

# **The Story of Innovating Together**

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## **Management summary**

This qualitative study is an analysis of the relationship between innovation-driven collaborations and in-company innovation. The subject is studied by reviewing the relevant literature and using examples from semi-structured interviews at diverse organisations. Existing research lacks an overview of how this relationship functions and what the problems and benefits are of innovative collaborations on in-company innovation. The inspiration for this paper is the increasing number of collaborative innovations which led to the search for answers on the shifting reasons for choosing this type of innovation.

The results of the study include four preconditions for collective innovation; conflict and interdependence were already accepted preconditions in this field. Expected reward and compatibility were added after the interviews. These additional preconditions were anticipated in literature in a change from politically engaged collaborations to collaborations aimed at general mutual benefits. The combination of the effect of the preconditions on innovation-driven collective action affects the in-company innovation which can be radical or incremental.

This paper supports a new narrative for collaborations. They are not only the result of conflict or interdependency, but also of entrepreneurship; seeing and creating chances for collective action to innovate. All cases provide examples of expected reward and/or compatibility as a reason for innovation-driven collective action next to conflict or interdependency. Next to this, the organisations often gained more than just innovations from innovation-driven collective action. Employees that are involved develop multiple professional skills and organisations are inspired by the example set by their partner.

## 1. Introduction

It is increasingly common for innovation to be the product of more than one organisation. An instance of this so-called open innovation can be seen in the development of open source software like Linux (Chesbrough & Appleyard, 2007). However, from a theoretical perspective, open innovation poses a problem since innovation outcomes or results are difficult to appropriate or monopolize like in the private or closed innovation model (Von Hippel & Von Krogh, 2006; West & Callagher, 2006, p. 86-87). For some time, closed innovation was preferred by organisations, but it became too expensive mainly due to three changes. First, the increase of labour mobility, additionally the growing ease with which a new company can be created, and finally, the expanding amount of information that is readily available to everyone (Van de Vrande et al, 2009).

The question then arises what (potential) benefits there are for companies engaging in collective action in general and innovation-driven collective action in particular. Reading and interpreting Von Hippel and Von Krogh (2006), and Van de Vrande and co-authors (2009), as well as West & Callagher (2006), from an innovation perspective an organization engaged in collective action could potentially benefit from either exploiting external knowledge (e.g. imitation) or from knowledge spillovers that contribute to its own stock of knowledge, thus strengthening its absorptive and explorative capacity for long-term survival. Innovation within the organisation, ranging from incremental to radical, is the result of innovation-oriented activities.

It is important to look into collective innovation-oriented activities because it touches upon both the effectiveness as well as the depth of the innovation process. Does an organisation benefit as much from collaborative innovation, however compelling this may have become, as from closed innovation? And how fundamental is innovation when it takes place in a shared compared to a closed context? Organisations need to invest to keep up with the shortening product life cycles and the new sources of innovation like start-ups. Often this is too much for internal R&D to handle. This inability of internal R&D to keep up with the changes and the increasing availability of relevant information outside organisations cause organisations to turn to collective action (Van de Vrande, 2017). Due to the changing nature of innovation, Benner and Tushman (2015, p509) call for the generation of “...*new constructs, mechanisms, and patterns associated with exploration and exploitation.*” The starting point for finding associated constructs and their mechanisms is knowing what factors might influence innovation-oriented activities.

In this paper, collaborative innovation is described from the collective action view. This is one of four different angles: the natural selection view, the collective action view, the system structural view and the strategic choice view (Astley & Van de Ven, 1983). The natural selection view recognises the natural evolutionary processes in the organisational environment. Collaborative innovations in the individual organisation are shaped by the natural selection influences in the environment like government regulations. The collective action view describes the environment through the network of organisations sharing the same environment. Collaborative innovation activities of the individual organisation are influenced by its network and the resulting tensions in the environment. The system structural view shows the individual organisation as a hierarchical system regulating collaborations on innovation. The strategic choice view focuses on the division of power in an organisation shaping the organisational structure and its environment. Persons in a position of power influence collaborative innovation through their behaviour in strategizing and other activities.

The collective action view is chosen because it is the only view that considers the increased interconnectedness between organisations in innovation. The system structural view and the strategic choice view only consider the forces inside the individual organisation. The natural selection view does take into account external influences, but they are perceived as given influences that cannot be changed. This results in the entrepreneur being side-lined. For the natural selection view, external factors are the reason for changes in the way innovation-oriented activities are conducted. Insights on behaviour would be interesting but there would be no practical implications since the factors are seen as deterministic forces. The collective action view represents the factors that can be influenced by organisations since they are part of the network. This means that the results of this paper could give organisations insight into the things that can be changed, rather than giving insights into deterministic forces that cannot be changed.

### **1.1 Research goal & research question**

The goal of this paper is to show how innovation-driven collective action contributes to interorganisational innovation. With the help of the literature on collective action and innovation, and interviews with employees in product-based organisations the foundation for an in-depth understanding of the relationships can be laid. Thus, the research question of this paper is: how does innovation-driven collective action influence innovation in product-based organisations?

This brings us to the literature gap addressed in this paper. Which is the lack of insight into innovation-driven collective action. This paper will contribute to the start of a systematic overview as an answer to the call of Benner and Tushman (2015) to take a new look at constructs associated with exploration and exploitation by providing insights into the characteristics that lead to innovation-driven collective action. Most of the studies on innovation only look at one or a few concrete characteristics, like Enkel and co-authors (2016), who looked at the influence of external knowledge on exploration and exploitation. Bringing together findings of multiple scholars that researched external forces influencing exploration and exploitation and adding experiences from practice could lead to an overview that bundles valuable insights into the concept of innovation. This paper aims to increase understanding regarding innovation-drive collective action by describing the influences on the innovation process and its results using literature and examples from organisations.

The main contribution of this paper to practice is showing whether innovation-driven collective action is useful. The further practical relevance of this paper lies in the pros and cons of innovation-driven collective action, which helps to answer why it may be useful for organisations to participate. It may improve the effectiveness of strategic decision-making regarding collaborative exploration and exploitation. Organisations seem to have difficulties choosing between exploitation and exploration in general (Greve, 2007). Because both forms require different routines and capabilities of the organisation (Benner & Tushman, 2003), it is easier to choose one than to combine them (Greve, 2007) but too little of either reduces performance (He & Wong, 2004). Often, an organisation does not have the resources to do both (Levinthal and March 1993). If a manager would have more insight into the way collaborative explorative and exploitative innovation works, he or she would be able to take a more informed decision and spend resources wisely. Additionally, more insight into the dynamics at work might help to choose between internal closed innovation or collaborative innovation.

## **1.2 Reading guide**

This paper is organised as follows. In the second chapter, the literature regarding innovation is reviewed. It gives an overview of the literature that led to the term ‘innovation-driven collective action’ which was adopted for this paper. Also, the (in literature) anticipated preconditions and results of innovation-driven collective action are discussed. In the third chapter, the research method is described, including the conduct of the researcher in the field and the operationalisation of the concepts used. The fourth chapter presents the results of the interviews

held and finally, the fifth chapter concludes with answering the research question, debating on the results and giving suggestions for further research.



## **2. Literature review**

In this chapter, the theoretical framework is built focusing on collective-action. Firstly, innovation is defined (§2.1) together with exploration and exploitation (§2.2). Then the two dimensions of organisational theory according to Astley and Van de Ven (1983) (§2.3) and the resulting four views will be described (§2.4), leading up to the collective-action view and its preconditions (§2.5). Finally, the conceptual model will be explained (§2.6).

### **2.1 Defining innovation**

The broad definition of innovation used in this research is: “*Innovation is the realisation of new ideas that contribute to sustainable changes*” (Jeschke et al, 2011, p. 5, translated). The word ‘innovation’ is used for a novelty, an action which results in something new, or a process that incorporates the whole flow from idea generation to its practical use in the end (Godin, 2015). It is researched at levels differing in scope geographically, sectoral and activity-wise. That is why it is important to clearly distinguish the borders of this concept. In this paper, innovation is looked at as a process within an organisation. This process has been compartmentalised and specified by Jeschke et al (2011, p. 5) as a dynamic process with human, organisational and technical components resulting in new ideas and economically and socially durable changes.

There are many types of innovation and often classifications of innovation have a certain overlap in the activities they describe. Spoken very broadly there are four major categories of innovation space within an organisation: process, product, position and paradigm (Francis & Bessant, 2005). Changing or improving the process or product are the most well-known categories. The perception of the product for a customer can be changed as well through innovation, which changes the product position. Also, an innovation sometimes causes a change in understanding the organisation or the environment. All these categories of innovation can be present in an organisation.

Innovation can be rated as a small change, an incremental innovation, or a big change, radical innovation (Tidd & Bessant, 2013). There can be multiple processes of innovation at the same time in different sizes. The scale from incremental to radical is typically divided into three steps: 1) improving current work, 2) starting something new for the organisation, and 3) introducing something new to the world (Tidd & Bessant, 2013). This paper focuses on incremental and radical innovation in an organisation. Radical and incremental innovation within an organisation are the result of activities that can be labelled explorative and/or

exploitative. In this paper, the link between innovations within an organisation and collaborative explorative and exploitative is explored.

## **2.2 Exploration and exploitation**

First, let us look into the concepts of exploration and exploitation in general. Exploration is developing products for an unfamiliar market, gathering new knowledge, and choosing technologies unknown to the firm and market (Greve, 2007). Opposed to exploitation exploration exposes the organisation to greater risk since it is less certain whether the return on the investment will cover the cost. Also, projects are known to be cut more often by managers due to a lack of fit with the current strategy, since resources must be spent wisely (Greve, 2007). To be successful in exploration, especially in technological markets, organisations need diversity in knowledge (Nonaka & Takeuchi, 1995). If organisations lack capabilities for exploration they can use external sources like alliances (Cattani, 2005). Exploration innovation is known to be influenced positively by the collection of new ideas through open innovation (Benner & Tushman, 2015), outsourcing diversity (Lucena & Roper, 2016), and the absorptive capacity of employees to adequately process new information (Lucena & Roper, 2016). Management also influences exploration innovation through managerial innovation and attention (Khanagha, Volberda, & Oshri, 2016).

Exploitation is defined as the use and incremental improvement of current expertise, technologies, and products (Greve, 2007). Positive in focussing on this type of innovation are the relatively certain gains in efficiency and often rapid profit that is made. The downside of focussing on exploitation is that it reduces the number of activities exploring new capabilities (March, 1991). Also, organisations need to be aware of the short-term bias they develop in organisational adaptation (March, 1991). To be successful in exploitation routine development is beneficial (Benner & Tushman, 2002). Exploitation innovation is known to be influenced by consumer feedback (Nielsen, Reisch, & Thøgersen, 2016) because relevant feedback of consumers increases the meaningful improvement of the product. Also, R&D collaboration and outsourcing diversity provide useful insights to positively influence exploitation (Lucena & Roper, 2016) and the ability of an organisation to identify external knowledge from various sources (Enkel et al 2016).

As the above shows, exploration and exploitation each have their own characteristics that can be beneficial or harmful. Focusing solely on exploration leads to large expenses of failed experiments that often do not weigh out the gains of a breakthrough. Exploitation as a focus is often not harmful if the environment remains stable, but it makes organisations less

compatible with changes. A logical conclusion is that having both exploration and exploitation is favourable for organisational performance. This is supported by empirical research (He & Wong, 2004, Gibson & Birkinshaw, 2004; Mengüç & Auh, 2008). This paper looks at the explorative and exploitative activities of organisations that they perform in collaboration with other organisations.

### **2.3 The two dimensions of the views**

Having elaborated on exploration and exploitation, it is time to look at the ways collaborative exploration and exploitation can be analysed theoretically. In this paragraph, a model is presented to show the multiple views on what is influencing the choice for exploration or exploitation.

Decision-making is a process that can be described by its sequential steps, or by the dimensions of the process (Papadakis, Lioukas & Chambers, 1998). To identify what is influencing the decision-making regarding collaborative exploration and exploitation, it is helpful to regard decision-making as a multidimensional process. This paper uses one of the four views of Astley and Van de Ven (1983) as summarised in table 1 (Astley & Van de Ven, 1983). These views describe the different approaches to organisational theory. They can be used to address the topic of collaborative exploration and exploitation. The upper two views focus on the dimension transcending the individual firm while the lower two views focus on the dimension of the individual organisation. The left half of the quadrant has a deterministic orientation, while the right half has a voluntaristic orientation. This means that the left views see their situation as something that influences them but they themselves cannot influence. For the views on the right side, it means the opposite, namely that the situation can be influenced by (bargaining) power.

The four views are described in table 1. Firstly, the natural selection view describes the organisational world as a competitive place where the natural processes of birth, growth and decay randomly determine the structure together with the economy. The research angle for this view is the question what characteristics the surviving organisations have. Secondly, the collective-action view describes this same world as an interconnected place with exchanges on the level of the organisational network that shape the world. Research with a collective-action view looks at how organisations collectively solve problems. Thirdly, the system-structural view shows the individual organisation as a functional hierarchy determining the conditions of the organisation. For research in the spirit of the system-structural view, the focus lies with matters regarding the hierarchical type that suits a certain situation best. Lastly, the strategic

choice view focuses on the choices of the influential persons that shape the relationships in the organisation (Astley & Van de Ven, 1983). This view directs research towards relationships of power within the organisation.

<p><b>Natural selection view</b> <b>(Macro level, deterministic orientation)</b> <i>Schools:</i> Population ecology, industrial economics, economic history.</p> <p><i>Structure:</i> Environmental competition and carrying capacity predefine niches. Industrial structure is economically and technically determined.</p> <p><i>Change:</i> A natural evolution of environmental variation, selection and retention. The economic context circumscribes the direction and extent of organizational growth.</p> <p><i>Behaviour:</i> Random, natural, or economic, environmental selection.</p> <p><i>Manager Role:</i> Inactive</p>	<p><b>Collective-action view</b> <b>(Macro level, voluntaristic orientation)</b> <i>Schools:</i> Human ecology, political economy, pluralism.</p> <p><i>Structure:</i> Communities or networks of semiautonomous partisan groups that interact to modify or construct their collective environment, rules, options. Organisation is collective-action controlling, liberating, and expanding individual action.</p> <p><i>Change:</i> Collective bargaining, conflict, negotiation, and compromise through partisan mutual adjustment.</p> <p><i>Behaviour:</i> Reasonable, collectively constructed, and politically negotiated orders.</p> <p><i>Manager Role:</i> Interactive</p>
<p><b>System structural view</b> <b>(Micro level, deterministic orientation)</b> <i>Schools:</i> Systems theory, structural functionalism, contingency theory</p> <p><i>Structure:</i> Roles and positions hierarchically arranged to efficiently achieve the function of the system</p> <p><i>Change:</i> Divide and integrate roles to adapt subsystems to changes in environment, technology, size, and resource needs</p> <p><i>Behaviour:</i> Determined, constrained, and adaptive.</p> <p><i>Manager role:</i> Reactive</p>	<p><b>Strategic choice view</b> <b>(Micro level, voluntaristic orientation)</b> <i>Schools:</i> Action theory, contemporary decision theory, strategic management</p> <p><i>Structure:</i> People and their relationships organised and socialised to serve the choices and purposes of people in power.</p> <p><i>Change:</i> Environment and structure are enacted and embody the meanings of action of people in power</p> <p><i>Behaviour:</i> Constructed, autonomous, and enacted.</p> <p><i>Manager role:</i> Proactive</p>

Table 1 – four views on organisation and management (Astley & Van de Ven, 1983)

## 2.4 The four views on exploration and exploitation

This paper will focus on the collective-action view, which will be discussed more in-depth. But first, all four views will be discussed with regards to exploration and exploitation to show the difference between the approaches.

