

# SHARING NETWORKED INNOVATION APPROACHES ACROSS COMPANIES

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## ABSTRACT

The paper discusses a workshop that has been set up to help companies that are struggling to get networked innovation projects started. In a guided one-day setting, three companies discussed their recent networked innovation cases with each other.

A step-by-step approach has been used, starting with baseline interviews prior to the workshop up to a multi-part workshop. By doing so, presenting information from the view of the case owners could be systematically compared to the effects of actively sharing information between professionals from different companies. Departing from the ambitions of each company, external trends, used processes and partners, the goals of each company were discussed. Then, the network that would make the value proposition work, was constructed and alternatives were discussed.

We describe the approach of trans-organizational knowledge sharing and the way of analyzing the gathered input. It showed that companies are willing to discuss their problems in depth, given a setting of mutual trust as well as shared understanding. The results also showed that the content of networked innovation projects became richer and more nuanced due to the discussions.

*Keywords: networked innovation, open innovation, early design phases, collaboration barriers*

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## 1 INTRODUCTION

Networked innovation, the collaboration of companies as partners, is a widely used form of open innovation. Studies on innovation networks indicate that common motivators are the sharing of skills, knowledge, and risks; expanding into new markets and technologies (Pittaway et al., 2004); the sharing of budgets to economize costs (Hagedoorn, 2002; Miotti and Sachwald, 2003); the creation of an innovative culture (Grönlund et al., 2010) and the belief that external technology is critical for the profitable growth of a company (Chesbrough and Crowther, 2006). The practice shows that networked innovation tends to be more complicated than its closed counterpart, i.e. innovation within one company (Valkokari et al., 2012). During a long-time study on networked innovation which is being carried out by three universities together with nine companies, we learned that several companies that take part in the research project, had considerable difficulties to get networked projects started at all. We could not detect obvious, singular reasons why they did not manage. When asked about their problems, each company gave a number of reasons for the lack of success, which related to the internal structure of the own company; to the fact that networked innovation processes pass off differently; and to the relationships between the actors in the network. The companies, however, could not make plausible how those factors connected to each other and how they finally formed a barrier to networked innovation. Earlier research within the same long-time study showed that experiences and learnings that derive from conducting networked innovation are seldom shared with colleagues within a company, and even more rarely, are shared among companies (Maurer and Valkenburg, 2011). Consequently, there is little opportunity to benefit from past experiences, or experiences that are made at another company in a comparable situation. This was confirmed by the companies, who expressed a need for external advice based on research. The networked innovation literature addresses *learning* mainly in the context of knowledge exchange during projects. Learning how to conduct networked innovation in itself, how to reflect upon past innovation projects and how to adapt existing structures to new demands has yet to be fully explored, within companies as well as in research. Doing so in inter-organizational networks offers distinct opportunities: learning is achieved throughout actor, team and organization level, the network is able to contain more information than an individual and the speed of learning is increased (Hallikas et al., 2009). Hoping to reveal deeper insights, we offered companies an opportunity to share their experiences through discussing their approaches in networked innovation as professionals together in a guided setting. As researchers, we were principally interested in three questions: (1) knowing that *trust* forms an essential basis to networked innovation (Bosch-Sijtsema and Postma, 2009; Den Ouden, 2012), would companies be willing to share their approaches? At the same time, we wanted (2) to investigate if the guided setting, a one-day workshop which was not tried out in this form before, would work, and (3) indeed provide new insights into the way bottlenecks in setting up networked innovation could be overcome. The paper at hand describes the way the workshop has been organized and carried out. It also describes the effect of the phases in which the workshop develops on the gathering of new insights. Finally, we discuss if and how a guided setting may contribute to a better sharing of knowledge between companies.

## 2 SETUP AND EXECUTION OF THE WORKSHOP

We decided to focus the workshop on two factors that are known to be critical to networked innovation: the innovation goals and the partner network. A company that has a clear picture of the way it wants to innovate -taking into account external circumstances, and internal capacities- and which develops comprehensive strategies, will be able to set clearer goals in networked innovation and to pursue them better than a company who lacks this understanding (Ritter and Gemünden 2003). Equally, a company that knows its potential partners, their motivation to enter an innovation network and the value each partner may contribute to a network, will find the right ones more easily and will be more capable of building sustainable networks (Beckman et al., 2004).

