membranes

### a) Which elements are used from IPA

**Table 6.2.** Elements used in beta-case after introduction of IPA.

Elements	Explanation
The place of the Inception Phase	The MPI must finish this phase with a project plan, before entering the next phase
The objectives of the Inception Phase	Branch meeting: to maximize success chance (here: to prompt more parties through the branch meeting, a success factor according to initiators) Workshop: to commit for DISCO
The components of viability	In Branch meeting: the idea consolidation from meeting three as input In Workshop: Does the Idea Fit with the (Objectives) processes of participants, the cooperation in the next phase concerning available equipment, the coordination to stay on high TRL level; Support: 'gate-keepers' use admission criteria depending on vision/strategy of company; Parent integration: task for individual representative with the pitch slides.
The measures for the components	Idea: technology and form: at the end the Idea is on demo-scale; Time to market: 2 years
Generic interventions	Yes, see b
Direct interventions	Yes, see b
Indirect interventions	The use of a project plan. With attention to financer support, the idea, objective of the MPI, partitioning of work. No attention for: <ul style="list-style-type: none"> <li>for support in parent organisations, some characteristics of the idea, next phase coordination and cooperation and specialized tasks for integration in parent organizations.</li> <li>for minimizing perceptual distance. IPA could offer a lot here.</li> </ul>
Navigation through the interventions	Yes
Definition of the Inception phase and Task description of those responsible for the process design	No

### b) In which way did I use/were elements of IPA used?

Initiators state the Objectives of the Inception phase were used, yet objectives seem to be different. *'Formal objective: to prompt more parties; informal: to create commitment for (to sell?) the idea and to allocate activities.* The consolidation of the former session was presented in the branch meeting (an ISPT routine intervention) and 'recruited' parties. Between the branch meeting and workshop a subgroup performed intervention 3B.2: *'make sure which idea to work on > system, process or product leading to jointly reasoning from whole to parts'* (in this case: before the workshop two ideas were integrated by initiators in DISCO: Downstream Isolation of high-value Components).

Before the workshop we used 1A.9: *'Invite parties who are already busy with the item leading to correct priorities for the MPI'* (in this case participants of the second meeting plus one from branch meeting) and also 1D.2: *invite staff representing the strength of the participants leading to unique resources in cooperation* (in this case to ask for hour investment of to produce the project plan and pointing at missing participants' expertise).

The process manager(s) also planned to use interventions derived from 3A.1: *'allocate work based on the future roles leading to long term support'* (in this case aiming at 'partial project leaders' for a certain part of the work package for the project plan) and derived from 4B.1: *elaborate ideas about technology, market, performance, risk, new knowledge and time horizon leading to the best possible assessment of the idea* (in this case *technology assessment, form and time horizon*).

Finally, they anticipated with 3E.3: *plan joint activities to ensure order in inter-dependent activities* (in this case *a planned meeting in September as a next step to create the project proposal*)

Anticipating on the meeting in September we are going to use:

- General intervention 4: propose a set of initiating activities to support follow up activities.
- General intervention 14: inventorize what is already available at the current parties as input or interpretation of the viability components leading to a shared view of (maybe different) starting points (in this case needs and equipment).
- 1E.4: search for champion, sponsor and gate keepers to introduce formal processes
- 1F.1: synchronize actions of partners continuously leading to joint starting points

### **c) What did I notice in participants' reactions?**

Branch meeting: almost no reactions during the meeting. According to the initiator: participants do not want to be explicit about the interests of their company in front of the entire group. After the meeting one e-mail expressed party interest. A plausible explanation is parties were not invited to co-create the idea. Actually, the idea was decided upon by some parties and presented as an offer to participate. An eye-catching observation was the people of the third meeting – those who pre-selected technologies - were remote in the fourth meeting as if they did not trust their 'shared' opinion.

Workshop: the participating companies clearly show what they want to contribute and what they have available, knowledge Institutes show fear to be skipped. Some industrial parties underline the necessity to receive company support, asking for slides: Informally, the MPI appoints the participant as representative.

#### **d) What kind of other effects did I notice?**

The initiators want to plan the next meeting in September only with the industry participants, because they finance. They may choose the knowledge institutes for the MPI. These institutes have presented their interest for some topics.

One industrial and one middle/small company agree to meet about technology issues outside the initiative.

### **6.9 Beta-test consequences for IPA design**

The possibility to use IPA became real when some of the activities in the MPI were already executed, mostly in digital meetings. So, part of the six weeks the use of IPA changed in an evaluation and the other part in a possible application of IPA, until holidays ended the six weeks. Important to state is that IPA was competing with routines grown within ISPT. The test provided some confirmations of the strengths. Furthermore, some weaknesses and possible adjustments (table 6.3) for the IPA design were revealed.

#### **Confirmation of strengths of IPA**

The preceding phase (Opportunity Scouting) was clearly present (but not acknowledged). The contours of the Inception phase became visible by the input (the consolidated idea and questions/remarks from some of the parent organizations) and the decision about the project plan as a final product of 'the Inception phase'. Implicitly 'the maximization of success with low toll' was confirmed because of the search for the best fit with own processes and the promise to invest only hours.

The use of direct interventions was clearly visible but with a strong accent on technology (push). Direct interventions for the viability component Idea were clearly leading in the beginning with emphasis only on technology and still abstract requirements. IPA suggested to add at least the market/user side, resulting in an agenda item for the September meeting.

The component Cooperation mainly developed in informal subgroups based on familiarity and earlier experiences with each other, with few new outsiders. Thanks to IPA an inventory will be done for parties with necessary strengths. IPA suggested 2c.2 (discuss market overlap of parties leading to less contribution) to explore the strong hesitation for participation of new parties.

Interventions were prescribed by routines of the Institute, but after application of the Navigation Tool the process managers saw the advantages of other interventions of IPA, especially Initiating activities for Support and the Idea.

No attention was given to Support in parent organisations, the characteristics attraction, risk and time to market of the Idea, little or no Coordination and Cooperation in next phase(s) and Specialized tasks for integration in parent organizations. Also, no attention was given to the perceptual distance between participants. The process manager acknowledged the added value of these aspects during the closing meeting.

### **Weaknesses revealed and adjustments for IPA**

The use of IPA revealed some weaknesses of IPA.

First the paradox IPA does not prescribe IPA. The actors using IPA may not be skilled in using IPA. Somewhere in the transition into the Inception phase, the formation of a skilled key-group with responsibilities for the process design of the Inception phase would give more attention to all the components. Romme & Dimov (2021) calls the combination of the actor and the intervention the agency, necessary to make the mechanism work. This will work for the use of generic interventions. They were almost not used spontaneously in the test. This – in combination with strong individual objectives gives room for direction risk: two companies even agreed to meet outside the MPI. The process manager recognized the assignment – also to include generic interventions - and the tasks as offered by IPA. But no room was made in the MPI to make these explicit. Again, this is dependent on the leadership quality. Furthermore, we saw enrichment of Cooperation with trust lacked in this case, because of a strong technology accent. It makes the added value of IPA very leadership dependent which 'sells' these interventions that produce trust and awareness of mutual needs. So, the question is *how the nomination of a collaborative and skilled leadership is arranged by IPA*, especially when other routines of parent organisations are already in place.

Another point is the observation that the minimization of perceptual distance was not an objective but partly enforced by the format of the project plan. And if a project plan is used, it does not normally cover all the viability factors. So, an adjustment may be an extra intervention to the check on viability index components of routine formats used at gates. A general intervention such as: *check the index of the first decision document on presence of the seven viability components because this makes them explicit to better assess viability*.

Finally, it was clear IPA does not compensate automatically for cherry picking in interventions. It asks for at least one intermediate evaluation to make these preferences explicit with enough time left to address other components of viability. This was the same in this test for many measures which were not used for concretization of viability components. An adjustment for 'next level' IPA would be to provide standard agendas for two or three meetings in the beginning of the Inception phase which address these evaluations and measures.

### **General conclusion to use IPA**

Four of the possible adjustments depend on the presence of leadership from the start of Inception phase activities which has the ability to use IPA. Initiators must be aware of this weakness if not present. This paradox - IPA does not prescribe IPA - seems to strongly link with the quality of the actor (Romme e.a., 2021). They only argue when the intervention is done by something or somebody who really enables the mechanism to emerge, the intervention will produce the outcome. Furthermore, the research by de Man

and Duysters (2011) about lack of skills in MPI's indicates the same. However, IPA does not provide interventions to arrange courses about IPA. This is a great lesson from the beta-test, adding a general intervention: *provide key-participants with a learning module about IPA so they become aware of the essentials of IPA leading to shared view on necessary outcomes.*

A second amendment is an intermediate evaluation which enables to assess the presence of viability components and the measures to concretizes them in a document in case the MPI has to deliver this end of phase.



**CHAPTER**

**7**

**CONCLUSIONS AND REFLECTIONS**





## 7 Conclusions and reflections

### 7.1 Summary of findings and conclusions

The range of the findings of this study and the conclusions are presented in this paragraph, followed by discussions which emerged during this study. In paragraphs 7.2 and 7.3 we reflect on the scientific and practical relevance of the conclusions. Paragraph 7.4 is dedicated to the limitations of the study and suggestions for further research.

The overall objective which drives this study is to enhance the viability of innovative multi-party initiatives (MPI's) since unfortunately, many multi-party initiatives perish. At the same time a gap exists in literature: no coherent theory for the approach of the very beginning of MPI's is available. This is in contrast with ample research about the other phases in the development process.

**Table 7.1.** The results of this study as presented in table 7.1 highlights four overall essentials.

1	The Inception Phase can be constructed	The identification of the phase, gives the possibility to think and act accordingly. This enhances the viability of viable multi-party initiatives
2	It is possible to operationalize Perceptual Distance	The key issues in parties' perceptions concern seven viability criteria, essential for collaboration and indicating collaboration readiness
3	Interventions will work if they trigger the right mechanism	The intervention-mechanism-outcome reasoning allows the practitioner to add scientifically informed interventions to his repertoire
4	Tools and methods are available to use specifically in the Inception Phase	It is possible to mitigate risks that regularly appear in practice such as lack of competences, excessive contractual formality and different interpretation of substantive issues

Starting point is the research assignment as formulated in 3.1: deliver an arrangement of activities which enhance the viability of a multi-party innovation initiative in the Inception phase. Breaking down this assignment, four parts were deducted:

1. (the description of) the Inception phase.
2. (the description of) the viability of a multi-partner initiative.
3. an arrangement of direct (a) and indirect (b) activities for the Inception phase.
4. the evidence of the contribution of the sets of activities of product 3.

Some specific research outcomes in literature are helpful to build a an approach for the front end of MPI's. From these findings in literature and the empirical data of this study a new part of the development process emerged: the Inception Phase, positioned between earlier phases such as Opportunity scouting or Ideation and later phases such as Concept or Business development. The Inception phase addresses the viability of the MPI in a way that the perceptual distance between participants becomes as small as possible and the chance on success as high as possible at low-cost. This viability concerns

the key-issues for participants: the support, the idea and its characteristics, the fit with objectives of parties, the cooperation and coordination of next phases, the partitioning of work and the specialized tasks for integration with parent organizations. With input given such as starting points from or questions of individual parent organizations, a specific arrangement of interventions is necessary to create the possible viability. These sets of interventions are unique for the inception: initiation of meetings, identification of each other, exchange of strengths, reflection about a shared future and conversion into a new entity. Additional general interventions help to formulate shared overarching ideas about priorities, building trust and handling transactions in the MPI. Finally, this study also delivered a set of indirect interventions to facilitate work. The resulting design includes an Intervention Box and a Navigation Tool. The Box arranges the total set of interventions in logical sections and the Navigation Tool specifies the questions of the user to find the right interventions.

After literature study, analysis of empirical findings and testing the outcome, the following can be concluded, resulting from the assignment above:

*Ad 1. The Inception Phase is part of the solution for the field problem that many MPI's perish.*

The Inception phase is an in-between phase coming forward from the empirical data. It starts with an identified opportunity or problem and ends when partners confirm to continue (or not) at some kind of Idea gate. Although the transition from earlier phases into the Inception phase is not marked out for each individual party, the start to explore collaboration points is at the start of this phase. Individual parties bring their questions and input, yet the joint execution of activities starts the inception of the MPI. Because of the Inception phase some problems are prohibited to develop, such as moving to a fixed organization too quickly, a lack of proper terminology and tools, no further idea development and network development stop. The Inception phase has unique objectives and unique outcomes which legitimate its existence in the development cycle.

*Ad 2. At the end of the Inception Phase specific tangible and intangible outcomes must be present to assess viability.*

In literature and empirical data, seven components emerged which operationalize viability and may be assessed at the end of the Inception phase. Before the decision to formalize the collaboration in a joint venture, program or alliance or similar, it is important to be able to assess the risk profile of the initiative and to decide to continue or not. If viability is not fully present one or more of the seven risks, derived from the viability components will be imported into the next parts of the MPI. Examples are direction risk, meaning parties mainly harvest driven by own objectives or operational risk, leading to possible unforeseen coordination failures or costs. It becomes more difficult to mitigate these risks further down the development cycle, maybe leading to demotivation, conflicts and misunderstandings.

The Inception phase produces a shared mental model as well for the product or service as for the next step(s) ahead. This mental model loaded with viability components will be the 'red thread' in subsequent phases. E.g., the benchmark 'fit with user values' is permanent throughout the entire process. The mental model helps parties to overcome boundaries of their organizations and become partners, who feel responsibility for each other. The Inception phase works like a 'try-out' for the collaboration to come at low-cost and with hardly irrevocable obligations. Important questions in the field such as 'how we direct each other', 'how we handle shared processes' and 'how we will look beyond our own interests' are answered in an early stage.

*Ad 3. It is possible to select an arrangement of interventions for the Inception phase for MPI's.* The Inception phase not only contains interventions to develop a view on viability but also sub-processes such as party meeting, building trust, exploring each other's strength, exchanging fantasies about applications, influencing parent organisations and continuously execute synchronizing opinions. This differentiates between the various MPI's because these processes are not very linear. MPI's have different characteristics, for example when there is time pressure or when work packages are modular or architectural.

Some of the arrangement interventions are called *design principles*. It means this is a directive valid for the MPI-context but not concrete enough to apply in each MPI assignment. The people busy with the process design need to customize this action for their MPI, like *'propose a set of exchange activities leading to insights for efficient collaboration'*. Though other activities are really directives for every MPI, the so-called *design propositions*, possible solutions applicable in the specific context of MPI's, such as *'show how the idea fits the shared processes of invitees in the invitation'*. Yet both kinds of interventions fit the needs of the parties in the Inception phase. The work of people responsible for the process design is to pick and translate the useful design principles and to select the design propositions which are fruitful for the next steps of the Inception phase.

The interventions can be clustered into work type and viability contribution. Type of work is ordered in initiation, identification, exchanging, reflection and conversion, where the outcome is sorted in the components of viability: support, idea, fit with objectives, cooperation and coordination of next phase(s), work partitioning and specialized tasks for integration with parent organisations. So, for example, the section reflection/coordination contains a subset of interventions such as *'ask partners for requirements or other contributions without obligations for or from them leaving the initiative with freedom in control'*.

*Ad 4. The evidence to contribute to interventions is explained by CIMO-reasoning.*

The use of the CIMO-logic makes it possible to underpin the plausibility of outcome expectations. This logic combines a descriptive explaining theory with a prescriptive

normative theory, as argued by researchers as van Aken (2015) and Romme & Dimov (2021). The use of CIMO- logic in (organization) theory is relatively new as well is prescriptive normative theory, yet confirming this theory, the most general mechanisms – as presented in paragraphs 3.8 and 4.2.2.d – were repeatedly found as basis for intervention- outcome relationships in this study.

## **7.2 Limitations and further research suggestions**

Based on the findings and conclusions of this study, a set of questions about the results and new research can be identified. First, questions about starting points of the study are discussed, subsequently followed by suggestions for future research.

### *Is group level the correct level of analysis?*

The group level choice makes the MPI an entity on itself. It is a necessary step to discriminate between the research object and the environment. Even the parent organizations and their strategies become environmental. With emerging evidence (Bogers, Sims, Keck, 2019) the transaction MPI models also work on a higher aggregation level: ecosystems. a possible belief may rule in ecosystems- as- structure (Adner, 2017) which is shared on a higher level than the MPI. Or as one of the expert panel members stated: 'it could be a set of companies is convinced that only the game can be won together. Helping other companies to be successful also has positive effects for my company'. Does this point at high-level Communal Sharing? Collaboration is normal: no need for selection processes of parties and exchange of staff and strengths is easy. When it comes to an MPI, the total branch receives the advantage of the 'the meat product of tomorrow' or 'becoming the plasma-centre of the world'. The discriminating factor is probably the level of competition. The study concerns the context of competition between companies. Other aggregation levels create other contexts than individual companies but after the Inception phase. The risk of low viability also exists on the higher level of competing chains or even the European Community with other geopolitical entities. Chains compete with chains, regions with regions. The emergent theories of ecosystems offer a platform to see if the principles of the Inception phase also have effect on this higher aggregation level. It would be fruitful to understand if a chain of organizations which already exists, for example for construction and maintenance for the air-conditioning in big buildings, could benefit from Inception principles when they tender as consortium.

### *Do digital meetings influence the outcome?*

Collection of data was done in physical meetings, except for the questionnaire. All other meetings were done digitally due to the Corona limitations. It could be, for example the alpha-tests respondents were less stimulated to tell everything or the researcher did not notice non-verbal information which is easier to notice in physical meetings. On the other

hand, respondents had accompanying forms or logbooks. Furthermore, all respondents received a report of their remarks and could check and react upon their output. The combination of physical interviews/workshops for data collection and the experienced use of digital meetings with feedback possibility in later meetings, justifies the assumption the digital meetings had no consequences for the quality of the design.

*To what level reaches the generalizability of the findings?*

Design science research wants to produce knowledge which helps to change existing situations into desired ones. This kind of research delivers theory to solve a field issue and not so much explanatory theory of a problem. This means the researcher must define the issue very well and must find its place in the rigour versus relevance dilemma. This dilemma shows empirical findings in a very defined context (rigour) are very 'hard' but only applicable in this context which does not repeat, so relevance is low. At the other side, empirical findings may concern an issue which occurs in many contexts (relevance), yet the generalizability is low because of the number of other rival explanations.

In this study the repeating issue is at the start of the Inception phase: three or more independent parties want to start to develop a product or service knowing they cannot do it on their own but have a problem with the process design. Solutions are only relevant for this class of problems. Consequently, the design to solve this problem is based on empirical findings from different MPI's, all having this same context. Research could help to underpin the generalizability of the use of CIMO-reasoning. This logic is as follows: in the Inception phase (C) use the intervention (I) 'make professionalism of parties visible' which triggers the mechanism (M) 'they start to trust each other' leading to the outcome (O) 'speed in activities'. The I<>M combination is informed by research and findings of this study show these triangulated interventions work in the kind context defined for this dissertation. Beta-tests and y-tests in the broader range of MPI's will learn if these CIMO's may be generalized further.

*Is the number of partners unlimited?*

Literature concerning organizational decision making, suggests a maximum of eight persons for sound decision making. In this study the minimum number of parties in the MPI's for collection of empirical data was three, yet on the maximum party number there was no topic found in literature nor did it emerge from the empirical data. Some practical examples exist of delegated authorities to a steering committee or umbrella organizations in the case of existing collaboration. One of the participants in the alpha-test works in MPI's with sometimes more than twenty parties. He does not organize a kind of inception and makes the transition directly from Ideation to Concept phase. Without having a real Inception phase, he developed the practice to structure governance in the beginning with: Steering Committee > program team > issue coordinator > project leader. Without questioning if this structuring is necessary, the advantages of the interventions in the Inception phase stay unused whilst entering the interventions of the Concept phase. Probably this will lead to an

informal catching up of issues which belong to the Inception phase in parallel with activities in the Concept phase, leading to iterations lowering the viability. So, this asks for research to understand if preparing the Concept phase with a representative group – in the Inception phase - with a maximum of eight persons would enlarge the viability, especially for contexts where more than eight organizations work on the same solution.

### *CIMO or CAMO?*

Artifacts in design science are considered as the outcome of (human) agency. In the creation of artifacts generativity is seen as a key-element in theory which helps to move from the present state into the desired state. Such generative theory is developed for a typical problem, which repeatedly shows up in comparable contexts. The problem is deliberately framed to avoid being captured by a theoretical paradigm. By framing the problem as 'how to start a multi-party initiative', it became possible to develop the theory of the Inception Phase Approach challenging the fuzziness of the 'Front End'. The generative part of the theory consists of the combination of action and mechanism. Because the action triggers the mechanism, for example empowering employees trigger their feeling of responsibility, it is plausible the outcome shows a diminished number of defects. If the action really triggers the mechanism, it is an intervention. This CIMO-logic as advocated by Deneyer (2008) and van Aken (a.o. 2015) was adapted by Romme & Dimov (2021), by proposing the CAMO format. They state the CIMO-logic misses a part in the underpinning of the prescriptive character. Merely the intervention is not enough to trigger the mechanism. The effect of the intervention depends on the combination of this action and the actor who executes the action. For example, the execution of cutting the budget will probably differ in success if done by the hall-porter than done by the CFO, because of their place in the authority scheme. In other words, the agency matters. This may also be the case if the agent is an artifact such as an interactive map of competencies. Romme and Dimov state only when the map mobilizes resources it becomes an agent, the I(ntervention) becomes an A(gency). This important notion came after the theoretical and empirical part of this study, where the agent is embedded in structure or staff dimensions, uncoupled from the intervention. But the notion of action/actor combination is very interesting for further research. What makes people responsible for the Inception phase and their interventions with real agencies in generating viable MPI's? For example, compare somebody skilled in collaborative leadership to make clear which activities are needed (combination agent 1 and action 1) who triggers the mechanism of common insight in the work for the short term. Will this trigger less if it is done by one of the persons not having this ability (combination agent 2 and action 1)? Or, if the product manager of party X makes sure parties discuss market overlap (agent 1 and action 1), will it make a difference in triggering the willingness to cooperate compared to a chaired discussion by an experienced counsellor (agent 2 and action 1). Research fleshing out the actor/action combinations in relation to the success of trigger mechanisms could have added value for

the CAMO logic validity. The functional requirements stated for the direct interventions (lesson five in chapter 5.1) could easily be used as criteria in research which rank agent/action combinations.

#### *IPA needs an agent that understands IPA*

The design gives no answer for this paradox. Initiators may have no skill how to handle the process of the Inception phase even if they are aware of IPA. This paradox seems to link strongly with the quality of the agency (Romme & Dimov, 2021) and the research by de Man and Duysters (2011) about the lack of skills in MPI's. The paradox is a great learning from the beta-test but impossible to add to the design of this study. The person(s) who pick up the role to organise the Inception phase are mostly not aware of this paradox. They are informally nominated as responsible whilst guided by their desire, not by the skills prescribed for the Inception phase. For example, the design states it is important to implement collaborative leadership because it facilitates presence of leadership in more positions (concurrent), decision making by everyone feeling responsible (collectivistic), expressing everybody may speak for the entire MPI (mutual) and dignity is preserved for everyone in the MPI (compassionate), important mechanisms which lead to high-speed progress and learning. Yet again, the MPI is lucky if somebody in the lead understands what collaborative leadership is. So, research which enriches IPA could be done by design research and would secure interventions to overturn this paradox. A concrete idea could be to research the effect of a MPI-Start-Up, where a first set of CIMO's is executed but also a transfer of IPA-knowledge could be done.

#### *Only limited testing for validation*

The actual design is based on literature and data from practice. This research is validated by two rounds of alpha testing and a limited beta test. Seven persons in round one and five persons in round two of the alpha-test fit the target group of users but twelve individual validators did not cover all the branches and types of MPI's. So, the possibility still exists the design only fits well in a MPI subset in the given context, represented by the validators as subset of the total target group.

A second limitation is beta-testing. Because of Corona it became difficult to organise group dynamics as assumed in the design. People were interested yet remote to apply. One beta-test was executed, but part of it became an evaluation because some interventions were already executed before the responsible person was able to start with the logbook. The Navigation Tool and the Intervention Box was applied in this MPI but only for 3 weeks because of Corona limitations and holidays. The aforementioned reasoning means IPA is also still a hypothesis and needs to be tested in further beta-tests. This would offer a better basis for this new theory about the very start of multi-party initiatives. Validating research questions could focus on further development of the Inception phase for the typical context of starting MPI's.