The natural selection view describes the prescribing effects of economy and technology on the market. This deterministic theory assumes decisions in organisations are adaptations to the threats, opportunities, constraints and further aspects of the environment, not an attempt to change the environment (Papadakis, Lioukas & Chambers, 1998). The threats and opportunities in the environment co-create the framework for choice (Child, 1997) and the decision-maker just facilitates the adaptation. For exploration and exploitation, this means that the budget is adjusted based on the perceived environment. It is, for example, to be expected that complexity (Lindsay & Rue, 1980) and uncertainty (Freel, 2005) in the environment, for example through a diverse consumer population (Achrol and Stern, 1988), dynamically changing technologies (Fine, 1998), and unequally divided resources (Pfeffer & Salancik, 1978), will stimulate organisations to explore. On the other hand, if it is easy to sell products because there are enough resources and opportunities to sell products in the market, it is likely that exploitation is favoured by the organisation (Achrol & Stern, 1988).

Just like the natural selection view, the system structural view regards the situation of the organisation submissive to influences. But other than being reigned by external forces, the system structural view regards the division of work, communication, and the division of power within the organisation as the rules by which the organisation operates. Focusing on the topic of this paper, this means that the organisational structure dictates exploration and exploitation. The organisational structure has many aspects that positively influence innovation, for example having a variety of professions within the organisation (Pierce & Delbecq, 1977), professionalism (Damanpour, 1991), and decentralisation of decision-making (Damanpour, 1991). For professionalism, there is a stronger positive relationship between professionalism and innovation for organisations with a higher number of innovations over the last year, which could mean that professionalism leads to an increase in exploration.

The strategic choice view is completely opposite to the natural selection view, concentrating on internal politics and advocating proactive management instead of inactively observing external forces. The strategic choice view and the system structural view both focus on the influences within an organisation but opposed to the two deterministic views the strategic choice view is based on the belief that the situation can be influenced through power. Instead of focusing on the imperatives in the structure, it points at the changing capacity of strategy and management. The choices of organisational members with the power to decide the direction of the organisation can direct innovation in a good or bad direction. It is important to create impact from innovation resources by aligning organisational activities with the overall business goals (Ikeda & Marshall, 2016). Having a strategy for innovation prevents a company from

implementing practices just because they worked for other companies (Pisano, 2015). For exploration and exploitation, this means that the way they are present in the organisation should fit the current strategy. It is advisable for decision-makers to take organisational barriers into consideration when setting a course. If for example, the organisational culture has no room for failure, it will be very resistant to a strong exploration innovation strategy. Organisational factors like leadership, organisational culture, social structure, and organisational structure, need to be synchronised for the strategy to be effective for innovation.

The fourth view is the collective-action view which will be discussed more in detail in the next paragraphs. This view shows the games of power play in the network of the organisation. It is interesting because power is very relative in the relationship to other organisations. While an organisation is trying to influence its direct environment, the other organisations are doing this as well. This creates an interesting type of interaction that does not occur in the other three views.

## **2.5 The collective-action view**

As one of the two organisation transcending views, the collective-action view sheds another light on the influences of the environment as opposed to the natural selection view. Instead of highlighting the inevitability of the forces influencing the decision-making, it shows the space for negotiation and collaboration between networks and communities in the environment. In this light, collective action can be defined as the way a group of organisations constructs and adjusts the shared environment (Astley & Van de Ven, 1983). The term collective action is most commonly used to describe the process in which a group of individuals influences the system. For example, the local actions of black churches and other small groups for equal rights in the United States resulting in the foundation of formal action-groups and an organised Civil Rights Movement that ultimately succeeded in criminalising many discriminating processes (Hargrave & Van de Ven, 2006). This process can also be observed in organisations that change the status quo. For example, when organisations work together to increase their bargaining power when facing a monopolistic organisation.

An example closer to the topic of innovation is the collective action of organisations and individuals to create and improve Linux (Chesbrough & Appleyard, 2007). Linux is free software that can be adjusted by everyone to meet their needs. Created content is always shared and in this way organisations and individual users can learn from each other while developing the software. This is the way innovation through collective action works: *“Drawing on or collaborating with external network partners to support innovation processes, for example for*

*external knowledge or human capital.*” (Van de Vrande et al, 2009). Collective action can challenge the status quo like Linux challenged the existing software in the quality that they achieved and the low cost of the software. Other than with the Civil Rights Movement, the example of Linux has no immediate cause for collective action. It seems to be more driven by a desire to create a certain outcome than the reaction to a situation.

### **2.5.1 Causes for collective action**

In literature, a very subtle shift from politically engaged collective action to collective action for general mutual benefits can be observed. Collective action literature originates in social movement literature and technology innovation management literature (Hargrave & Van de Ven, 2006). The collective action described by these branches of literature is generated by: *‘recognition of an institutional problem, barrier, or injustice among groups of social or technical entrepreneurs.’* (Hargrave & Van de Ven, 2006). This description points to two causes or precedents for collective action: first, the need for a conflict, and second, the prior existence of some type of interdependence among the groups that are in conflict. The description by Van de Vrande (2017) does not meet these assumptions, nevertheless, she observes collective action (in innovation). She describes collective action as a result of incentives based on the expected reward, rather than driven by conflict and interdependence. It would seem that the modern collective action, at least for innovation, does not only have the classic precedents. In this paragraph conflict and interdependence are explored further to determine the content of the conceptual model used for this research. Also, some incentives for organisations to deliberately engage in collective action are described at the end of the paragraph.

Conflict is already in 1977 described by Pierce and Delbecq as a precondition for collective action. They see interorganisational conflict as one of the relationships that change the shared environment. Interorganisational conflict can be defined with help of the definition of Jehn (1995) on conflict: interorganisational conflict is when an organisation engages in activities that are incompatible to activities of other organisations in their shared environment. The interorganisational conflict can be between product or service organisations, but also between groups of organisations and the governing institutions. An interorganisational conflict is characterised by a sequence of periods of functional or dysfunctional conflict between two or more organisations and its influence on the stability of these organisations (Pondy, 1967). The conflict can increase competition, but at the same time, it provides possibilities to find allies and grow together in inter-organisational programs (Pierce & Delbecq, 1977). The rationale is that there would be no need to work together if there were no conflict.

A simple example of interorganisational conflict is when the medicine produced by the pharmaceutical industry is too expensive and a group of apothecaries decides to produce their own less expensive version. The pharmaceutical industry has invested in developing the medicine and wants to compensate for those costs by high prices. They can do this because they have a patent on the medicine. The problem is that a medicine with a price point that is too high will not be covered by the health insurance companies. When the group of apothecaries sympathises with the patients and decides to produce the medicine despite the patent this creates a conflict between the apothecaries and the pharmaceutical industry.

Interorganisational conflict and interdependence are interconnected. In general, interdependence is when multiple organisations within the same environment experience something in a similar way (Achrol & Stern, 1988). This interdependence can have different forms. In the example of the apothecaries opposing the pharmaceutical industry, apothecaries and the pharmaceutical industry both need the findings of the same R&D department, which is a very direct example of interdependence. The pharmaceutical industry owns the R&D department and uses it to develop medicine. But the apothecaries can only reverse-engineer medicines, so they rely on the same knowledge in the R&D team. They are interdependent, which means they both are influenced if health insurance companies cut an expensive medicine from their compensation list. The pharmaceutical industry will feel it first because their sales decline and their return on their investment in the R&D team declines. But the pharmacy will experience the consequences in the long run if they try to make an affordable copy because they need the R&D findings of the pharmaceutical industry to develop new or improved medicines.

A form of indirect interdependence is visible when organisations follow the example of others. Ramaswami, Nilakanta, and Flynn (1992) used four situations to measure the rate of interdependence of the organisations in their study. In price reductions, campaigns launched to increase sales, or campaigns for publicity, and the introduction of a new product. If organisations are strongly interdependent, they react very quickly if others take one of those four steps. A well-known example in the Netherlands of organisations with this type of behaviour are supermarkets. The price reductions sometimes create so-called price-wars that can go on for several weeks. For innovation, this means that organisations in an environment with high interdependence either must produce the product with the highest quality and best brand reputation, or they have to radically innovate to stay on top of the competition. In the spirit of the collective-action view, it is natural for organisations to seek an alliance with other organisations in order to influence their direct environment.



Within the collective-action view interdependence can be seen as an opportunity to form an alliance that changes the system. Assets, skills and technology often are not only firm-specific but also industry-specific which makes organisations within an industry interdependent to a certain extent (Niosi & Bellon, 1994). A high number of relationships connecting organisations leads to increased interdependence (Pfeffer & Salancik, 1978). The interdependence also grows if organisations have the same suppliers or customers, except for markets with loyal customers often choosing the same brand or store (Achrol & Stern, 1988).

If collective action is not driven by conflict or interdependence, there are other incentives for collective action. Incentives for deliberate collective action are the expected rewards of learning, job satisfaction, productivity, and often also monetary rewards. Reasons for these assumptions are, among others, the following three phenomena that often occur in collective action. Firstly, active involvement which, unlike free riding, yields private benefits in the form of a sense of ownership, gratification, and learning on the job (Von Hippel & Von Krogh, 2006). Second, employees in a project in a community are motivated because they feel indispensable in their team (Hertel, Konradt, and Orlikowski, 2004). Third, working on a project, employees develop feelings of solidarity, fairness, and altruism, that increase their contribution to projects beyond the expected input (Elster, 1986).

These incentives explain the collaborative innovation described by Van de Vrande (2017) which is a form of collective action. But not collective action as an inevitable result of a shared conflict or interconnectedness of the participating groups. It is the result of deliberate entrepreneurship to increase innovation and to spread the risk of innovation over a larger group of organisations (Van de Vrande, 2017). Instead of conflict, the cause of collective action seems to be connected to the opportunity for the organisation. Also, collaborations can arise between organisations without a clear interdependency. Often research can be relevant to a broad range of industries, for example the research on graphene, a form of carbon which can be used in electronics, the purification of water, and in the medical world. Collective action to increase knowledge of this substance is very likely though it does not solve a conflict or is the result of a pre-existing interdependency. It seems like the preconditions conflict and interdependence have been let go. But, since this assumption is fairly under-researched, this paper will start with just interdependence and conflict as preconditions in the conceptual model and keep all options open by allowing for other preconditions to be included based on the interviews.

### **2.5.2 Collective action moderated by environmental uncertainty**

The degree of uncertainty in the environment influences collective action. Returning to our example of the apothecaries and the pharmaceutical industry, it is understandable one apothecary wants to help patients to have access to affordable medication. However, one apothecary against the pharmaceutical industry has little chance to survive claims in the long-term. If this apothecary asks other apothecaries to join him or her, the chances of being able to stand up against the pharmaceutical industry increase and if they join it is collective action. An example of a very stable environment would be if a single apothecary can rely on the government and the justice department to support its decision to recreate medication. In an unstable environment, it would be advisable for the apothecary to join forces with other apothecaries in an attempt to stand up against the government and the justice department and be able to keep recreating medication.

The predictability of the environment can be seen as a scale with the two extremes of uncertain and static. An example of the uncertain environment is the everchanging market of high-tech products that are subject to regulations and demands that are continually adjusted in unpredictable ways. An example of a static environment is the market for chairs. The main requirement for products will always remain that customers are able to sit on them and it is not likely that regulations are changed. The uncertainty of the environment is relevant to collective action because it tells something about the intensity of collective action.

In the case of a stable and dependable environment with clear responsibilities and expectations, the need for exploration decreases (Achrol & Stern, 1988). Organisations can develop their partnerships by building trust and exchanging information (Ostrom, 1997). Building upon this, the absence of strong competitiveness enables free information flows between organisations, and also between organisations and institutions (Smith, Maloney, & Stoker, 2004). This means that organisations are more generous with sharing their knowledge either with direct competitors or with other relevant organisations and institutions in their environment. Regulatory systems can be perfected to increase the profit for all organisations (Ostrom, 1997) and the regulated environment creates an interconnectedness which makes meaningful differentiation harder due to the number of factors out of their direct control (Achrol & Stern, 1988), leading to a focus on exploitation. The easy flow of information enables organisations to exchange information which could lead to exploration, but it is mainly used to enhance collaboration (Ostrom, 1997).

In an environment where organisations need to adapt quickly exploration is often increased (Brown & Eisenhardt, 1997). The information flow between organisations might get

restrained, but the quality of information flows need not necessarily decrease since a changing environment increases commitment to share information relevant to solve the problems that arise in the shared environment (Gibbons, 1998). Sharing information this way, even in constructive conflict (Lawrence & Lorsch, 1967), increases exploration because of the combined variety of expertise (Pierce & Delbecq, 1977). Regulations that need alteration to suit the new environment could activate organisations to engage together in some forms of politics to change the regulations, which decreases the need to explore as a way to cope with the changed environment (Smith, Maloney, & Stoker, 2004). Collective action through exploration and exploitation in the environment in the end, of course, affects the individual organisations that are a part of it. Within the organisation, these collaborations on exploration and exploitation contribute to the radical and incremental innovations of the individual organisation.

## **2.6 The conceptual model**

Looking back at the research question, innovation-driven collective action, its preconditions and the environment should be placed in the conceptual model in the way that they are most likely influencing innovation in product-based organisations. Conflict and interdependences between organisations within the same environment are the preconditions for collective action. The environment has a moderating function determining the degree of exploratively and exploitatively focussed collective action. Summarising the argumentation in the previous paragraph, if the environment is uncertain, organisations will be more careful to share information and resources, but also lingering dangers in the environment become more urgent. That is why in an uncertain environment the effect of the preconditions on collective action is expected to be weaker for exploitative collective action, due to the heightened threshold for sharing information. At the same time the effect of the preconditions on collective action is expected to be stronger for explorative collective action, since the urgency for radical changes increases. The other way around, in a stable environment the effect of the preconditions on explorative collective action is expected to decrease due to the lack of experienced urgency for disruptive innovations in the environment. The effect of the preconditions on exploitative collective action is anticipated to increase because organisations are less protective of their information. The last relationship in the conceptual model shows how these exploration and exploitation activities which form collective action influence radical and incremental innovations in individual organisations. The conceptual model (figure 1) shows how collective action acts as a mediator for the effects of interdependence and interorganisational conflict on

innovation, with the uncertainty in the environment as a moderator for the effects of interdependence and interorganizational conflict on collective action.