Preparations began with the selection of the companies to be invited. Although a workshop on getting new insights in networked innovation would probably be attractive to all sorts of companies, we wanted to facilitate shared understanding by selecting those that would easily recognize each other's situations. Out of the nine companies that participate in our study, we chose three that had comparable characteristics: they are large-sized companies with a similar organizational structure; they operate in the mature automotive and aircraft industry, albeit in different sectors, so that they have no mutual history of collaboration and/or competition; and they had protracted networked innovation cases,

which had not yet led to a successful start of the collaboration. Company 1 is a manufacturer in the automotive industry, company 2 is a producer of aircraft interiors and company 3 manufactures aircraft components.

The three companies readily accepted the invitation to the workshop and agreed to present and discuss one of their networked innovation projects. Confidentiality was formally guaranteed by letting every person involved in the workshop sign a non-disclosure agreement.

The next step covered the case selection. The findings from our earlier studies showed that the startup phase contains severe barriers to networked innovation. Each company was asked to choose one of their own cases as a workshop subject. The emphasis should lie on the building of innovation networks and the start of projects. The case description was collected by a researcher in a semi-structured baseline interview without time limit, written down and presented again to the company for verification (see Figure 1 for the setup of the workshop). Each input had to include: a description of the innovation case and why it should be carried out in a networked setting; the required partners; challenges that arose; goals of the company that should be achieved by the project. Furthermore, the companies were also asked to answer questions that served as preparation for the workshop: What is the vision of the future from the company's point of view, regarding market, branch of industry etc.? Which role does the company want to play in the future? What is the company's formal way of innovating? Are there important innovation processes currently carried out at the company? Through which processes is (innovation) strategy being introduced to the company; how is it being implemented and communicated?

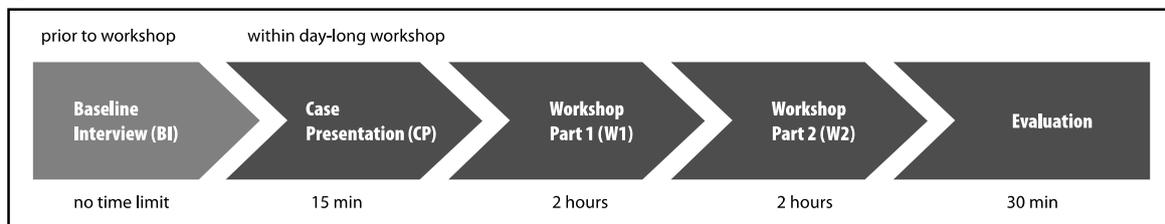


Figure 1. Setup of the workshop

The workshop itself took one day and consisted of four parts: case presentation, workshop part 1, workshop part 2 and evaluation. Each company had delegated three managers who were familiar with the case, one of whom was the case owner/champion within the company. All participants were briefed beforehand about the setting and their role in it. During the workshop, altogether nine employees from the companies were present, plus five researchers. The role of the researchers was to instruct, to help with questions, if necessary and further to be a neutral observer. The whole day was audiotaped for later analysis, graphic input was filmed.

*Case presentation.* Each case owner got 15 minutes to present his case. The audience could pose short questions, but at this stage, the case was not yet discussed. Then, the researchers gave background information about the workshop that followed and the audience split up. Each case owner was seated at a table together with two participants from the other companies, plus one researcher. In this way, all companies could share their cases with each other.

*Workshop part 1.* The first part of the workshop served as a tool to discuss the role the company intended to fulfill in the future, while taking external developments and internal requirements into account. It was based on the Cyclic Innovation Model (CIM) (Van der Duin et al., 2007). Main topics of this workshop were: ‘*Innovation and the future – where are we going to? Internal ambitions and external trends*’; ‘*Innovation is a process – which roads do we take?*’ and ‘*Innovation is a joined activity – who are our companions?*’ as a first step. Discussing the topics, the participants developed the requirements together. In a second step, these were made more specific and the necessary future activities of the company concerning technological research, product creation, scientific explorations and market transitions were laid down. All findings were visualized progressively on prepared sheets. Workshop part 1 and 2 took two hours each.