*Is the definition of the context accurate enough?*

IPA is intended for a context with independent parties who need each other. The assumption is they act equally such as 'three tankers' or 'three speedboats'. This makes transaction models as equality matching or communal sharing possible. Is IPA still valid if the context is characterized by one speedboat and two tankers? Or, if one party or person start to act as a principal? Or application of the other transaction models (authority ranking and market pricing) lead to informal dependency of one or more parties. The answer is no, IPA is in these contexts not valid anymore since IPA is based on enrichment of ideas by collaboration and mutual influence. IPA does not stand the situation that one enthusiastic entrepreneur pushes his or her own ideas or the regulations of a big party prescribing the relationships, as can be observed on the websites of big companies which invite idea-owners to present themselves. These differentiations in context are not yet clearly elaborated in theory and could be object of further research: what happens with Inception principles if the power balance is clearly unbalanced?

*What makes the core-group the core-team?*

One of the initiating interventions in the Intervention Box is 'invite participants representing a branch with immediate interest'. This intervention leads to acceleration in receiving support because it triggers the mechanism a whole group with the same interest gets involved. This intervention was used in the beta-test but only one of the many attendees started to participate. Is this a weak signal for something missing? On the group level of the core-participants of the beta-test a hesitation was seen to become part of the leading group. Participants in some of the researched MPI's preferred to go on with parties or people they knew, knowing it would not be the best fit.. It is in line with research (Gulati, 1995b) shows preferences for parties based on proximity, status, earlier partnerships and even similarity. It would be interesting research to understand if these informal preferences lead to better teaming-up than for example selection of parties based on their proven strengths. Is this non-rational preference a contributor to viability?

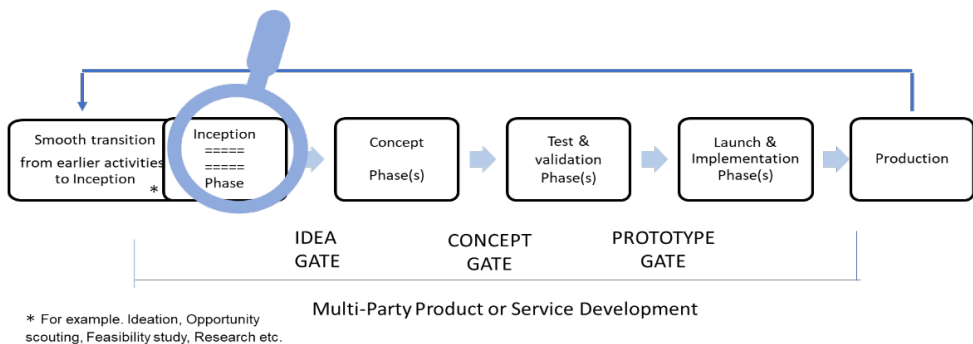
**7.4 Scientific contribution**

This study proposes the Inception Phase Approach, designed for the very beginning of inter-organizational collaboration, an area with problems reported about objectives, cooperation and coordination (Tucci, 2004, Schreiner, 2009, Gulati, 2012). The presented Inception approach adds knowledge for several theories in these areas.

Firstly, the theory about development of a new product- and service development (Cooper, 2008) is enriched with *the Inception phase*. Until now the fuzziness of the front end reaches closely to the moment the collaboration is formalized. Part of the fuzziness is based in the myriad of innovation typologies (Kristiansen, 2012). The Inception phase adds an informal phase in the front-end making a more effective development possible *by defining the viability of the outcome by seven components*. This means *bias diminishes in decision making* as stated in literature (Liedka, 2015) because of the better possibility

to assess the outcome more independently from gut-feeling. Also, when continued, the *waste of resources* (Eling, Griffin and Langerak, 2016) *will be less* because of the higher success rate.

Where most of the publications (Cooper, 2008, Antons, Kleer & Salge, 2016) concern mono-party initiatives (with suppliers/contractors) or issues in existing multi-party initiatives, *theory for multi-party initiatives is added*, a rapid growing condition (De Man and Duysters, 2011). It supplies stage gating theory (Cooper, 2016) with *a new gate*, offers a way to *keep the working capital low* (Tatikonda, 2013), operationalizes opportunity identification / idea generation & enrichment (Koen et al., 2001) and adds *new viability components* to service evaluation (Posselt & Förstl, 2011) and perceptual distance (van der Krift, 2019). The opinion the initiation phase consists of a set of independent activities (Kim & Wilemon, 2002) weakens, because the interventions in the Inception phase *build up to the same viability components*. The non-linear character as posed by literature stays intact, yet the fuzziness becomes less since *a well-defined set of interventions* is applied in the Inception phase. The Inception phase means backwards integration from the researched areas of development processes, reducing the uncertainty in the 'fuzzy front end' of MPI's.



**Figure 7.1.** Position of the contribution of IPA to stage gate theory.

Secondly, a contribution is made to the social network theory, especially to interorganizational learning (Gulati, 2012, Bogers, Sims, Keck, 2019). Workers in interorganizational situations suffer dual identification, several authority structures and difficult boundaries (Schreiner, Kale, Corsten, 2009) hindering coordination. Representatives from the networks collaborating with IPA now can understand what quality of the idea is needed because of *its characteristics* and *its chances of adoption by partner organizations* before it is fixed by decisions. IPA shows *interventions in the socialization process* help formulation of game rules, creation of shared mental models and collective views on follow up before decision making. The interventions in this early stage of multi-party initiatives have large consequences for *confidence between partners* and *robustness of the building blocks for the follow-up*. Furthermore, the tendency of future partners is to immediately impose a stage gate approach to handle passive resistance (Heidenreich, 2015) with the risk of fixation of ideas and distrust between the key stakeholders because of still having different interpretations of benefits and approach. With

the presented design it becomes clearer within the social network theory *by which dynamics parties become partners* who need each other to produce new products or services.

This study partly fills the gap of terms, tools and collaborative capabilities as reported by De Man and Duysters (2011) and Maurer and Valkenburg (2014). Yet no name is offered for the role of the responsible, but as a start *the task description* is validated. The term *Inception phase* is the answer for the identity of this part of the development process and *the Intervention Box*, filled with interventions typically for the Inception phase gives a home for a growing set of tools. This emerging initiative cannot rely on established hierarchical structures, protocols, standards of other formalizations of participating organizations (Schrujjer, Vansina and Taillieu, 1998) leading to coordination problems (Gulati, 2012). IPA offers *collaborative leadership* as a tool which fits this organic context in which executing, thinking and deciding are dispersed more than in parent organizations.

Finally, as addition to the boundary crossing theory (Akkerman and Bakker, 2011) the cluster of *initiation interventions* is presented. This theory proved to be very useful because it offers a set up principle for clustering the interventions: identification, exchanging, reflection and conversion interventions. In the empirical data the cluster *initiation interventions* as an additional set emerged, typical for starting initiatives. Cross boundary theory also suggests the use of *the cross-boundary object*, the preliminary artifact (Stomppff, 2016). It is a synonym for the representation of product or service concepts, but it can be observed and reflected on by all involved. Meetings will be staged around the boundary object, no matter if it is a visualization, a narrative, a prototype, a sketch or a scenario. A clear example was presented in one of the empirical studies where participants physically worked around a drawing of an information system for nature and environmental topics. Important in MPI's, this makes it the object of everybody and of nobody at the same time.

## **7.5 Practical contribution**

Generally spoken, the amount of MPI's which perish will go down because of the application of the Inception Phase Approach. This most important contribution lies in the possible *reduction of failures* of interorganizational collaboration. The trend is more and more organisations work in multi-party initiatives because they do not have the resources alone to outperform competition, reduce costs, gain market share or even survive. And IPA offers the possibility to enhance the viability of multi-party innovation initiatives with the use of the Idea gate in a multi-party context by gatekeepers with potential partners, who make an evaluation of the opportunity.

IPA makes it possible to fill up the portfolio of parent organisations with initiatives with a higher viability until now, because seven risks are actively addressed. This may lead to a *higher success rate* of MPI's which were granted access to the portfolio. Gate keepers who make decisions about the start and allocation of costly resources become less flawed dependent in cognitive processing during decision moments as they are now.

Another user group consist of people with responsibility for constructing the MPI.

Their practical contribution concerns one of the remarkable points showed up in the very beginning of this study. This fuzzy part was very much acknowledged by practitioners, yet they reported no name for this phase in the developmental process at the same time. Until now answers will develop for interventions with unanswered questions such as 'how will we direct each other', 'how will we get a clear idea of the benefits of participants' and 'how will we make participants look beyond their own interests or their own borders'? The second point – no name for the role which takes responsibility - stays unanswered, but the task description gives them a clue.

The consultants form the third user group. They receive an instrument to train their clients in IPA or to execute midterm evaluations to advise their principles about adjustments in their IP- approach.

Another more practical gain for the field is the acknowledgement of the adaptivity of the idea for the product/service and the organization to produce it. Both get the opportunity to grow and stabilize in the Inception phase before costly next phases are entered and irrevocable decisions are made. This is important given the amount of unclarity, both technically and commercially, but also about the organizational approach. Instead of deciding to fix the idea and the organization early, into having the burden of progressive insights in more formal and costly stadia.

Finally, in the early stages the questions are which idea fits the network or which network fits the idea? The freedom because of the informality of IPA gives the opportunity for players to gather and assess each other as those parties in the network who offer the strengths and trust. So, the best partners come forward to carry the longer-term responsibility to develop the idea which really contributes to the objectives of all participants.

Summarizing the scientific and practical relevance: the 'Valley of death' (Kijkuit & van de Ende, 2007) is somewhat easier to cross in practice.

## **7.6 Closing remarks**

This dissertation investigated the answer to the question: Which interventions can be applied to help several parties with various relevant ideas at the start of an innovative initiative, to increase the viability of that initiative?

This answer is approached from two perspectives: the availability of knowledge of academics and of the knowledge of practitioners in the field. Combined, the results show the existence of the Inception Phase. This phase makes it possible to assess the viability of a multi-party initiative by executing sets of interventions which produce ideas shared by key-participants about what solution to produce and what road to take. The reasons to do so is to make the perceptual distance between participants as small as possible and to maximize the chance of success. This, without irrevocable agreements and at low cost. This will help to prevent the failure of the initiative.



# APPENDICES



## Appendix A: literature Overview on front-end activities

Author(s)	Direct interventions	Indirect interventions
Asch (1953)		Create a climate of diversity so that parties experience possibilities for acting constructively and creatively
Fiske (1992); Bertels et al. (2011)		Make a mixed climate of Communal Sharing and Market Pricing
Partner selection (Gulati, 1995b)	Select partners based on prior direct partnerships, proximity, partner status, similarity	
Nakata & Sivakumar (1996)		Install a dynamic, future-oriented attitude, persistence, hard work, thrift, fear of embarrassment, and regard for relationships
(Bunker & Alban, 1997)	Legitimation of the assembled parties	
Gulati & Singh, 1998; Luo, 2005; Vlaar et al., 2006		Formalize division of labour for organizational and job design, propose shared institutions to facilitate coordination and cooperation, propose conventions for metrics and measuring, support meanings by glossaries and values such as reciprocity, information sharing and feedback, tune the tasks, make joint decision-making possible, make arrangements for conflict handling
Opportunity identification, project strategy formulation and project pre-planning (Khurana & Rosenthal, 1998)	State dissatisfaction with the current state of affairs	Mutual understanding: ability to understand and build on each other's knowledge base Ambiguity as an expression of multiple interpretations
Holmquist, 1999		Propose an 'imaginary organization' (an arena where actors can build knowledge on a joint basis, converting their individual knowledge into inter-organizational knowledge) with a collective storage mechanism.
De Brentani, 2001	Involve expert front-line personnel, help customers to appreciate distinctiveness and benefits	
Rice et al., 2001		<ul style="list-style-type: none"> <li>• Promote initial (non-Face 2 Face) introduction (e.g., virtual F2F), <i>short visit to location</i>, set up virtual mini teams, advocate shared cyber spaces</li> <li>• Reduce communication barriers (e.g., English courses, <i>set up contact person</i>, distribute newsletters and create communication protocol)</li> <li>• Routinize communications (e.g., regular reflection sessions, around the table discussions, project meetings, <i>visit to remote locations</i>)</li> <li>• Open communication channels (e.g., <i>direct communication channel</i>, centralized source of shared information)</li> <li>• Ensure message quality (e.g., detailed email, use phone, ensure understanding message received, <i>use graphical representation</i>)</li> <li>• Use various collaborative tools (e.g., <i>phone, email, groupware tools</i>, knowledge repositories, teleconference, videoconference, on-line chat).</li> <li>• Employ practices (flexible working hours, standardized software package)</li> </ul>



Author(s)	Direct interventions	Indirect interventions
Scott, 2001	Visits with customer teams, focus groups with customers for identifying questions/problems, analysis of the main type of use, design together with customers, review patents to see where competitors are in terms of technology	
Koen et al., 2001	Opportunity identification (flaws and gaps in current thinking), opportunity analysis, idea genesis, idea selection, concept & technology development	
Huxham & Vangen, 2003	Create awareness of interdependency	
Neu & Brown, 2005	Hire proper staff to understand customers' needs	
Jansen, 2005		Develop routines to tackle the short-term expectations of the parent organizations
Leiponen, 2005; Van Riel et al., 2004; Dyer & Nabeoka, 2000;		Arrange knowledge management (gathering information on feasibility internally and externally, and make it available and collectively owned)
Schruijer, 2005. Sullivan et al., 2012		Build trust by emphasizing fair balance, abilities for face-to-face interaction, presence of rules of engagement, install collaborative leadership that coordinates by uniting parties, work as a facilitator for interaction, portray a neutral attitude and an eye for interests, act independently from authorities
Vansina, 2005		Create space for reflection about processes and conclusions about the follow-up
Carson, 2006	Clarify definitions used and expectations of partners by formalization	
Ideation, idea incorporation, idea commitment (Griffith-Hemans & Grover, 2006)	Present an idea, specification of potential: business viability and feasibility analysis, allocation of resources, formal acceptance	
'Idea generation', 'idea development' and 'idea evaluation' (Kijkuit & Van den Ende, 2007)	Question the status quo, problem identification, generate responses, develop concepts, idea formulation, idea screening, go/no-go decision-making, problem structuring, describe the idea in detail, refine the idea on minor points, funding considerations, attend presentations about market developments, assess level of (possible) mutual understanding in non-redundant contexts, conceptualize the idea (by champion), prepare business cases (by champion), demonstrate the project's viability, set criteria (by gatekeeper), make acceptance decisions (by gatekeeper)	Create clear roles for the champion, the sponsor and the gatekeeper
Seidel, 2007	Creation of product concept, estimation of related costs	

Author(s)	Direct interventions	Indirect interventions
Cooper, 2008	Idea generation, product definition and project evaluation, formulation of the need to solve a problem, screening of ideas about preliminary target market / customer needs / market requirements, and identifying technology solution	Negative evaluation
Van Dijk, 2008		Use one of these credentials for the MPI: 1) Conformation: embed the initiative into the existing conventions 2) Selection: look for a supporting group that enhances legitimation 3) Transformation: introduce new conventions that can be merged with old conventions 4) Toleration: accept a combination of formal <u>and</u> informal strategic areas 5) Non-conformation: ignore existing conventions ('Saying yes and behaving differently').
Schruijer & Vasina, 2008	Joint exploration and development of new ways of working Bring partners together for orientation and legitimation of their presence	Prevent tough structures and dominant leadership, Address individuals and their typical context, Work on emotional consequences of change, Notion of interdependency, Pay attention to righteousness, Create face-to-face contact, Develop rules of engagement, Priority for low-risk activities, Grow trust instead of wicked-fairy effect: parties which have not been invited feel excluded
Carson et al., 2009		Specify detailed coordination mechanisms
Oxley and Wada, 2009		Promote the joint venture format,
Klijn, Edelenbos & Steijn, 2010		Install values such as honesty and transparency
Tortoriello & Krackhardt, 2010		Make sure the (two) companies are both strongly and reciprocally tied to the same (third) party.
Akkerman & Bakker, 2011	Othering, legitimating coexistence, communicative connecting, making efforts of translation, enhancing boundary permeability, routinization, perspective making, perspective taking, confrontation, recognizing a shared problem space or boundary object, hybridization, crystallization, maintaining uniqueness of practices and continuous work on boundary	
Mulder, 2012		Select carefully project leader and project team members
Twardy-Duisters, 2013	Use twelve steps in partner selection, Increase ownership, Make as many different opinions visible as possible	Develop and establish common starting points

Author(s)	Direct interventions	Indirect interventions
Badir & O'Connor, 2015	Check the reputation of the potential partner, Check the expectations for dealing with the partner for an extended time, Obtain references from a third party which has had prior dealings with the partner, Check how the partner feels about handling trust, Execute a cost-benefit analysis to assess whether acquiring knowledge from a partner is worth the communication (to share tacit knowledge) and coordination Costs, Formulate criteria for a good or bad customer for the new product/service, Gather insights into user applications, technological trends, and distribution systems, identify lead users to identify viable design specs	Frequency of interaction, Media-richness of communication, Amount of sensitive and important information to be shared, Collusion on prices, Geographic territory allocation, Modular or integrated development > outcome: level of tie strength (weak-strong) between partners (closeness, reciprocity, indebtedness/advice, help, knowledge flow in both directions), promise of reduction of costs, promise of minimizing negative impact of opportunistic behavior, Partners' effectiveness in the transfer of tacit knowledge, partners' technical skills (complementary or similar), Liberty to use better technology (instead of being forced to forgo that technology), Certain degree of trust
Heidenreich, (2015)	Mental simulation. Benefit comparison.	
Schweizer (2015)	Concern staffing with 'Technology Reflective' persons.	
Liedka, (2015)	Participant observation, interviewing, journey mapping, and job-to-be-done analysis, prototyping, field experiments	Imagery, storytelling, metaphors and analogies, capturing individual ideas on post-it notes and whiteboards, mind mapping, brainstorming, concept development techniques, assumption surfacing
Beverland et al., (2016)	Exposure, co-opting and repurposing	
Elin, Griffin & Langerak (2016)	Consistency at Idea gate and at Concept gate	
Eling & Herstatt (2017)	Assessment of articles in <i>Journal of Production Innovation</i> concerning the front end	
Hofman, Halman & Song, 2017		Degree of organizational coupling

## Appendix B: Activities linked to viability labels in literature

1. <b>The fit of the objectives</b> of the initiative with the objectives of the individual partners	Arrange legitimation of the assembled parties, State the dissatisfaction with the current state of affairs, Demonstrate the project's viability, Specify potential: business viability and feasibility analysis, Recognize a shared problem space or boundary object, Use mental simulation and benefit comparison, Bring partners together for orientation and legitimation of their presence, Pay attention to righteousness, Apply techniques for objective formulation, Review patents to see position of competitors
2. <b>A feasible idea</b> or concept with six properties (technology, time to market, risks, knowledge, market/user fit, performance)	Screen ideas about preliminary target market / customer needs / market requirements and identify technology solution, Formulate perspectives, Formulate idea and its potential, Prepare business case and cost estimate, Gather insights into user applications, technological trends, and distribution systems, Identify lead users to identify viable design specs, Involve expert frontline personnel, make customers help to value appreciate distinctiveness and benefits, Visit with customer teams, Use focus groups with customers for identifying questions/problems, Analyze the main type of use, Design together with customers, Attend presentation about market developments, Formulate criteria for a good or bad customer for the new product/service, Identify lead users to identify viable design specs, discover jointly new value perspectives (re-purposing), Make a client journey, Develop a prototype/protocetp,
3. <b>The coordination</b> in the next phases	Set up virtual mini teams, Execute joint exploration, Advocate shared cyber spaces, Reduce communication barriers, Set up contact person, Set up communication protocol, Open communication channels (e.g., direct communication), Centralized source of shared information, Allocate resources, Abilities for face-to-face interaction, Presence of rules of engagement, Continuous learning and translation of others starting points, Create face-to-face contact, Develop rules of engagement, Give priority for low-risk activities, Grow trust instead of wicked fairy effect: parties which have not been invited feel excluded, Specify detailed coordination mechanisms, Think about frequency of interaction and media-richness of communication, Clarify definitions, metrics and expectations of parties, Develop new ways of working
4). <b>The cooperation</b> in the next phases	Select partners based on prior direct partnerships, proximity, partner status, similarity, Ensure the legitimacy of the assembled partners, Promote initial (non-Face to Face) introduction (e.g., virtual F to F), Present English courses, Distribute newsletters, Advocate shared cyber spaces, Routinize communications (e.g., regular reflection sessions, around the table discussions, project meetings), Make as many different opinions visible as possible, Ensure message quality (e.g., detailed email, use phone), Ensure understanding messaged received, Use graphical representation, Vary collaborative tools (e.g., <i>phone, email, groupware tools</i> , knowledge repositories, teleconference, videoconference, on-line chat), Use best practices (flexible working hours, standardized software packages), Explore jointly and develop new ways of working, Use each other's tools (co-opting), Reveal each other's interpretative schemes
5. <b>Specialized tasks</b> for horizontal and vertical integration in parent organizations	Conceptualize the idea (by champion), Prepare business cases (by champion), Set criteria (by gatekeeper), Make acceptance decisions (by gatekeeper), Prevent tough structures and dominant leadership, Decide on sensitive and important information to be shared, Use geographic territory allocation, allow liberty to use better technology (instead of being forced to forgo that technology)
6. <b>An approach for partitioning</b> the development of the idea	Create space for reflection about processes and conclusions about the follow-up, Think about modular or integrated development outcome: level of tie strength (weak-strong) between partners (closeness, reciprocity, indebtedness/advice, help, knowledge flow in both directions), maintain uniqueness of practices and continuous work on boundary, Execute field experiments, Make a job to be done analysis,
7. <b>The support of interested partners</b> to realize the idea with a certain degree of trust	Bring parties together for understanding each other's knowledge base by justifying co-existence, Create awareness of interdependency by showing consequences of change, Bring short visit to location, Identify opportunity (flaws, problems and gaps in current thinking), Build trust by emphasizing fair balance, Make as many different opinions visible as possible, Develop and establishing common starting points, Check the reputation of the potential partner by othering, Check the expectations for dealing with the partner for an extended time, Obtain references from a third party which has had prior dealings with the partner, Assess how the partner feels about handling trust, Execute a cost-benefit analysis to assess whether acquiring knowledge from a partner is worth the communication (to share tacit knowledge) and coordination costs, Promise cost reductions, Promise to minimize negative impact of opportunistic behavior, Understand partners' effectiveness in the transfer of tacit knowledge, Assess partners' technical skills (complementary or similar), Sign intention agreements, Make go/no-go decisions formally, Formulate funding considerations, Set criteria for acceptance

## Appendix C: literature CIMO's

In the context of a starting MPI:

- make the availability of staff, strengths and typical styles clear (I) so a shared understanding about contributions and payoffs is in place (M) leading to viable cooperation in activities (O) (Gulati, 2012)
- make an inventory of competences and needs of parties (I) because this reduces uncertainty (M) leading to good arrangements to cooperate (Gulati, 2012)
- start immediately with building trust (I) because this demonstrates the integrity of parties (M) preventing excessive contractual formality (Goshal, 1996)
- start immediately with building trust (I) because this strengthens relationships (M) leading to smooth knowledge exchange (O) (Leven, 2004)
- introduce structures, routines and planning (I) so a deliberate and orderly alignment or adjustment of partners' actions is possible (M) leading to a viable coordination of activities (O) (Gulati, 2012)
- present product or service concepts in elemental descriptive forms (that included verbal stories, verbal metaphors, and physical prototypes) (I) so teams can shift individual concept components (M) resulting in flexible changes required due to new technical or market information (O) (Seidel, 2007)
- ensure that the characteristics of the idea are also formulated by users (I) because connecting meaningfully with people's lives (M) leads to commercial success (O) (Press, 2003)
- use boundary objects (I) so they can be reflected on by all participants (M) leading to bridging knowledge boundaries (O) (Stompff, 2011)
- provide users task-enabling self-reflection opportunities (I) so their preferences start to be stable (M) leading to market understanding/co-creation (Hauser, 2013)
- use methods as mental simulation or benefit comparison (I) so the contribution of partners becomes clear (M) leading to support for collaboration with parties (O) (Heidenreich, 2015)
- use visualization, ethnography, collaborative sensemaking, assumption surfacing, field experiments to formulate objectives/ideas (I) so judgements, debates, and tension are eliminated (M) leading to leverage of differences (O), (Liedka, 2015)
- create only for modular work packages high coupling of partners (I) because clearly defined intermediate deliverables makes coordination effective (M) leading to higher chance for commercial success (O) (Hofman, Halman & Song, 2017)
- use boundary crossing activities (I) to reveal the interpretative schemes of parties (M) which facilitates mutual learning (O) (Beverland et al., 2016).
- treat input of mother organizations as trade goods (I) so transactions are based on rational calculations (M) leading to fair reciprocity in collaboration (O) (Fiske, 1992)