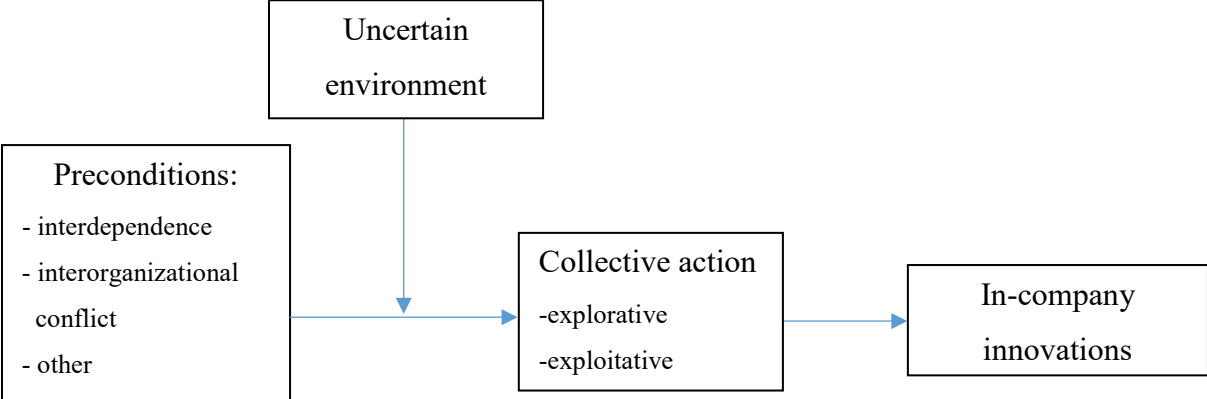


Figure 1 – Conceptual model

### **3. Methodology**

In the methodology chapter, the research is described in a way that other researchers can repeat it to see if they come to the same conclusions. In this chapter, the journey to come to the right data for this research is described, starting with the method and continued with the research field (§3.1). After this, the relevant concepts are operationalised (§3.2) and the criteria for qualitative research are discussed (§3.3). Finally, the ethical questions regarding the research tradition and the position of the researcher are reflected upon (§3.4).

#### **3.1. Research approach**

The research approach is discussed by drawing on the research goal for the method chosen and a description of the research field. The research field consists of the entities researched and the field they exist in. The potential participants and a general description of the type of organisations they work for are discussed after the research entities and the method used are explained.

##### **3.1.1 Method chosen: qualitative research**

Qualitative methods are chosen to describe the central topics of this paper. The goal of this paper is to explore how innovation-driven collective action might explain and contribute to innovation. This includes an account of the factors enabling these collaborations. This paper aims to generate knowledge on a given situation, namely the process of innovation-driven collective action resulting in innovation. This fits the definition of descriptive research, which is a form of qualitative research (Vennix, 2010). Using a narrative of an example, themes can be identified (Langley & Abdallah, 2011). More specific, through interviews using thick description. The definition of thick description used is given by Denzin (1978): ‘‘(1) It gives the context of an act; (2) it states the intentions and meanings that organize the action; (3) it traces the evolution and development of the act; (4) it presents the action as a text that can then be interpreted. A *thin description* (italics in original) simply reports facts, independent of intentions or the circumstances that surround an action.’’ (p. 33)

So, in thick description, the researcher has the role of researching not only the present state but also with what intentions and what context the current situation came to be. Also, the researcher interprets it in a way that enables the reader to give meaning to the situations described (Ponterotto, 2006). In interviews, as used in this paper, this means asking for the context of a described situation. Not only a thick description of the interview situation is given,

but like a tree, these are the roots that build the trunk being thick interpretation which branches out in thick meaning (Ponterotto & Grieger, 2007). Thick interpretation is the account of the researcher on the themes and other relevant information from the interviews. Thick meaning enables readers to empathise with the situation. Consequently, the objective of the analysis for this paper is to describe innovation-driven collective action and its effects on innovation.

### **3.1.2 Research field**

Using the literature reviewed in the previous chapter, a profile for potential respondents has been set up. They are chosen from product-based organisations because most of the research reviewed in the literature chapter uses the same type of sample. The respondents are in a function that enables them to make decisions regarding the start, pause or stopping of innovation activities. For instance, innovation managers, entrepreneurs, members of the board of directors, or project managers are chosen. Diversity of environment between organisations is pursued when choosing the organisations for this research in order to gather examples from different situations. These examples that are gathered from the interviews are the research entities of this paper. This has the consequence that the findings of the empirical part of this research can only be used to tell something about the specific examples discussed and not about the companies as a whole (Vennix, 2010). Despite this, these research entities are chosen because focussing on examples enables depth without putting too much strain on the time of respondents.

The opportunist approach is used for gaining access and choosing respondents. This means that the access is provided by the mediation of a person known by the researcher. This way of sampling is part of non-probability sampling, where the researcher is the one selecting appropriate respondents (Saunders, 2012). It is used with the purpose to select heterogeneous cases (Coyne, 1997). As an outsider it can be difficult to know what respondents are most feasible. Using a mediator in the form of a person close to the organisation the feasibility of a respondent for the purposes of the research can be assessed. This way of gaining access does not only make it easier to choose the right person but it also lowers the resistance to participate (Saunders, 2012). In this research, respondents are chosen based on the recommendations of the mediator, their role in innovation-driven collaborations, and their readiness to partake in the research. These factors increase the quality of the data (Alvesson & Ashcraft, 2012).

### **3.1.3 Short description of the organisations**

To make the description of the targeted organisations more practical, this subsection ends with a short introduction of the six organisations where the interviews took place. In subsection 4.1 a further description of the organisations is given, which is common for thick description, specifically describing the examples discussed in the interviews. As a reference for the assessment of organisational size, the Dutch website of the MKB is used, defining organisations as Medium-sized with fewer than 250 employees, small with fewer than 50 employees, and micro with less than 10 employees. Also, the categories are defined by annual turnover and the annual balance sheet total (Informatie over het MKB, 2018). Interviews A and B took place at Company I which is a medium-sized organisation in the horticulture business. Company II is a medium-sized that produces software for logistics. It facilitated interview C and interview D. The large Company III provided interview E and is active in the dairy industry. Company IV is a large insurance company. Here interviews F and G took place. Interview H was held in Company V, which is a small business to business organisation that creates software for organisational processes. Lastly, interview I was given by a member of Company VI, a small starting organisation in the automotive industry.

### **3.2 Operationalisation and interview setup**

Operational definitions are used to translate concepts into identifiable characteristics (Vennix, 2010). While it is not conventional in thick description to predetermine too much of the research topics, it is good to understand what meaning is assigned by the researcher to the various concepts used. Operationalisation consists of four steps: Firstly, forming theoretical definitions, followed by operational definitions. Thirdly, indicators are needed for all concepts and lastly, a measuring instrument should be developed. The theoretical definitions have been given in the second chapter of this paper which brings us to the operational definitions.

The definitions given below are based on the descriptions and theoretical definitions given in chapter two. The operational definitions are used in the interview questions. In this subsection the operational definitions are given and clarified where necessary. Collective action is defined as a group of organisations working together to achieve a shared goal. Interorganisational conflict is the existence of incompatible processes between two actors in the same environment. At least one of these actors is a collective of organisations, for the purpose of this paper on collective action. Interdependence is defined as the shared needs of organisations due to their common environment. The changing environment is the uncertainty about the future regarding technology, demand, and rules and laws. Innovation-driven activity

is defined by exploration and exploitation in the interviews. Exploitation is working on something new for the organisation, or improving current products, processes, or ideas. Exploration is introducing ideas, products and processes new to the world. Innovation as an outcome is defined by incremental and radical innovation. Incremental innovation is defined as products, processes, and ideas that are improved, or new to the organisation. Radical innovations are ideas, products and processes new to the world.

The interview combines closed questions in the form of statements with scales from 1 to 5 with open follow-up questions asking the respondent to elaborate. The closed fixed field questions serve to facilitate inter-organizational comparison of firm behaviour. These type of questions aim to increase the reliability of measurement. Every closed fixed field question precedes an open questions for explaining and deepening the closed fixed field response in order to increase the validity of the research. Furthermore, closed fixed field responses serve to reduce researcher bias when it comes to the interpretation of respondents answers and expansions to the open questions. In this way triangulation of interview techniques fosters both reliability and internal validity of the research.

The design of the interview is general to specific and starts with a broad description of the organisation. The respondent is asked to describe their organisation and its innovation activities in general. Using follow-up questions on a chosen innovation project, the researcher covers the predefined topics. This way of asking saves time for both the researcher and the respondent while still giving the opportunity to go in-depth in an example. The interview is a static measuring instrument; it takes place at one moment in time. Questions on precedents will be asked in order to get insight into the development of exploration and exploitation and of the collective action relationships of the organisation. In this way, the situation which arose over time can still be reconstructed for sense-making.

Before the interview starts, the researcher informs the respondent on the goal of the interview and on how the information is obtained with help from the consent form (Appendix A). The interview is a social situation that because of its complexity requires some prior strategizing of the researcher. It cannot be assumed that the respondents are always telling the truth and know everything about the situation (Alvesson & Ashcraft, 2012). Therefore, ideally, two respondents are interviewed in every organisation to check for contradictions, and to get more depth in the stories. The structure of the interview is planned. Structure increases the chances that the research topics are addressed, also it causes people to talk more extensively about the research topics, and it simplifies data analysis (Alvesson & Ashcraft, 2012). A low degree of structure creates a high likeliness of discovering new aspects of a topic while risking



not gathering relevant information (Alvesson & Ashcraft, 2012). The questions are formed in a way that gives the research a more topical structure, to allow for some freedom to explore each particular case differently rather than using pre-made format. This way, each part of the case can be treated as a different story with other highlights which might generate interesting examples of the topic. The guide for the duration of the interview is one hour. In Appendix B, the interview template with the more precise guidelines and questions can be found.

Having assessed how the interview is created and executed from the operational definitions, the third step in the operationalisation is the development of indicators for each concept. After the interviews, the recorded sessions are transcribed. Because thick description is used, open coding will be the first step of the data analysis using the question: ‘what was/is happening?’ as a guide for coding. This is followed by axial coding, and by going back and forth between open and axial coding sensitizing concepts can emerge and be tested. This is fitting for the inductive analysis which is a part of thick description.

Next to this analysis of the data, a second analysis using predefined concepts is used. Though this paper is not aimed at testing theory, it would benefit from a shared format to analyse all examples in a similar way. Such a shared format can be used to order cases and compare them. In this paper, concepts from theory are chosen before the analysis is started as ‘variables of interest’ (Van Lanen, 2016) that can facilitate a comparison between cases. The concept of innovation-driven collective action is a variable of interest that facilitates the differentiation between exploration and exploitation. The other variable of interest is innovation. It allows for differentiation between radical and incremental innovation. Since these concepts have an established position in literature, they can be used to categorise the parts in the interview that pertain to innovative activities. Selective coding is used in order to get all relevant quotes for the main concepts, while the first analysis allows for new concepts to be added. The selective coding is based on Table 2. The indicators from the text have primacy over the numbers from the scales for the closed questions, they are namely a mere help for the researcher to give meaning to the answer of the respondent.

<b>Concepts</b>	<b>Indicators</b>
Collective action (1)	group of organisations with shared goal
Interorganisational conflict (3a)	incompatible processes in environment
Interdependence (2, 3b)	organisations share needs or interests because of environment
Uncertain environment (11, 12, 13)	uncertainty in technology, demand, rules, and laws
Exploitation (4, 5, 6, 10)	starting something new or improving
Exploration (4, 5, 6, 10)	introducing something new to the world.
Incremental innovation (7, 8, 9)	improved products, processes, or ideas
Radical innovation (7, 8, 9)	ideas, products, and processes new to the world

Table 2 - indicators for selective coding with corresponding question numbers interviews

### **3.3 Credibility, transferability, dependability, and confirmability**

The four criteria for qualitative research widely acknowledged by positivist researchers are credibility, transferability, dependability, and confirmability. The credibility of a paper is about the internal validity of qualitative research, whether the research is corresponding with reality (Shenton, 2004). In this paper, the credibility is promoted by multiple provisions. Firstly, encouraging honesty of the participants by giving opportunities to refuse or withdraw their participation and by emphasising the independence of this research. Secondly, the researcher will reflect upon the method used which helps the reader to understand how the researcher came from the observations of reality to the results as presented in the paper. Third are member checks in the form of asking the participants to check their transcripts to verify the intentions of the participants that are captured in the transcript. The scales in the interview also serve this purpose. Lastly, the results of this paper are if possible related to similar studies to check for congruence.

Transferability is the external validity of qualitative research which deals with the question whether the findings of this paper can be applied to other situations. This paper is transferable in four ways. Firstly, moderatum generalisations can be made, which are based on characteristics that are linked to specific structures (Williams, 2000). These structures will lead to similar characteristics in other organisations. A similar way of reacting to interorganisational conflict for example. Second, naturalistic generalisations can be made where the case is used by external actors that learned something for their own situation from the example (Buchanan, 2013). Giving examples of the experiences of participants in this research enables readers to

think about the applicability of those stories in their own organisation. Next is analytical refinement, which is the adjustment of theory because of experiences (Buchanan, 2013). The generalisation goes from experience and observation to theory instead of the usual sample to population generalisation. It is not aimed at collecting proof, but it is about the renewed understanding that is broadening the existing view on collective action in exploration and exploitation. Lastly, isomorphic learning is learning lessons from events (Toft & Reynolds, 2005). It is based on the fact that lessons from accidents and disasters are unique, but still can be applied in other settings to prevent other accidents from happening.

Being able to replicate research is at the base of dependability. However, an exact replica of research at organisations is impossible since the circumstances of the organisation change every day and the organisation adapts to this (Shenton, 2004). Giving readers an overview of the method and its effectiveness and enabling them to perform research very similar to this research, however, allows for as much dependability as possible in changing circumstances. To do so, this paper describes the research design and implementation, gives a detailed account of the interviewing process, and reflects on the effectiveness of the method used. The confirmability of research emphasises the predisposition of the researcher (Shenton, 2004). To this end, the position and role of the researcher are discussed in the next paragraphs. Also, it is another reason for openness in the choices made by the researcher during the data gathering and analysis. The researcher cannot be completely neutral but by articulating the personal predisposition and choices made in the research the difference between the interpretations of the researcher and the observed situation becomes more obvious for the reader.

### **3.4 Research Ethics**

Reflection on your position as a researcher is not only important for development and understanding of yourself as a researcher but also makes understanding and replicating your work easier for others (Elliott, Fischer, & Rennie, 1999). In this paper, the research tradition of this paper, the position of the researcher in the field and the ethical questions of using interviews will be discussed.

#### **3.4.1 Research tradition**

The research performed for this paper is influenced by the stream of qualitative neo-positivism. In this school of research, it is the basic assumption that it is possible to understand and capture the topics under research, this is much like traditional positivists assume. Contrary to positivists, however, is the notion that pre-understanding forms understanding. Traditional positivists start

collecting data with few prior knowledge as possible, but neo-positivists regard knowledge as a source that should be used together with field work (Duberley, Johnson, & Cassel, 2012).