*Workshop part 2* focused on the partner network that is needed to carry out the networked innovation project. We used Value Flow Modeling (Den Ouden, 2012) and (Den Ouden and Valkenburg, 2010), a method to build networks that aims at a balanced gain for all partners in a business ecosystem. During Value Flow Modeling, the same combination of participants was maintained. Starting from the original value proposition of each company, the case owner and the other participants were asked to

draw the innovation network that would make the value proposition work. Special attention should be given to the roles and needs of all partners involved, but also to the different sorts of value that were involved. Value did not have to be exclusively financial, but the different values had to be balanced for all partners to create a sustainable business model. The partner network and the value flows between the partners were drawn on whiteboards and the different value flows (physical goods and services; information; money; intangible value) were color-coded by the participants. The first version was the network as seen by the case owner. Through discussions between the participants, new partners were introduced and/or the position of partners in the network was changed. During this workshop, the development of the partner network in a map was also filmed. The goal of the Value Flow workshop was to create awareness about the multiple stakeholders within a value network, to make the value flows explicit and to discuss how the network could be improved.

*Evaluation.* The workshop closed with a plenary evaluation. The participants were asked to reflect on the day: how they experienced discussing their cases together with other companies, and if this led to new insights. They were also asked if they found the used method suitable for their problems.

### 3 METHOD

All parts of the workshop had been audiotaped. They were transcribed and analyzed using a QDA program. The different stages of the analysis, such as tagging network partners and detecting topics (which formed the start of the analysis), but also the summaries that have been made about different discussion topics, were triangulated in cooperation with two other researchers: the tagging was repeated by them on different data samples and the number of matching tags was checked. The summaries of discussion topics were verified in the following way: each step in the process of making the summaries was noted. Then, this step-by-step approach was presented to the triangulating researchers and discussed on behalf of its logic. Finally, the content of the summaries was discussed between the researchers, which resulted in a few corrections.

To determine to which extent the workshop approach worked, we checked the developments in topics and network partners from the baseline interviews through case introduction and the two workshop parts. We needed to check in detail if, and how, the partner network changed throughout the workshop – concerning the partners themselves as well as concerning the content related to them. Comparing large text entries seemed too poorly organized given the amount of information we had got. We therefore structured the information systematically so that changes in content and links between content and partners could be visualized. In this paper we show only schematic representations of the structuring and not the original content. We made the following distinction concerning network partners: the case company was tagged as “case company” if the whole company was addressed; divisions of the case company were tagged as internal stakeholders by their name, whenever mentioned. Mother and sister companies were listed as well, but not as internal stakeholders. All other external partners were listed by their roles, such as “supplier”, “certification authority”, “end user” and so on.

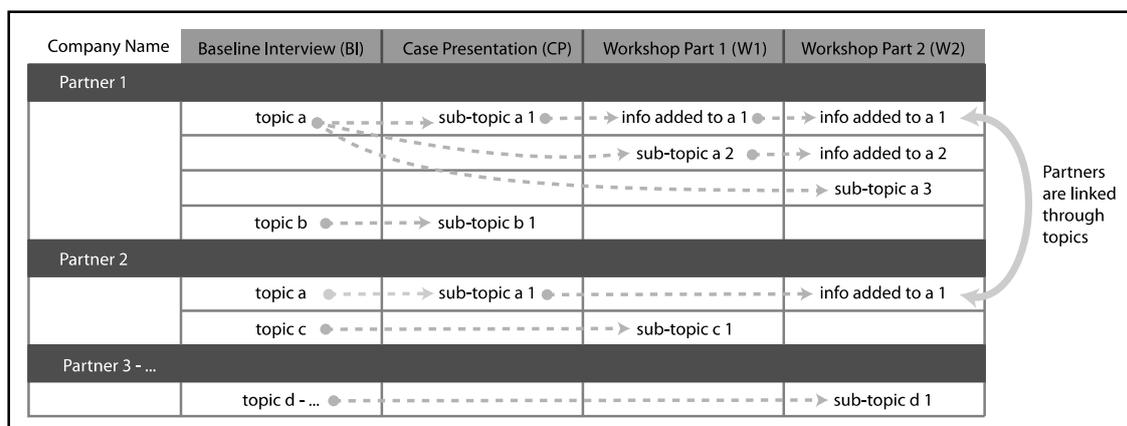


Figure 2. Charting network partners and topics across the workshop parts

Per company, all partners that have been mentioned were entered into a matrix (see Figure 2 for a schematic representation). It was subsequently filled with topics that arose in relation to a certain partner: information that added to, or repeated, an already mentioned topic was placed in the same

row. If new aspects to a topic arose ('sub-topic' in Figure 2), they were placed in additional rows. This resulted in an overview of the relevant topics in the networked innovation project, the way they were related to network partners, and how they developed during the workshop. The systematic charting enabled us to point out when a network partner is mentioned for the first time, and when again; if there are different topics related to them, and if the content of these topics changes. We can also see how network partners are linked through topics. However, we did not yet discern *how* this information was added, and *by whom*. We clarified this in the next step: we went back to the transcripts and coded in the matrix shown in Figure 2 who had made the contribution. There were four possibilities. New input could be given by: the case company solely; another participant; the workshop facilitator; the case company, but triggered by questions or remarks from a participant. The results were visualized in another matrix (Figure 3). We now can easily detect when a network partner has been mentioned for the first time, and when again, and who made the contribution.