- treat within MPI each other as equivalent (I) so individual differences are ignored leading to trust and open interactions in collaboration (O) (Fiske, 1992)
- invite staff who are relevant from a customer point of view (I) so the MPI is able to understand customers' problems and needs (M) leading to fulfilling expectations of customers (O) (Ottenbacher, 2006)
- invite staff representing the strength of the organization (I) knowing that capacities take a long time to grow (M) leading to unique resources in cooperation (O) (Hamal, 1994)
- implement collaborative leadership (I) because it is concurrent, collective, mutual and compassionate (M) leading to the presence in more positions and decision-making by everyone feeling responsible, allowing that everybody may speak for entire organization and dignity is preserved for all MPI participants (O) (Raelin, 2006).
- establish an initial level of trust (I) to facilitate positive self-reinforcing effects on the development of the collaborative relationships (M) leading to efficient degree of formalization, interorganizational performance and positive interpretation of each other's behavior (O) (Doz, 1996; Schrujjer, 2005; Vlaar, 2006)
- search for champions, sponsors and gatekeepers (I) because they promote the MPI in mother organizations (M) leading to introduction in formal processes (O) (Kijkuit, 2007)
- introduce important definitions and expectations (I) preventing dual identification of MPI members (M) leading to stakeholders' ability to assess partners' behavior (O) (Carson, 2006)
- create interaction based on communal sharing and market pricing (I) to get equivalent transactions (M) leading to fair mutual prices (O) (Fiske, 1992)
- aim for a collaborative leadership style (I) so action learning is facilitated (M) leading to the broad contribution of participants (Raelin, 2006)
- combine organizational strengths (I) so capabilities are increased (M) leading to competitive advantages (O) (Hamal et al.,)
- choose a level of formalization for roles and metrics (I) that make it possible for partners to assess each other's behavior (M) leading to viable coordination (O) (Carson, 2006)
- state formalized procedures (for problem solving, decision-making, conflict resolution, performance evaluations) (I) that create a positive spiral based on partners' sense of procedural justice (M) leading to collaboration in domains that are extremely sensitive or risky (Faems, 2008)
- use an open and sometimes layered exchange of knowledge, with discovery register and concealment (I) so open exchange is possible (M) leading to the effective diffusion of knowledge. (Bogers, 2014)
- use alliances with customers or suppliers to jointly develop products/technologies (I) (Bindroo, 2016) to rely on external knowledge (M) to be innovative and remain competitive (O) (Chesbrough, 2003)

- have organizations join the MPI (I) to reduce future transaction costs (M) to focus on efficiency benefits (O) (Williamson, 1985)
- have organizations join the MPI (I) for partners' tangible or intangible resources (M) to receive competitive advantages (O) (Wernerfelt, 1984)
- arrange the use of information sharing procedures, non-contractual commitments, change management approaches, arrangements for penalties (I) to prevent problems (O) because uncertainty about competences and needs of partners diminishes viability (M) (Gulati & Gargiulo, 1999)
- use the Communal Sharing and/or the Market Pricing transaction style (I) because they assure sharing objectives, hazards and benefits building a non-equity relationship and inputs can be priced (M) so individuals treat each other equally using common values as money for inputs (O) (Fiske, 1992; Bertels, 2011).
- introduce routines for gathering codified information about feasibility (I) because this ensures effective diffusion of knowledge (M) (van Riel, 2004) so that it becomes available and collectively owned in a network-level storage system (O) (Leiponen, 2005; Dyer, 2000).
- use choose the right frequency and media richness for the partners' communication (I) because this promotes trust and tie strength (M) ensuring that none of the partners shows opportunistic behavior (O) (Badir, 2015).
- execute activities for conversion of own work protocols to work packages and common tools for all participants (I) to facilitate action and interaction (M) delivering the binding of the parties (O) (Akkerman, 2011).
- leaving objectives unshared (I) makes that parties assess their contribution based on own objectives (M) leading to several problem perceptions (O) (Schruijer & Vansina, 2007).
- ignoring overlapping objectives for the same market (I) diminishes party's willingness to collaborate (M) leading to less contribution (O) (Tucci, 2004).

## Appendix D: MPI's and interviewees overview

Explorative interviews	Names	Background	
Abbot	K. Wijer	Maintenance	
Friesland Campina	L. Horn	Technology	
Philips	T. v.d. Pluym	Senseo	
Albemarle Catalysts	K. v.d. Wiele	Research	
Topsport Centrum FlikFlak	W. Vos	Starter	
Paperfoam	M. Geerts	Circular project	
University Nijmegen	J. Schalks	Valorisation of ideas	
Yes Delft	J. v. Kranendonk	Solar panels on offices	
SIOO	A.de Man	Competence	
MPI interviews	Names	Number	Remarks
<b>1 New Glue</b> (Saba Adhesives, Glue academy)	A. Knottnerus	1.1	Explorative
	M. Abee	1.2	Explorative
	R. de Block	1.3	Explorative
<b>2 Gas expansion</b> (Gasunie, Chemelot, entrepreneur, RVO)	M. Dumont	2.1	
	J. Viljeer	2.2	
	M. Bakker	2.3	
<b>3 Groengelink</b> (Kennisset Foundation, Min. of agriculture, IVN, Mindmatters)	E. Leusink	3.1	
	H. Ladders	3.2	
	L. Ijmker	3.3	
<b>4 Meerjaren afspraken hergebruik warmte in glas productie</b> (RGS, Ardagh, NCNG)	L. Wolthers	4.1	
	M. den Heijer	4.2	
	S. Kahl	4.3	
<b>5 Netherlands Circulair</b> (MVO, Nuovalente, KlikNL, Spark design, het Groene Brein, Sustainable finance lab)	E. Hoog Altink	5.1	
	A. Heideveld	5.2	
	J. Hinfelaar	5.3	
	M. Schuurman	5.4	
<b>6 Zero energy house</b> (Engineering company, vd Maazen Construction, Architect studio)	E. Heijnen	6.1	
	Vd Maazen	6.2	
	M. van Delft	6.3	
<b>7 Duurzaam door</b> (entrepreneurs, Min. of Economics, Science Institute, Energy Corp.)	A. Bijma	7.1	
	J. Eigeman	7.2	
	L. Crombach	7.3	
<b>8 Platform biodiversity, Economics and Ecology</b> (VNO, DSM, UCN and others)	W. Boshardt	8.1	
	E. van Zadelhof	(8.2)	
	E. Trines	8.3	
<b>9 Solar integrated solutions</b> (entrepreneurs, v.d. Maazen construction, Wicro)	v.d. Maazen	9.1	
	P. de Jong	9.2	
	B. Allart	9.3	
<b>10 Heat pump innovation</b> (Cosun, Tata, construction company)	A. de Haan	11.1	
	T. van de V	11.2	
Expert interviews	Name	MPI	Experience
<b>1 Tutti Foodi</b>	W. Vermeer	Drying fruit	Specialist
<b>2 Verbond van den Bosch</b>	T. Cornelissen	Meat contract	Specialist
<b>3 Blended culture fermentation</b>	R. Zonneveld	Disinfection fluid	Specialist
<b>4 Door to door services</b>	K. Bergsma	Luggage handling	Specialist
<b>5 Rijksdienst voor Ondernemend Nederland</b>	H. Nijhuis	Green Deal	Specialist
<b>6 Weg van de toekomst</b>	De Hoogt en de Hoon	Weg v. d. Toekomst	Specialists
<b>7 Utrechtse Ontwikkelings Maatschappij</b>	R. Gordon	Start-up's	Specialist
<b>8 Rijkswaterstaat</b>	H. Hortensius	Chain Innovation	Specialist
<b>9 Power to gas</b>	J. Kimman	Hydrogen from sunlight	Specialist



## Appendix E: Interview Approach

**Initiatief:**

**Naam persoon:**

**Datum:**

### Deel 1: descriptief (Start opname)

#### Toelichting

**Achtergrond:** Dit onderzoek is gericht op activiteiten en interventies die Multi Party Initiatieven levensvatbaar maken. We doen deze interviews met mensen die betrokken zijn bij het eerste begin. Gebaseerd op deze interviews en wat bekend is uit de literatuur willen we lering trekken voor begeleiders van deze initiatieven. Met dit leerresultaat maken we een protocol dat moet helpen een traject zo in te richten dat de kans op een levensvatbaar initiatief vergroot wordt.

**Anonimiteit:** Ik zal uw gegevens vertrouwelijk gebruiken en om niets te vergeten uw antwoorden 'op band' opnemen. Gegevens worden anoniem uitgewerkt waarna u niet meer traceerbaar zult zijn. De opbrengsten van dit en andere interviews worden gebruikt in een proefschrift. Mocht ik een quote van u willen gebruiken neem ik met u daarover contact op.

**Aanpak interview:** het eerste deel van het interview is bedoeld om uw beeld te pakken te krijgen van het initiatief en het tweede deel wat positief of negatief werkt om te besluiten met uw partners door te gaan.

#### Introductie

1. Wat is uw achtergrond en uw functie in de routine/moeder organisatie?
2. Waar is uw organisatie goed in?
3. Feiten als doorlooptijd, mate van nieuwigheid t.o.v. eigen markt, toepassingen, technologie, aantal jaren van geïnterviewde bij organisatie, eventueel een levenslijn van het initiatief.
4. Op welk moment en hoe werd u betrokken bij het initiatief?
5. Wat was de status van het initiatief op dat moment
6. Welke partners waren op dat moment betrokken?

#### Het initiatief

1. Hoe zag de situatie eruit bij de aanvang? Wanneer is het gestart?
2. Welke vraagstukken waren te beantwoorden bij het begin?

3. Vertelt u a.u.b. welke activiteiten zijn verricht vanaf het begin tot nu toe
  4. Welke regisserende activiteiten zijn verricht?
  5. Voor welke onderwerpen moet er kennis op tafel komen?
- (> voor interviewer: zowel inhoudelijke als procesmatige activiteiten; doorvragen: heeft u het begin nu verteld? Hoe kwamen partners bij elkaar? Kenden partners elkaar?)

1. Hoe gingen/gaan betrokkenen met elkaar om?
2. Welke besluiten worden op welke manier genomen?
3. Welke afspraken/gebeurtenissen vindt u typisch voor dit initiatief?
4. Welke problemen bent u zoal tegengekomen?

### **Deel 2: verklarend (voor Interviewer: is besluit om samen door te gaan al genomen of niet)**

1. Wat vindt u een goede uitkomst van de eerste fase alvorens te beslissen samen verder te gaan? Waarom vindt u dat?
2. Welke activiteiten/gebeurtenissen hebben bijgedragen/zullen bijdragen juist wel/ juist niet te bereiken samen door te gaan. Wat bewerkstelligen deze activiteiten/gebeurtenissen dan?
3. Welke consequenties heeft uw eigen deelname gehad? Waaraan is dat te merken?
4. Hoe is de samenwerking (procesafspraken, communicatie, informatieverzameling) ingericht/gegaan en helpt dat/heeft dat geholpen om de gewenste uitkomst te bereiken?
5. Hoe verhoudt zich uw eigen ervaring met de opgave in het initiatief?
6. Wat dienden de deelnemers te overbruggen om een levensvatbaar initiatief te creëren? Hoe werd overbrugging gedaan en hielp dat/helpt dat om gewenste uitkomst te bereiken?

### **3) Afsluiting**

- Hoe beschouwt u het initiatief nu: levensvatbaar/niet levensvatbaar (indien mogelijk een %)
- Hoe vond u het gaan?
- Hebt u iets toe te voegen, gaan we iets missen?
- De komende tijd zullen we de gegevens verwerken. Wanneer we uw gegevens en die uit de andere interviews op een rij hebben zullen u natuurlijk dit toesturen dan wel in een workshop met u doornemen. Voor nu wil ik u hartelijk bedanken.

## Appendix F: Questionnaire

### De Waarde van faciliterende<sup>1</sup> activiteiten in startende initiatieven met meerdere partijen

Geachte deelnemer,

Voor je ligt een enquête. Deze vindt plaats in het kader van mijn promotieonderzoek naar hoe een startend multi-party initiatief - op basis van een geïdentificeerde kans of erkend probleem - het beste kan worden ingericht. Minstens één van de partners heeft een commercieel belang. De enquête betreft faciliterende activiteiten. Dit zijn activiteiten die relevant zijn voor het effectiever laten verlopen van de directe activiteiten die leiden tot een levensvatbaar initiatief. **Indien je inderdaad verantwoordelijk bent (geweest) voor een dergelijke opgave** vraag ik je aan te geven hoe belangrijk je de betreffende faciliterende activiteit vindt bij een startend multi-partner initiatief en vervolgens je score terug te sturen naar [jaap.walter@p2.nl](mailto:jaap.walter@p2.nl). Indien gewenst kom je op de lijst met personen die de geanonimiseerde uitkomst zullen ontvangen.

*Met vriendelijke groet, Jaap Walter*

**Naam:**

**Rol in initiatief:**

**Titel multi-party initiatief:**

*Omcirkel per item het antwoord van je keuze*

	< Niet belangrijk				Zeer> belangrijk
1 Duidelijk maken van de geschiedenis van partners voor partners (dummy)	1	2	3	4	5
2 Bespreken van mate van marktoverlap van deelnemende partijen	1	2	3	4	5
3 Interventies om gedeelde bedoelingen te krijgen	1	2	3	4	5
4 Inrichten van besluitvorming in het initiatief	1	2	3	4	5
5 Tegenhouden van andere investeringen bij partners (dummy)	1	2	3	4	5
6 Interventies om taakverdeling vorm te geven	1	2	3	4	5
7 Gelijkwaardigheid (bijv. met beslissen of in spreektijd) bewaken bij onderhandelingen tussen partijen	1	2	3	4	5
8 Het proces zoveel mogelijk inrichten met op zichzelf staande werkpakketten	1	2	3	4	5
9 Zorgen dat capaciteiten van ene partij ingezet worden ten behoeve van de bedoelingen van deelname van de andere partijen	1	2	3	4	5
10 Gelegenheid creëren om vertrouwen op te bouwen	1	2	3	4	5
11 E.a. inrichten voor omgang met niet betrokkenen (dummy)	1	2	3	4	5
12 Zorgen voor synchronisatie van acties van partners	1	2	3	4	5

<sup>1</sup> In this study those activities that are process oriented: (part of) an activity helping to solve a problem in the execution of direct activities (a designed configuration of a verb and a generative mechanism according to Andriessen and van Aken, 2011)

13	Tegelijkertijd uitwerken van ideeën voor technologie, markt, prestatie, risico, nieuwe kennis en tijdhorizon voor het nieuwe product of de dienst	1	2	3	4	5
14	Instrumenten om activiteiten in het initiatief te kunnen sturen	1	2	3	4	5
15	Coördinatie kosten voor onderlinge afstemming in beeld krijgen	1	2	3	4	5
16	Afspraak maken voor niet bedoelde onderlinge kennisoverdracht	1	2	3	4	5
17	Kwaliteit bewaken van het selecteren van partners	1	2	3	4	5
18	Inrichten van het delen van informatie incl. het geven van feedback.	1	2	3	4	5
19	Routines ontwikkelen binnen het initiatief	1	2	3	4	5
20	Goede mensen/kunde aan boord te krijgen	1	2	3	4	5
21	Zorgen dat deelnemers zich met zowel moederorganisatie als met initiatief identificeren	1	2	3	4	5
22	Vertalen van heersende normen, termen en waarden bij partner organisaties naar een specifieke set binnen het initiatief	1	2	3	4	5
23	Zorgen voor acceptatie door partners van de standaarden (zoals bijvoorbeeld m.b.t. techniek, inkoop, beloning) van partners	1	2	3	4	5
24	Interventies om waarden gedeeld te krijgen	1	2	3	4	5
25	Keuzen maken voor aard van de communicatiemiddelen	1	2	3	4	5
26	Aandacht schenken aan omgang met contractuele formaliteiten	1	2	3	4	5
27	Zorgen voor plannings over onzekerheden (dummy)	1	2	3	4	5
28	Regeling voorstellen voor beantwoorden van ad hoc problemen	1	2	3	4	5
29	Onderscheid maken tussen echte en minder belangrijke issues	1	2	3	4	5
30	Bewaken van omgang met beperkte materiele en immateriële resources	1	2	3	4	5
31	Zorgen voor efficiency van gebruik van partner 's bijdragen	1	2	3	4	5
32	Specifieke aandacht voor 'ruis'2 in hoofden van besluitvormers	1	2	3	4	5
33	Aandacht voor (collaboratieve) leiderschapsstijl zoals elkaar afrekenen, juist onderlinge verschillen laten verdwijnen, afwegen van belangen e.d.	1	2	3	4	5
34	Bezien welke instrumenten voor de marketingcampagne relevant zijn (dummy)	1	2	3	4	5
35	Interventies om partners hun grenzen te laten overschrijden (zoals snappen van partner 's identiteit, mensen uitwisselen, reflectie op verschillen als kansen, gezamenlijke werkpakketten, gemeenschappelijke betekenis creatie e.d.)	1	2	3	4	5
36	Zorgen voor duidelijkheid over benodigde activiteiten	1	2	3	4	5
37	Gebruik van een activiteitschema voor overzicht van activiteiten	1	2	3	4	5
38	Keuzes maken voor frequentie van communicatie	1	2	3	4	5

Zet mij op de verzendlijst voor de uitkomst van deze enquête: ja/nee  
 Dank je wel voor je medewerking!

2 Veel voorkomende ruis: verleden op toekomst projecteren, anderen eigen voorkeuren opleggen, elementen over benadrukken, huidige situatie te veel laten meespelen, eigen voorkeuren niet scherp hebben, te optimistisch, veronderstellingen ten onrechte bevestigd zien, voorkeur voor makkelijk voorstelbare zaken

## Appendix G: Discriminating survey statistics

Item	Mean	SD/Mean: coefficient of variance	Correlation: - 95, 93%
10	4,73	0,11839	
36	4,35	0,20367	
4	4,27	0,21826	
2	4,24	0,24433	
21	4,21	0,22517	
29	4,19	0,19164	
20	4,16	0,18942	
12	4,09	0,22200	
18	3,91	0,23452	
14	3,85	0,26415	
6	3,84	0,26406	
17	3,72	0,27849	
24	3,68	0,28586	
32	3,68	0,33614	
30	3,65	0,30657	
35	3,59	0,33593	
9	3,56	0,29494	
33	3,55	0,31521	
37	3,47	0,36311	
38	3,47	0,30749	
7	3,41	0,33958	
3	3,4	0,365	
13	3,38	0,35414	
26	3,38	0,32958	
31	3,37	0,31186	
22	3,33	0,33513	
25	3,26	0,35888	
27	3,23	0,35015	
1	3,22	0,36643	
8	3,17	0,38643	
15	3,15	0,41174	
23	2,96	0,41891	
11	2,93	0,41843	
28	2,78	0,49784	
34	2,73	0,45934	
19	2,66	0,42330	
16	2,58	0,48914	
5	1,62	0,53086	

## Appendix H: MPI's viability (sub)criteria

Viability criteria and new sub-criteria from MPI's plus remarks	Original sub-category for viability plus remarks from 10 MPI's
<p><b>1) Support of partners</b></p> <p><b>Sub-criteria/Scales &gt; en V:</b></p> <p><b>1a) Power (contribution yes – no)</b>  <b>For example:</b>            Makes decision to continue            Gives priority as MT member            Authorized for budget/deferral costs            CEO at the start and in the follow up            Creates right conditions            Willing to pay next step            Provides test location            Provides FTE's            Provides room            Prevents circulation of persons            Defends priority            Gives in-kind support            Look for support in supply chain            Meets with other partners            Shares the risk in the MPI.            Presents initiative in other gremia.</p>	<p><b>MPI maturity level:</b></p> <ul style="list-style-type: none"> <li>&gt; Eagerness to invest.</li> <li>&gt; Wants to share the risk in the MPI.</li> <li>&gt; Essential persons/parties have said: we are on board.</li> <li>&gt; Decision to go on with each other.</li> <li>&gt; A decision to continue for scaling up: the next viability decision.</li> </ul> <p><b>Supportive roles:</b></p> <ul style="list-style-type: none"> <li>&gt; Initiator is still on board.</li> <li>&gt; Supporting person does also work.</li> <li>&gt; A party is the launching customer.</li> <li>&gt; Ownership clear, also with more owners.</li> <li>&gt; Stop means hurting consumer.</li> </ul> <p><b>Ability:</b></p> <ul style="list-style-type: none"> <li>&gt; Partner is a doorkeeper: he can mobilize resources quickly.</li> <li>&gt; Supporters' role is to create the right conditions.</li> </ul>
<p><b>1b) Actual role (relevant yes – no)</b>  <b>For example:</b>            Gatekeeper            Resource manager            Owner, also more owners.            Launching customer            Member steering committee            Supplier            End-user</p>	<p><b>Contribution:</b></p> <ul style="list-style-type: none"> <li>&gt; MT member presents initiative in other gremia.</li> <li>&gt; Support measured by asking for financial contribution.</li> <li>&gt; Support measured by the level of sharing contacts.</li> <li>&gt; Partners are willing to pay next step.</li> <li>&gt; Finances for the next phase are arranged.</li> <li>&gt; Test location provided (contribute capacity).</li> <li>&gt; Persons allowed to participate 100% (contribute capacity).</li> <li>&gt; Partner organisation gives a room (contribute capacity).</li> <li>&gt; Access to machines (contribute capacity).</li> <li>&gt; Expenses paid (contribute money).</li> <li>&gt; Willingness to provide cash (contribute money).</li> <li>&gt; Willingness to pay salary in next phase (contribute money).</li> <li>&gt; Deferral costs accepted (contribute money).</li> <li>&gt; Participate in Steering Committee (contribute role).</li> <li>&gt; Ready to invest (contribute finance).</li> </ul>
	<p><b>Commitment.</b></p> <ul style="list-style-type: none"> <li>&gt; Readiness to cooperate in other, bigger, upscaled follow ups.</li> <li>&gt; Ask commitment for four years, not for 4 x 1 year.</li> <li>&gt; Commitments are clear.</li> <li>&gt; CEOs are the same persons who start the initiative and form the support later.</li> <li>&gt; Prevents circulation of persons.</li> </ul>
	<p><b>Action:</b></p> <ul style="list-style-type: none"> <li>&gt; Defend priority for the initiative.</li> <li>&gt; Allocates really capacity.</li> <li>&gt; See if the initiative fits the objectives of the organization.</li> <li>&gt; Ask sometimes for reports and problems.</li> <li>&gt; Sometimes they make a TOR.</li> </ul>
	<p><b>Other</b></p> <ul style="list-style-type: none"> <li>&gt; Sometimes look for support in the supply chain (source).</li> <li>&gt; When partners contribute (nature of support).</li> <li>&gt; Persons are part of the line of command in their organization (position).</li> <li>&gt; Ideas about builders in the Netherlands (supplier).</li> <li>&gt; The program manager starts a lot, but the yield is low because her management is not yet supportive (efficacy).</li> <li>&gt; Expectations for more than a year (expectations).</li> <li>&gt; From the beginning four house owners ready for application (launching customer).</li> <li>&gt; Higher levels of partner meet each other also (ties).</li> <li>&gt; Gate keepers in partner organizations know core members or have visited MPI (perceptual distance).</li> <li>&gt; In-kind support: contributing hours for talking about direction and advice as well some financial contribution to show interest and to make subsidy possible.</li> </ul>