### **3.4.2 The position of the researcher**

Another influence in this research is reflexivism, this stream of research methods regards the interview process and the interviewer as influences on the research environment. The position of the researcher should, therefore, be seen in the light of relational, cultural and political practise. While neo-positivism assumes it is possible to be neutral as a researcher while assessing reality (Duberley, Johnson, & Cassel, 2012), it is almost impossible to remain neutral when interpreting the data from the interview, since people do not tell entirely coherent stories on the same topic, especially if there are interviews with different respondents (Potter & Wetherell, 1987). Neutrality would cause the data gathered to be equivocal and thin. Also, having a neutral attitude while interviewing has shown to be counterproductive (Ashcraft, 2007). For example, neutrality creates an atmosphere in which respondents are more careful with what they say (Alvesson & Ashcraft, 2012). Also, having questions to follow-up on earlier trains of thinking in the interview is critical for grasping what the respondent is saying (Alvesson & Ashcraft, 2012), though this is impossible for a truly neo-positivistic researcher since engagement in a conversation is neither neutral nor standardisable. Neutrality may be harmful to the insights that can be generated from the interview.

If the position of the researcher is not neutral, it is important for the researcher to be reflexive on their own role. The motive for doing research, assumptions and personal history lead to a specific way of posing questions (Duberley, Johnson, & Cassel, 2012). Also, in analysing the data the epistemological and ontological assumptions of the researcher are leading (Haynes, 2012). In this paper, the reflexivity of the researcher is encouraged by making field notes and having moments of reflection during the data collection. In the concluding paragraphs of this paper, a summarised account of the role of the researcher is given.

### **3.4.3 Ethics**

Since the researcher interprets the data which place the respondents in a certain framework, it is important to make conscious choices regarding the ethics of the way of working. Firstly, this implies being sensitive in handling the relationships and the data collected (Holt, 2012). This is done through the attitude of the researcher, maintaining a spirit of inquiry, rather than utilisation as a primary goal and listening open-minded, allowing for different ways of seeing the world. Also, a researcher should be willing to learn from mistakes. Another way of being sensitive to

the relationship with the respondent is in clear and honest communication before the interview and managing the access after the interview (Okumus, Altinay, & Roper, 2007). The respondents in this paper have been informed on the broad idea of the research prior to the interviews and have been informed of their rights, asking them for their consent based on an informed choice through signing an information sheet. The consent form used with its specific formulations can be found in Appendix A. After the interview, the respondents had the opportunity to give feedback on the transcript. Also, respondents can get a copy of the final results of the research, if they wish. In doing so, the communication with the respondents remains transparent.

## **4. Results**

This chapter will provide a broader view of the concepts based on the additional insights from the interviews. In the literature chapter of this paper, innovation-driven collective action is mentioned in connection with multiple other topics. However, the number of interviews that could be conducted in the time available for this research does not correspond with the number of concepts that came up in the literature study. That is why the distinction between explorative and exploitative collective action is more used as a guideline to identify innovative activities than as a way to distinguish between types of collective action. Only in paragraph 4.4 this distinction is used in discussing the relationship between collective action and innovation, since it leads to a clearer description of the data. Also, the moderating role of the environment that is assumed in the literature is not addressed in this paper because it diverts the attention of the research too much from the main subject. Omitting these parts allows for a clearer focus on exploring the gains for organisations that engage in innovation-driven collective action.

The topics that are discussed in the results follow the conceptual model (Figure 1) after the examples given in the interviews are introduced (4.1). Then the analysis starts by looking at what preconditions for collective action are found in the interviews (4.2). Then, a description of what innovation-driven collective action looks like is given (4.3). Finally, the effects of innovation-driven collective action on innovation are described (4.4). For each subsection, there will be a description of the concepts followed by the relationship of that aspect of the conceptual model. The results show a diverse range of organisations has been interviewed. The respondents often mentioned more on the topics than can be included in the results. The full list of indicators and sub-categories can be found in Appendix D. The quotes are referred to using the letter of the interviewee (A-I), followed by a number which indicates the moment in the interview it was mentioned (relevant to the ones with the entire transcript) and then after the hyphen ( - ) the number which indicates the position of the quote in Appendix D. So, for example, if the quote is referred to as A17-1, this means that the quote is the 17<sup>th</sup> taken from interview A and can be found as the first quote in Appendix D. The last quote is H2-182 and can be found at the end of the appendix.

### **4.1 Introducing the examples – thick description**

This introduction of the examples also gives some extra information on the organisations. The goal of this section is to describe the examples in a way that the reader can relate to the situations. Due to the number of cases the descriptions will be relatively short. This section will

describe the situation using the characteristics of the organisation, the example and what led up to that situation, relevant persons or parties, and the environment at that time.

Company I is a family owned horticulture business with two siblings in charge. The organisation has developed a culture with room for discussion and attention to the knowledge and experience of individual employees (A26-163). The example discussed with both interviewees of Company I is the collaboration they started with three other horticulture businesses to join sales (A17-1). They also exchanged cultivation plans and mutually adjusted their assortments accordingly (A19-174). The relationships in the collaborations went back 20 years and could get quite explosive. Over time, only two organisations were left. They collaborate in very diverse areas like market research and improvements to their product range (A21-150). The uncertainty of the environment is relatively high for this organisation, the rate at which new inventions come to market is high (A27-73), and changes in legislation can be whimsical. But interviewee A, the owner, emphasises that every challenge is an opportunity and that producing in the Netherlands comes with these challenges: *‘I have been to many countries, but there is no country like the Netherlands, as beautiful as the Netherlands. So, that comes with a cost too. And if you see how horticulture in the Netherlands is valued as a sector, that is very different in other countries (...) it is the price that you pay to be allowed to produce here. If I do not agree with that, I have to produce somewhere else’* (A30-97).

Company II focuses on organisations that coordinate the entire chain of transport for businesses. The main goal of Company II is to make logistical processes as transparent as possible. They create software to track different parts of the logistical process. The interviews C and D are about a proof of concept for the implementation of a new technique in their market to safely share data (D1-12). Company II works together with two of its customers and the supplier of this technique. Their customers were interested to join the project in order to stay relevant. One of them expresses the wish to be a frontrunner (C10-20), but the other organisation is mainly concerned with becoming redundant if they do not keep up with new developments (C9-19). For Company II, the proof of concept will help to show the possibilities of this new technique and help convince other customers to set aside their fear for the costs and risk involved with this type of IT projects. The environment of this company is quite stable which can be illustrated with this quote: *‘it is a slow market. Seriously, companies are only now coming up with mobile solutions, though that became popular 5 years ago. Only now it starts a little, really slowly. Unbelievable.’* (C20-79). The customers for their product are easy to identify and ups and downs in demand do not disrupt their activities much (C21-87).

The international Company III produces dairy products for more than 100 countries worldwide (E2-178). The example discussed in interview E is a research group on ways to decrease sugar in their products (E7-24). The research group consists of people from four organisations, including themselves, and a university. There is a clear trend to decrease sugar and these organisations want to keep up with the trend. The sector has a history of sharing research (E3-127). This started because it was required for all Dutch dairy organisations to dedicate a part of their budget to a centralised research institute. Now, they often take place in research that profits the whole sector, also their competitors (E4-128). Even if they develop a green innovation themselves, they will make it available to others (E5-53). The environment of this organisation does change, but the demand and technology develop gradually and as expected which makes it easy for the organisation to anticipate the changes. The clear gradual trends in demand, regulation and technology create a relatively certain environment with a clear direction towards a market with low sugar products.

Company IV is an insurance company with a clear strategy on what novel topics are their main concern. The interviews are on two out of the four novel topics they have chosen to explore. In interview F introducing robotics to the insurance company is discussed. The organisation works with two other parties that have the right expertise (F11-25) to explore the possibilities for implementing robotics. Company IV knows robotics can benefit them in multiple ways, but they do not yet have a clear view of the possibilities organisation-wide. The second interview at this organisation, interview G, was on the creation of a blockchain. The collaboration in this example is with another insurance company and they have a third party that consults for this complex project. A software company brought both insurance companies together (G7-9) as they both struggle with the way the transfer of value and responsibilities is organised (G1-13). The environment of both projects is rather uncertain, mainly due to the technology which is still developing. Also, rules and regulation are uncertain factors in the environment for this organisation because they strongly influence the revenue model and specifications of the insurance policies they sell.

The apps created by Company V display information from diverse systems. They often come up with solutions that were not available in their market, or they develop a more practical solution to replace an existing impractical solution. The goal of the collaboration discussed in interview H is complying with the standards from their partner organisation in order to make one of their apps compatible with the data from the system this partner makes (H3-30). This is a way of strengthening their market position by offering synchronisation with a popular party and thus improving their product. Their partner is a large party in software. Because their



partner is large compatibility with Company V was not urgent for them. However, this large software organisation did see the growing desire of customers to connect as many applications as possible (H6-5). That is why they generally cooperate with organisations with the same customer base. Company V is more of a trendsetter than a follower which creates some uncertainty on what growth to expect in coming years, even if the growth can probably be handled (H10-83), next to that their market changes very fast which creates a high uncertainty with regards to technology since more or less everything they do is online (H9-75). This requires them to stay informed on developments because their customers will only buy their products if they use the latest techniques.

Company VI operates in the automotive industry. They build a revolutionary car. Company VI works with multiple larger organisations and it has in all collaborations the clear ambition to make sure both parties gain something from the partnership (I7-42). The organisation is quite young and at the time they announced their plans for making a car they got an overwhelming amount of job applications. They did not have much experience hiring employees (I1-27). Also, they lacked the capacity to deal with the number of job applications (I2-130). They sought help from an HR consultancy firm to improve their selection and hiring processes. The organisation they hired proved to be able to teach and train them much more in this domain. Before they took their relationship to a partnership, they got to know each other, and they compared ambitions. The organisations are very different. On the one hand, the automotive company is young, flexible, and has an informal culture. On the other hand, the HR consultancy firm has a more formal culture, an established way of working, and a lot of experience. The environment is highly uncertain, this is mainly because they operate in a new market with unknown demands, with technologies that change rapidly, and rules and regulation that are hard to translate to their situation since they are in between the automotive industry and the electronics industry: *'...there are a lot of laws and rules in the Netherlands and sometimes it is very difficult to get explicit what applies to you because there are still quite a lot of things in a grey area (...) also, in my opinion, some things are weirdly regulated in Dutch law. (...) specifically for the collective labour agreement (CLA), we may have to start mixing with the electro-CLA and the rules in it are of course meant to counter unfair competition, but at the moment I feel we will be held back if we have to commit ourselves to this CLA.'* (I13-95). Because of the changeable and sometimes ambiguous environment, having a stable partnership provides a source of reliable information for improving their hiring processes.

## 4.2 Preconditions

The factors that contribute to the existence of collective action are the preconditions. Consequently, the types of preconditions are derived from quotes in the interviews that answered the question: why did the partnership in this example develop into innovation-driven collective action? In this paragraph, the four preconditions found in the interviews are described using examples from the interviews. The previously defined preconditions interdependence and interorganizational conflict were confirmed. Also, two new preconditions are introduced: expected reward and compatibility.

The first precondition based on the literature review is the interdependence of organisations. This is defined as the shared needs of organisations due to their common environment. In the interviews the role of the common environment showed for example in a collaboration as a result of customer requests (H6-5), or merging sales because of demand: *'It was very useful to collaborate, because we had large customers and they would love to do business with all three of us, suddenly, we were an important party'* (A17-1). These are examples of interdependence because the collaborating parties have the same customer base. Another role in the common environment is that of a shared external authority that shows the approval or disapproval of a product. An external authority influences what the customers buy by giving their approval, like in the example of dairy Company III that could put a certain logo on their products if they were healthy according to the standards of this external authority. All food products that complied to the standards set could apply for the logo which gave products a competitive edge being marked as a healthy alternative: *'back then, we had the 'I choose consciously' logo, the checkmark, and that was a big stimulus for reducing sugar'* (E24-7). The logo was important to the organisation, so they decided to look for other organisations with the same desire to comply with the standards of the logo. An additional example of interdependence is the growing importance of sharing data in a fast and safe way (C3-6) for all concerned parties at Company II. This example shows that trends in the shared environment can unite organisations to start an innovative project.

The other precondition from literature is interorganisational conflict. Interorganisational conflict is defined as incompatible activities in the environment of the organisation. There are two organisations that give an example of experiencing conflict. For Company II the challenges of increased cybercrime (C6-10) and mistrust in their market (D1-12) are so severe that they could be regarded as conflict. These two factors contributed to the choice to try and find organisations to create a proof of concept for a way to have a competitive edge and increase trust between organisations. Company IV faces a monopolist (G1-13), which is a classic

example of organisational conflict. The worldwide monopolist does not care about the problems of their smaller customers since they have no alternative and have to use their services regardless of them being less suited for their needs. In standing up against the monopolist by creating their own service that hopefully replaces the service of the monopolist they challenge the power of this large party and threaten their monopoly in the market of clients that are insurance companies. In most of the examples, however, the organisations choose for collective action because of other reasons than organisational conflict, like the expertise others offer (I6-26) or because they already work on similar projects (E10-43), as described below.

Next to these preconditions, there were two other preconditions that stood out in the interviews namely expected reward and compatibility. Expected reward is not an entirely new precondition. This precondition is mentioned in the literature review as an under-researched possible precondition. It is described by Van de Vrande (2017) in her definition of collective action as the result of deliberate entrepreneurship to increase innovation and opportunities for the organisation. The difference with interdependence is with interdependence the organisation reacts on the environment and with expected rewards the organisation is actively looking for opportunities. For example, the interviewees mentioned reasons for collaboration like expertise exchange with a partner outside their environment whose technology they need for a large project (D5) or even total dependence on multiple partners that are actively sought from various environments to create a car and a company: *'...we are totally dependent on all partners around us, because we simply cannot develop a whole car on our own and set up the company around it. (I6-26)'*. Next to this, economising (F14-29) and sales (B4-14, H5-15, I5-16) are examples of expected rewards that are mentioned as deliberate reasons for collective action. An extensive list of examples can be found in Appendix D.

Compatibility is the other precondition that protrudes from the interviews. It could be described as achieving an arrangement satisfactory to all parties. Interviewee I describes it as the main objective before entering any collaboration: *'...I must say that if I enter into a partnership, I always try to get the common interest as high as possible. Especially because I do not believe you have a healthy collaboration if you are the only one profiting from it, or even if you profit just a little more from the arrangement than the other party. (...) because I think if only one of them achieves the goals, the other person will be unhappy.'* (I7-42) Examples of determining compatibility before officially starting to collaborate are looking for compatible strategies (A6-40), agreeing on goals (C15-91), and working on similar things (E10-43). In the practical part of collaboration, it is about using the same system (I8-44).

For the relationship between the preconditions and collective action the above described preconditions are the reason organisations come together. For the role of the relationship in the conceptual model it means that at least one of these preconditions is assumed to be present when organisations engage in innovation-driven collective action. Organisations always have a reason for starting collective action. For innovation-driven initiatives the older explanations did not suffice to categorise these preconditions. Because of the limited size and scope of this research, there probably are more categories that could be added to the preconditions. This section describes the preconditions mainly to show that there are more types of preconditions, but also to tell the story of innovation-driven collective action. An overview of all relationships in the conceptual model can be found in Table 3. It shows that interdependence is a factor for almost all organisations (5 out of 6), and expected reward and compatibility also are present in many of them (4 out of 6 for both). Conflict was only mentioned twice. This is of course by no means statistically sound evidence, but it might help the reader to put the above in perspective.