To get a better picture of the developments in information content, the results of the workshops were sorted according to the questions from the first workshop part: the goal of the innovation case; challenges and influence factors (separated into: related to partners / product / process / market situation) and also the current approach of the company to the case. During the workshop, the picture of the future was discussed, taking into account internal ambitions and external trends. Suggestions for solutions to the challenges of the case were put forward. All important issues and/or new contributions during the two workshop parts were marked and inserted into the matrix shown in Figure 2.

Company Name	Baseline Interview (BI)	Case Presentation (CP)	Workshop Part 1 (W1)	Workshop Part 2 (W2)
Partner 1 [name]	fill in when the contribution has been made and by whom *			
Partner 2 [name]				
Partner 3 [name]				
...				

\* possible contributors: case owner | another participant | facilitator | case owner, but triggered by remarks of others

Figure 3. Charting in which session a network partner is mentioned and by whom

## 4 RESULTS

An atmosphere of trust arose quickly between the companies: they all shared confidential information to learn from each other and were willing to answer all sorts of questions. We think that the preparations contributed to this. The companies were all partners in a long-time research project, yet they did not know each other on a personal basis. For this workshop, we selected companies that had enough professional overlap to understand each other's problems, but we carefully avoided to select competitors. The companies either would have denied to do the session together with a competitor, or, they told us, they would have filtered sensitive information. When collecting the cases, we sought to reduce some of the still remaining original reluctance by keeping them all informed about the extent of information the other companies gave (though not about the content). A big step towards sharing confidential information was made during the case presentations: after the first presenter dared to acknowledge weaknesses, the overall attitude quickly shifted to sharing all kinds of information.

As mentioned in the introduction, our main question was if the understanding of networked innovation would improve by active sharing of experiences and insights among professionals in a guided approach, which focuses on innovation goals and the partner network.

During the baseline interviews and the case presentation, the companies brought up network partners at their own choice, without the intervention of another party. We can therefore use this information as a benchmark to see if and how the perceived partner network is changing during the workshops under the influence of other participants.

The three companies mentioned a limited number of partners (8 / 6 / 7, see Figure 4) during the baseline interviews and again during case presentation (company 1 and 3). The network partners of company 2, however, nearly tripled to 17. A reason might be that unexpectedly, the case presentation by company 2 consisted partly of a general presentation of the company (which was omitted in the

presentations by the other companies). Five of the 17 partners mentioned by company 2 in the Case Presentation had no role in the actual case.

During the two workshop parts (W1 and W2), the number of network partners remained quite stable and relatively high, between 13 and 16. This does not necessarily mean that the same partners are mentioned in both workshops, it happened that new ones were introduced and others were not mentioned again.

	Baseline Interview (BI)	Case Presentation (CP)	Workshop Part 1 (W1)	Workshop Part 2 (W2)	
Company 1	8	8 (8*)	15	13	* the number of partners actually in the case
Company 2	6	17 (12*)	15	15	
Company 3	7	7 (7*)	14	16	

Figure 4. The number of network partners per workshop part

	Baseline Interview (BI)	new partners added during			total
		Case Presentation (CP)	Workshop Part 1 (W1)	Workshop Part 2 (W2)	
Company 1	8	3	7	3	21
Company 2	6	5	4	4	24
Company 3	7	1	7	8	23

Figure 5. The introduction of new network partners during the workshop

Notably, we see the same tendency among the three companies (Figure 4): during the baseline interviews, a relatively small number of network partners is mentioned, which expands during the workshop.