Viability criteria and new sub-criteria from MPI's plus remarks	Original sub-category for viability plus remarks from 10 MPI's
<b>2) Idea with six characteristics</b>	<b>2a) Market (application clear yes – no)</b>
<b>Sub-criteria/Scales &gt; en V:</b>	<ul style="list-style-type: none"> <li>&gt; If it has a function that fits all participants.</li> <li>&gt; Short road to users/translators.</li> <li>&gt; The bigger the scale, the bigger the interest.</li> <li>&gt; Try to apply on various places.</li> <li>&gt; Superordinate goals from users met.</li> <li>&gt; Thinking from the beginning on a big scale.</li> <li>&gt; Immediate from user viewpoint.</li> <li>&gt; The business side has good perspectives.</li> <li>&gt; Story about business case available.</li> <li>&gt; If it stops, it should hurt the target group.</li> <li>&gt; We focus on already interested companies.</li> <li>&gt; Develop networks of municipalities, institutes and companies.</li> <li>&gt; Assumptions about maturity of the market</li> <li>&gt; For companies and institutions</li> <li>&gt; Time to market 0 – 5 years.</li> <li>&gt; Uniform ideas about application.</li> </ul>
<b>2d) Attraction (formulated yes – no)</b> <ul style="list-style-type: none"> <li>&gt; Description with broader applications</li> <li>&gt; The welding rusts, glue does not.</li> <li>&gt; The idea is loaded with an important unalterable component.</li> <li>&gt; 'One click to get your info', 'information per sector'.</li> <li>&gt; Appealing force of the idea, you see immediately applications.</li> <li>&gt; Just make sure it is it 'Zero On the Meter'.</li> <li>&gt; We need a backbone solution and vary on that in various houses.</li> <li>&gt; Name: A Dream deal.</li> <li>&gt; It must be done in the shell of the house.</li> <li>&gt; 'A second life cycle' is a 'one liner' fitting a lot of companies: repairing washing machines, recycling business, spare parts selling.</li> <li>&gt; Normal PV-panels are ugly: we need a beautiful product.</li> <li>&gt; A solar panel that fits the roof tiles.</li> </ul>	<b>2b) Performance (requirements clear yes – no):</b> <ul style="list-style-type: none"> <li>&gt; The idea is practicable.</li> <li>&gt; Is divided in themes.</li> <li>&gt; Developed enough to show suitability for the market</li> <li>&gt; The idea must be 'achievable'.</li> <li>&gt; Ideas available about appliance/price/pay-back time.</li> <li>&gt; Functionality.</li> <li>&gt; Longer term &gt; broader application.</li> <li>&gt; Develop a product to prevent garbage &gt; later: last longer, are better repairable or upgradable.</li> </ul>
<b>2d) Form (available yes -no):</b> <ul style="list-style-type: none"> <li>&gt; Is a visual with possibility to stand around.</li> <li>&gt; Theoretical evidence is not enough: you need a demonstrator</li> <li>&gt; A mock-up for visibility and sponsoring; (a panel of 10 x10 cm)</li> <li>&gt; Endpoint of this phase is a demonstrator</li> <li>&gt; Description of thing: a radiation panel.</li> <li>&gt; It is still 'idea on paper'.</li> <li>&gt; A mock-up for visibility and test in the market.</li> <li>&gt; A 'Praatplaat'</li> <li>&gt; Idea is visualized as a circle with companies that want to share their experience.</li> <li>&gt; A webtool for info about environment and nature (idea).</li> <li>&gt; Idea is changed in a proposition.</li> <li>&gt; A drawing with participants in a circle.</li> <li>&gt; A green deal text</li> <li>&gt; Concept for Demonstration model.</li> <li>&gt; Concepts/drawings that fit the objectives.</li> <li>&gt; A (design for a) demonstrator is present for example a 3d-Cat model</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Work together in win-win while the 'Impact on the ground' is clear'</li> <li>&gt; Zero energy houses or Energy efficient houses.</li> <li>&gt; 4 Houses is ok short term but later 100 houses guaranteed for 30 years.</li> <li>&gt; It must be possible to scale the result up.</li> <li>&gt; To see as entrepreneur that you will gain money.</li> <li>&gt; A building integrated PV-panel with affordable price.</li> <li>&gt; There is a statement about a demonstration/trial situation including tests.</li> <li>&gt; 50% capital reduction.</li> <li>&gt; Standard unit, 2 MW</li> </ul> <b>2c) Technology (formulated yes – no):</b> <ul style="list-style-type: none"> <li>&gt; Different use of pressure at end of the pipe.</li> <li>&gt; Use of existing infrastructure.</li> <li>&gt; Ideas about maintenance is present.</li> <li>&gt; It is technical feasible.</li> <li>&gt; Certain TR-Level</li> <li>&gt; A platform</li> </ul>
	<b>Not confirmed sub-criteria:</b> assessment of Time to market Risk and New knowledge

Viability criteria and new sub-criteria from MPI's plus remarks	Original sub-category for viability plus remarks from 10 MPI's
<b>3) Fit of Objectives</b>	<p>Gives participants common goal for short term, while objectives of parent organizations should fit for the long term. Relationship idea/ interest of parties is clear. Repeat business is possible. Anticipation what is to be expected at the first gate. Every participant has his interest and risks clear. A shared reason is formulated, directly linked to participants interests to go on together. Saving energy. Getting higher margin. Improving image of company. MPI fits in core business. To create better overview for education. To diminish the fragmentation. To improve the accessibility. To save costs. To have positive image. To be ahead of factories in other countries within concern. Interest of participants are complementarily. Participant identifies himself with objectives of initiative. KPI's are of the initiative, not of the parent organizations (shared). Government: to prevent questions from a lot of parties (nature). To be ready for a new market of zero energy houses. To keep the expenses low. To be budget neutral. To fit the increase of MPI tenders for higher added value instead of lowest price. To get a profile as one organization. To create a region without waste. To stimulate green and sustainable economy. To make industrial chains greener, (informally) to bridge between policies and industry, to confine the effects of growing economy, to serve adherents. To be at front: a) being launching customer gives certain profile b) first in the market, Overall objective: getting a durable image, It is decided to put it in the market, Company director saw new business, Fitting also objectives of customers &gt; ending the discussion if a house has more value with or without ugly panels. All parties are committed to the same: reduction of investments. High volume (4000 uniform pieces) possible on long run. The concept shows possibility to reduce 50% of the energy investments and it fits general market requirements. To reduce 50% of the cost price. Trying to execute hundred times. There is a upscaled future.</p>
<b>Sub-criteria/Scales &gt; en V:</b>	
<b>3a) Common objective short term (present yes – no)</b>	
<p><b>For example:</b>  Gives participants common goal for short term  Anticipation what is to be expected at the first gate.  A shared reason is formulated  Interest of participants are complementarily  The concept shows possibility to reduce energy with 50%</p>	
<b>3b) Common objective long term (present yes – no)</b>	
<p><b>For example:</b>  Objectives of parent organizations should fit for the long term.  Relationship idea/ interest of parties is clear.  Repeat business is possible.  MPI fits in core business  To be ready for a new market of zero energy houses.  Company director saw new business.  High volume (4000 uniform pieces) possible on long run.</p>	



Viability criteria and new sub-criteria from MPI's plus remarks	Original sub-category for viability plus remarks from 10 MPI's
4) Cooperation next phase	<p><b>4a) Staff (available yes – no):</b></p> <ul style="list-style-type: none"> <li>&gt; Staff can construct legal entity.</li> <li>&gt; Able to handle financial constructs.</li> <li>&gt; Is mentally free to work/think outside his domain.</li> <li>&gt; Is expressive, decisive, can give and take.</li> <li>&gt; Can handle the interests of his parent organization.</li> <li>&gt; Coordinator is trusted in inviting team members.</li> <li>&gt; Working groups exist of various people (ITC, teachers, participants of organizations).</li> <li>&gt; 'Worlds' are connected &gt; design, business, circularity.</li> <li>&gt; At least one other participant is present while working.</li> <li>&gt; Competencies fit the ambition.</li> <li>&gt; You do not work together as parties with same interest but as persons with same assignment</li> <li>&gt; Based on functional expertise.</li> <li>&gt; Core activities will be done by core members, so no new dependency is developed.</li> <li>&gt; Sources for 'staff' are the five O's: (van) onderop, overhead, ondernemingen, onderwijs, onderzoek.</li> <li>&gt; You need application driven and not knowledge driven persons.</li> </ul> <p><b>4b) Strength (confirmed yes – no):</b></p> <ul style="list-style-type: none"> <li>&gt; Has entrance to relevant partners.</li> <li>&gt; Put those together that can strengthen the other participants.</li> <li>&gt; Continuity depends not on parties with indirect interests to diminish vulnerability.</li> <li>&gt; Use current relations as launching customer to get constructive feedback.</li> <li>&gt; Parties have realistic expectations of each other about what they want and what they want to do.</li> <li>&gt; Has entrance to subsidies.</li> <li>&gt; Core team: specialist in photovoltaic, a specialist in appliance and a specialist in synthetics.</li> <li>&gt; Participant has possibilities for 'demostruction'.</li> <li>&gt; Participant has entrance to construction market.</li> <li>&gt; One party knows a lot of construction and launching customer, the second of photovoltaics and the third of plastics and assembly.</li> <li>&gt; The consultant knows about subsidies.</li> <li>&gt; When new people come in, I look more to performance/contribution while sharing IP.</li> <li>&gt; Relations with development departments exist, also in other companies for system integration or production in series.</li> </ul> <p><b>4c) Style (acknowledged yes – no):</b></p> <ul style="list-style-type: none"> <li>&gt; Have intuitive style of working.</li> <li>&gt; Honours identity of participants.</li> <li>&gt; Has mainly his focus on this MPI.</li> <li>&gt; Somebody may have to prompt.</li> <li>&gt; Working with persons not with organization moves fast.</li> <li>&gt; On what is important for every participant: introductions, acceleration, articulation of questions.</li> <li>&gt; 'Learning by doing' as thinking style.</li> <li>&gt; First trusting intuitively (can I work together with this person), then making some agreements and then depending what happens (he is opportunist/pragmatist) you take your measures.</li> <li>&gt; Make sure to start with articulated question.</li> <li>&gt; An atmosphere/form as if you get married.</li> <li>&gt; Trust is important in the beginning because contracting/patenting costs a lot of money and time, plus it will change a lot in the beginning.</li> <li>&gt; Able to work on basis of equality and openness and exchanging all information.</li> </ul>

Viability criteria and new sub-criteria from MPI's plus remarks	Original sub-category for viability plus remarks from 10 MPI's
5) Coordination next phase	<p><b>5a) Structure (erected yes – no):</b></p> <ul style="list-style-type: none"> <li>&gt; Tasks fit strengths of person/organization.</li> <li>&gt; NDA is needed.</li> <li>&gt; An owner is appointed or nominated.</li> <li>&gt; A steering committee is installed to make high level decisions.</li> <li>&gt; Agreement what to deliver by who so somebody is accountable</li> <li>&gt; End-user/launching customer does the market research.</li> <li>&gt; Coordination of execution was allocated to one party</li> <li>&gt; Division of tasks based on future relationship.</li> <li>&gt; Launching customer claims a leading position.</li> <li>&gt; A coordinator in the launching customer for TR 3/4</li> <li>&gt; Task division and lead per segment is clear.</li> <li>&gt; It is clear who has ownership, even layers in ownership = financial commitment.</li> <li>&gt; There is a contract about a joint venture where decision making is arranged.</li> <li>&gt; There is an agreement what to do in the MPI and what not to do in the MPI but is related.</li> <li>&gt; It is clear who takes which role in the new entity &gt; shareholder, program/project leader, principal, customer, supplier.</li> <li>&gt; First educate designers, then use them in designing circular business models.</li> <li>&gt; Tension between being accountable and creating space is solved.</li> <li>&gt; Coordination of the MPI was done by a chairman,</li> <li>&gt; 'We are going to meet other parties as one party, the initiative'.</li> <li>&gt; Somebody is in the lead.</li> <li>&gt; Decision making by project leader with strong advice with steering committee.</li> <li>&gt; Roles: Two builders, two knowledge institutes, three launching customers.</li> <li>&gt; Work packages with sub project leaders.</li> <li>&gt; FME + ISP organizations stimulate other companies to help.</li> </ul>
Sub-criteria/scales >	<p><b>5b) Routine (formulated yes – no):</b></p> <ul style="list-style-type: none"> <li>&gt; Own people are informed because of needing them later.</li> <li>&gt; Steering committee comes together when the MPI asks them.</li> <li>&gt; Monitoring the MPI is ready (I am proud of.., which problem do I face, what have I learned).</li> <li>&gt; Organizing learning by questions as I am proud about.., I had troubles with..., I have learned...and sharing the answer with everybody.</li> <li>&gt; File with paragraphs that are filled with learnings.</li> <li>&gt; Shared communication and logo.</li> <li>&gt; Communication, logo, brand: it is one style.</li> <li>&gt; The cooperation is paid from one budget.</li> <li>&gt; There is an exit strategy for partners.</li> <li>&gt; Share experiences in a learning history.</li> <li>&gt; Criteria (KPI's) for reviewing progress are in place.</li> <li>&gt; In Ltd. (structure), agreement/scenarios about exit.</li> </ul> <p><b>5c) Planning (agreed upon yes – no):</b></p> <ul style="list-style-type: none"> <li>&gt; Planning horizon two years.</li> <li>&gt; First for most important target group &gt; then others.</li> <li>&gt; Choosing specific projects; 'not wiring in general but wiring in that sector.</li> <li>&gt; A plan for organization/steps of next phase.</li> <li>&gt; Work packages are planned parallel as much as possible for speed.</li> </ul>

Viability criteria and new sub-criteria from MPI's plus remarks	Original sub-category for viability plus remarks from 10 MPI's
<b>6) Partitioning of work</b>  Sub-criteria/Scales >	<p><b>6a) Modular (allocated to specialists yes – no):</b></p> <ul style="list-style-type: none"> <li>&gt; Work divided in builders, input providers, checkers.</li> <li>&gt; Work packages per theme.</li> <li>&gt; Testing in the organization of the user (for acquisition purposes).</li> <li>&gt; Building is modular;</li> <li>&gt; Responsible/theme division of work like Circulo/design or Finance lab/business models = parent organizations.</li> <li>&gt; A joint venture is a commitment for task division.</li> <li>&gt; Division of work in circular product designing, finance of sustainability, circular business start-up, circular chain innovation = parent organizations.</li> <li>&gt; In 'Grondcontracten' is decided who does what.</li> <li>&gt; Proportional: the biggest wallet does the most.</li> <li>&gt; Criteria are clear for division of tasks</li> <li>&gt; It is easier to collaborate when you need each other but there is no overlap in work: we can apply, the others develop and make.</li> <li>&gt; End-user looks at environment-, safety-, application issues</li> <li>&gt; Synergy: decided is what is better to allocate to one party</li> <li>&gt; We formulate what we want, and they think how we can make that.</li> <li>&gt; Also, for suppliers, component builders.</li> </ul> <p><b>6b) Architectural (allocated to teams):</b></p> <ul style="list-style-type: none"> <li>&gt; Criteria are clear for working together on tasks: what to discuss together, what to decide together, what to make together, which process control do we develop together</li> <li>&gt; Plateau for ICT-architecture, for knowledge infrastructure, for user groups and for entrance of users.</li> <li>&gt; Designing is architectural because of several appliances.</li> <li>&gt; Work divided in plateaus based on who to involve when.</li> <li>&gt; Synergy: decided is what is better to be done together</li> <li>&gt; First four houses as experiment, then 12 houses based on learnings + improvements, then 100 houses more routinely.</li> <li>&gt; Design issues</li> <li>&gt; A demonstration project is organized at one of the customers.</li> <li>&gt; The builder looks at system integration.</li> </ul>
<b>7) Specialized communication (arranged yes – no)</b>	<ul style="list-style-type: none"> <li>&gt; The gatekeeper/decisionmaker is linked with the MPI.</li> <li>&gt; Collect and spread learnings.</li> <li>&gt; Monthly financial report.</li> <li>&gt; Bring big dilemma's as well on the table of the MPI as well of the partner organisations</li> <li>&gt; Partners talk with all other parents' organization in the MPI group.</li> <li>&gt; One person submits financial estimates and takes responsibility for expenses.</li> <li>&gt; Communication to sponsors who have no operational responsibility.</li> <li>&gt; One secretary from the key team becomes the counsellor of sub-initiatives for content issues and release of payments.</li> <li>&gt; Representative talks only about go no-go issues, rest is delegated.</li> <li>&gt; If applicable: prepared shareholders meeting.</li> <li>&gt; Participant makes agreement with his company director about hours to spent in initiative and the first in row to become shareholder.</li> <li>&gt; Make it possible for gatekeepers/project coordinators to communicate internally to the real end-users (business units).</li> </ul>

## Appendix I: Labels from MPI's, expert interviews and workshops data

- <i>Input in the inception phase:</i>	The idea is loaded with an important unalterable component (Idea), There's a 'partisan' with a technical proposition or an opportunity (Idea-owner)', Discussion with internal group before taking part in initiative is finished (Support), the problem that interested people cannot find information about sustainability, solution: label the information as a sectoral interest, urgency exists in the field, Pre-sorted idea, project idea, idea pre-selected based on broad area of effects, A (production) process to make new product, Trend in branch, A good idea that appeals for environmental, financial and network yields, Looking at partner as innovative partner since its strengths are formulated, The question that is answered by the idea, the assignment must be clear, Be clear in how many hours to invest instead of 'do I need to go again', Still moving governmental rulings is risky, The overall/legal preconditions should be fixed, to have a facilitator from the beginning who initiates, prepares, chairs, reports and uncovers unusual connections, Understanding of the knowledge needed for domains, Member of the core team with expertise in solar market, The answer for the dilemma: what to give away for speed/own share
- <i>Questions at the start:</i>	What are the expectations at the first gate? (Support), How do I get support in the world of gas companies, What has to be done for the business case, Does it fit the TOP-sector, Where are we going to act, what needs to be clear first? How will it finance itself?, What is lifespan of things to be influenced, What would be the life span, Who is the owner of the CBO, Who does what for which interest, Who pays for what and legal arrangements, "Why should I act', Is it collaboration if one party brings in a lot of money and the other does not?, Do you need a joint contact data base in the MPI?, How do you solve the problem that collaboration/meetings cost a lot of time/money?, How close are participants and how separated do clients see you?, Which company/customer are you talking with, besides the partners?, How do we handle each other?,- Can we focus instead of flourish thousand flowers?, How to handle all or nothing financial risks: when it is OK 1,40 Euro per m2, if it is not OK nothing, How to handle the pressure if participants need to do all the investments by themselves? Will they work for cost price, what would be a concept for renovation to energy neutral houses? Also for interaction with residents, Is trouble coming up in parent organizations because of other issues, Do we see a conflict between directors of business and nature protection, Is there an issue with terms of references, Do we need to maintain administration of hours, What is owned by the shareholders, Do you really want to change your own starting points build in in current services/products?
- <i>Future activities:</i>	Show how test installation and up-/down scaling is arranged, to connect with gasnet
- <i>Leadership</i>	Able to add up inputs of participants (3x), able to choose people because of expertise, has a view on who will cooperate well, organizes tightly, points on sentiments, Identifies himself with objectives of initiative, Has ability to recite, Connector who has insight in more branches
- <i>Form of the idea:</i>	A mock-up for visibility and sponsoring; e.g. a panel of 10X10 cm), A mock-up for visibility and test in the market
- <i>Mental position participant:</i>	End-user, project member, client not component producer/material supplier
- <i>Context:</i>	Drivers in the whole branch (1200 companies with agreement to get 2% more energy efficient) (2x) , ideas in other countries within same company are more competitive, subsidy available >> innovation complementary credit >> demonstration innovation credit; MIT subsidy for feasibility study, First subsidies makes it possible to say to supporters: it will work
- <i>Organizing learning:</i>	Monitoring when the MPI is ready (I am proud of.., which problem do I face, what have I learned), Organizing learning by questions as I am proud about... I had troubles with..., I have learned...and sharing the answer with everybody
- <i>Type of process:</i>	Do we have a renovation, a learning, an innovation, an idea development process? Do we have a project or an experiment? executing a selection process consisting of an expression of interest > Long list > Propositions > Position paper
- <i>Inception gate:</i>	Decisions about a demonstrator, developed enough to show suitability for the market, the business plan holds, it must be possible to get certification for the idea

## Appendix J: CIMO's from data of MPI's expert interviews and workshops

When responsible for an MPI (C):

- create a platform with residents (via breakfast session, workshop, exploring meeting, idea generation) (I) so the project reflects their values (M) leading to higher support (O)
- explain a problem caused by an outside party (I) so the MPI becomes aware of a common challenge (M) leading to a focus within the group (O)
- organize communication outside-in (I) so external parties feel acknowledged (M) leading to a positive image of the MPI (O)
- let parties 'sniff' at each other (I) so the opportunity arises to generate trust (M) leading to better cooperation (O)
- include small and big parties first (I) to get power/money and room to maneuver with few conventions (M) leading to speed (O)
- identify concurrent initiatives (I) so the possibility occurs to reflect or compare (M) leading to enrichment of the MPI (O). For example, compare knowledge ranging from parking places to industrial areas.
- create a real safe environment, *even, if possible, arrange for an exit* (I) so parties feel comfortable (M) leading to better cooperation (O)
- make sure competences for creating a MPI are on board (I) so participants understand the relevant issues (M) preventing *problematic issues* in this precontractual phase (O)
- make the professionalism of parties visible (I) so they start to trust each other (M) leading to speed in activities (O)
- introduce a rule that everybody can step out without sanction (I), so everybody is aware of the possibility to leave (M) leading to relaxed presence (M)
- find a launching party (I) so he explains what is going to be important in the future (M) leading to focused anticipation (O)
- ask an opposing party which conditions would make them positive (I), so participants get a clear view (M) leading to good decision to adapt the initiative or drop that party (O)
- relieve participants of their normal job duties (I) so they can work dedicated on the assignment (M) leading to less distraction (O)
- make sure that participants share 'a dream' (I) so they strive explicitly for the same (M) leading to getting along (O)
- be very explicit about criteria for staff (I) so selection is very careful (M) leading to deep understanding (O)
- keep the idea inside the MPI arena (I) so it stays under the radar (M) preventing being torn apart by political wolves (O)

## Appendix K: Stimulating and obstructing non- CIMO factors from the data

### Overview of 71 stimulating factors

- **Initiation/support:** organize 'believers' with power, arrange a powerful sponsor, be open at the start, admit what you do not know and what you need to know
- **Initiation/Fit of objectives:** Check outside the initiative (with customers) on support and feasibility, link initiative to motives and incentives from society, link initiative to company identity, portray the emotional side of the need
- **Identification/Support:** Organize symposium for branch, distinguish between principal and partner, go for a drink after meeting
- **Identification/Coordination:** Make sure everybody recognizes what phase the idea is in, de-emphasize future activities to gain time
- **Identification/cooperation:** Make individuals members rather than representatives
- **Identification/Specialized communication tasks:** Visualize approach (2x), influence supporters indirectly
- **Exchange/Support:** Push tempo (2x), coach each other, search for collaboration with a powerful sponsor, mobilize heavy pressure from the top for enrichment of the idea
- **Exchanging/Coordinating:** Organize learning, make milestone planning, use online tools, build website for community, make plans, plan progress meetings, do not pay hours, arrange subsidy, separate the initiative from parent organizations, put the commercial aspect in one hand, hold strong evaluation meetings, stay 'below the radar', portray explicitly the process
- **Exchange/Cooperation:** Work in the same room after meeting, involve the right individuals, try to influence the composition of the team that has to make progress with the idea, make sure that 'best practices' are required, check with other than customer (a thwarter), give a lot of freedom between benchmarks (scrum)
- **Reflection/Idea and its characteristics:** Make sure that development stays within frame of the need, formulate the idea in conceivable terms, make 'prototypes' for conceptualization/tangibility, apply current technology commodities, allow time to combine problem/idea with the parties, share developments of the competition
- **Reflection/Cooperation:** Produce as many ideas as possible and be firm in supporting or not supporting them, strongly encourage perseverance
- **Methods:** scrum 2x, timeboxing, role play 2x, show of hands, placemats to work on, white boards, formulate problem as dilemma, use 'theme' tables, imagining, thinking in concepts, crowd funding, paying in advance.