<b>Preconditions</b>	<b>Collective action</b>
Interdependence	A, B, C, D, E, F, G, H
Interorganisational conflict	C, D, G
Expected reward	D, E, F, H, I
Compatibility	A, B, C, D, E, I

Table 3 - interview examples of preconditions for collective action

### **4.3 Innovation-driven collective action**

Collective action is about negotiation and collaboration between networks and communities in the environment. Since this paper focuses on innovation initiatives, it was defined as making use of and working together with organisations to strengthen innovation processes (Van de Vrande et al, 2009). Innovation-driven collective action can be described by two categories that are often used to discern innovation behaviour: explorative or exploitative activities. Exploitative activities focus on existing processes and products, and explorative activities on new processes and products. Contrasted to radical and incremental innovation, explorative and exploitative activities are the way innovations are achieved if a specific innovation is the planned outcome. Although it could be expected for exploitative activities to have incremental innovations as an outcome and for explorative activities to have a radical outcome, it can very well be that this is not the case. Explorative activities can result in incremental innovations, or

vice versa, and it can also be that either activity does not render any result in the form of innovations. Out of the 9 interviews 5 were on an exploitative example and 4 on an explorative example as can be seen in the first table in Appendix D. In this paragraph, the examples of every organisation are divided into the categories and described shortly based on the answers to question 4, 5 and 6 on research and the nature of their shared goal.

Starting with exploitative collective action, this is working on a product or process that is new only to the industry or improving something existing. Four of the examples, which are covered in 5 interviews, fit into this category. Both members of the horticulture Company I (interviewee A and B) discussed the case of a group of initially four organisations that had high ambitions to merge their sales and form a large party in the market for bedding plants. That did not work out as planned, but it did result in an ongoing collaboration for innovation (A8-45) in their shared concept factory (B6-47) and the exchange of knowledge between the employees of the participating organisations (A7-122). Their joint innovation is often exploitative and led for example to process improvement as a result of new seed trays (A25-56). However, other activities of this group fit into the exploratory category which is why this organisation is mentioned in the next paragraph as well. The example in interview F for Company IV is on experimenting with the possibilities of robotics (F8-48) which is a new technology for the organisation. Trying to find the right platform to use for their ends, they asked two potential organisations to help them figure out the possibilities and benefits. This selection process will lead to selecting this technique to improve existing processes, like adjusting numbers (E13-70) when the retirement age is adjusted by the legislators. Company V is a very innovative company that produces apps for trading companies, but the collaboration discussed is about connecting one of its existing products to another system for data analysis. The collaboration is about achieving compatibility and getting the app of Company V certificated for connecting with the system. For both organisations, this is an addition to their existing products which makes it an exploitative collaboration. Company VI is an innovative automotive organisation, but the example of collaboration is about their hiring procedures which needed to be more efficient. The organisation they hired became a partner that coaches them in becoming more proficient at attracting, selecting, and hiring the right candidates. This makes the collaboration a process improvement and therefore exploitative.

Explorative collective action is working on a product or process that is new to the world. The mainly exploitative collaboration of Company I was mentioned in the previous subsection, however, they also did develop potted plants with coco plugs, an explorative innovation which they have the perquisite on. Company II (from the interviews C and D) started its explorative

collaboration with the specific goal to introduce a safer and quicker way to share data that was new to the market (C3-51). Trying to introduce the technique of an organisation from outside their market, Company II found two other organisations that were willing to work together on a proof of concept. The collaboration example of Company III is exploratory in nature because they researched new scientific methods for decreasing sugar in their dairy products to stay ahead of the competition (E14-71). In order to do so, they worked together with other producers, like a manufacturer of juices, but also with a university. For Company IV, interviewee G elaborates on their plans to create a blockchain which would be a new product and tool at the same time (G3-54). To achieve this, they teamed up with another insurance organisation, and in the long run, they will create a separate organisation to manage the blockchain to avoid conflicts of interest and cartel formation (G12-102). An insurance organisation that creates a blockchain is new to the world, making this an example of exploration as well.

#### 4.4 Collective action and innovation

Innovation is the last concept in the conceptual model. It encompasses products, processes and ideas that are improved or introduced. This paragraph depicts how radical and incremental innovation are present in the interviews and how the relationship between collective action and innovation can be described. All scenarios for the relationship between collective action and innovation are set side by side with the interviews in table 5. After discussing the relationships in the table, the non-innovation gains from the interviews are briefly reviewed.

		<b>Innovation</b>	
		<i>Incremental</i>	<i>Radical</i>
<b>Collective action</b>	<i>Explorative</i>	C, D, E	C, D, E, G,
	<i>Exploitative</i>	A, B, F, H, I	A, B

Table 5 – Interview examples of innovation as a result of collective action

Most interviewees mentioned incremental innovations, which means improvements to existing products, processes or ideas, or one of those being just new to the organisation. In relation to exploration and exploitation, the following observations can be made from the examples. Many improvements and new ideas are due to inspiration from visiting or meeting the partner organisations, maybe even subconsciously (B11-58), getting ideas for improving the product assortment (A24-55). Incremental innovation can also be caused by collective action because of a desire to synchronise between partners which leads to reciprocal

improvement (H4-65). Another type of examples of how incremental innovations are linked to collective action is that addressing something with others speeds up the process of innovation (E21-62) and accelerates change (C4-60). Lastly, an example of an improved idea is the spotted lacuna in supplier relationship management (F21-63), which results in a changed perception of the role of the organisation in its environment.

Radical innovations are new to the world. There were few examples of these in the interviews. As expected, all organisations that participated in explorative collective action came up with some form of radical innovation. For example, Company II created a new way of authentication as the result of collective action which was a radical innovation because it was the first implementation of a product new to the market and adapting it to their expertise made it a product new to the world. Company III invented new ways to decrease sugar which are new techniques to the world (E14-71). However, also one of the examples of exploitative collective action did result in radical innovation. This example at Company I is a series of plant pots with coco plugs which was new to the world and enabled them to get them patented.

A remarkable characteristic of all examples of collective action is the amount of non-innovation gains that are mentioned by the interviewees. This paper is not the right place to go in depth for these examples, but they are indirectly related to innovation since they often create chances for the organisation to develop themselves further in the future. Maybe the most interesting benefit mentioned is the individual growth of the employee working with the other organisations (A10-151). The examples show growth in knowledge (C14-146, I9-124) and skills, like formulating good questions (I10-139) and timing of communication (F20-144). Other examples that are more specific to single cases can be found at the end of Appendix D.

In short, all examples of explorative collective action achieved, or at least made steps towards the radical innovations that they strived for. For example, Company III worked on decreasing sugar in its products and they managed to develop new techniques that they use for their goal: *'we have avoided quite a few truckloads of sugar worldwide'* (E14-71). Also, exploitative collective action led to incremental innovations, like Company VI that improved their hiring and selection procedures with the expertise from their collaboration (I4-66). However, all examples of explorative collective action seem to lead to some form of incremental innovation as well. Sometimes, innovations are the goal of the collaboration, like making data sharing easier and safer (C3-51), and sometimes, innovation is the by-product of the collaboration, like improvements in the product assortment after inspiration from partners (A24-55). And though the examples of collective action all had some sort of innovation as the main goal, they often gained much more than just innovation from collective action.

## **4.5 Summary**

Before proceeding to the last chapter on the conclusion and discussion, this paragraph will provide a short summary of the results. The effect of environment on the relationship between preconditions and types of collective action is ambiguous in the examples. The only example that fits the assumption is that of Company IV that is in a relatively uncertain environment and decides to build its own blockchain in collaboration (interview G). The suggested new narrative for collective action as not only caused by conflict or interdependency, but also by entrepreneurship seeing and creating chances for collective action to innovate. All cases provide examples of expected reward and/or compatibility as a reason for collective action next to conflict or interdependency. Examples of explorative collective action coincide with radical innovation as well as side-effects in the form of incremental innovations, except interview G. However, the absence of incremental innovation next to the radical innovation, might be explained by the fact that it is an ongoing collaboration in an early stage. For exploitative collective action, only incremental innovation seems to occur in the organisations as a result of the collaboration. In the interviews, only Company I achieves a radical innovation in exploitative collective action. Also, the organisations often gained more than just innovations from innovative collective action.



## **5 Conclusion and discussion**

This final chapter is where the story of collective action and innovation is told, by giving a summary of the theory (§5.1) answering the research question and elaborating on the answer based on theory and the interviews (§5.2). After the story ends, the future of these topics in other research (§5.3) and for actual collective action initiatives is discussed (§5.4). At the end, the limitations of this research will be reviewed (§5.5)

### **5.1 Short summary of theory and research question**

The goal of this paper is to show how innovation-driven collective action contributes to interorganisational innovation. In short, collective action is defined by explorative and exploitative collaboration. Literature shows a change in preconditions from politically engaged collective action to collective action for general mutual benefits. Next to the established preconditions of organisational interdependence and interorganisational conflict, two new preconditions that fit this change are introduced based on the interviews namely expected reward and compatibility. The combined effect of the preconditions on collective action affects the in-company innovation which can be radical or incremental. This comes together in the research question.

### **5.2 Answer to research question**

The research question is: how does collective action influence innovation in product-based organisations through collaborative exploration and exploitation? The participating organisations experience the influence of collaborative exploration and exploitation on innovation as a source of inspiration for incremental innovation. Radical innovation is mostly the direct effect of an explorative collaboration with the goal of creating a radical innovation. Collective action is the result of at least one of the four preconditions, namely organisational interdependence, interorganisational conflict, expected reward, and compatibility. The preconditions interdependence and interorganisational conflict were expected based on literature, but expected reward and compatibility were added after the interviews. Collective action can be divided into collaborative exploration and exploitation. When differentiating between both types with regards to how they influence innovation in product-based organisations, explorative collective action also leads to the radical innovation that is their shared goal, while exploitative collective action only leads to radical innovation in one instance, which is more of a by-product of trying to improve their products. The type of collective action

seems to predict the type of findings for radical innovation. However, regardless of the type of collective action, incremental innovation seems to always be part of the expected or unexpected rewards. All interviewees did mention at least one incremental innovation that came from their collaboration. Sometimes, this was expected, but especially for explorative collective action, which is focused on radical innovation, the incremental innovations were not always expected.

### **5.3 Contribution to knowledge**

This study looks into the relationship between collective action and innovation. It focuses on innovation-driven initiatives of multiple organisations and takes a new look at what the gains for sharing the innovative processes are. The lack of insight into this type of innovation-driven collective action is the literature gap that was identified in chapter 1.1.

Most contributions of this paper to literature on collaborative exploration and exploitation innovation are related to the preconditions. For one, the added precondition of expected reward as described by Van de Vrande (2017) was confirmed. Secondly, the precondition of compatibility was added because of the similarities unrelated to their environment that caused organisations to work together. The last literature contribution for the preconditions is that interorganisational conflict and organisational interdependence are not always present when collective action is. This does not match the definitions used by social movements that collective action is the result of *'the recognition of an institutional problem, barrier, or injustice among groups of social or technical entrepreneurs.'* (Hargrave & Van de Ven, 2006). Neither the conflict nor the presumed pre-existing interdependence between groups are found in all examples. It is true that they sometimes do coincide, but they are not always present when collective action is. While it is true that at least some preconditions have to be present as an incentive for organisations to collaborate on innovations, it cannot be concluded from the interviews whether the preconditions had a stronger effect on innovation-driven collective action depending on the stability of the environment, or that the stability of the environment is another precondition for collective action that influences the tendency to explorative or exploitative collective action. This is something to be mindful of if further research leads to statistical research in a larger sample looking at the influences on collective innovation.

Another contribution to knowledge is the added perspective of the effect on actual innovations within organisations. The relationship between the preconditions and innovation-driven collective action is the main focus of the results, but the inclusion of actual innovations that are the result of these shared innovative activities adds a new dimension. The relationship

between preconditions and innovation-driven collective action describes the observed forces that lead to action. The second relationship between innovation-driven collective action and innovation describes the effects of these actions. This does not only provide a fuller overview of concepts related to innovation-driven collective action, but also increases the extent to which this research is relatable for organisations. This brings us to the practical implications of this paper.

#### **5.4 Practical implications**

The main contribution to practice of this paper is an answer on whether innovation-driven collective action is useful. The contribution of this paper with regards to this question is twofold. Firstly, the in-company innovations that are the result of collective action illustrate the direct results of innovation-driven collective action. Secondly, organisations can derive pros and cons of innovation-driven collective action from the examples in this paper. Examples in this paper that can be used as reasons to engage in innovation-driven collective action are the possibilities of improving products or inventing new ones. Also, gaining insights and expertise from the collaboration could be a reason for engaging in these activities. Examples from this paper that illustrate arguments against participating in innovation-driven collective action are mostly about the collaborating parties. For example, the often-inevitable decline of commitment over time (interview A) or the fact that the most suitable partners in these collaborations often are competitors (interview E).

A second type of practical implications is the actual strategic decision making with regards to innovation-driven collective action. The results of this paper may improve the effectiveness of strategic decision-making. If a manager would have more insight into the way collaborative innovation works, he or she would be able to take a more informed decision and spend resources wisely. An example of information that could lead to better decisions is to explore whether all partners agree on the level of investment for the project. Also, knowing that many ideas for innovation come from the journey of innovation-driven collective action may equip employees that are a part of a collective-action initiative to actively seek for innovation inspiration.

Lastly, the extra findings that did not directly pertain to the research question also suggest that organisations can profit a lot by contemplating which employee will actively join the collaboration since this employee will have many opportunities for development. Examples of non-innovation gains are individual growth, increasing skills, and the possibilities for bypassing internal managing issues when using external expertise.

## 5.5 Limitations

In this paragraph, the limitations of this research are discussed. This paragraph follows the structure of the before-mentioned criteria of credibility, transferability, dependability, and confirmability. The limitations will be discussed by assessing the goals that were set in paragraph 3.3.

Starting with the **credibility** of the paper on whether the research is corresponding with reality (Shenton, 2004). There were no indications that interviewees were not telling the truth. They sometimes even were a little too honest about other persons for example, but these parts were omitted from the data if they bore no relevance to the research. The researcher did encourage honesty by giving interviewees opportunities to withdraw participation and by providing anonymity. Also, the interviewees were sent their transcripts for verification. Secondary interviews were held at all organisations where that was possible. However, for most projects discussed there was only one person from the organisation that knew enough about the project to give an interview. This was solved by interviewing more organisations than planned. Which led to a greater variety of examples.