The results (Figure 5) show that none of the companies introduced all their relevant partners at their own initiative, but that a significant amount emerged during the two workshops. One might argue that the case presentations were too short to give a comprehensive picture of the innovation project. There was, however, no time limit to the baseline interviews, which took between one and three hours. This indicates that the time factor has no influence on the given number of network partners.

introduced by:	Company 1				Company 2				Company 3			
	BI	CP	W1	W2	BI	CP	W1	W2	BI	CP	W1	W2
case owner	8	3	2	1	6	9	3	2	7	1	6	2
another participant			2	1								1
facilitator				1							1	2
case owner, but triggered by remarks of others			3			2		2			1	2

BI: Baseline Interview | CP: Case Presentation | W1: Workshop Part 1 | W2: Workshop Part 2

Figure 6. The way a new stakeholder has been introduced

In addition, we registered by whom a new partner was introduced. Four categories could be identified: introduced by (i) the case owner without interference of others; (ii) by another workshop participant without direct contribution from the case company; (iii) by the workshop facilitator without direct contribution from the case company; (iv) introduced by the case company, but triggered by a question or comment of a participant or workshop facilitator. The results are shown in Figure 6.

During CP, two new partners of company 2 emerged upon questions from the audience, the others were introduced without external influence. The case company still remained the main contributor of relevant partners. However, the fact that others were thinking along with the case company also resulted in new partners.

## 5 DISCUSSION

Altogether, the participants appreciated the approach. The described workshop was practiced on lengthy, well-worked cases which did not present surprises to the case owners. The participating

companies agreed that such an approach would be especially helpful when setting up new networked projects, with a core team of actual network partners as participants and an external facilitator. Compared to the baseline interviews and the case presentation, the information about the cases became much more nuanced. Not only were additional network partners introduced, the information about relationships became richer as well. The baseline interviews and, especially, the case presentation gave information about the case in a factsheet-like fashion: the goal of the case was described, main players were introduced, and main problems were presented. Yet, in several aspects the case presentations did not provide the information that was needed in order to comprehend if and why an influence factor became a challenge to the case.

## **5.1 Information changes during the workshops**

In the three cases, the same pattern emerged. The case presentation concentrated on the status quo of the project: network partners were named, but little was said about their role, their motivation or how the company interacts with them. During workshop part 1, the goals of the company in relation to future developments and the intended partners came into focus. This meant making explicit which partners were sought, and why – as a consequence, the number of mentioned network partners rose (Figure 4). In the second workshop part, new partners were added again, but now the main contributions to the content were that formal processes, interactions, motivators and attitudes between the partners were discussed. For every company, we want to illustrate with a few examples how knowledge was shared and how the information changed.

### **5.1.1 Unlocking implicit knowledge**

All case owners provided new information (that is, information that was not mentioned during baseline interviews and case presentation) upon questions or remarks of the other participants. The case owners were always able to contribute the information and to elaborate on it, which indicates that these were no new facts to them, but that the knowledge had been kept implicit. Considering that there was no time limit to the baseline interviews and that the case owners were encouraged to share all information they regarded as vital to the case, we can conclude that before the workshops, the information was not seen as relevant to share.

#### *Company 1 / Example*

The large company 1 needed to partner up with a certain type of supplier, consisting of thousands of SMEs spread across different countries. It intended to choose a number of companies among this group and make them partner. During the baseline interviews and case presentation, this fact was presented as a big challenge, but the reasons were not further elaborated. The questions of two other participants resulted in adding elucidating information: the internal organization of processes in the company did not permit larger investments to be made without an existing business case. Setting up a complex network during the fuzzy front end fell outside the scope of permissible business actions, even if it is critical to the future success of the company. In this example, facts that are well-known within the company are taken for granted.

#### *Company 2 / Example*

Airlines are a main customer of company 2. However, they were not mentioned at all prior to workshop part 1. From then on, several important facts were elaborated about them: the way the relationship between airlines, OEMs and company 2 influenced a networked innovation project; the difficulty, including the reasons, to introduce innovations to the airlines; and the intention of company 2 to offer in the future services to them instead of tangible products alone.

#### *Company 3 / Example*

The board of company 3 was not mentioned at all during the baseline interviews and case presentation. During the workshop and as a reaction to questions of a participant, the case owner revealed that middle management had screened the innovation case from the board during an extended phase of the development. Would the board have known, they would have terminated the case immediately, as it did not fit into the innovation policy of the company. However, in the course of time and due to changing external circumstances, the attitude of the board had turned and the innovation case was now

fully supported. As a consequence to the late support, the involvement of much-needed network partners had been delayed for years.

### **5.1.2 From factual to relational information**

During the workshops, the content of the given information shifted from factual knowledge about a network partner or a situation (answering questions as ‘who?’, ‘what?’, ‘how big?’, ‘how important?’) to more relational information (‘how does a situation influence the company?’, ‘how do the company and a partner interact?’).