## Overview of 95 obstructing factors

- **Initiation/Support:** Important group not present, invite party without connection to problem, not enough money at the start
- **Initiation/Idea:** Not having the (governmental) starting points, too many degrees of freedom
- **Initiation/Objective:** Some see an experiment and others a fixed deliverable; lack of clear objectives/deliverables gives fuzzy ideas about parties
- **Initiation/Coordination:** Failure to bring parties together, no information about organization/expertise from earlier initiatives
- **Identification/Support**
- Party speaks of 'no objection', participant does not understand technology, principal withdraws due to risks, parent organizations do not demonstrate shared support, new people create new dependencies
- **Identification/Idea:** No view on business case, parent organizations serve the same customers, see objective as deliverable
- **Identification/Fit of Objective:** Payback time too long/different between parties, assignment is threat for the current relationships, lose sight on longer term, 'I'll scratch your back, you 'll scratch mine' as reason for cooperation, suppliers want to go to the market before end-users, prioritize the short term before the long term, do something just because it is possible
- **Identification/Cooperation:** 'Condemned to cooperate'
- **Identification/Coordination:** Not enough focus, too much focus on what the competition does
- **Exchange/ Support:** Too busy with own business, create no urgency, fixed answer on a developing assignment, different assumptions cost/benefit, supporters come only once or twice together, the selling of a partner
- **Exchange/Coordination:** Formalizing reporting, deciding year budgets, ownership to participants with indirect interest, allocated budgets hinder communication/meetings, changes in MT parent organizations, unclear in the beginning what is expected, different pressure on individuals, several sources of starting points, nobody can decide on starting points, imbalance between evaluation of work and of cooperation, individually responsible for output team, too many costs for exchange, one party does not feel benefits, four to five changes of representatives, emphasizing standards/current contracts, choosing allocation to work based on misinformation
- **Exchange/Cooperation:** Different frame of reference, old frame of reference, being rude gives irritation, allow other criteria or rules, chairman must do everything, nobody has the lead, parties are afraid to speak, parties are listeners instead of participants, early participants are critical or micromanagers, thinking that financing

means collaboration 2x, protecting own domain concerning data and findings, a party takes too much from the revenues, big difference in decision-making firmness, one party has to chase the others, asymmetry because one party does more, a person lacks integrity, no trust arises so I will not share not patented IP, trying to do all the work perfectly, customer(s) do not dare/want to be a guinea pig

- **Exchange/Partitioning of work:** Division of tasks based on own interest 2x, work in isolation, start with their own ideas about what is to be accomplished
- **Exchange/Specialized communication tasks:** Different delegation of authority schemes
- **Conversion/Cooperation:** Change people on board from the beginning, pre-financing before cash-flow
- **Reflection/Idea:** Solve only part of problem, a push-idea without a launching customer, prices competition too low, technical solutions are more costly than other solutions, If division of modular work packages for technicians is too dominant, reflection about marketing/putting it in the market tends to be neglected, choice too early for a technology platform, idea concerns niche market or hobby project, no need to show how it works, juridical constrictions, investment too high to justify later revenues, no view on future needs, deficiency of 'customer facing' and the problem behind
- **Reflection/Objectives:** Using different objectives: comfort or zero energy, changing starting points, use only one criterion for viability
- **Method:** use Prince 2



## Appendix L: Workshop outputs

**Explorative workshop one:** *stimulating/obstructive issues* for idea development in general in multi-party situations.

Stimulating issues; 17 direct, 12 indirect	13 Obstructive issues
<p><i>Initiation/Support</i></p> <ul style="list-style-type: none"> <li>Organize 'believers' with power</li> <li>Arrange a powerful sponsor</li> <li>Be open at the start, admitting what you do not know and what you need to know</li> </ul> <p><i>Exchange/Support</i></p> <ul style="list-style-type: none"> <li>Search collaboration around the powerful sponsor</li> <li>Mobilize heavy pressure from the top for enrichment of the idea</li> </ul> <p><i>Initiation/Fit of objectives</i></p> <ul style="list-style-type: none"> <li>Check outside the initiative (at customer) on support and feasibility</li> <li>Couple initiative to motives and incentives from society</li> <li>Couple initiative to identity of the company</li> <li>Show the emotional side of the need</li> </ul> <p><i>Identification/Coordination</i></p> <ul style="list-style-type: none"> <li>Make sure everybody recognizes phase the idea is in</li> <li>Withdraw activities at the future user to gain time</li> </ul> <p><i>Exchange/Coordination</i></p> <ul style="list-style-type: none"> <li>Put the initiative apart from the parent organizations</li> <li>Put the commercial part in one hand</li> <li>Execute strong evaluation meetings</li> <li>Stay 'below the radar'</li> <li>Show explicitly the process</li> </ul> <p><i>Exchange/Cooperation</i></p> <ul style="list-style-type: none"> <li>Involve the right persons</li> <li>Try to influence the composition of the team that must make progress with the idea</li> <li>Make sure that 'best practices' are obliged</li> <li>Work out with other then customer (a thwarter)</li> <li>Give a lot of freedom between benchmarks (scrum)</li> </ul> <p><i>Reflection/Cooperation</i></p> <ul style="list-style-type: none"> <li>Produce as much ideas as possible and allow them strongly or disallow them strongly</li> <li>Cherish perseverance as a pit-bull</li> </ul> <p><i>Reflection/Idea and its characteristics</i></p> <ul style="list-style-type: none"> <li>Make sure that development stays within the frame of the need</li> <li>Formulate the idea in conceivable terms</li> <li>Make 'prototypes' for conceptualization and tangibility</li> <li>Apply current technology on commodities</li> <li>Allow time to combine problem/idea with the parties</li> <li>Show development at competition</li> </ul>	<p><i>Initiation/Support</i></p> <ul style="list-style-type: none"> <li>Not enough money at the start</li> </ul> <p><i>Exchange/Support</i></p> <ul style="list-style-type: none"> <li>The selling of a partner</li> </ul> <p><i>Identification/Fit of objectives</i></p> <ul style="list-style-type: none"> <li>To prioritize the short term before long term</li> <li>To do something just because it is possible</li> </ul> <p><i>Initiation/Coordination</i></p> <ul style="list-style-type: none"> <li>Not really bringing together of parties</li> <li>No information about organization/expertise from earlier initiatives</li> </ul> <p><i>Identification/Coordination</i></p> <ul style="list-style-type: none"> <li>Not enough focus</li> <li>Too much focus on what the competition does</li> </ul> <p><i>Exchange/Cooperation</i></p> <ul style="list-style-type: none"> <li>Customer(s) do not dare/want to be a guinea pig</li> </ul> <p><i>Reflection/Idea and its characteristics</i></p> <ul style="list-style-type: none"> <li>Juridical constrictions</li> <li>Investment too high to justify later revenues</li> <li>No view on future needs</li> <li>Deficiency of 'customer facing' and the problem behind</li> </ul>

**Explorative workshop two:** *viability issues and stimulating issues* in multi-party situations

Question 1: try to describe – in one sentence - when an initiative starts to be viable

1. There is a mandate for persons to take decisions (coordination/structure)
2. Participating parties contribute because they feel interest (support)

3. Participants work on an ideal or a solution (idea)
4. Participants work on a problem or a mission (objective)
5. Participants have the feeling they own the initiative (support)
6. The starting points for implementation are known (too abstract)
7. Trust exists between parties (cooperation)
8. A business case is emergent (idea)
9. There is a budget for time and money no matter the origin (coordination/planning))
10. Participants are present that will profit in the future (support)
11. The expectations are clear and unequivocal (too abstract)
12. Somebody acts as advocate (coordination/structure)
13. There is an ambition fitting the scale (objective)
14. Feasibility is formulated (too abstract)
15. There is a fantasy about appliance (idea)
16. Criteria are present to evaluate the application (not needed yet)

Question 2: describe on post-it's your organizational interventions to influence positively the viability of the initiative.

- a. Bringing the parties together (initiation)
- b. Arranging subsidies (identification)
- c. Organizing network meetings, 2x (exchange)
- d. Organizing meetings of principals (exchange)
- e. Controlling on content and budget (exchange)
- f. Managing interfaces between work-packages (exchange)
- g. Reporting about meetings of principals (exchange)
- h. Organizing platforms (exchange)
- i. Controlling use of money (exchange)
- j. Helping for specific questions like energy-efficient measures (reflection)
- k. Organizing learning processes (reflection)
- l. Dividing problems in projects (conversion)
- m. Allocating assignments at parties (conversion)

### **Explorative workshop three:** *viability issues* in multi-party situations

Question: when do you think a multi-party initiative reaches viability?

- There is a fit with strategic intentions (objectives)
- A team with capabilities is present (cooperation)
- An externally tested, feasible value proposition is present (idea)
- There is an estimate of the market size (idea)
- There is a view on potential launching customers (idea)
- There are estimates about finances (idea)
- There are ideas about mitigation of risks (coordination)

## Appendix M Overview of all informed interventions in CIMO logic

### General interventions:

1. plan the Inception phase (I) so hazards and benefits of collaboration become explicit (M) leading to a small cognitive bias gap (O)
2. give opportunity to build mutual trust (I) because personal attributions become clear (M) leading to self-reinforcing effects in collaboration (O)
3. establish an initial level of trust (I) to trigger positive self-reinforcing effects to develop collaborative relationships (M) leading to efficient degree of formalization, interorganizational performance and positive interpretation of each other's behavior (O)
4. immediately start building mutual trust (I) as it will show integrity (M) preventing excessive contractual formality (O)
5. immediately start building mutual trust (I) as this strengthens relationships (M) leading to smooth knowledge exchange (O)
6. use boundary crossing activities (I) to reveal the interpretative schemes of parties (M) which facilitates mutual learning (O)
7. give Idea description, fitted with objectives and support of parent organizations emphasis in the beginning (I) as they create a sense of continuation in key-players (M) leading to motivate idea development for next phases (O)
8. intervene for support, fitted with objectives, ideas, coordination and cooperation before interventions for the other criteria (I) as this makes participants aware of viability (M) leading to motivation for concretizations of work packages and creating links with parent organizations (O)
9. use objectives or problems whilst starting the MPI (I) which invites an informal problem-solving process (M) which leads to collection of formal starting points about conditions to participate and it leads to mutual views of participants' contributions (O)
10. use market, performance requirements and technology as measures for ideas; staff, strength and style as measures for cooperation; structure, planning and routines as measures for coordination and modular and architectural as measures for partitioning of work (I) as elaboration makes key-players aware of viability (M) leading to support for the MPI (O)
11. use a set of initiating activities (I) to ignite a shared interest in relevant persons (M) to support follow up activities (O)
12. use a set of identification activities (I) to learn about the identity of participants (M) which makes the fit of objectives and proposition becomes clear (O)
13. use a set of exchanging activities (I) to create insight how practices relate to each other (M) leading to efficient collaboration (O)

14. use a set of reflection activities (I) to understand the assignment (M) leading to perspectives of participants contribution(O)
15. use a set of conversion activities (I) to develop a shared view on new in-between practices (M) enabling coordination, work packages en specialized tasks for the next phase (O)
16. intervene for objectives, ideas, coordination, cooperation immediately from the start (I) to create 'party willingness and be vulnerable for actions of another party based upon the expectation the other performs an important action to the trustor' (M) leading to durable agility for collaborating parties (O)
17. have a set of indirect interventions available for viability criteria (I) as they enlighten participants (M) to enhance direct activities (O)
18. execute indirect interventions (I) for positive changes in (the interaction of) parties (M) which leads to positive process outcomes like speed, focus, support, respect, decisions and understanding (O)
19. keep ideas inside the MPI arena (I) and staying under the radar (M) thus preventing destruction by political wolves (O)

#### **Direct interventions with priority<sup>1</sup>:**

1. make sure participants understand each other's gains and pains, (I) thus trust builds up (M) leading to progression also in difficult times (O)
2. choose high frequency communication with rich media (I) as these develop trust and social ties (M) which leads to a high degree of inter-organizational learning and low opportunistic behavior (O)
3. have regular and systematic interaction using rich media (I) bas it establishes social ties (M) leading to trust (O)
4. immediately invest in coordination of not only change- and conflict management as well as decision making (I) as it enables parties to show responsibility (M) leading to growth of trust (O)
5. use non-binding contracts (I) because these lead to personal attributions (M) giving a basis for interpersonal trust (O).
6. state formalized procedures (for problem solving, decision making, conflict resolution, performance evaluations) (I) which creates a positive spiral basis for procedural justice (M) leading to collaboration in domains too sensitive or too risky (O)
7. get people on board who understand customers (I) as this leads to insight of all the needs (M) leading to fulfilment of expectations (O)
8. discuss market overlap of parties (I) because objectives for the same market diminishes party's willingness to collaborate (M) leading to less contribution (O)
9. set up sharing of information including feedback (I) as this facilitates interaction (M) leading to the best formalization level (O)

<sup>1</sup> As indicated by practitioners (chapter 4, par. 4.4.2)

10. make sure participants identify themselves with MPI and with their parent organizations(I), so they do not suffer dual identification problems (M) leading to better assessment of partners behavior (O)
11. agree within the MPI about allocation of hours only (I) because it avoids complicated coupling with money (M) leading to informal and easy decision making about priority/ sharing the growing information/staffing (O)
12. check the selection of new parties (I) so criteria become explicit (M) preventing use of wrong criteria (O)
13. deploy capacities of parties for objectives of other participants (I) so parties clearly see the benefit (M) leading to self-reinforcing effects in collaboration (O)
14. share values (I) so parties experience constructive attitude of other parties (M) leading to efficient cooperation and coordination (O)
15. implement collaborative leadership (I) because it facilitates presence of leadership in more positions (concurrent), decision making by everyone feeling responsible (collectively), expressing everybody may speak for the entire organization (mutual) and to dignity preserved for everyone in the MPI (compassionate) (M) leading to high-speed progress and learning (O)
16. guard equality (for example in decision making and talking) during negotiations (I), therefore mandatory resources and capabilities become clear (M) and accessible (O)
17. elaborate technology, market, performance, risk, new knowledge, and time ideas simultaneously (I) for the total clear picture (M) which leads to the best possible idea assessment (O)

### **Direct interventions without priority**

1. make staff, strengths, and typical style availability clear (I) for a shared understanding about contributions and payoffs (M) leading to viable cooperation in activities (O)
2. make competences and party needs inventory (I) as it reduces uncertainty (M) leading to effective arrangements for cooperation(O)
3. introduce structures, routines, and planning (I) for a deliberate and orderly alignment or adjustment of partners' possible actions (M) leading to vital coordination of activities (O)
4. present product or service concepts in elemental descriptive forms (which includes verbal stories, verbal metaphors and physical prototypes) (I) for the team can shift in individual concept components (M) resulting in flexible changes required due to new technical or market information (O)
5. formulate characteristics of the idea also with users (I) because the connecting meaningful user's lives (M) leads to commercial success (O)
6. discuss differences, similarities and consequences with parties (I) as it explicates possibilities (M) leading to legitimation of collaboration (O)

7. use boundary objects<sup>2</sup> (I) so the tangibility helps participants to reflect (M) leading to bridge knowledge boundaries (O)
8. give users tasks enabling self-reflection (I) so their preferences become stable (M) leading to market understanding/co-creation (O)
9. use methods as mental simulation or benefit comparison (I) so contribution of partners become clear (M) which leads to supporting party collaboration (O)
10. use visualization, ethnography, collaborative sense making, assumption surfacing, field experiments to formulate objectives/ideas (I) so judgements, debates, attention for tension are withheld (M) leading to differences leverage(O)
11. describe a common market (I) when a mutual problem area emerges (M) which leads to common interest (O)
12. only create for modular work packages and high coupling of partners (I) because clearly defined intermediate deliverables makes coordination effective (M) leading to higher chance for commercial success (O)
13. treat input of mother organizations as trade goods (I) so transactions are based on rational calculations (M) leading to fair reciprocity in collaboration (O)
14. invert ingredients of parties' practices in something new (I) therefore added value comes forward (M) leading to innovative applications (O)
15. treat each other within MPI as equivalent (I) so individual differences are ignored (M) leading to trust and open interactions in collaboration(O)
16. invite relevant staff from a customer point of view (I) so the MPI can understand customers problems and needs (M) which leads to fulfilling customers' expectations(O)
17. invite staff representing the strength of the organization (I) knowing capacities take long to grow (M) leading to unique resources in cooperation (O)
18. create an 'in between application' on the borders of participating parties(I) because this confirms the collaboration(M) leading to concretization of the next step (O)
19. search for champion, sponsor, and gate keepers (I) because they promote MPI in mother organizations (M) leading to introduction in their formal processes (O)
20. introduce definitions and expectations (I) preventing dual identification of MPI members (M) leading to possible actual assessing partners behavior (O)
21. create interaction based on communal sharing and market pricing (I) to get equivalent transactions (M) leading to fair mutual prices (O)
22. head for a collaborative leadership style (I) so action learning is facilitated (M) leading to a broad contribution of participants (O)
23. combine organizational strengths (I) so capabilities are added up (M) leading to competitive advantages (O)
24. choose a level of formalization for roles and metrics (I) which makes it possible for partners to assess each other's behavior (M) leading to good coordination interpretation (O)

2 Cross-boundary means that it belongs to nobody and to everybody in the MPI. This object needs to have a kind of form that synchronizes participants continuously such as a narrative, a demonstrator, or a drawing.

25. use an open and sometimes layered exchange of knowledge with a discovery register and concealment (I) to enable open exchange (M) leading to effective knowledge diffusion (O)
26. confront the other party as a stranger (I) because this filters emotional bias (M) leading to clear added value of the party (O)
27. discriminate between important and unimportant issues (I) as it makes party issues clear (M) leading to less inter-party rivalry and less coordination costs (O)
28. deliver a stage gate document for the Idea gate with the elaborated viability components (I) at the end of the phase so perceptual distance is minimized between supporters becoming aware of the viability of the initiative (M) leading to a shared go or no-go decision for continuation (O)
29. use confirmation, selection, transformation, toleration, or non-confirmation as tactics (I) to counteract opposition (M) leading to fit the parent organizations (O)
30. plan joint activities (I) to fit with priorities and conventions of parent organizations (M) to ensure interdependent activity order (O)
31. show which activities are needed (I) because this creates common insight for the short term (M) to possibly coordinate and cooperate(O)
32. do not use NDA or competitive conditions in the beginning (I) because other (linked to NDA) initiators take over (M) leading to the situation which unclear future obligations paralyze collaboration (O).
33. put the seven criteria of viability on the agenda (I) because they develop a sense of continuation in key-players (M) leading to a viable MPI (O)
34. make an inventory what is available as input for or interpretation of viability criteria (I) because it discloses the actual opinion of participants (M) leading to a shared view of (possibly different) starting points (O).
35. make an inventory of questions for and about MPI (I) because it discloses the actual participants uncertainties (M) making a prioritization of actions possible (O)
36. create a platform with residents (breakfast session, workshop, exploring meeting, idea generation) so the project reflects their values (M) leading to higher support (O)
37. organize communication outside-in (I) so external parties feel acknowledged (M) leading to a positive image of the MPI (O)
38. include big parties <> small parties first (I) to get power/money <> get room to maneuver/few conventions (M) leading to speed (O)
39. point at concurrent initiatives (I) so the possibility occurs to reflect or compare (M) leading to enrichment of MPI (O).
40. create a real safe environment, even if an exit possibility is arranged (I) so parties feel comfortable (M) leading to better cooperation (O)
41. ensure competences to create an MPI are on board (I), so participants understand the relevant issues (M) which prevents wrong items in this pre-contractual phase (O)

42. visualize party professionalism (I) so parties start to trust each other (M) leading to speed in activities (O)
43. ask an opposing party which conditions would have a positive impact (I), so participants get a clear view (M) leading to good decisions to adapt the initiative or drop the party (O)
44. invite participants representing a branch with immediate interest (I), since a whole group with the same interest gets involved (M) leading to acceleration in getting support (O)
45. invite many parties with useful qualities (I) because a sense of feasibility is activated (M) facilitating a transformation from attendee to supporter (O)
46. combine a broadly felt problem with an idea which fits the objectives of the potential participants (I), so they feel united around a solution as problem owners (M) leading to a starting group of innovators/early adapters (O)
47. collect relevant input (I) because it legitimates the start of the MPI (M) leading to preliminary support (O)
48. show how the idea fits the shared processes of invitees (I) in the invitation as it activates awareness of a shared interest (M) leading to broader support (O)
49. scan the five O's<sup>3</sup> in the neighborhood for skills needed (I) because parties with local interests have stronger ties (M) making the MPI profit from existing and experienced connections (O)
50. make partners understand their overlap in objectives (I) since this creates awareness of the shared direction (M) making initiation and identification almost redundant (O)
51. find a launching party (I) to show participants what is going to be important in the future (M) leading to focused anticipation (O)
52. formulate idea characteristics in relation to different objectives of participants (I) because it makes the individual interest clear (M) leading to support (O)
53. identify participants objective(s) for the long term (I) so their motivation is based on a future situation (M) leading to mitigation of risks for short term support (O)
54. let relevant people of the parent organizations discuss their objectives and possibilities of the idea (I) from the start because it synchronizes the gate keepers (M) reinforcing support for MPI (O)
55. base identification interventions on a tentative assignment (I) so actual participants are aware the idea is still changing (M) which leads to understanding MPI participation is not fixed either (O)
56. fit characteristics of the idea to party objectives (I) so every participant sees possibilities (M) and keeps on supporting (O)
57. demand partner organizations are very active in contributing to finances, machines, room and/or staff (I) because it challenges the level of their involvement (M) leading to an understanding of the level of support needed (O)

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58. give an end-user possibility for in-kind support<sup>4</sup> (I) so the user can sell the idea internally (M) to be allowed to act as partner (O).
59. allocate work based on future roles (I) because it makes the individual interest clear (M) leading to long term support (O)
60. decide with parent organizations only about main issues (I) because parent organizations will start to feel as stakeholders (M) leading to support to pick up this role later (O).
61. give the launching customer a discount for future purchases (I) so he sees his advantage clearly (M) and supports the initiative (O)
62. formulate the attraction in the idea (I) because it supplies an intrinsic appealing element (M) leading to ties of participants (O)
63. apply (pre)tests in the organization of the user (I) so the user organization experiences the positive effect (M) and inclines to act as partner (O)
64. make sure the idea characteristics serve the objectives of the parent organizations (I) because it creates an interest for the key-players (M) leading to support MPI (O)
65. invite users in an early stage (I), since they make applicability explicit (M) urging participants to be realistic about the idea (O)
66. prevent focus on only one characteristic of the idea (I) so discussions stay comprehensible for all attendees (M) leading to a fair evaluation of their possible contribution (O)
67. identify persons at the (decision) gates, persons linked to appliance and future owners of the know-how (I) because they see the possibilities first (M) leading to the best idea input (O)
68. formulate idea characteristics in line with objectives of parent organizations (I) because it makes decision makers aware of the added value of the MPI (M) leading to support in parent organizations (O)
69. reflect as fast as you can with the market (I) because creating validating feedback about happiness of a customer (M) gives a feeling of success/fit (O)
70. deliver the idea as a demonstrator including statements of performance (I) because this allows testing for suitability (M) making the idea more viable (O)
71. scope continuously whilst reflecting on adding new components (I) to prevent bias or create wrong wisdom (M) leading to low-cost price (O)
72. use an approach which aims for an organization with the possibility to develop more applications (I) enabling long term ambitions (M) leading to a more viable future of the MPI (O)
73. deeply understand the basic idea principles in connection with future users (I) enabling low risk follow up (M) leading to a more viable idea with little use of working capital(O)

4 'In-kind support means contributing hours for talking about performance, market, ideas, tests and advice as well some financial contribution to show interest and to make subsidy possible that calls for also private investment

74. formulate movement in terms of goals, participants, markets, and technology (I) to enable connection with MPI meaning (M) leading to high MPI identification (O)
75. invite those device builders and end-users (I) who experience pre-competitive interests for the same market (I) so they will be inclined to reinforce each other (O).
76. fit the idea into the superordinate branch goals (I) because when the idea fits their 'spirit of the time' (M) they are willing to contribute (O)
77. choose parties who add value and speed (I) trusting your first appraisals and your experience (M) allowing better evaluations of your appraisals during subsequent actions (O)
78. be very explicit in staff criteria (> brilliant, gritty) (I) so selection is very careful (M) leading to deep understanding (O)
79. install a stable working group with technical persons (I) because it facilitates a pre-competitive atmosphere based upon same pastime (M) leading to cooperation stability (O)
80. make supporters commit themselves for a long active role (I) because this makes their capacity contributions solid (M) preventing circulation of persons in and around the MPI (O)
81. make the long- and short-term interests of partners clear (I) so they understand the responsibility for each other (M) and stay motivated to work together (O)
82. make sure that collaborative leadership capabilities are present (I) so different opinions and perspectives are elaborated well (M) leading to new meanings (O)
83. prevent one party getting the biggest influence on the development (I) so frustration in other parties builds up (M) leading to weakening ties of that party with the other parties(O)
84. introduce a rule everybody can step out without sanctions (I), so everybody is aware of the possibility to leave (M) leading to relaxed presence (O)
85. let participants elaborate on each other's contribution (I) so 'it clicks' between them (M) which makes them team up (O)
86. show a problem caused by an outside party (I) so the MPI becomes aware of a common challenge (M) leading to focus within the group (O)
87. take participants away from their normal job (I) so they can work dedicated on the assignment (M) leading to less distraction (O)
88. select key persons with less strict ties in the parent organizations (I) because they have higher degrees of freedom to act (M) so the MPI stays free from hindering dependencies (O)
89. agree within the MPI about allocation of hours (I) because this avoids the complicated coupling with money (M) leading to informal and easy decision making about priority, progress, sharing growing information and staffing(O)
90. install a learning attitude combined with a written learning history (I) so experiences are explicit for participants (M) making new discoveries and shared insights (O)