The second criterium was **transferability** which deals with the question whether the findings of this paper can be applied to other situations. The practical and theoretical lessons that can be transferred from this research to other situations are discussed in the paragraphs on the contribution to knowledge (5.3) and practical implications (5.4). Which brings us to the third criterium, which is **dependability**; the possibility to replicate the research. The limitation with regards to this point could be the problem of not exactly having the planned sample. The plan was to have a diverse set of organisations and then have two interviewees for each organisation. But not all organisations had two persons that could answer the questions, as mentioned before. And even if they had, employees did not have the same approach to the example which caused the data to be richer, rather than clearer. An example of this is the distinction between interviewee A and B. Interviewee A is the owner of the organisation who makes the choice to start the collaboration while interviewee B is experiencing the effects of this collaboration. Although the richness of the data gives a broader view of the unexpected innovation and non-innovation gains, using the same questions for both interviewees did not entirely work, like interviewee B not having the same insights as interviewee A on the effects of the environment on the reasons for collaboration. Concluding, allowing for interviewees in any role in collaborations did provide depth and richness for the data but it could have had an impact on the type of answers given which makes it harder to compare answers for the same example.

Lastly, the **confirmability** is discussed. This is about the role of the researcher in the interviews. Articulating the potential consequences of choices made during the research at least allows the reader to see the difference between the interpretations of the researcher and reality, increasing confirmability. There are two points that will be discussed here. Firstly, choosing an example for the interview sometimes involved quite some steering from the researcher, despite the set conditions the example should comply with. While the researcher did try to stick to the description from the interview model, this was not always possible due to the fact that reality often does not fit a model exactly. Ambiguity on the topic of the question did sometimes result in unexpected answers. Whenever this was noticed during the interview, the researcher did attempt to clarify the goal and direction of the question. It is not something that could have been entirely anticipated for in the interview model, but it is a good reminder of the fact that all people have different language fields in which they operate and consequently use to interpret questions. Secondly, the role of the researcher may also have influenced the examples chosen because of using the opportunist approach for finding interviewees. It depended per situation how the connection was made, but in some interviews, the person who arranged the interview was mentioned. Mostly this person came up to clarify something, for example in interview I the connection was used to deepen the understanding of technological uncertainty because the person who is the shared link is responsible for keeping track of new technology. While the relationship remained a 'side subject', it could be that the way the interviewees responded was influenced by the way the researcher was introduced to them.

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## Appendix A – The consent form

Beste deelnemer,

Fijn dat u mee wilt doen aan dit onderzoek. Er zijn wat dingen waarvan het goed is als u het weet. Allereerst iets over het onderwerp van het onderzoek: Dit is een onderzoek is naar a) de verschillende vormen van innovatie in organisaties en b) naar de relaties die organisaties met groepen organisaties in hun directe omgeving hebben. De focus is op samenwerkingen tussen organisaties om iets te ontwikkelen.

Goed om te weten: U kunt op ieder moment besluiten om toch niet mee te werken aan dit onderzoek, ook alle eerdere informatie die u gegeven hebt zullen dan niet meegenomen worden in het onderzoek. Uzelf en uw bedrijf worden niet met naam in het verslag genoemd en de bijlages met de interview transcripten worden enkel verstrekt aan de universiteit van de onderzoeker.

Wat we u willen vragen: Zou er een geluidsopname van het interview gemaakt mogen worden zodat het uitgetypt kan worden? Het transcript zal u dan voor revisie toegestuurd worden zodat u eventueel aanpassingen kan voorstellen zodat uw uitspraken juist geïnterpreteerd worden.

Het ondertekenen van het formulier verplicht u nergens toe, het laat alleen zien dat u alles gelezen hebt en dat u toestemming geeft voor de geluidsopname. Als u vragen heeft kunt u die op ieder moment stellen aan de onderzoeker.

Datum: .....- ..... - 2018

Naam:

Handtekening

### Opties:

Ik ontvang graag een digitale kopie van de onderzoeksresultaten.

*Dit is een versie zonder de transcripten van de interviews, in verband met de privacy van de respondenten.*

Ik geef **geen** toestemming voor het gebruik van mijn naam en de bedrijfsnaam in de bijlage van het onderzoek die alleen toegankelijk is via de universiteit.

## **Appendix B – Interview template**

*Fijn dat u mee wilt helpen aan dit onderzoek. Ik zal eerst wat vertellen over het onderwerp. Het onderzoek gaat over samenwerkingen tussen organisaties en de invloed op innovaties van uw bedrijf. Het begint met wat algemene vragen over het bedrijf en uw functie. Daarna zou ik graag ingaan op een voorbeeld van een samenwerkingsverband van uw bedrijf.*

### **Algemene vragen**

<b>Naam</b>	<b>Functie</b>
<b>Organisatie</b>	<b>Grootte</b>
<b>Wat is de hoofdproductgroep uw bedrijf?</b>	<b>Sector</b>

**Zou u aan kunnen geven hoeveel uw bedrijf uitgeeft aan innovatie?**

Onze organisatie heeft op dit moment .....% van de omzet als innovatiebudget.

**Beschrijf hoe sterk dit percentage fluctueerde over de afgelopen vijf jaar.**

**Heeft uw bedrijf sinds 2015 producten geïntroduceerd die nieuw waren voor uw bedrijf of die technisch ingrijpend zijn vernieuwd?** (Bijv. door nieuwe grondstoffen of materialen te gebruiken, veranderingen in productiefuncties of werking e.d.) (ja/nee)

**Bevonden zicht bij deze nieuwe producten (nieuw sinds 2015) ook producten, die nieuw-voor-de-markt waren en die uw bedrijf als eerste op de markt introduceerde?** (ja/nee)

1. Hoe vaak is het voorgekomen in de afgelopen vijf jaar dat uw bedrijf actief heeft samengewerkt met twee of meer andere bedrijven om een gemeenschappelijk doel te bereiken? (nooit – een keer – vaker) *We bedoelen hier geen zuivere toeleverings- of uitbestedingsrelaties.*

**Kies een voorbeeld** *basis voor keuze is in eerste plaats de mate waarin van tevoren al gepland werd veel te investeren, een zo groot mogelijk aantal samenwerkingspartners staat op de tweede plaats.*

*- Van welk van deze samenwerkingsprojecten verwachtte u destijds, bij aanvang van de samenwerking dat dit project aanzienlijke investeringen voor uw bedrijf zou gaan vergen?*

*- Hoeveel organisaties werkten actief samen bij elk van de genoemde samenwerkingsprojecten (uw bedrijf inclusief).*

*Selecteer een project. Alle vragen in dit interview hebben betrekking op samenwerkingsproject.....*

### **Casus vragen**

*Het interview is als volgt opgezet. De vragen vormen een afwisseling van open en gesloten vragen. Ik begin steeds met een gesloten vraag, waarbij ik zal vragen om met een cijfer op een schaal van 1 tot 5 te antwoorden in hoeverre het gevraagde van toepassing is op uw bedrijf. Ook wordt er soms gevraagd in hoeverre u het met een bepaalde stelling eens ben of niet; ook op een schaal van 1 tot 5.*

*Na elk oordeel van u uitgedrukt in een cijfer, vraag ik vervolgens om een toelichting op uw antwoord.*

1a. Hoe belangrijk was het behalen van dit doel voor het functioneren en de prestaties van uw bedrijf? (1=niet belangrijk; 5=zeer belangrijk)

1b. Licht uw antwoord toe

2 Met hoeveel partners werkte uw bedrijf samen? (aantal)

2a. In hoeverre bestonden er al voor deze samenwerking zakelijke relaties tussen uw bedrijf en de organisaties waarmee u in samenwerkte?

2b Licht uw antwoord toe

3. Wat was de reden van deze samenwerking?

3a. In welke mate lagen er conflicten met andere organisaties ten grondslag aan de samenwerking? (schaal van 5, 1=niet, geen conflict; 5=zeer grote conflicten)

i. Hoe groot was de invloed van het probleem/conflict voor het functioneren van uw bedrijf? (schaal van 5, zeer klein – zeer groot)

ii. Beschrijf het probleem/conflict

iii. Wat waren de conflicterende belangen?

3b. In welke mate bent u het eens met de volgende stelling:

Het gemeenschappelijk belang van de samenwerkende organisaties in dit project was zeer groot. (1=volstrekt oneens; 5=zeer mee eens)

i. Licht uw antwoord toe.

ii. Indien van toepassing, beschrijf de gemeenschappelijke belangen

4a. In hoeverre heeft uw bedrijf zelf onderzoeksinspanningen verricht om het doel van de samenwerking te helpen bereiken (schaal van 5, niet – in zeer grote mate)

i. Licht uw antwoord toe

4b. In hoeverre hebben de overige samenwerkingspartners onderzoeksinspanningen verricht om het doel te helpen bereiken (schaal van 5, niet – in zeer grote mate).

i. Licht uw antwoord toe

5. *Indien minstens 'enigermate' onderzoeksinspanningen of –uitgaven gedaan om het doel te bereiken:* In hoeverre hebben onderzoeksinspanningen of –uitgaven in het kader van dit samenwerkingsproject om het doel te bereiken uw bedrijf belangrijke nieuwe kennis opgeleverd voor uw productontwikkeling? (schaal van 5, niet – in zeer grote mate)

5a. Licht uw antwoord toe

6. In hoeverre heeft uw bedrijf onderzoek uitbesteed in het kader van dit samenwerkingsproject (schaal van 5, niet – in zeer grote mate)

6a. Licht uw antwoord toe

7. In hoeverre heeft uw bedrijf nieuwe werkwijzen overgenomen of ideeën opgedaan van de samenwerkingspartners in dit project om de inrichting van uw bedrijf aan te passen? (schaal van 5, niet – in zeer grote mate)

7a. Licht uw antwoord toe

8. In hoeverre heeft uw bedrijf ideeën voor nieuwe technologieën, machines, apparatuur, instrumenten of software overgenomen van de samenwerkingspartners? (schaal van 5, niet – in zeer grote mate)

8a. Licht uw antwoord toe

9. In hoeverre heeft uw bedrijf anderszins leerzame/belangrijke kennis overgehouden aan de samenwerking? (schaal van 5, niet – in zeer grote mate)

9a. Licht uw antwoord toe

10. *Indien op minstens een van de vragen 7-9 het antwoord 2, of meer is:*

In welke mate heeft u kennis en ervaring opgedaan in het samenwerkingsverband kunnen toepassen bij de ontwikkeling van nieuwe of vernieuwing van bestaande producten? (schaal van 5, niet – in zeer grote mate)

10a. Licht uw antwoord toe

**Vragen omgeving:**

11. In welke mate was er was er destijds, op het moment van de samenwerking sprake van onzekerheid over de snelheid van de technologische ontwikkelingen in uw branche (Technologische onzekerheid) (niet – in zeer grote mate)

11a. Licht uw antwoord toe

12. In welke mate was er was er destijds, op het moment van de samenwerking sprake van onzekerheid over vraag naar producten uit uw branche (volume onzekerheid) (niet – in zeer grote mate)

12a. Licht uw antwoord toe

13. In welke mate was er was er destijds, op het moment van de samenwerking sprake van onzekerheid over ophanden zijnde veranderingen in relevante wet- en regelgeving? (regelgeving) (niet – in zeer grote mate)

13a. Licht uw antwoord toe

Dit is het einde van het interview.

Hartelijk dank voor uw medewerking

## Appendix C – Scaled answers to interview questions

	A	B	C	D	E	F	G	H	I
1a. Importance of shared goal for organisation	(5)	4	3-4	4	3-4	(5)	4	4-5	5
3a. conflict as reason for collaboration	.	1	(1)	1	(1)	(1)	1	1	1
3b. common interest of all partners	(4)	5	(3)	4	5	(4)	4	2	4
4a. own research	(1)	3	(2)	3	(2)	(2)	3	3	(3)
4b. research others	.	3	(3)	3	(2)	(3)	3	?	(3)
5. New knowledge from research	.	.	4	5	4	.	5	(5)	.
6. Outsourced research	.	5	1	1	1	1	2	3	1
7. Copy from partners way of working or ideas	(5)	3	1	5	1	1	5	1	5
8. New ideas for technology from partners	(4)	3	(2)	1	(2)	1	(2)	(3)	1
9. Other beneficial knowledge from partners	(4)	3	(3)	(3)	(2)	(2)	?	(4)	5
10. Usability knowledge for own products	(4)	(1)	(4)	(5)	(3)	1	(15)	(5)	1
11. technological uncertainty	5	1	(2)	1	2	3	3	5	5
12. volume uncertainty	1	5	(3)	3	(1)	2	(2)	3	(3)
13. uncertainty rules and regulations	2-3	?	3	1	(1)	(5)	(4)	1	(5)

### Legend

. = not answered

- = not applicable

? = interviewee does not know

() = assigned by researcher based on context



## Appendix D – List of indicators

Preconditions		Code	Description	Quote	
Interdependence	Same customers	A17-1	merging sales because of demand	<i>It was very useful to collaborate, because we had large customers and they would love to do business with all three of us, suddenly, we were an important party</i>	
		B1-2	broader area of distribution	De kracht van samenwerken is in deze branche groot, samen sta je toch sterker, samen heb je een breder afzetgebied. Zeker omdat er geen overlap in onze producten zat, ze maakten toch weer andere dingen dan dat wij maakten.	
		G4-3	existing collaborations in environment	er zijn wel meer samenwerkingsverbanden tussen verzekeraars om dit soort dingen te regelen. Bijvoorbeeld we hebben als verzekeraars samen een soort van fraudedesk we hebben een centrale zwarte lijst van mensen waarbij we moeten uitkijken om die te verzekeren (...). We hebben als verzekeraars ook berichtenverkeer met tussenpersonen georganiseerd zodat we daar dezelfde standaard hanteren. Dat een persoon voor ons hetzelfde nodig heeft als bij een andere verzekering. Een format waar je dingen kan delen.	
		G6-4	common ground environment	We komen uit hetzelfde kamp, we komen uit de kant van de verzekeraar hetzelfde plekje in het proces dus dat scheidt wel echt een band om dit probleem te benaderen (...).	
		H6-5	collaboration because customer request	Nou, frictie zit in dat wij natuurlijk data willen gebruiken uit andere systemen. En die andere systemen worden min of meer gedwongen door vragen van klanten die zeggen: ik wil zo'n app gebruiken, ik wil dit gebruiken en ik wil dat gebruiken. Dus zij moeten hun systeem 'koppelbaar' maken	
	Same development trends	C3-6	growing importance of sharing data in a fast and safe way	De drempel van het data delen verlagen binnen de gehele logistieke keten. Dat was het. Iedereen doet het op zijn eigen manier en hoe hij het moet doen, maar dat kan veel beter sneller, veel simpeler en veiliger.	
		E24-7	logo stimulates innovation	<i>Toen hadden we nog het 'ik kies bewust'-logo', het vinkje, en dat was een grote stimulans voor ons om te reduceren in de hoeveelheid suiker.</i>	
	Same external authority	Shared third party	F15-8	First contact via suppliers	die twee bedrijven (...) hadden jullie daar al eerder zakelijke relaties mee? De ene wel, (...). Die andere ook, maar dat komt door een overname aan die kant. Wij hadden hier een bepaalde tool die draaide hier al en door een overname aan die kant is dat nu een soort van hetzelfde bedrijf.
			G7-9	brought together by third party	We zijn bij elkaar gebracht door die softwareleverancier en die weet eigenlijk niet zo goed wat zijn belang hierin is. Die is nu faciliterend bezig maar we laten hem eigenlijk een beetje zo veel mogelijk links liggen.
	Conflict	Shared negative influence	C6-10 & C8-11	cybercrime	Het is erg belangrijk om op een veilige manier om te gaan met data, en dat zal ook belangrijker worden. Er zijn steeds meer dreigingen dat je dingen gestolen kunnen worden, dat je malware of iets dergelijks op je systeem kan krijgen, dat er problemen kunnen komen. (...). Iedereen die meewerkte erkende wel het probleem of kende wel de uitdaging van we moeten met elkaar wel wat doen om voorop te gaan lopen. Dat is gewoon een belangrijk punt. Dus dat erkennen we met z'n allen wel. Dat zou je kunnen zien als hoofdprobleem. Dat het nu nog te ingewikkeld en op schillende manieren wordt gedaan, waardoor het heel moeilijk is om eruit te komen met z'n allen. <b>Dus dat er eigenlijk een</b>