#### *Company 1 / Example*

During the baseline interview, company 1 identified its suppliers as the originators of technical innovation. The company subsequently integrated the innovations into their products. Suppliers were not mentioned during the case presentation, but emerged again during the workshop with a shift in the given information: the case owner admitted that suppliers were no real partners to them and that the relationship was unbalanced in favor of company 1. “...And we are squeezing our suppliers as far as we can. It is not a real partnership.”

#### *Company 2 / Example*

The case owner introduced OEMs as partner group for whom company 2 was currently working as a supplier. In the workshop, information about the relationship with the OEMs emerged: about the difficulties to introduce innovation concepts to them and how this group played a critical linking role between company 2 and the airlines. During the workshop, the focus shifted to the required procedures to offer products of company 2 via the OEMs to the clients.

#### *Company 3 / Example*

During the baseline interviews, company 3 introduced a potential partner to bring the innovation to market: he had to become a network partner and business models had to be developed together with him to be able to bring the innovation professionally to market. The reasons were not explained. There was no mentioning of him during the case presentation, but during the workshop parts the actual role of the partner became clear: he was needed as a “vault” between the case company and the clients of the product, who would not have accepted that company 3 (being partly their competitor) gets direct access to their data. Additionally, the names of companies that would be suitable to fill this position, were introduced.

## **6 CONCLUSIONS**

As mentioned, we studied the developments of the workshop with regard to three questions: (1) are companies willing to share confidential information in order to improve their networked innovation approaches?; (2) has the used method been successful in supporting the sharing of information?; (3) does the sharing of approaches lead to new insights about networked innovation?

### **6.1 Sharing information**

We saw three factors that made the approach work: (i) the setting has to be carefully prepared regarding trust issues; (ii) there is enough overlap in expertise to comprehend each other (‘speaking the same professional language’); (iii) companies realize the necessity to exchange information in order to improve their networked innovation approaches.

For different reasons, the companies preferred the mixed-company setting upon a closed one within their own company. They found that the inter-organizational approach had led to a more open discussion, because no hierarchies are to be protected, whereas the same discussions would immediately have been made a power-issue in-company. Having to ponder how to present a case to strangers was seen as an advantage, too: within a company, everybody plays his designated role and immediately delves into details, which makes that the big picture may get lost. And, finally, they found that the active exchange of different expert views opened one’s perspective.

### **6.2 The influence of a guided approach**

In our workshop setting we used design driven methods: parallel to discussing, each case was continually visualized by the participants during the different workshop stages. The underlying

structure of the workshop served as a reminder to deal with the different topics, but was unobtrusive enough to respect the individuality of a case. The participants commented on the ‘layeredness’ of all cases, and that the step-by-step visualization helped to distinguish these layers. They also provided suggestions for improvements: we begun with the goal setting and its conditions and concluded with building the partner network. The companies suggested that it would have been better to go back to the first workshop part and to elaborate on it further, after having obtained the insights from the value flow modeling. We will certainly consider to involve this additional step in the future. To come back to the initial question -has the used method been successful in supporting information sharing- we can conclude with the remarks of a participant: the workshop served as an external catalyst, which made one take the time to reflect upon innovation approaches, which otherwise would not have been done.

### **6.3 Are new insights created?**

We identified different ways how the original case information was enriched during the workshops. First of all, new network partners, both internal and external, are being introduced after the baseline interviews and the case presentations. We have no evidence that totally new partners, unknown to the company, were introduced. We neither can decide *why* a certain partner has not been mentioned before, apart from the fact that he was probably not yet seen as relevant by the case owner – the case discussions do not provide information about it. However, we *can* detect if the level of importance to the case has shifted during the workshop. During the workshops, the content of the given information shifted from factual knowledge about a network partner or a situation to more relational information. Especially during the modeling of value flows, new information about the relationships among partners emerged when motivators, interactions and attitudes were explained. During the baseline interviews and the case presentation, the cases from the three companies were presented almost in terms of closed innovation, as a goal of the own company where the involvement of a partner is rather a necessary evil. For the participants, who are accustomed to think about the networked project mainly from the perspective of their own company, stepping into the shoes of a network partner was difficult. Finding the motives and goals of the partners and imagining what they might expect as a gain from your own company did not come easy to them. As one of the case owners said: “Managing the context is the most critical part of networked innovation.”

### **6.4 Future work**

The companies found that the workshop gave them valuable insights which they want to augment. Upon their request, we are now preparing a second series of workshops with a different selection of companies.

Based on the findings of this and other studies within our long-time research project on networked innovation, we are now working on methods to facilitate networked innovation.

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