91. make detailed agreements about the work packages (I) so every participant understands the use of the budget (M) preventing one of the participants mainly emphasizes his /her own interests(O).
92. make agreements based on first experiences with other parties (I) because the more one sees no reason for a formal contract (M) the more optimal flexibility for adjustments (O).
93. exchange agenda from end-users and gatekeepers (I) to understand the risk of burning money (M) so everybody stays on the same priority scheme (O)
94. make the breakdown of the idea and the responsibilities coherent (I) understanding the relationship with burning money (M) so everybody stays on the same priority scheme (O)
95. make sure an end-user does not need to work continuously for the MPI (I) so he/she can measure out his/her contribution besides his/her work in parent organization (M) which makes it convenient for this contributor (O)
96. make agreements about an open or layered exchange of knowledge (I) so knowledge owners trust the use to benefit the collaboration (M) leading to a low level of coordination costs (O)
97. develop a view in co-creation upon the deliverable at the horizon (I) because it gives trust in the steering committee (M) so the steering committee will execute (O)
98. put getting to know each other, contracting, financing and performing also on the agenda (I) because it prevents thinking only technically (M) leading to integral decision making (O)
99. have time and money budgets including delegated authority on MPI level (I) because this minimizes cross-vertical coordination (M) which makes high tempo proceedings possible (O)
100. agree on modular work packages for deliverables (I) so participants start to see clear tasks (M) which leads to less coordination effort (O).
101. converge a business plan with the criteria of viability including a demonstrator (I) showing to the decision makers who are suitable for the market and positive perspective on certification (M) leading to a sensible go- no go decision (O).
102. work with a visualized idea (I) because it facilitates sharing the actual status of the idea (M) leading to an equal starting point for next activities (O)
103. make sure participants share 'a dream' (I) so they strive explicitly for the same (M) which leads to getting along (O)
104. organize learnings through accessible files (I) because it assures the exchange (M) leading to exchange of progressive insight for all (O)
105. speak out about clashes (I) understanding there is always respect for opinions (M) helping to continue when it gets rough (O)
106. invite a selected group for decision making about formalization (I) because it gives a small locus of control (M) leading to restricted dependency of shareholders (O)

107. make sure everybody contributes (I) preventing the feeling someone is a profiteer (M) leading to motivation of participants to take a fair share(O)
108. give the work to the best suited party even if it does not fit your own short-term interest (I) preventing you to get short term oriented (M) so you stay focused on the result (O)
109. beware for longing for formalization and details (I) because these must fit with compelling systems in parent organizations (M) leading to spending a lot of indirect hours (O)
110. agree on the starting points about what to do (I) so you, your principal or other initiators see the same assignment (M) which leads to a shared view on the process (O)
111. deliver a detailed modular work planning, a juridical entity and a routine for exit (I) for the next phase so participants understand clearly the responsibilities entering the next phase (M) leading to low coordination costs (O).

## Appendix N: The interventions allocated to sections in the Intervention Box

### Section general interventions

Help the MPI by giving it a general process design, binding parties to a common approach and reducing uncertainties without irrevocable obligations.

1. propose the use of an Inception phase leading to a small cognitive bias gap in participants
2. provide the key-participants with a learning module about IPA so they become aware of the essentials of IPA leading to a shared view on tools and outcomes
3. give Support of parent organizations, Idea description and Fit with (personal) objectives emphasis in the beginning, leading to motivation to develop ideas about Cooperation, Coordination, Partitioning of work and Integration with parent organizations
4. immediately start to work on trust leading to positive inter-organizational collaborative behavior (see for direct interventions concerning trust 3c.1, 2d.4, 2d.6, 1e.1, 1e.2, 3e.1, 3e.8, 4e.4, I1.1, I1.5)
5. propose a set of initiating activities leading to support for follow up activities
6. propose a set of identification activities leading to trust in future transaction costs, mutual capabilities or other added values
7. propose a set of exchange activities leading to insights for efficient collaboration
8. propose a set of reflection activities leading to perspectives of the contribution of the participants
9. propose a set of conversion activities leading to consolidations for cooperation, coordination, work packages and specialized tasks in the next phase
10. propose common measures for viability (power and actual role for support of partners, short term and long-term benefits to fit objectives, market, performance requirements, technology, attraction and form for the Idea, staff, strength and style for cooperation, structure, planning and routines for coordination, modular and architectural for partitioning of work) leading to support for MPI
11. use boundary crossing activities leading to facilitate mutual learning
12. immediately start to work on trust leading to positive (inter-organizational) collaborative behavior
13. introduce a transaction style based on communal sharing and market pricing leading to sharing objectives, hazards and benefits built on a non-equity relationship and priced inputs
14. put the seven criteria of viability on the agenda of the Inception phase leading to a best viability assessment

15. make an inventory of what is already available at the current parties as input for or interpretation of viability components leading to a shared view of (maybe different) starting points.

Intervention 15 is important since the Inception phase does not start just like that. Experience shows (individuals in) parent organizations already are idea-owners or important trends in a branch are already known. Discussions are going on fuelled by a 'partisan' or 'champion' who already led to decisions about pre-sorted ideas, direction or urgency. Which is also the case with existing questions relevant for the MPI. But also, which companies can take part or how to handle pressure if participants need to do all investments by themselves? It is important for persons with (informal?) responsibilities in the MPI to collect these issues. These inputs and questions create a natural trespassing into the Inception phase from earlier stages as Ideation, Research, Opportunity scouting and likeable.

1. execute indirect interventions for positive changes in (the interaction of) parties leading to positive process outcomes like speed, focus, openness, respect, decisions and understanding (63)
2. intervene from the start on the level of objectives, idea, coordination, cooperation leading to durable agility for collaborating parties
3. check the index of the first decision document on presence of the seven viability components because this makes them explicit leading to better assessment of viability.

### Sections direct interventions

Direct interventions provide a solution for users who want to enrich innovative thoughts about products or services and the multi-party collaboration which emerges:

Choose one or more interventions for the next process step(s) to enrich one or more of the viability components.

Ask yourself two questions: what kind of component do I/we want to enrich and what kind of intervention do I/we need (43, 60)? You choose intervention/outcome combinations before each process step (44) given your assessment of the current viability state. You make sure these interventions are executed in a group consisting of persons from the participating organizations due to the cross-boundary character of the initiative. Depending on the number of persons some interventions can be done parallel in two or more groups. After each intervention you assure the outcome is consolidated so parties get synchronized (45, 51, 61,62) even when the same intervention must be done again.

Part seven of the task description of Inception process management

The objectives for the Inception phase explain why interventions are executed: to minimize the perceptual distance between potential partners and to maximize the chance for success with low toll for participants. Users have five clusters of interventions to their disposal for these objectives: initiating the initiative, identifying the parties, exchanging routines, reflecting about potential and conversion in a more concrete entity. These interventions in the clusters attribute to the seven components of viability and are listed corresponding to the sections in the Intervention Box.

### **First row in the Intervention Box: direct interventions for the viability component Support**

#### **Section 1A: Initiation > Support**

1. check the selection of (new) parties preventing use of wrong criteria
2. gather existing input for the Inception phase and existing questions about viability in the first meeting leading to motivation to go on if used or answered
3. invite participants representing a branch with immediate interest leading to acceleration in getting support
4. invite many parties with useful qualities facilitating a transformation from attendee to supporter
5. combine a broadly felt problem with an idea which fits the objectives of the potential participants leading to a starting group of innovators/early adapters
6. show how the idea fits the shared processes of invitees in the invitation leading to broader support
7. scan the five O's<sup>5</sup> in the neighborhood for needed skills making the MPI profit from existing and experienced connections
8. introduce a potential launching party leading to focused anticipation
9. invite parties who are already busy with the item (assumption: because pioneers understand the actual challenges) leading to fair priorities for the MPI

#### **Section 2A: Identification > Support**

1. discuss differences, similarities and consequences with parties leading to legitimation of collaboration
2. make sure values are shared leading to efficient cooperation and coordination
3. ask an opposing party which conditions would make them positive leading to a good decision to adapt or drop that party
4. let relevant people of the parent organizations discuss their objectives and possibilities of the idea reinforcing support for the MPI
5. base identification interventions on a tentative assignment leading to understanding participation in the MPI is not fixed either

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6. make sure characteristics of the idea fit objectives of parties leading to keep support
7. give an end-user possibility for in-kind support leading to be allowed to act as partner
8. ask attendees to admit what they do not know leading to the right parties entering
9. exchange the needs of participants leading to support for each other

### **Section 3A: Exchange > Support**

1. allocate work based on the future roles leading to long term support
2. give the launching customer a discount for future purchases which supports initiative
3. execute a cost-benefit analysis (assumption: because assessing the knowledge acquisition from this partner leads to insight to (coordinate) costs of sharing (tacit) knowledge

### **Section 4A: Reflection > Support**

1. formulate the attraction in the idea leading to ties for participants
2. apply (pre)tests in the organization of the user leading to temptation to act as partner
3. make sure the characteristics of the Idea serve the objectives of the parent organizations leading to support for the MPI

### **Section 5A: Conversion > Support**

1. demand partner organizations are very active to contribute to finances, machines, room and/or staff leading to understand the level of support

## **Second row in the Intervention Box: direct interventions for the Idea**

### **Section 1B: Initiation > Idea**

1. invite users in an early stage leading to participants being realistic about the idea
2. ask around at universities leading to good selection

### **Section 2B: Identification > Idea**

1. formulate explicitly why collaboration is worthwhile leading to a resource-based, transaction-cost based or other added value-based (for example. higher earnings, larger market share, longer survival) enrichment process.
2. Introduce a (collaborative) style of leadership leading to new meanings for the idea to be executed by these parties
3. prevent focus on only one characteristic of the idea leading to correct evaluation of their possible contribution to develop the idea
4. identify persons linked to (decision) gates, persons linked to appliances and future know-how owners leading to the best first input for the idea



**Section 3B: Exchange > Idea**

1. keep the idea inside the MPI arena to prevent tearing it apart by political wolves
2. make sure which idea to work on > system, process or product (assumption: because it prevents participant preferences) leading to jointly reasoning from whole to parts

**Section 4B: Reflection > Idea**

1. elaborate ideas about technology, market, performance, risk, new knowledge and time horizon leading to the best possible assessment of the idea
2. present product or service concepts in elemental descriptive forms (including verbal stories, verbal metaphors, and physical prototypes) which leads to flexibility in changes required for new technical or market information
3. make sure the characteristics of the idea are formulated by users leading to commercial success
4. give users tasks to enable self-reflection leading to real market understanding or co-creation
5. reflect swiftly with the market to feel for success or fit
6. use boundary objects as prototyping technique to bridge knowledge boundaries
7. formulate idea characteristics in line with objectives of parent organizations to support parent organizations
8. deliver the idea as a demonstrator including statements of performance to more viability for the idea
9. scope continuously whilst reflecting on adding new components leading to low-cost price
10. use an approach aiming for an organization instead of a product with the possibility for more applications leading to a more viable future of the MPI
11. deeply understand the basic principles of the idea in connection with future users leading to a more viable idea with little use of working capital

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**Section 5B: Conversion > Idea**

1. invert new ingredients of parties' practices to innovative applications
2. embed ideas in current practices because this facilitates operationalization leading to low-cost introduction

**Third row in the Intervention Box: direct interventions for Fit with (personal) objectives****Section 1C: Initiation > Fit with (personal) objectives**

1. invite organizations to enter the MPI to focus on efficiency benefits
2. invite organizations to enter the MPI to receive competitive advantages
3. first intervene for support, fit of objectives, the idea, coordination and cooperation to motivate concretizations of work packages and links with parent organizations

**Section 2C: Identification > Fit with (personal) objectives**

1. put own objectives or problems on the agenda of start-up meeting leading to start topics about conditions for participation and mutual views of participants' contributions
2. discuss market overlap of parties leading to less contribution
3. formulate the movement in terms of objectives, participants, market and technology to identify with the MPI
4. participants identify objective(s) for the longer term so risks for short term support are compensated
5. review patents (assumption: position of competitors become clear) to focus on the correct participants

**Section 3C: Exchange > Fit with (personal) objectives**

1. participants understand each other's gains and pains to also progress in difficult times
2. detailed agreements about work packages mainly to prevent one of the participants emphasizing his own interests

**Section 4C: Reflection > Fit with (personal) objectives**

1. let partners understand their overlap in objectives which almost makes initiation and identification redundant

**Section 5C: Conversion > Fit with (personal) objectives**

1. describe a common market leading to common interest

**Fourth row in the Intervention Box: direct interventions for Cooperation.****Section 1D: Initiation > Cooperation**

1. invite relevant staff from a customer point of view to fulfill expectations of customers
2. invite staff representing the strength of the participants leading to unique resources in cooperation
3. invite device builders and end-users with pre-competitive interests for the same market
4. take time to understand the non-moving starting points of the initiative (assumption: because parties interpret these points as positive) to uncheck starting points

**Section 2D: Identification > Cooperation**

1. get people on board who understand customers to fulfill of expectations
2. combine organizational strengths leading to competitive advantages
3. include big parties (with power/money) <> small parties (with room to maneuver/ few conventions) leading to speed

4. visualize parties' professionalism to speed up activities
5. make an inventory of competences and needs of parties leading to good arrangements to cooperate
6. treat each other as equivalent within the MPI to ignore individual differences
7. connect the idea with the superordinate branch objectives so participants from that branch are willing to contribute
8. choose parties who add value and speed to your first appraisals leading to the possibility of better evaluations during later actions
9. be very explicit about criteria for staff (> brilliant, gritty) to deeply understand topics

### **Section 3D: Exchange > Cooperation**

1. make the availability of staff, strengths and typical styles clear to realistically cooperate in activities
2. immediately start to build trust to smoothen knowledge exchange
3. guard equality (for example in decision making and conversation time) during negotiations to access them
4. implement collaborative leadership to facilitate tacit learning

Intervention 4 about the implementation of Collaborative Leadership unites parties, works as a facilitator for interaction, shows a neutral attitude, has an eye for interests and acts independently from authorities. These mechanisms triggered by the presence of collaborative leadership facilitate tacit learning. This kind of leadership is defined by four characteristics. First, it is concurrent, meaning leadership is present in more positions at the same time. Second, by being collective it is possible decisions are made by whoever has the relevant responsibility. The third characteristic – mutuality – expresses the idea a member may speak for the entire organization and finally, this leadership is compassionate so dignity will be preserved for everybody in the organization. This style facilitates action learning. This plural accountability makes collaborative leadership appropriate for a context as an MPI since the initiative is dependent on the contribution of every participant.

1. treat input of mother organizations as trade goods leading to fair reciprocity in collaboration
2. install a stable working group with technical persons to stabilize cooperation
3. make supporters commit themselves for a long active role leading to low circulation of other persons in and around the MPI
4. make the long- and short-term interests of partners clear so they stay motivated to work together
5. make sure that an end-user does not need to work continuously for the MPI leading to convenience for this contributor

**Section 4D: Reflection > Cooperation**

1. deploy parties' capacities for the objectives of other participants to self-reinforce collaboration effects

**Section 5D: Conversion > Cooperation**

1. confront another party as if it concerns a stranger so it filters emotional bias to clearly add value of the party
2. take participants away from their normal job so they can work dedicated on the assignment to distract less
3. make sure capacities are available (assumption: because this is mostly a responsibility of lower managers leading to too optimistic views of higher managers)

**Fifth row in the Intervention Box: direct interventions for Coordination****Section 1E: Initiation > Coordination**

1. immediately arrange coordination of change - and conflict management as well in decision making leading to growth of trust
2. use non-binding contracts for a basis of interpersonal trust
3. immediately start building trust to prevent excessive contractual formality
4. search for champion, sponsor and gate keepers to introduce formal processes

**Section 2E: Identification > Coordination**

1. make sure participants identify themselves with the MPI and with their parent organizations to better assess partners behavior
2. select key persons with less strict ties in the parent organizations to hinder dependencies for the MPI less

**Section 3E: Exchange > Coordination**

1. choose high frequency communication with rich media leading to a high degree of inter-organizational learning and low opportunistic behavior
2. introduce structures, routines and planning to efficiently coordinate activities
3. joint planning activities leading to ensure order in interdependent activities
4. discriminate between important and not important issues leading to less inter-party rivalry and less coordination costs
5. set up the sharing of information including feedback leading to the best formalization level
6. arrange information for sharing procedures, non-contractual commitments, change management approaches, arrangements for penalties leading to less collaboration problems

7. introduce routines about gathering information about feasibility leading to availability and ownership in the MPI
8. to agree about an open or layered exchange of knowledge (with discovery register) leading to a low level of coordination costs and to effective diffusion of knowledge (52)

Intervention eight may have two options:

- a) Open exchange: in case of limited number of participants, big potential and new knowledge emerging from collaboration. If a patent by one inventor is problematic, co-ownership of patents is helpful as is the use of an Invention Register in Meeting. Also, a NDA can be added.
  - b) Layered exchange: in case of many partners with partial work packages a common license scheme or cross licenses are useful (partners take a onetime license without royalties). Another possibility is the 'umbrella agreement' (use of knowledge till the level needed, only during collaboration, perhaps with an obligation to return subsidies). Non-disclosure agreements for external parties.
1. agree within the MPI about allocation of hours because it avoids complicated money coupling leading to informal and easy decision making about priority, staffing and sharing growth information
  2. make agreements based on first experiences with other participants because if one sees no reason for a formal contract this leads to optimal flexibility for adjustments.
  3. exchange agendas of end-users and gatekeepers so the risk of burning money/hours is understood so everybody stays on the same priorities
  4. cohere the breakdown of the idea and the responsibilities so participants understand the relationship with burning money so everybody stays on the same priorities

**N****Section 4E: Reflection > Coordination**

1. elaborate joint planning leading to good timing and work order divided over several parties
2. think about a level of formalization for roles and metrics leading to viable interpretation of coordination
3. work out formalized procedures (for problem solving, decision making, conflict resolution, performance evaluations) to collaborate in domains which were too sensitive or too risky
4. co-create a deliverable at the horizon to make room for execution from the steering committee
5. ask partners for requirements or other contributions without obligations for or from them leaving the initiative with freedom in control

6. also think about getting to know each other, contracting, financing and performing on the agenda leading to integral decision making

### **Section 5E: Conversion > Coordination**

1. promote the joint venture format leading to an agenda of solemn MPI interest
2. try alliances with customer and/or suppliers to jointly develop products/technologies to innovate and to remain competitive
3. create an 'in between application' on the borders of participating parties leading to concretization of the next step
4. create time and money budgets including delegated authority on MPI level leading to high tempo proceedings
5. converge a business plan with the components of viability including a demonstrator leading to a sensible go- no go decision
6. create a select group for decision making about formalization leading to a restricted dependency of shareholders

### **Sixth row in the Intervention Box: direct interventions for Partitioning of work**

#### **Section 1F: Initiation > Partitioning of work**

1. 1. make sure to synchronize actions of partners leading continuously to joint starting points

#### **Section 2F: Identification > Partitioning of work**

1. agree on modular work packages for future deliverables leading to less coordination effort
2. agree for which IP an NDA is needed leading to fair transactions in future

#### **Section 3F: Exchange > Partitioning of work**

1. only create for modular work packages, high coupling of partners leading to bigger chances for commercial success
2. in case of architectural work packages use rich media leading to high interorganizational learning
3. make sure everybody contributes to motivate participants to take a fair share
4. give the work to the best suited party even if it does not fit your own short-term interest to stay focused upon the result

#### **Section 4F: Reflection > Partitioning of work**

1. agree on the starting points about what to do, because it makes you, your parent organization or other initiators seeing the same assignment leading to a shared view on the process

2. make work packages for the idea/CBO in order of materials > modules > panel > system > equipment (assumption: because this emphasizes efficiency) leading to the least rework
3. think about modular or architectural development (assumption: because it influences tie development between partners) leading to different relations and knowledge flows

**Section 5F: Conversion > Partitioning of work**

1. transfer own work protocols to work packages and common tools to all participants because it supports action and interaction leading to bigger participants' ties
2. deliver a detailed modular work planning, a juridical entity and a routine for exit so participants understand clearly the responsibilities entering the next phase leading to low coordination costs

**Seventh row in the Intervention Box: direct interventions for Specialized tasks for integration with parent organizations****Section 1G: Initiation > Specialized tasks**

No interventions formulated here due to this very early stadium.

**Section 2G: Identification > Specialized tasks**

1. organize decision making with parent organizations only about main issues to support picking up the role of stakeholder
2. in case of subsidy ask the same number of parties' responsables leading to first selection criterion between parties

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**Section 3G: Exchange > Specialized tasks**

1. use confirmation, selection, transformation, toleration or non-confirmation as tactics to fit in the parent organizations

**Section 4G: Reflection > Specialized tasks**

1. think about how to integrate independent MPI operating and communication with parent organizations (assumption: because sidestepping parent communication routines) leads to best progress

**Section 5G: Conversion > Specialized tasks**

1. deliver a stage gate document for 'the Idea gate' with the elaborated viability criteria so perceptual distance is minimized between supporters becoming aware of the

- viability of the initiative at the end of the Inception phase leading to a shared go or no-go decision for continuation
2. officialize the relevant player by installing reporting lines (assumption: because this creates responsibility) leading to continuous support

### Indirect interventions

Indirect interventions help in the execution of direct interventions and when allocated to the Inception leadership assignment this adds the next part to the task description:

Use indirect interventions to prevent rigidity in adoption of roles, procedures, interfaces and responses to ad hoc problems (54, 58, 64) or to keep bargaining positions symmetrically, given the diversity of parties (55, 56).

Part eight of the task description of Inception process management

Because indirect interventions help certain direct interventions (64) they are listed together with those clusters.

#### Section I.1: helping initiation

1. have regular and systematic interaction using rich media ties to build up trust
2. create a real safe environment, even with the possibility for an exit arranged, leading to cooperate better
3. use visualization, ethnography, collaborative sensemaking, assumption surfacing, field experiments to formulate objectives/ideas leading to leverage of differences
4. organize network meetings (assumption: because this gives a good opportunity to discriminate) to invite the best participants
5. give priority to low-risk activities (assumption: because this grows trust) leading to positive interaction

#### Section I.2: helping identification

1. make sure participants share 'a dream' to get along
2. let parties meet informally to cooperate
3. bring competences to create a MPI on board to prevent wrong items in this pre-contractual phase
4. use methods as mental simulation or benefit comparison to support for collaboration with these parties
5. show a problem caused by an outside party to focus within the group
6. obtain references from a third party (assumption: when a party had prior dealings with a potential partner for the MPI) explicit experiences help to assess future support
7. circumvent tendering to create collaboration contracts (assumption: because this prevents hierarchy) leading to optimization instead of sub-optimization



**Section I.3: helping exchange**

1. promote initial face to face contacts and shared cyber spaces leading to openness
2. organize learnings through accessible files leading to progressive insight for all
3. use customer visit teams, lead user analysis, focus groups to enrich the market/performance aspect of the idea leading to common formulations
4. let no one party get the biggest influence on the development to weaken ties of that party with the other parties
5. introduce a rule which everybody can step out without sanction leading to relaxed presence
6. visualize parties' professionalism to speed up activities
7. create a platform with residents (breakfast session, workshop, exploring meeting, idea generation) leading to higher support
8. organize communication outside-in leading to positive image of the MPI
9. beware for longing for formalization and details leading to spending a lot of indirect hours
10. install a learning attitude combined with a written learning history to share new discoveries and insights
11. make a launching customer act as an informal principal (assumption: because it gives the MPI the right perspective) leading to common focus

**Section I.4: helping reflection**

1. let participants elaborate on each other's contribution to team up
2. speak out about clashes leading to go on when it gets rough
3. point at concurrent initiatives to enrich MPI
4. work with a visualized idea leading to synchronization and an equal starting point for next activities
5. use methods as imagery, storytelling, metaphors, analogies and assumption surfacing leading to new enrichments
6. stretch from technology to market model (assumption: because this makes volume, development in raw materials etc. explicit) leading to realistic enrichment
7. formulate an abstract business case and cost estimates (assumption: because this helps to fantasize about the final situation) leading to realistic enrichment

**Section I.5: helping conversion**

1. formulate the relation of objectives and the idea of the MPI in the Intention Agreement (assumption: because this explicates the interests of participants) to take each other into account
2. make go/no-go at a kind of formal Idea gate (assumption: because this forces parties to consider their role seriously) leading to serious support

## Appendix O: Literature

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## Appendix P: Intervention Box navigation

This navigation tool is to be found on [Coenwalter.nl/navtool](https://Coenwalter.nl/navtool). It consists of the setup of the Intervention box (par. 5.3.6) and the interventions (par. 5.3.7). Some screenshots are presented in this appendix to give an impression of this automated tool.