		D1-12	mistrust in market	<p><b>gemeenschappelijke vijand was? Ja (...)</b> omdat cybersecurity zo een belangrijk iets is, omdat de tegenstand ook groot is? Ja, maar weet je, je kan pas verder komen als je ook gaat samenwerken. Als je niet wil samenwerken of dat moeilijk blijft elke keer, ja, dan verdraag je dus</p> <p>Well it was important, because we see that in the logistics and supply chain the data sharing is becoming a problem, not because of the technology, but because of the trust. And Company I was and is still one of the possible ways to solve this trust problem among the companies, so in that respect we really wanted to make it a success with the example-implementation, so that we can prove to the market that trust can be there.</p>
	Shared problem with third party	G1-13	monopolist	<p>Dat willen we niet omdat ze overgenomen zijn door een beursgenoteerd bedrijf uit Amerika met een monopolie in deze markt en we weten niet precies wat ze doen. Maar ze laten data zitten, en als we wat willen veranderen is dat moeilijk en daar betalen we geld voor dus allemaal redenen om daar wat aan te doen. Dus wat we eigenlijk zeggen is, we zetten daar een blockchainapplicatie in.</p>
Expected reward	Sales	B4-14	increased sales expected	<p><b>ik probeer conflict als reden voor samenwerking uit te sluiten.</b> Nee verkoop technisch gezien dan maak je een koppeling en dan heb je ook wel partners van (samenwerkingspartner), (...) die verkopen dan (product samenwerkingspartner) en vinden ons product dan interessant genoeg om mee te nemen. Dus je hebt ook nog verkooppartners. Re-sellers.</p>
		H5-15	attracting resellers	
		I5-16	Long term client	<p>we hebben een apart tarief met hen afgesproken, maar ook wel met het idee dat we op een gegeven moment natuurlijk groter zijn en meer omzet draaien en hun daarin ook mee kunnen nemen.</p>
		B8-17	party has design bureau	<p>zij zijn het ontwerpbureau. Ik ga hier niet zitten tekenen. Ieder z'n vak</p>
	Joint purchases	B9-18	joining their purchases	<p><b>En die potjes (*wijst naar potje op tafel*) kopen jullie dan ook ergens?</b> Ja die worden gewoon door iemand gemaakt door degene die dit (...) heeft. <b>Daar haken jullie dan bij aan.</b> Ja.</p> <p>Bedrijf III deed bijvoorbeeld mee omdat ze niet anders konden. Als zij niet mee zouden doen dan zouden zij straks niet meer relevant zijn. Ze zouden buitenspel gezet worden. Dus zij gingen vanuit een verdedigend mechanisme meedoen, om te zorgen dat ze zelf niet meer buitenspel konden gezet worden.</p>
	Relevance	C9-19	Staying relevant	
	Be frontrunner	C10-20	wanting to be a frontrunner	<p>En Bedrijf II had ook zoiets van "Wij willen als enige expediteur ook vooroplopen, en bezig zijn met zulke dingen." Dus wat Bedrijf II betreft was het een beetje dezelfde insteek, laten we vooral vooroplopen</p>
	Know-how	D5-21	external party with technique	<p>all the experts were helping each other. It was very nice of Company I to create kind of a working concept on that.</p>
		D2-22	Cannot do it alone	<p>So there are even things that we cannot do ourselves, on one side it has to be with a client, otherwise people will say it is theory it is nothing, and on the other side the client is requiring some things that are from Company III, but then Company III also needs to be involved, on the other side Company I is kind of the authority that can define some of the protocols for the security, so company A couldn't have done it themselves.</p>
		E1-23	expertise	<p>Wij zijn met 550 R&amp;D'ers en dat lijkt wel veel, maar we hebben niet alle kennis in huis.</p>
		E7-24	sugar reduction	<p>een samenwerking om suiker te kunnen reduceren in onze recepten, zoetheid genereren, want mensen willen nu eenmaal zoete drankjes, maar zonder dat ze er iets van merken toch suiker kunnen reduceren,</p>

		F11-25	external expertise	dan moet je dus maatregelen nemen om toch zoetheid te geven en ook een beetje body, want suiker geeft ook dikte, viscositeit aan het product. <i>you can't invent everything yourself</i>
		I6-26	dependence on others	<i>we are totally dependent on all partners around us, because we simply cannot develop a whole car on our own and set up the company around it</i>
		I1-27, I3-28	help in employee selection	wat er gebeurde was dat we overspoeld werden door mensen die bij ons wilden werken en onderdeel wilden uitmaken van ons bedrijf. <b>Cool!</b> Wat natuurlijk supergaaf was, alleen we hadden er geen of weinig kaas van gegeten (...) dus toen ben ik op zoek gegaan naar een partner die ons kon helpen met de selectie van mensen, dus het uitsorteren van zaken die echt relevant zijn en hoe doe je dat? en uiteindelijk zijn we dus toen een partnerschap aangegaan
	Economise	F14-29	economise	we hebben de IT-afdeling al flink gekrompen en waar komt dat door, omdat we niet alles zelf willen doen, want dat culturele aspect en houding en gedrag component is soms heel goed om dat van buiten verfrissend te hebben en dan maakt het punt 1, je kosten flexibeler, want je kunt wel of niet besluiten om iemand aan te haken, en het houdt je gewoon effectiever omdat er een ander soort structuur en beloning in zit.
	Connectivity	H3-30	connect products	Wij willen graag onze producten koppelen aan een systeem; een bedrijfssysteem. (...) dus wij wilden voor elkaar krijgen dat (...) we de artikelen en klanten zien en dat we de juiste prijzen voor de klanten kunnen ophalen. En dat je extra informatie over artikelen kunt opvragen en dergelijke, en ook van klanten. Zo hebben we een lijstje van functies die je wilt kunnen afvuren op zo'n systeem, die je dan terugkrijgt en die je dan in de app zichtbaar kunt maken. Dus de koppelingsmogelijkheid die moest er komen. Dat was ons doel. Er was al wat mogelijk, maar onze partner heeft er wel voor gezorgd dat zij hun koppelingsmethodiek zo hebben uitgebreid dat wij daar bijvoorbeeld goed mee kunnen werken.
Compatibility	Direction	A6-40	look for compatible strategies	En daarnaast ging onze policy van het bedrijf niet echt in decorum, dus dan ben je een paar jaar lid, ik heb ook nog in het bestuur gezeten, hartstikke interessant, hartstikke veel geleerd persoonlijk, maar ik kon het niet toepassen op m'n eigen bedrijf.
	Goals	C15-41	agree on goals	Wat we hebben gedaan is het afsprakenstelsel, dat hebben we verzonnen, een afsprakenstelsel, hoe je data veilig kan delen met elkaar, dat hebben we dus met elkaar ontwikkeld en in groepjes hebben we toen proof of concept gemaakt.
		I7-42	achieving high common interest	Ja, ik moet eerlijk zeggen dat als ik een samenwerking aanga, dat ik altijd probeer het gemeenschappelijk belang zo hoog mogelijk te trekken natuurlijk en vooral ook omdat ik niet geloof dat als je er zelf alleen maar beter uitkomt, of ook maar een beetje beter dan die andere partij, (...) want als alleen een van beiden de doelen haalt dan wordt de ander denk ik ongelukkig.
	Unity activities	E10-43	working on similar things	<b>...in hoeverre hebben zij onderzoek verricht voor het doel van deze samenwerking.</b> Allemaal waren ze daarmee bezig al.
		I8-44	using the same system	zij maken gebruik van ons systeem

<b>Collective action</b>	<b>Code</b>	<b>Description</b>	<b>Quote</b>
Exploit	A8-45	ongoing collaboration for innovation	nu doen we wel de innovatie mee, dus we hebben (merknaam) opgestart, met kokospluggen en zeg maar een alleenrecht vanuit (de groep). We hebben het veredelingsprogramma opgezet vanuit (de groep).
	A11-46	exchange knowledge between employees	mensen bij elkaar brengen, mensen verbinden met elkaar en ja dat proces dat loopt nu volop.
	B6-47	shared concept factory	daar hebben we een conceptfactory voor. Die ontwikkelt merknamen als (...), dat soort dingen, die worden door hen als concept bedacht,
	F8-48	experimenting with robotics	dus de eerste helft van 2018 verklaren we tot de speeltuin, we gaan experimentjes doen met verschillende tooling
	H3-49	Connect products	Wij willen graag onze producten koppelen aan een systeem; een bedrijfssysteem. In dit geval dus (partner) dus wij wilden voor elkaar krijgen dat (eigen product) in dit geval bijvoorbeeld (...) dat we de artikelen en klanten zien en dat we de juiste prijzen voor de klanten kunnen ophalen. En dat je extra informatie over artikelen kunt opvragen en dergelijke, en ook van klanten. Zo hebben we een lijstje van functies die je wilt kunnen afvuren op zo'n systeem, die je dan terugkrijgt en die je dan in de app zichtbaar kunt maken. Dus de koppelingsmogelijkheid die moest er komen. Dat was ons doel. Er was al wat mogelijk, maar (partner) die heeft er wel voor gezorgd dat zij hun koppelingsmethodiek zo hebben uitgebreid dat wij daar bijvoorbeeld goed mee kunnen werken.
	I3-50	Help in employee selection	op zoek gegaan naar een partner die ons kon helpen met de selectie van mensen, dus het uitsorteren van zaken die echt relevant zijn
Explore	C3-51	safer and quicker data sharing	De drempel van het data delen verlagen binnen de gehele logistieke keten. Dat was het. Iedereen doet het op zijn eigen manier en hoe hij het moet doen, maar dat kan veel beter sneller, veel simpeler en veiliger.
	D4-52	Visibility and transparency	we wanted to also show our customers that the visibility and transparency in the supply chain can only be done by sharing data, and that sharing data can be secure by using protocols like Company I.
	E5-53	decrease sugar for staying ahead of competition	dat is een samenwerking om suiker te kunnen reduceren in onze recepten, zoetheid genereren, want mensen willen nu eenmaal zoete drankjes, maar zonder dat ze er iets van merken toch suiker kunnen reduceren, dan moet je dus maatregelen nemen om toch zoetheid te geven en ook een beetje body, want suiker geeft ook dikte, viscositeit aan het product.
	G3-54	create blockchain	we hebben een blockchainapplicatie gemaakt samen en daar hebben we afgelopen vrijdag een demo van gegeven

<b>Innovation</b>	<b>Code</b>	<b>Description</b>	
incremental	A24-55	ideas for improving the product assortment	(partner), die heeft heel erg gefocust op assortiment en spullen en op de juiste variëteiten. En bij ons hadden we zoiets van: 'joh dat horen we wel'. En sinds we met Wouters werken zijn we daar veel meer op gefocust.
	A25-56	innovation product quality	En we hebben de zaaitray overgenomen, dus het systeem van zaaien, we waren in 1970 of 1980 met de tray begonnen, Tempex, en we hadden dat nooit veranderd en nu hebben we het hele systeem omgezet in twee jaar tijd naar hard plastic trays met pootjes. Dus onze kwaliteit van producten en zeker van jonge planten is echt heel erg gestegen.

	B10-57, B11-58 B12-59	subconscious copying Copy relevant products	Oh ja, als we bij hun op het bedrijf zijn en we zien daar machines staan, natuurlijk wel. (...) Of naar arbeidsprocessen, daar wordt ook naar gekeken, maar dat is vaak onbewust. Je loopt daar dan en dan zie je dan en dan denk je, 'he dat is iets om mee te nemen naar huis'
	C4-60	accelerates change	we werken wel met een pot die zij ook gebruiken. (...) Dat is een pot met een watergeefstelsel. Dat is een pot die zij ontwikkeld hebben en wij hebben hem eigenlijk gewoon zo overgenomen.
	E12-61	unexpected discoveries	Simpeler en veiliger is misschien gek om bij elkaar te noemen. Maar wel waar we naartoe gaan nu. En dat was ons doel. Als wij dat doen, dan zijn er veel meer kansen en veel meer mogelijkheden om te versnellen maar ook om geld te verdienen om zo te zeggen
	E21-62	speeds up innovation	bijvoorbeeld, we zien hoe een smaakstoffenfabrikant werkt met panels om producten te keuren, dat zou kunnen, want dat zijn vaak geen heel geheime dingen, dat je ziet: we hebben een nieuwe methode ontwikkeld waarbij je met de helft van het aantal mensen net zoveel conclusies kan trekken. Nou, dat soort dingen wissel je gewoon uit en dat kan mij ontglipt zijn, maar dat zijn normaalgesproken dingen, we noemen het even unexpected discoveries, dingen waar je niet voor kwam, maar waar je wel mee thuis kwam
	F21-63	spotted lacuna in supplier relationship management	Nee, we wisten ook uiteindelijk kom je tot een maximum en daarom zijn we wel gewoon begonnen met dit project omdat er wel gewoon nieuwe technologieën moesten komen die niet alleen maar sweetness boosting flavours inhielden, maar echt iets nieuws. Het was redelijk voorspelbaar wat er allemaal gebeurde, maar we hadden meer nodig.
	G8-64	Process innovation	leveranciersmanagement, hoe gaan we om met mensen en hoe zorgen we voor de relatie, ik zou denken, dat kan strakker. <b>Relatiemanagement is vaak wel een speerpunt van grote bedrijven.</b> Eens en dat hebben we absoluut goed opgezet voor de buitenwereld, naar de klanten, de intermediairs, dat soort dingen, maar onze eigen leveranciers... Volgens mij doen we daar niet altijd de handige dingen.
	H4-65	reciprocal improvement	het is inderdaad een proces innovatie en niet zozeer van producten. Stiekem op de achtergrond denken we daar wel een beetje over na want je hebt dadelijk een grote bak met data georganiseerd en daar kan je altijd wel wat mee
	I4-66	Improved selection and hiring	Dat er heel veel andere partijen ook zo'n koppelingmethodiek kunnen gebruiken en ze hadden al wat draaien en daar hebben we natuurlijk onze vragen aan gesteld. En je ziet ook dat zij dingen uitbreiden naar aanleiding van onder andere onze vragen maar ook van andere softwarepartijen natuurlijk
radical	C2-67	new to market	Dat er heel veel andere partijen ook zo'n koppelingmethodiek kunnen gebruiken en ze hadden al wat draaien en daar hebben we natuurlijk onze vragen aan gesteld. En je ziet ook dat zij dingen uitbreiden naar aanleiding van onder andere onze vragen maar ook van andere softwarepartijen natuurlijk
	C13-68	New way of authentication	Dat is de samenwerking die we hebben gehad met Bedrijf II en Bedrijf I. Dat is wel echt nieuw, dat is afgelopen januari live gegaan. Dit jaar is het jaar van adoptie, dus het jaar waar het nog aan moet sluiten, en daarna moet het wel echt gaan lopen. Dus dat is wel echt vernieuwend voor de hele markt.
	D8-69	New way of authentication	De technologie die we daar gebruiken, dat is een technologie die we nog niet gebruiken in onze projecten, maar waar we eigenlijk wel naar toe gaan
			Of course, there are a lot of things that we learned, like I said, the OAD, the new methodology for the authentication, and a new way of working, and apart from that it is just again another proof that if you have the right partners on the table, if you have the right connection, then you get a success, so apart from that nothing else.

E13-70	development new technology in project	Een soort cellijn die dan menselijke cellen bevat en dan oplicht als iets zoet is of niet. Dat soort dingen. Dat is nieuwe technologie die ook mee in dat project ontwikkeld is, nog niet 100% betrouwbaar. De mens is moeilijk te vervangen, maar er zijn wel ideeën uitgewisseld over hoe je dat in een lab zou kunnen meten. Dan kan je natuurlijk veel sneller heel veel samples meten alsof het een temperatuur is in plaats van allerlei mensen het laten proeven en dan nog een soort van gemiddelde te pakken.
E14-71	new techniques to decrease sugar	we hebben dan onze gereedschapskist van allerlei technieken die zoetheid genereren en daar hebben we een aantal dingen vanuit het project ingestopt en die worden gebruikt in de honderden projecten die we hebben lopen. En of dat nou in Nederland of Thailand is, ik heb er niet overal zicht op, maar we hebben wereldwijd al heel wat vrachtwagens aan suiker vermeden.
G2-72	Demo blockchain	Daar zijn we een samenwerking mee aangegaan en zitten we eigenlijk op twee sporen: we hebben een blockchainapplicatie gemaakt samen en daar hebben we afgelopen vrijdag een demo van gegeven (...). Daarnaast zijn we bezig om een consortium in te richten. Die blockchainapplicatie moet door iemand worden beheerd.

Environment	Code	Description	Quote
Technology - yes	A27-73	technology – changes faster than anticipated	de praktijk is dat het altijd sneller gaat dan we denken
	F22-74	prioritising with limited budget causes insecurity	we hebben beperktere budgetten met het gevolg dat het iedere keer weer een kwestie is van prioriteren en de juiste dingen doen en intussen ook vernieuwen dus het is niet zozeer dat het allemaal instabiel is qua onzekerheid
	H9-75	unclear direction of developments	En de onzekerheid zit hem met name in het internet. Als daar ooit een keertje echt de pleuris op uitbreekt, ja, dan hebben we toch wel een probleem. Met de app bijvoorbeeld. En daar hebben toch wel veel bedrijven last.
	G10-76	unclear direction of development	De blockchain gaat best wel hard. Er is veel aan het ontwikkelen, welke kant dat opgaat is nog best wel onbekend
	I11-77	using multiple fast changing technologies	Specifiek voor de automotive industry gaat het steeds sneller, de technologie waar wij gebruik van maken die niet per se van toepassing is in de automotive industry is wel spannend maar vooral ook de zonnecellen technologie en batterijtechnologie, die dan wel steeds meer in de automotive industry toegepast wordt, die technologie gaat enorm hard
Technology - no	B13-78	technology – already frontrunner	technologie, nee daar hebben we met perkgoed niet zo last van, het is niet alsof we continu de kas moeten aanpassen om een plantje op zo'n manier of zo'n manier te maken. We lopen al zo ver voor op wat er qua techniek eigenlijk voor nodig is om perkgoed te maken.
	C20-79	slow market	Want het is een trage marktform. Echt serieus, nu pas komen bedrijven met mobiele oplossingen, terwijl dat zo 5 jaar geleden is. Nu pas begint dat pas een beetje te komen, echt enorm traag. Ongelofelijk...
	D9-80	No	<b>did at the moment you started this collaboration, insecurity/onzekerheid, about the changes of technology influence your organisation?</b> No
	E20-81	predictable development sugar reduction	Ik zou een twee zeggen, omdat het op het moment was dat voor het eerst sweetness modulated flavours op de markt kwamen, dat waren smaakstoffen die bijvoorbeeld een procent aan suiker konden vervangen, dus daarna waren ze ietsje beter, naar anderhalf procent, naar 2 procent, dus je wist eigenlijk dat er elk jaar een verbetering kwam...

volume insecurity - yes	B14-82	limiting volume insecurity	Dat is wel van invloed geweest, juist omdat je samen grotere volumes aankon. Alleen zijn wij 26 hectare, Wouterse is 40 hectare, dus een snelle rekensom, dat is bij elkaar 68 hectare die je met samenwerking hebt. Dus volume is wel een ding ja.
	H10-83	self-generated demand	Onzekerheid? Nou ja: drie. Kijk, je moet uitgaan van je eigen kracht. En dat je die groei kunt blijven genereren. De markt is groot genoeg. De markt is er ook klaar voor dus het moet kunnen.
	I12-84	minimising uncertainty demand through design preview	De vraag naar ons product was helemaal in het begin natuurlijk wel onzeker, want je hebt er natuurlijk wel een idee bij en je hebt goede verhalen gehoord naar aanleiding van het (...) waarvan mensen al zeiden 'mogen we deze auto kopen?', maar blijft natuurlijk wel de vraag of mensen hem echt willen. Daarom hebben we er ook voor gekozen om als eerste stap een ontwerp naar buiten te brengen, of in elk geval een deel om te laten zien 'jongens dit gaan we doen' om te kijken of mensen ook echt gingen happen en die auto wilden kopen.
volume insecurity - no	A28-85	able to influence sales	Wij produceren heel veel op voorverkoop, dus een deel is voorverkocht, of op basis van vorige jaren, we gaan niet zomaar een miljoen geraniums zetten. Het kan wel, we hebben een veiling en daar kan je alles heenbrengen.
	F23-86	predictable decline in demand	Ik denk dat die onzekerheid niet zo heel groot is, omdat we wel zien dat de vraag op sommige delen afnemend is, bijvoorbeeld binnen leven. Dus dat je juist wilt inspelen op die daling. Dus ik denk dat we daar redelijk goed inschattingen kunnen maken.
	C21-87	clear market	We hebben best wel een heel duidelijke groep aan wie we willen verkopen en ook echt niet aan willen verkopen. Sommige dingen zijn gewoon niet onze specialiteit. Dus dan doen we dat niet. Kunnen we wel willen gaan uitvinden, maar soms is het gewoon ons ding niet, en dat is zonde van je tijd.
	D10-88	No reaction, but an investment	with this project there was no commercial part behind, so it was purely investments
	E22-89	clear demand for less sugar	We wisten dat consumenten allemaal minder suiker zouden willen als die keuze er was, maar die keuze was er niet en er was ook geen reden om dat maar helemaal niet meer te consumeren, dus we hebben wel de verwachting gehad dat op het moment dat we geen suiker zouden reduceren en de concurrent wel, dan zou je bijvoorbeeld met wel 10% per jaar dalen in volume.
	G11-90	Stable demand product	Als het mislukt dan is het 0. We gaan dan niet gedeeltelijk implementeren, het wordt een markt of het wordt niks. <b>En de vraag naar jullie verzekeringen die zijn gewoon een beetje stabiel? Ja</b>
Regulations - yes	C15-91	new privacy legislation	de privacywetgeving, die komt in Mei. Die was toen ook al ter sprake gekomen. Dus daar hadden we het toen ook wel over van hoe wordt dat nou in praktijk. En in dit traject was daar een duidelijke uitspraak over. Daar gaan de partijen zelf over en niet het project. Maar dat is wel een dingetje.
	F24-92	workload and revenue model	het punt met wet- en regelgeving is vaak ten eerste dat het moet én dat het vaak simpeler gesteld is dan doorgevoerd, om maar eens iets te noemen. (...)nog even los van het feit dat je het vast moet leggen zit je ook bijvoorbeeld prijstechnisch...
	E9-93	pressure government to reduce sugar	Ook de overheid zat te pushen op het reduceren van suiker door de industrie, dus alle winst was mee.
	E23-94	government threatens with rules in Indonesia	misschien in andere landen, zoals bijvoorbeeld in Indonesië waar we van die blikjes gezoete condensmelk, van die ouderwetse dingen waar je ook taarten mee kan bakken. Nou die blikjes verkopen we ontzettend veel in Indonesië, die worden daar ontzettend veel gebruikt en daar bemoeit de overheid zich nu ook wel mee, van 'jongens er zit enorm veel suiker in zo'n ding, als jullie nu geen actie ondernemen om dat suiker weg te halen of te reduceren dan

	I13-95	unclear what rules apply	kunnen wij wel eens ooit een keer grenzen gaan stellen of ze verbieden, dat soort dingen, dus daar houden we wel rekening mee als we de suiker niet gaan verlagen dan verlies je misschien wel 10% of meer van je business. want er spelen een hele hoop wetten en regels in Nederland en soms is het heel lastig om expliciet duidelijk te krijgen wat voor jou van toepassing is omdat ook nog best veel dingen in het grijze gebied vallen (...) plus dat het ook nog zo is dat dingen naar mijn idee raar geregeld zijn in de Nederlandse wet (...) specifiek met de Cao's, we moeten ons misschien straks gaan mengen met de elektro-CAO en daar zitten ook weer regeltjes aan vast en eigenlijk is dat natuurlijk bedoeld om oneerlijke concurrentie tegen te gaan, maar op dit moment voel ik me vooral teruggehouden op het moment dat we ons daaraan moeten gaan binden.
Regulations - no	A29-96	regulations – use change to advantage	Natuurlijk verandert die wel, want alles verandert, maar ik zie het meer als kansen, dan als last, want als ik het als een last zie ga ik er tegenaan schoppen, terwijl ik er toch niets aan kan doen. Dus je wordt ermee geconfronteerd en je moet daarop in spelen en soms kan je daar op een of andere manier iets positiefs uit halen.
	A30-97	regulation – you have to deal with it	ik ben in heel veel landen geweest, maar zoals we in Nederland wonen is geen een land hoor, zo mooi als Nederland is. Dus dat kost ook iets. En als je ziet hoe de tuinbouw in Nederland gewaardeerd wordt als sector, dat is in andere landen heel anders. Ik was net in Polen en dat is van oorsprong een agrarisch land denken we met z'n allen, maar werken in de tuinen is aan de Polen niet besteed. Dat zou je niet zeggen als je ziet hoeveel er hier wonen, maar daar niet in Polen, daar werken allemaal Oekraïners in de tuin. Dus dat schuift gewoon op in ieder land. In Oekraïne werken weer mensen uit de Oeral, de Russen in de kas, dus dat schuift gewoon door. Maar het is dus een prijs die je betaalt om hier te mogen produceren. Als ik het daar niet mee eens ben moet ik ergens anders gaan produceren.
	B15-98	No idea	Ik weet niet, we doen de verkoop niet samen, dus we hebben geen onderlinge afspraken gemaakt over prijs of wat dan ook. Dus dat is helemaal gescheiden van elkaar.
	D12-99	No	<b>last question is about the juridical stuff, do 'wet en regelgeving', does it change a lot for your organisation and are you influenced by that?</b> No.
	C22-100	New privacy legislation is own responsibility	de privacywetgeving, die komt in Mei. Die was toen ook al ter sprake gekomen. Dus daar hadden we het toen ook wel over van hoe wordt dat nou in praktijk. En in dit traject was daar een duidelijke uitspraak over. Daar gaan de partijen zelf over en niet het project. Maar dat is wel een dingetje
	H11-101	No	Nee.
	G12-102	Fear for cartel formation	Er is best wel een probleem met toezichthouders die vindt het spannend dat verzekeraars samenwerken. Omdat ze vrezen voor een kartel. Die vinden de blockchain spannend, die vinden privacy spannend dus de data die er overheen gaat.



<b>Non-innovation gains</b>	<b>Code</b>	<b>Description</b>
competences partner	B7-103	partner has development department
	D7-104	less research
	F12-105	bundling competences
learning marketing	C18-106	communication marketing
	H8-107	inspiration commercial
exposure	C17-108	marketing
	D11-109	marketing presence
	D3-110	showcase example
	C5-111, C19-112	exposure
project manageability	F2-113	easier implementation
	F5-114	effective rewardstructure
	F13-115	efficiency
	F6-116	manageable
	F16-117	new dynamics
	C20-118	new technology
	F4-119	stay sharp
exchange	D6-120	idea exchange
	G9-121	compare way of working
learning	A7-122, F3-123	learning
	I9-124	keep learning
	A23-125	Bought same new technology, reciprocal learning
idealistic	E6-126	higher goal than competitive advantage
	E3-127	make green innovations available for others
	E4-128	no direct competitive advantage
motivation	F10-129	partners motivated through competition
monetary	I2-130	capacity
	E19-131	collaboration public institution subsidy
	E15-132	innovation subsidy
	E18-133	innovation subsidy labour costs
	A5-134	monetary motivation
	F18-135	More flexible costs
	E16-136	shared costs
	E11-137	subsidy
E17-138	subsidy stimulates collaboration	
individual	I10-139	asking the right questions
	C16-140	personal development
	C24-141	broadening horizon
	A9-142	contact employees
	C15-143	handling parties discussing with different interests
	F20-144	moment of communication
	C23-145	job satisfaction
C14-146	professional knowledge	
economise	F14-147	economize
	A22-148, B3-149	shared cost exhibition stand
	A21-150	shared investments
information	A10-151, A16-152	exchange data

B2-153	more information
B5-154	information
B10-155	collecting information on machines
C11-156	sharing knowledge
F17-157	knowledge

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<b>Organisation of collaboration</b>	<b>Code</b>	<b>Description</b>
Best practices	A1-158, A12-159	Task division
	A3-160	Making time for coordination
	A4-161	Frankness in communication
	A18-162	Communication to decrease distrust
	A26-163	Low hierarchy
	C7-164	mutual agreement on goal
	E8-165	alignment with strategy
	F1-166	innovation strategy
	G5-167	Hired third party to advise
	G13-168	selfless collaboration develops technology
Problems	A2-169	Too busy for coordination
	A15-170	Explosive relationships
	A21-171	loss due to shared investments
Adjustments	A13-172	Central location
	A14-173	Actively connecting employees
	A19-174	Mutual adjustment
	C12-175	Concessions on product

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<b>Relevant company information</b>	<b>Code</b>	<b>Description</b>
Organisational goal	C1-176	transparency logistics
	F9-177	one tool for the whole organisation
Size	E2-178	Multinational
Knowledge gap	F7-179	Need for more experience
	G4-180	existing collaborations in environment
Essence of organisation	H1-181	coming up with innovative products
	H2-182	identifies with being innovative