### How to find the right intervention for the next step?

#### Welcome to the Navigation Tool for the Intervention Box.

This tool will help you to find the interventions for the development of your multi-party initiative. These interventions will deliver you the possibility to assess the viability of your initiative. Viability of your initiative needs support from the parent organisations, an idea with certain characteristics, fit with objectives of participants and a view on coordination, cooperation, work partitioning and communication lines with parent organisations in the next phase(s). Every starting initiative needs a set of interventions from the intervention box to create viability, but since every initiative is unique you have to customize your individual process with the right interventions for the next step.

Please follow the questions to find the right interventions. Please understand that execution of each intervention adds unique information to the initiative and it is important to consolidate this yield. This consolidation is again input for next interventions. It is possible to iterate several times through the sections and even execute the same intervention more than once. At the same time it is necessary to execute interventions for all the seven components of viability of your initiative.

[START NAVIGATION TOOL](#)

#### First set general interventions.

1. propose the use of an Inception phase leading to a small cognitive bias gap in participants
2. provide the key-participants a learning module about IPA so they become aware of the essentials of IPA leading to shared view on tools and outcomes
3. give Support of parent organizations, Idea description and Fit with objectives emphasis in the beginning leading to motivation to develop ideas about Cooperation, Coordination, Partitioning of work and Integration with parent organizations later.
4. begin to work on trust immediately leading to positive (inter-organizational) collaborative behaviour. If relevant go to Section 15 for concrete interventions
5. propose a set of initiating activities leading to support for follow up activities. If relevant go to Section 16 for concrete interventions
6. make an inventory of what is already available at the current parties as input for or interpretation of the viability components leading to a shared view of (maybe different) starting points.

After the (selection of the) above interventions are finished, consolidate the output before going to Section 8 for the next iterations starting here now the MPI has finished its first set of activities and goes on in the Inception phase.

Reset

First set general interventions

Indirect supporting interventions

The Fast Lane

The Circus Lane

The Cloister Lane

Interim evaluation of the MPI

Interventions leading to trust

Supplemental general interventions

Initiation interventions (A-C)

Initiation interventions (D-F)

Identification interventions

Exchange interventions

Reflection interventions

Conversion interventions

## Intervention for the next step?

### Identification > Support

Interventions for understanding each other and legitimize co-existence in a MPI)

Identify differences, similarities and consequences with parties leading to legitimization of cooperation

Ensure that values are shared leading to efficient cooperation and coordination

Propose to opposing party which conditions would make them positive leading to a good

idea to adapt or drop that party

Identify relevant people of the parent organizations discuss their objectives and

Importance of the idea reinforcing support for the MPI

Identify identification interventions be based on a tentative assignment leading to

Understanding that participation in the MPI is not fixed either

Ensure that characteristics of the idea fit objectives of parties leading to keeping on

going

Ensure end-user possibility for in-kind support leading to be allowed to act as partner

Encourage to admit what they do not know leading to the right parties entering

Ensure the needs of participants leading to support for each other

### The Fast Lane.

This lane has not much time available and a very limited number of persons gets access. These necessary limitations allow a higher risk profile for support, fit with objectives, coordination and specialized tasks for integration with parent organisations. All the necessary interventions are pre-sorted in this section.

#### Set general interventions

- propose the use of an Inception phase leading to a small cognitive bias gap in participants
- propose common measures for viability (power and actual role for support of partners, short term and long-term benefits for fit with objectives, market, performance requirements, technology, attraction and form for the Idea, staff, strength and style for cooperation, structure, planning and routines for coordination, modular and architectural for partitioning of work) leading to support for the MPI
- begin to work on trust immediately leading to positive (inter-organizational) collaborative behaviour (see for direct interventions concerning trust
- introduce a transaction style based on communal sharing and market pricing leading to sharing objectives, hazards and benefits build on a non-equity relationship and priced inputs
- give reflection on Idea description and identification/exchange of Cooperation emphasis in the beginning leading to speed and risk taking on Support, Fit with objectives, Coordination

## Appendix Q: Invitation Expert Panel members

Van: Jaap Walter

Onderwerp: deelname expert panel over de aanpak van de start van initiatieven met meer partijen

Datum: ... 2021

Aan:

Beste,

Dank voor uw interesse in het valideren van de aanpak voor de start van initiatieven met meerdere partijen (MPI), zoals telefonisch besproken. Met deze brief wil ik u enige achtergrond geven en de afspraak bevestigen.

### Achtergrond

De bijeenkomst vindt plaats in het kader van mijn promotieonderzoek aan de TU Eindhoven onder supervisie van prof. dr.ir. M Weggeman en dr. M. Cloodt. Onderwerp is mijn ontwerp voor de aanpak van startende initiatieven met meerdere partijen, 'Multi-Party Initiatives' (MPI). Hoewel er veel bekend is over de samenwerking van partijen nadat de samenwerking is bekrachtigd, is er echter weinig bekend over de (vaak informele) totstandkoming van de samenwerking. Daarop is de te bespreken aanpak gericht.

### Expert panel

Gebruik van expert panels geeft inzicht in de mate waarin de aanpak herkend wordt in de praktijk. Daartoe worden mensen zoals u geraadpleegd in dialoog met mij als de onderzoeker. U wordt gelegenheid gegeven om de aanpak te commentariëren en te verbeteren. Uw mening als expert wordt waardevol omdat u ervaring heeft met de start van tenminste drie MPI's en wellicht momenteel daarbij betrokken bent.

### Lasten en baten

Mijn vraag aan u is om uw mening te geven in een persoonlijk gesprek van ongeveer een uur in een Corona veilige omgeving dan wel als deelnemer aan een digitale bijeenkomst van ongeveer anderhalf uur met twee andere professionals. Het is momenteel helaas niet mogelijk om met een groep bij elkaar te komen. Uw input wordt bij u gecheckt en geanonimiseerd verwerkt in de definitieve aanpak. Uw bijdrage wil ik graag honoreren met toesturen van een update van de aanpak en t.z.t. een exemplaar van het proefschrift.

### Praktische zaken

Zoals telefonisch besproken zie ik u graag op ...../neemt u deel aan de digitale bijeenkomst op .....In deze bijeenkomst leg ik u de vragen voor. Mijn verzoek is of u de

bijlage voor die tijd zou willen lezen. Eventuele vragen daarover staan als eerste op de agenda.

Met vriendelijke groet,  
Jaap Walter, 06 53150145

Bijlage: 'an approach for enhancing the emerging multi-party collaboration'. Deze PowerPoint van 20 minuten bereidt u voor op de meeting en speelt zichzelf af in de presentatie-modus.

# APPENDIX R: Test members preparation Powerpoint

### Wat is validatie met uw hulp, als lid Expert Panel?

- Validatie: toetsen of de ontworpen aanpak in uw praktijk bruikbaar is
- Methode: aan de hand van zeven vragen de essenties van de aanpak confronteren met uw praktijk-ervaring en -behoeften
- Resultaat: deze aanpak voor de start van multi-party initiatieven (MPI) is (al of niet) herkenbaar en bruikbaar in uw ogen, als de doelgroep.
- NB. De term MPI wordt gebruikt voor startende samenwerking waar later termen worden gebruikt als alliantie, project, joint venture, partnerschap, programma en andere synoniemen waar onafhankelijke partijen met elkaar in zee gaan om een nieuw product of dienst te ontwikkelen

5



### Aanpak van de validatie

- U krijgt behalve de uitnodiging, deze toelichting toegestuurd
- U heeft een digitale bijeenkomst met de onderzoeker (jaap) van maximaal 3 personen of een fysieke bijeenkomst individueel
- De agenda bestaat uit 7 vragen waarin u gevraagd wordt essentiële onderdelen van het ontwerp op bruikbaarheid te scoren en wellicht suggesties voor verbetering te geven
- U krijgt een samenvatting van uw scores en verbeteringen gecombineerd met die van anderen.

6



### De te valideren aanpak: de Inceptie fase

7



### Gedachten achter het ontwerp voor de Inceptie fase 1

Er bestaat geen samenhangende theorie voor het bouwen van een MPI vanaf het begin. Wel zijn er suggesties voor thema's als verrouwen, formalisatie en redenen voor samenwerking.

Het is nog steeds een vraag hoe interventies op groepsniveau met meerdere organisaties effectief zijn voordat het initiatief ontwikkeling, commercialisatie en routine fasen bereikt.

De wetenschappelijke ontwerp aanpak mikt op het oplossen van een veldprobleem (theorie voor/voorschrijven) en niet zozeer op het beschrijven ervan (theorie van/verklaren).

Het voortschrijdend inzicht bij totstandkoming van een MPI is veelal niet een lineair proces.

Het ontworpen instrumentarium is gebaseerd op wetenschappelijk verkregen inzichten en legt daardoor een evidence-based aanpak onder de vele MPI's waar deze veelal gebaseerd zijn op best-practices.

8





## Wat is validatie met uw hulp, als lid Expert Panel?

- Validatie: toetsen of de ontworpen aanpak in uw praktijk bruikbaar is
- Methode: aan de hand van zeven vragen de essenties van de aanpak confronteren met uw praktijk-ervaring en -behoeften
- Resultaat: deze aanpak voor de start van multi-party initiatieven (MPI) is (al of niet) herkenbaar en bruikbaar in uw ogen, als de doelgroep.
- NB. De term MPI wordt gebruikt voor startende samenwerking waar later termen worden gebruikt als alliantie, project, joint venture, partnerschap, programma en andere synoniemen waar onafhankelijke partijen met elkaar in zee gaan om een nieuw product of dienst te ontwikkelen

5

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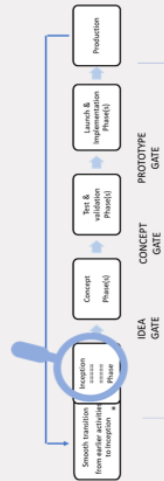
## Aanpak van de validatie

- U krijgt behalve de uitnodiging, deze toelichting toegestuurd
- U heeft een digitale bijeenkomst met de onderzoeker (jaap) van maximaal 3 personen of een fysieke bijeenkomst individueel
- De agenda bestaat uit 7 vragen waarin u gevraagd wordt essentiële onderdelen van het ontwerp op bruikbaarheid te scoren en wellicht suggesties voor verbetering te geven
- U krijgt een samenvatting van uw scores en verbeteringen gecombineerd met die van anderen.

6

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## De te valideren aanpak: de Inceptie fase



\* For example: Ideation, Opportunity Screening, Feasibility Study, Validation, etc.

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## Gedachten achter het ontwerp voor de Inceptie fase 1

Er bestaat geen samenhangende theorie voor het bouwen van een MPI vanaf het begin. Wel zijn er suggesties voor thema's als verrouwen, formalisatie en redenen voor samenwerking. Het is nog steeds een vraag hoe interventies op groepsniveau met meerdere organisaties effectief zijn voordat het initiatief ontwikkeling, commercialisatie en routine fasen bereikt. De wetenschappelijke ontwerp aanpak mikt op het oplossen van een veldprobleem (theorie voor/voorschrijven) en niet zozeer op het beschrijven ervan (theorie van/verklaren). Het voortschrijdend inzicht bij totstandkoming van een MPI is veelal niet een lineair proces. Het ontworpen instrumentarium is gebaseerd op wetenschappelijk verkregen inzichten en legt daardoor een evidence-based aanpak onder de vele MPI's waar deze veelal gebaseerd zijn op best-practices.

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## Gedachten achter het ontwerp voor de Inceptie fase 2

Algemeen:

De interventies in het ontwerp zijn gebaseerd op de CIMO-logica: als je in context C interventie I gebruikt triggert dit mechanisme M waardoor uitkomst O verwacht wordt.

Meer specifiek: de moeder-CIMO voor dit onderzoek!

U, met een opgave voor het managen van de Inceptie fase (Context)

Gebruik die ingrijpende activiteiten (Interventions)

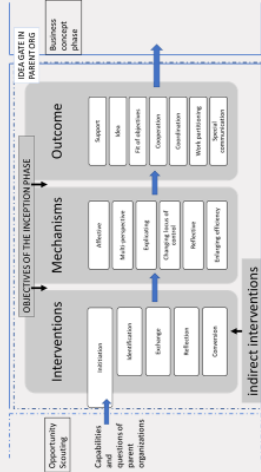
Die evidence-based veranderingen in gang zetten (Mechanisms)

Die leiden tot levensvatbaarheid en voortzetting van het multi-party initiatief (Outcome)

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## De (essenties van) de Inceptie fase



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## Het waarom en de definitie van de Inceptie fase

Waarom is Inceptie fase nodig?

- to minimize the perceptual distance\* between potential partners
- to maximize the chance for success with low toll for participants.

\*de verschillen van samenwerkende partners in hun percepties op kern-issues

Wat is de definitie van de Inceptie fase?

The Inception phase is the phase in which an arrangement of interventions is used by a group to transform a problem or opportunity into shared ideas about what solution to produce and about how to organize the complementary partners, who advance in seeing the viability of the initiative compared to other initiatives

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## Levensvatbaarheid en continuïteit als uitkomst van de Inceptie fase

De zeven samenstellende delen van levensvatbaarheid en continuïteit zijn:

- De Support in de deelnemende partijen
- Het idee beschreven in aspecten technologie, fit met gebruikers, prestatie, vorm, attractie, risico, time to market en kennishiaten
- De fit met de bedoelingen van de deelnemers
- De coöperatie in de volgende fase(n)
- De coördinatie in de volgende fase(n)
- De wijze van indelen van werkpakketten
- Speciale taken voor de integratie met de moeder organisaties

12

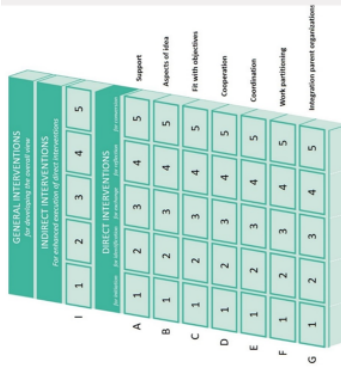
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## Aard van de directe interventies in de Inceptie fase

1. Initiërend: set van interventies voor nominatie, eerste bijeenkomst(en), introductie
2. Identificerend: set van interventies om elkaar te gaan begrijpen en het samen optrekken te legitimeren.
3. Uitwisselend: set van interventies om communicatie te routiniseren, het idee te behandelen en transparantie te creëren.
4. Reflectief: set van interventies om individuele en collectieve perspectieven en potenties te creëren
5. Construerend: set van interventies om entiteiten, werkpakketten en gezamenlijke uitdagingen uit te kristalliseren, terwijl de agenda's van deelnemers gehonoreerd blijven.

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## De intervention box

- Gebaseerd op:
- Algemene en (in)directe interventies
  - Typische clusters (1 – 5) van interventies in de Inceptie fase: initiërende, identificerende, uitwisselende, reflecterende, construerende
  - De componenten voor levensvatbaarheid (A- G) waar de interventies aan bijdragen

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## Voorbeelden van interventies (147 in totaal)

Algemene: begin onmiddellijk aan vertrouwen te werken want dat leidt tot positief samenwerkingsgedrag

Initiërend/support: laat in de uitnodiging zien hoe het idee past voor gedeelde processen bij genodigden want dat leidt tot breed support

Uitwisselend/fit met bedoelingen: laat deelnemers elkaars 'gains and pains' begrijpen want dat leidt tot voortgang ook in lastige perioden

Reflecterend/indeling van werkpakketten: maak werkpakketten in de volgende materiaal > module > paneel > systeem > apparaat want dat leidt tot het minste materiaal > Construerend/coördinatie: stel een business plan op gebaseerd op de componenten van levensvatbaarheid incl. een 'demonstrator' want dat leidt tot een verstandig-go-nogo besluit

Indirectidentificatie: presenter een probleem veroorzaakt door een externe partij want dat leidt tot focus in de samenwerking

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## Tenslotte

Tijdens de bijeenkomst krijgt u ook:

- Een manier van navigeren door de Intervention Box voorgelegd om – bij toepassing in uw MPI – bij de goede interventies uit te komen.
- Een taakomschrijving voorgelegd om de taak van diene(n) die een verantwoordelijkheid hebben voor het inrichten er van te verhelderen.

Met bovenstaande dia's heeft u de essenties van de te valideren Inception fase gezien. Wanneer u deze heeft doorgenomen bent u voorbereid op de agenda van validerende bijeenkomst. Voor u is de tekst met de benodigde details beschikbaar op de bijeenkomst.

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**Appendix S: Agenda for and scores of expert panel members**

**Naam:**

Dank voor uw aanwezigheid en uw moeite mijn ontwerp voor de aanpak van de start van een multi-party initiatief te toetsen op gebruikswaarde. U heeft dit ontwerp vorige week als Power-Point toegestuurd gekregen. Ik heb u daarnet enige achtergrond geschetst van de totstandkoming van deze aanpak en eventuele vragen beantwoord. Nu wil ik uw reactie inventariseren op de verschillende onderdelen beschreven in de u toegestuurde en net uitgereikte bijlagen. Wilt u uw score geven voor de mate waarin u het gebruik ervan toepasselijk vindt in de praktijk. Als u een element wilt veranderen of aanvullen, gelieve dit te doen. *Zie uitgedeelde bijlage bladzijde 1.*

**Alpha test round one**

1) *So, you find the definition useful?* (Not useful at all 1 2 3 4 5 Very useful)

2) *Does the overall view of the development cycle of services/products clarifies the place of the Inception phase?*

(Not clarifying at all 1 2 3 4 5 Very clarifying)

3) *Do you think that these two objectives make the Inception phase worthwhile?*

(Not worthwhile at all 1 2 3 4 5 Very worthwhile)

4) *Do you recognize the components for viability of the MPI?*

This component of viability.....	.....is recognizable as factor for viability.....					
	Not at all	1	2	3	4	5 Very sure
a) Support						
b) The idea						
c) Fit with objectives						
d) The cooperation in the next phase(s)						
e) The coordination of the next phase(s):						
f) The approach for partitioning of work						
g) Specialized tasks for integration with parent organizations:						

5) *Will the navigation-tool for search through the interventions help to enhance the process design?*

(Not helpful at all 1 2 3 4 5 Very helpful)

6) *Do you find the description of the tasks of somebody with responsibility for the process design appropriate?*

(Not appropriate at all 1 2 3 4 5 very appropriate)



7) How likely would *you apply this approach in your next assignment to help the start of a multi-party initiative?*

(Not likely at all 1 2 3 4 5 Very likely)

## Appendix T: Expert panel members validation outcome

### Members round one:

MGO: project leader, Heineken Experience, Gouda Banner, Loading trucks

MLE: innovation strategist: TNO projects, Waternet Ciculair, 013 Food

HWE: project leader, Traffic renovation, the Rich Wadden Sea, Buffers for Climate

JDE: project leader, Transition of cloisters, Redevelopment Heritages, New markets Brabant

TPL: innovation and design leader, Senseo, Beertender, Digital Health Hub

HKU: project leader, Electricity transport, Wind Energy projects

DUR: venture generator, Master of Scale, Incubation Centre Delft, Pavillion World Expo

### Scores quantitative:

Question	1	2	3	4a	4b	4c	4d	4e	4f	4g	5	6	7
MGO	5	4	5	4	5	4	4	4	4	4	4	5	5
HWE	5	5	5	5	5	5	5	5	5	5	2	5	5
TPL	4	5	4	5	3	4	4	5	3	5	4	4	5
JDE	5	4	5	5	4	5	4	3	5	5	4	4	4
HKU	5	4	5	5	3-5	5	3	2-3	5	4-5	5	4	5
MLE3	5	5	5	5	5	5	5	5	5	5	4	4	4
DUR	4	5	3	4	4	3	3	4-5	4	4-5	3	4	5
Average	4,7	4,6	4,6	4,7	4,3	4,4	4	4,1	4,4	4,6	3,6	4,3	4,7

### Remarks:

ad 1: Initiators has no added value in definition; add 'solutions'; ad 2: show also different project phases; language suggestions; topics are abstract and this asks skill of receiver, it is important in which language design is offered; not to use the complete definition, but using and applying the ingredients; the practicality of the design is very appealing; maybe it is possible to capture it in image; definition is 'spot on' but hopefully it is possible to tweak it for use by 'normal people'

ad 2: the impression is that the Inception phase has a start and end; more clear start and end points would help; is it possible to use a different term for 'gate', like decision point or decision document? Opportunity scouting is almost not done; It comes by incidence; Better would be 'problem scouting' or 'Ideation'. Start-ups do not use project approach, they need chaos. Are you trying to change revolution into evolution? Beware of the kiss-of-death by corporates. It is more about building a company that partners with corporates later.

ad 3: which may lead to the insight that there is no partnership possible for one of the parties; if you do not work on these seven components, you take on basis of my experience

a big risk for failure; the approach assumes a 'waterfall' way of phasing. I personally find it clear but in initiatives the phasing can differentiate drastically; it must be done but it has no attention during Ideation

ad 4: risk is necessary measure; preferable = mostly essential; complementary interests are important; is integral instead of modular possible; I am not sure of measurements are complete; it is not clear if input of knowledge or readiness to give it are part of strength; explanation is complex and I miss in 'Coordination' the Deming circle; have a look at the shifter pod (knowledge, cards, video). concerning d): an organisation may have trust in its competency development speed; very important is interaction with customer, with whom feedback loops go on in Test & Validation; Risks (necessary) concerns short (idea gate) and long-term risks (assurance, certification, law). The Fit with Objectives is adjusted in time as well is cooperation. Specialist integration (7) is 5 if it concerns 'making noise' and challenging!

ad 5: 'open all doors' for a moment; this navigation is complex; questions are in English; I think in Dutch. I recognize some interventions immediately, others need very close reading; I think it is ok, but I get lost in current version; nothing about mid-term evaluation of the MPI in the Inception phase?; more simplicity: the box and especially the numerous interventions assume an experienced process designer/director; I miss the overview; it will help especially on execution level: there are more Inception levels.

ad 6: Point one is abstract, other points are clear; this task description supposes a clear position in time, but this role of responsible is not clear yet in this moment mostly: how to make sure that this responsibility does emerge? By an MPI-start-up? The description suits a MPI with equal parties (3 tankers or 3 speedboats). The main task as captain is to maintain a controlled chaos

ad 7: I would use it, but it can be more user-friendly by a) translated in Dutch and b) with automated navigation tool; yes, but under the condition that the scientific form is changed in a more practical one; especially useful evolution more the revolution.

Observations by the researcher in the meetings with expert panel members.

- Panel is quick to think that 'partner organizations' are large organizations, while sometimes they are one-person companies. Adjustment: reformulated in the PowerPoint introduction for round two and in text in paragraph 3.5 "The choice for this unit of analysis".
- For question 1: useful is not the same as good. Usable means that approach helps to better construct Inception phase. Reformulated in the PowerPoint introduction.

- Translation into a practical variant is primarily a communication battle. For example, is there an acronym for the viability components? Adopted as suggestion for a popular version of the design.
- Nice question for discussion: is there a limit on the number of participants?
- Good to indicate in introduction what an MPI is in this context. Individual inventors who want to market their invention, individual entrepreneurs who want 100% control, customer-supplier relationships, contractor-client relationships are beyond definition! This resulted in some adjustments in box 1.6, the context description.
- Extra contraindication for use: when one of the parties does not want to agree on any rules/transaction method for the distribution of the proceeds. Added in paragraph 5.5, Contra-indications

### Members round two:

RZO: innovation strategist, Vitafluid, Chain craft, Tuttifoodi

KRI: program manager, several MPI's in Circular Plastics

FVA: business developer industry, Eco-regions, Consumer products Philips, New Business DHV

FVE: consultant Climate, Aire and Sustainability, Warming Up, Switch Smart Grid, Aardgasvrije wijken

JKA: project manager food, Protein Cluster, Start Hub Wageningen, Vertical Farming

### Scores quantitative:

Question	1	2	3	4a	4b	4c	4d	4e	4f	4g	5	6	7
RZO	5	4,5	5	5	4	5	4	5	3,5	5	5	5	5
KRI	5	5	5	5	4	5	5	4	5	5	5	5	5
FVA	5	5	5	5	5	5	5	3,5	5	4	5	5	5
FVE	5	5	5	5	5	3	5	3	4	5	4	5	3,5
JKA	4	4	4	5	4	3	5	4	3	nvt	4	4	4
Average Round 2	4,8	4,7	4,8	4,9	4,5	4,2	4,8	3,9	4	4,8	4,6	4,8	4,5
Average Round 1	4,9	4,6	4,8	4,9	4,3	4,4	4	4,1	4,4	4,6	4,1	4,3	4,7

### Remarks:

Ad 1: Bringing persons together is very important. If this is not done correctly at the start, you will suffer from it throughout the entire process! Think of it as awareness where you step in and develop an idea of why 'something' can be successful ; I don't really know the word inception, but it seems appropriate to me. Should be more known; Only the part 'who advance in seeing the viability of the initiative compared to other initiatives' does not fit



Ad 2: We are working on a Roadmap. What are crucial steps to implement in 2030 in restroom processing, circular plastics, cleaning business; It must be pre-competitive; If someone does not move in the first meeting, you have to deal with it; The end of Inception is often the Kick-Off (after the Idea gate); Think it's not easy if you don't work or have worked in this world. Then abstraction is great; It is now often part of the concept phase in which a piece of feasibility is examined on an economic and technological level; This consists of a number (3 to 5) conversations about 'how are we going to fill it all in'

Ad 3: In plain Dutch: getting everyone's noses in the same direction; Addition of PD: there must also be some commitment based on expectations of each other: what do I/you bring or about finances or commitment from internal organization; Just don't know if reducing the distance between partners (who are they?) is always the intention. But is OK if it sometimes leads parties to take a step back when PD is too big. Then it is a high goal (the role of power and politics); Which playing field will you step on and which match will you play? It is also thinking forward together instead of having it happen to you; More attention to why parties participate will certainly help to make things a success; 2nd objective: reformulate in the direction of 'Optimize success'; Too bad the intention is worded negatively. It is about creating a joint image of 'why are we doing this and how are we going to implement it and what do we want to achieve'. So, if possible, formulate Perceptual distance' positively; But a 5, because both are recognizably necessary.

Ad 4a) 'Power' sounds a bit clumsy. In principle, everyone is given the same weighting in the initiative; As a process supervisor I have to help ensure that they can sell it internally; Power/greed/conxies can lead to hand overplay; Beware of autocrats; Commitment at the highest level is very important, although they can delegate it. You almost always need this during the ride.

Ad 4b): This component should show for the added value; Opportunity does not always address a real problem; A problem works better for implementation than an opportunity; Perhaps Fit for Purpose is better than Performance requirements at this stage; I miss the beginning of the business case, maybe you can do something with business canvas; Attraction is perhaps the slogan of the MPI; So always a top customer present; Beware of knowledge institutions: they do everything 'push'. Also, what social value do you add, the big story. Attraction is often in storytelling: 'we want circular carbon' or 'towards 6 types of plastics'; There's something sexy about it; Requirements: it must always be better than what is now, but not so precise, even if financiers think it is important; Also what falls within/outside scope, performance requirements less, comes as a business plan is written; 'Form' can also be in the form of sketches; Risk. We do discuss that, but it is also part of it. We are not risk averse! So not necessary; Form is important, so we also make an interactive drawing of it.

Ad c): In the context of an ecosystem, there is a high form of Communal Sharing; Strong personalities can also get things done without very clear objectives; Don't forget the personal objectives: 'Do I like it myself' counts; I have seen the entire party got out because of the lack of it; For example, with 'hour bill' agreement, binding is already less; In concrete terms, in the subsequent phase, here it is more intuitive, like 'this could well have added value', while it does give an effort obligation with hours (e.g. 3 man months) or money.

Ad 4d) Cooperation. It must above all be clear what you get and what you bring; Staff: a little careful. They already have their own work. To what extent is this extra; The project man: thinking in terms of risks and measures; It is also important to realize which parties to invite.

Ad 4e) Coordination. Structure in large lines: name/work project leader and the work packages leaders; Planning horizon is very short; only really becomes important in the next phase; More concrete a phase later while it has already started; When it is clear 'what binds us'; A lot of experience with very large MPI's (> 20 players). Then governance is having a Steering group > program team > theme coordinator > project leader in Concept phase.

Ad 4f) Very important because expectations are linked to this! Think it is still a bit early if added value is not clear; Ok in this phase, but can also be done later; In practice, it is rarely used actively, but is recognizable as relevant. Especially, if work package leaders are sought; Little resistance if everyone gets their own package (they flee into isolation), but also a lot of hassle if this goes wrong!

Ad 4g) Not much experience with this special type of people, difficult to assess; People often take this for 'granted' and attach some importance to it. This is the responsibility of the program manager; This is arranged with the Prince 2 approach, with the presence of the supplier, user and stakeholder analysis. This has really changed in recent years.; Very important for continuity, so also arranging a good replacement who does not have to come from the same organization when changing.

Ad 5) This phase is crucial, you have a lot to do with it, but you have your own firm preferences for intervening; You do have to work with it to see its added value; It can certainly help; It seems important to me that as a user you have a good idea of the proposed intervention. You probably need to get/have real experience in this; The numbering of the interventions and numbers in overviews of the Lanes do not match; Suggestion: also look at the Multi-Stakeholder Partnership guide of the WUR. This MSP monitors and reflects. Can be found on the internet; Navigation is recognizable, but it is quite extensive, and it

'competes' with my own experience. But especially if you have little experience helpful; Suggestion: make it simpler.

Ad 6) I'm comfortable with it; For 2nd part: problem or solution? Ad 4th part: do you also notice that things are going in the right direction? Seems adequate to me, but it does require that these people feel and are responsible for this phase; Part 1: ++, part 2 questionable: too scientific. Rather something like 'I am going to help you shape your initiative for the future'. If you can pronounce it without stuttering, it's good; Part 3: ++ and 4: ++; People should remember from introduction: 'X is going to help us'. That role is often unseen; Adjust at 2nd part: 'perceptual distance' to 'a shared image and joint responsibility' (positive formulation); At 4th part: emphasize that a lot is about personal contacts.

Ad 7) I think it's very interesting to work with. Only then do you really learn whether it is useful in practice; I don't know if it suits me (usually > 15 parties). Navigation tool still too complex, rely mainly on my own experience; Ideation, Inception, Concept phases often overlap; Suitable for less experienced people.

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## About the author

Jaap Walter is born in Roosendaal en Nispen, on February 3, 1954. After graduation at the Gymnasium in Mook, he studied Organisational Psychology at the University of Nijmegen. He worked as teacher in Organization studies at Nijmegen College, Management educator at Enka, Management development officer at Akzo Pharma en Consultant at Nimo. In the next step he became co-founder of P2 Process- and Project managers, a project staffing firm. Doing projects in health care, industry and municipalities, he became more and more interested in the very beginning of projects, resulting in this dissertation about the very beginning of multi-party initiatives. Besides his work as project leader and teacher, he published two books with other authors: 'From idea to result: a process management approach' and 'Project management, new angles'. Furthermore, he wrote articles like 'Long live the increase of scale', 'Consolidation, the new competence of the project leader' and 'By the way, what does the project manager?'

## Summary English

The Inception Phase Approach:

from a multi-party opportunity to a viable multi-partner initiative

A dissertational design for organizing emerging collaboration among independent parties aiming at realizing a product or service opportunity.

In today's world multi-party initiatives (MPI's) become more and more relevant. First, this is because the lifecycle of products and services is becoming shorter so the need for new initiatives grows. Furthermore, the development of backbones, platforms or products and services requires increasingly know-how or resources that are not available within the initiating organization. And in addition, the risk of the organization taking care of all investments itself is significant. This asks for multiple partners that enable proper capacities for initiatives right from the start.

Unfortunately, the problem in the field is that many multi-party initiatives perish. So, the preliminary research question is: *which interventions can be applied to help several parties with various relevant ideas at the start of an innovative initiative, to increase the viability of that initiative?*

Exploring literature for answers for the above question shows that the main part of findings concerns mono-party initiatives or contexts in which the collaboration is started already and converted into formalizations like joint-ventures or alliances. But it offers also the possibility to draw on product development theory, inter-organizational learning theory and cross border theory. These theories provide a meaningful basis for building a design for enhancing multi-party initiatives. However, it is still unclear what to do in the process of initiating multi-party collaboration and what to deliver to bind a set of parties in their pursuit of an innovation after an opportunity or problem is identified and before the initiative enters the more formalized development, commercialization and realization stages. This gap is the issue of the study.

The design science approach is chosen as research methodology because of its focus on learning about the why and the how of solving field problems by producing design propositions. Based on the problems derived from literature as well from practice a set of requirements is stated that the design proposition should meet. For example, 'A defined product concept prior to development' should be available (Koen, 2001, Kim, 2002, Cooper, 2005, Kristiansen, 2013, Cooper, 2016) or 'Must help to make participants look further then their own interests'. And solutions found in literature or practice mould starting points for the design.

Based on the knowledge gap and the wish to enhance the start of multi-party initiatives, the product of the dissertation is formulated as: *an arrangement of interventions that enhance the viability of a multi-party innovation initiative in the front-end phase*. This opts for four partial deliverables:

*a description of the characteristics of the front-end phase*

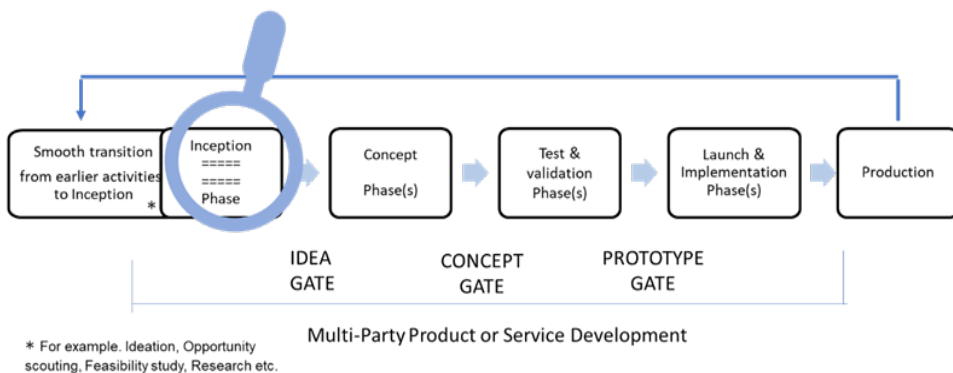
*a description of the viability of a MPI*

*an arrangement of direct and indirect interventions for the front-end phase that stimulates the development from a multi-party to a multi-partner situation*

*evidence for the patterns in intervention–outcome relationships*

To underpin the value of interventions, the CIMO-reasoning is explicated as an important instrument to explain human patterns in typical **C**ontexts, where **I**nterventions trigger **M**echanisms that produce **O**utcomes. These Intervention-Mechanism relations play an important role in the validation.

Furthermore, the argument is presented for positioning this part of the front-end as *the Inception phase*. In the Inception phase the central problem is the lack of joint interest, so the challenge is to construct the process that starts with a given problem or opportunity and ends with shared ideas about the product and/or service as well as the development approach.



Position of the contribution of IPA to stage gate theory.

Empirical data were collected by studying participants in ten multi-party initiatives, three explorative and ten expert interviews, a survey, three workshops and second literature studies. The triangulated data show the existence of the Inception phase with seven viability components as outcomes: *Support of partner organizations, Idea description, Fit with objectives, Cooperation of work in next phase(s) as well the Coordination and Partitioning of it and Specialized roles for integration in parent organizations*. The operationalization has been done by measuring on sub-criteria as found in literature as well in the data. Many CIMO's came forward from the data. Also, we saw only a partial overlap in interventions proposed by literature and practitioners. For example, '*Visualization of costs for coordination*' is not important for practitioners and '*Set up a decision-making process*' is important for



academics as well practitioners. The data prompted to do extra literature studies about trust, use of organizations' knowledge, the output of the Inception phase and the job of persons responsible for the Inception phase.

The design is proposed and checked against the requirements developed. The partial deliverables forming the design are *definition, description and objectives of the Inception phase, the description and measurement of the outcome, the Intervention Box for categorization of the interventions in action/contribution combinations, one hundred forty-six interventions, a navigation tool to find the right interventions and a job description for persons involved in the management of the Inception phase.*

Special attention is given for use of the interventions if limitations are present in time or number of parties/persons: *the fast, circus and cloister lanes, besides the regular lane.* A first user-friendly design of the navigation tool is to be found on [www.Coenwalter.nl/navtool](http://www.Coenwalter.nl/navtool).

The design was tested in two rounds of alpha-testing with respectively seven and five experts. The essentials and the application of the design is tested. This leads to enrichments for the definition, the overall view on the position of the *Inception phase*, the *Navigation Tool* for the interventions and the task description, particularly in the early stages. A beta-test confirmed the value of the design and yielded a precondition: people responsible for the Inception phase need to be introduced to the Inception Phase Approach in order to apply it well.

The contribution of this dissertation is that the product development theory becomes less fuzzy in its early stage. Theory about development of new product- and service development is supplemented with *the Inception phase* for operationalization of opportunities and idea enrichment. This makes a more effective development possible by defining the viability of the outcome by seven components, giving a better possibility to assess the outcome more independent from gut-feeling at a new gate. By doing so, a way is offered to keep the working capital restricted and the waste of resources low. Furthermore, the social network theory, especially on interorganizational learning is enriched with validated interventions that build confidence between partners and robustness in the building blocks for the follow-up. Cross border theory is broadened with a cluster of *initiation interventions*, typical for MPI's.

Generally spoken, the most important contribution for practice lies in the possible *reduction of failures* of interorganizational collaboration. Gatekeepers will make *better assessments at their 'idea gate'* to fill the portfolio of initiatives, but also persons responsible for the emerging collaboration have a toolbox with validated interventions at their disposal. The consultants as a third group will benefit because of the evaluation and adjustment possibilities with IPA, the Inception Phase Approach.

## Samenvatting (Dutch Summary)

**De Inceptie fase aanpak:** van een kans voor meerdere partijen naar een levensvatbaar initiatief met meerdere partners

Een proefontwerp voor het wordingsproces van de samenwerking tussen onafhankelijke partners gericht op realisering van een kans voor een product of dienst.

In de wereld van vandaag worden Meer-Partijen Initiatieven (MPI's) steeds relevanter. Ten eerste omdat de levenscyclus van producten en diensten korter wordt en de behoefte aan nieuwe initiatieven groeit. Bovendien vereist het ontwikkelen van backbone, platforms of producten en diensten in toenemende mate kennis of middelen die binnen de initiërende organisatie niet aanwezig zijn. En daarnaast is het risico als één organisatie alle investeringen zelf doet groot. Dit vraagt om meerdere partners die vanaf het begin de juiste capaciteiten voor een initiatief beschikbaar maken.

Helaas is het probleem dat in de praktijk veel MPI's ten onder gaan. De onderzoeksvraag is dan ook: *welke interventies kunnen toegepast worden om meerdere partijen met verscheidene relevante ideeën aan de start van een innovatief initiatief te helpen om de levensvatbaarheid van dat initiatief te vergroten?*

Literatuuronderzoek naar antwoorden op bovenstaande vraag laat zien dat het grootste deel van de bevindingen betrekking heeft op initiatieven met één partij of situaties waarin de samenwerking al is gestart en omgezet in geformaliseerde joint ventures of allianties. Maar literatuur biedt ook bruikbare theorieën over productontwikkeling, inter-organisatorisch leren en grensoverschrijdend samenwerken. Deze theorieën bieden een zinvolle basis voor het bouwen van een ontwerp voor het versterken van MPI's. Het is echter nog steeds een vraag wat te doen bij het initiëren van samenwerking tussen partijen en wat opgeleverd moet worden om partijen te binden. Typisch in deze situatie is dat partijen wel streven naar een innovatie gegeven een kans of probleem, maar het initiatief nog niet de meer geformaliseerde ontwikkelingsfase ingegaan is, die weer voorafgaat aan commercialisering en realisatiefasen. Deze lacune is het onderwerp van de studie.

De wetenschappelijke ontwerp benadering is gekozen als onderzoeksmethodologie vanwege de focus op het leren over het waarom en het hoe voor het oplossen van veldproblemen door ontwerpvoorstellen te produceren. Op basis van de problemen uit zowel de literatuur als de praktijk wordt een set van eisen gesteld waaraan het ontwerpvoorstel moet voldoen. Bijvoorbeeld: *'Een gedefinieerd productconcept voorafgaand aan ontwikkeling' moet beschikbaar zijn* (Koen, 2001, Kim, 2002, Cooper, 2005, Kristiansen, 2013,

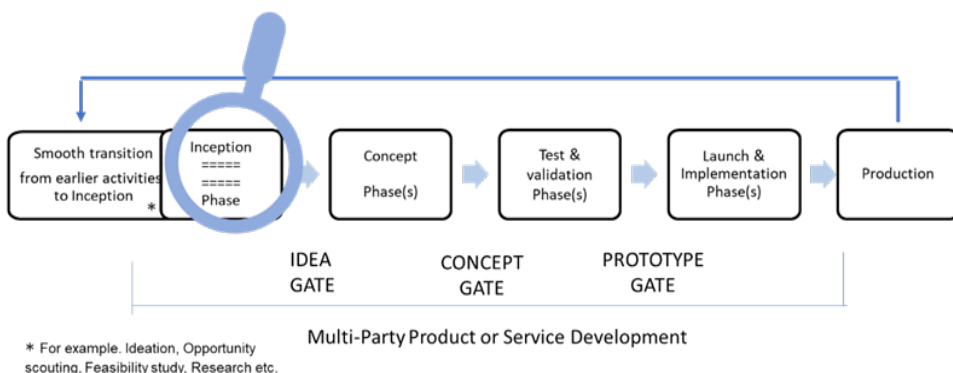
Cooper, 2016) of uit de praktijk 'Moet helpen om deelnemers verder te laten kijken dan hun eigen interesses'. En oplossingen die gevonden zijn in literatuur of praktijk vormen uitgangspunten voor het ontwerp.

Op basis van de kennislacune en de wens om de start van MPI 's te bevorderen, is het product van het proefontwerp geformuleerd als: *een arrangement van interventies die de levensvatbaarheid van een innovatie-initiatief met meer partijen in de aanvangsfase vergroten*. Hierbij wordt gekozen voor vier deelresultaten:

- een beschrijving van de kenmerken van de aanvang fase
- een beschrijving van de levensvatbaarheid van een MPI
- een arrangement van directe en indirecte interventies voor de aanvangsfase die de ontwikkeling van een multi-party naar een multi-partner situatie stimuleert
- bewijs voor de patronen in interventie-uitkomst relaties

Om de waarde van interventies te onderbouwen, wordt de CIMO-redenering toegelicht als een belangrijk instrument om menselijke patronen in typische Contexten te verklaren, waar Interventies Mechanismen op gang brengen die 'Outcome' produceren. Deze Interventie-Mechanisme relaties spelen een belangrijke rol bij de validatie van het ontwerp.

Verder wordt het argument aangevoerd om dit deel van de aanvangsfase te positioneren als de *Inceptie-fase*. In de Inceptie-fase is het centrale probleem het gebrek aan gezamenlijk belang, dus de uitdaging is om het proces te construeren dat begint met een gegeven probleem of kans en eindigt met gedeelde ideeën over het product en/of de dienst en de aanpak van de ontwikkeling ervan.



Positie van de bijdrage aan de stage gate-theorie.

Empirische gegevens werden verzameld door deelnemers te bestuderen in tien MPI 's, drie verkennende en tien expertinterviews, een enquête, drie workshops en tweede literatuuronderzoek. De getrianguleerde gegevens tonen het bestaan van de Inceptie-

fase met zeven componenten van levensvatbaarheid als uitkomsten: *Ondersteuning van partnerorganisaties, Ideebeschrijving, Fit met bedoelingen, Samenwerking in evenals Coördinatie en Opdeling van werkzaamheden in volgende fase(n) plus Specialistische rollen voor integratie in partnerorganisaties*. De operationalisering van de componenten is vormgegeven door te meten op sub-criteria zoals gevonden in de literatuur en in de data. Uit de data kwamen veel CIMO's naar voren. Ook zagen we slechts een gedeeltelijke overlap in interventies voorgesteld door academici en praktijkmensen. Zo is *'Visualisatie van kosten voor coördinatie'* niet belangrijk voor praktijkmensen en *'Opzetten van een besluitvormingsproces'* belangrijk voor zowel academici als praktijkmensen. De data waren aanleiding om extra literatuuronderzoek te doen over vertrouwen, gebruik van kennis van organisaties, de output van de Inceptie-fase en de functie van de personen die verantwoordelijk zijn voor de Inceptie-fase.

Het ontwerp wordt gepresenteerd en getoetst aan de ontwikkelde eisen. De deelresultaten die het ontwerp vormen zijn *definitie, beschrijving en bedoelingen van de Inceptie-fase, de beschrijving en meting van de uitkomst, de Interventie Box voor het categoriseren van de interventies in actie/bijdrage-combinaties, honderdzesenvoertig interventies, een navigatietool om de juiste interventies te vinden en een functiebeschrijving voor personen die betrokken zijn bij het beheer van de Inceptie-fase*.

Bijzondere aandacht wordt besteed aan het gebruik van de interventies als er beperkingen zijn in tijd of in aantal partijen/personen: de snelle-, circus- en kloostertrajecten, naast het reguliere traject. Een eerste gebruiksvriendelijke versie van de navigatietool is te vinden op [www.Coenwalter.nl/navtool](http://www.Coenwalter.nl/navtool).

Het ontwerp is getest in twee alfa-test rondes met respectievelijk zeven en vijf onafhankelijke experts, waarin de essentie en de toepassing van het ontwerp werd getest. Dit leidde tot verrijkingen voor de definitie, de positie van de Inceptie-fase in het gehele ontwikkeltraject, de Navigatietool voor de interventies en de taakomschrijving. Een bètatest bevestigde de waarde van het ontwerp en leverde een belangrijke randvoorwaarde op: mensen die verantwoordelijk zijn voor de Inceptie-fase moeten kennis maken met de Inceptie-aanpak om deze goed toe te passen.

De bijdrage van dit proefschrift is dat het vroege stadium van de product-ontwikkelingstheorie concreter wordt. Theorie over nieuwe product- en dienstenontwikkeling wordt aangevuld met *de Inceptie-fase* voor operationalisering van kansen en ideeëverrijking. Effectievere ontwikkeling wordt mogelijk door de levensvatbaarheid van het initiatief te baseren op zeven componenten, waarmee de uitkomst onafhankelijker van onderbuikgevoel bij een faseovergang beter beoordeeld kan worden. Hiermee wordt een manier geboden om het werkkapitaal beperkt en de verspilling van middelen laag te houden. Bovendien is de sociale netwerktheorie, met name over onderling leren van organisaties, verrijkt met gevalideerde interventies die vertrouwen tussen partners en

robuustheid van bouwstenen voor de follow-up opbouwen. Theorie over overschrijden van grenzen wordt verbreed met een cluster van *initiatie-interventies*, *typisch voor MPI's*.

De belangrijkste bijdrage voor de praktijk ligt vooral in *het mogelijk verminderen van mislukkingen* van inter-organisatorische samenwerking. Poortwachters zullen aan hun 'idea gate' betere inschattingen maken om de portfolio van initiatieven te vullen, maar ook personen die verantwoordelijk zijn voor de zich ontwikkelende samenwerking hebben een tool-box met gevalideerde interventies tot hun beschikking. De adviseurs als derde groep zullen profiteren van de evaluatie- en bijsturingmogelijkheden met de Inceptie-Fase Aanpak.



