

Final report

Identifying Critical Stakeholders for Sustainable Products (WP-082)

This final report is public and may be used freely by TransForum participants.



Project goals & approach

The objective of this project was to identify the characteristics of stakeholders that are critical for take-off of sustainable products. This should produce knowledge about *how* the mix of stakeholders that TransForum (and similar institutions) aim to involve in innovative projects, has an impact on the success of innovations.

The project was divided into three studies. These three studies form the basis for three individual papers, which together are the core of a Ph.D. thesis (to be completed later, as was agreed upon at the start of the project):

1. A literature study that has the goal to describe how innovation success can be explained in the contexts of a stakeholder network. The outcome of this study suggested that we have to focus on the governance of innovation networks, to really understand how stakeholders are actually fulfilling their roles.
2. An explorative qualitative study using case studies was conducted to explain how innovation networks are actually governed. In that way we are able to find out how the stakeholders know which role they have to fulfill and how tasks are divided.
3. A quantitative study investigates the influence of stakeholder roles in collaborative innovation networks on the success of an innovation. This study is in a preliminary phase.

Thus, after the literature study, the focus of the project has somewhat shifted to a higher aggregation level: from studying the characteristics of stakeholders to studying how governance among stakeholders is achieved in innovation networks. This shift in focus was made in agreement with the Theme Coordinator for this TransForum scientific project. The background and design of the three studies is discussed in more detail below. Please note that the project will be continued to by the Institute for Management Research at Radboud University Nijmegen. The knowledge from the project will be further developed, and findings disseminated.

1. Literature study: *Explaining innovation success in the context of multiple stakeholders*

In an attempt to explain innovation success, most diffusion studies have focused on customers and ignored how other stakeholders might impact takeoff. Likewise, some social network theorists have studied the diffusion and takeoff of innovations, but in doing so they have

analyzed fairly homogeneous networks, usually customers or users of innovations, and sometimes firms. The underlying assumption in these studies is that innovation takeoff may be understood by only looking at *one* stakeholder group, i.e. customers or firms. However, observations from practice suggest that the development, launch and diffusion of innovations may involve a lot of different stakeholders. For example, the takeoff of soot filters may be better understood when we not only focus on car owners, but also take into account that governments, car manufacturers, research institutes and NGOs may have a major involvement in the development, launch and diffusion of the soot filters. Yet, the literature to date has largely ignored heterogeneous sets of stakeholders when studying innovation performance.

This study aims to fill this gap in the literature by presenting a conceptual framework that explains how a heterogeneous set of stakeholders influences innovation takeoff. Our framework draws on stakeholder theory and network governance literature

2. Explorative qualitative study: *An explorative study on what network governance in innovation networks entails: Towards a taxonomy*

Innovation projects are often undertaken by networks of organizations rather than individual organizations, due to a strong interdependency between organizational and technological competences and resources. This means that the relationships and resource exchanges between the network actors have to be governed in some way. This has spurred researchers to introduce the concept of network governance, defined as the combinations of governance mechanisms that coordinate resource exchanges, activities, and goal-setting in a network of interdependent firms. Thus, we view network governance as being made up of several governance mechanisms. The goal of this study is to explore what network governance entails by building a taxonomy based on several governance mechanisms. Moreover, this study should give insights into when a specific mode of network governance is more likely to emerge and what the performance outcomes of the different modes are.

We depart from prior research in three different ways. First, and in line with our definition of network governance, we argue that governance mechanisms should be studied in combination, as they may complement, substitute or exclude each other. Second, as governing networks refers to an activity, it makes sense to focus on what is actually done when governing a network. Yet, most research has focused on structural elements or remained conceptual. Our study is, to the best of our knowledge, the first empirical study that tries to explore combinations of behavioral governance mechanisms. Third, only few studies have looked at network governance from a multi actor perspective, rather than a dyadic or individual actor perspective. As networks may be

governed by joint effort of multiple actors, it seems important to take a multi-actor perspective on the network level when studying network governance.

For our exploration we employ a qualitative comparative case study design. Six innovation projects (four agribusiness and two transport projects) were selected as cases. Three cases fall under the TransForum program, the other three do not. Data collection includes 22 semi-structured interviews with network actors and 750 pages of secondary data.

3. Quantitative study: *The influence of stakeholder roles on innovation success*

This study starts from the assumption that innovation projects require a specific set of roles that are fulfilled by the stakeholders in order to increase the chances for innovation success. A role is defined as “a set of behaviors that are interrelated with the repetitive activities of others and characteristics of the person in a particular setting”. Roles represent behavioral patterns that become meaningful during the interaction with other stakeholders in the innovation network. Roles can be divided into task roles and into social roles. Task roles refer to knowledge and skills and are often associated with mostly goal-oriented behavioral patterns (such as work completion and problem solving). Social roles refer to solidarity and cooperation and are often associated with communicative behavioral patterns (such as coordination and persuasion).

In this study, we hypothesize that it is not only important to fulfill tasks roles, such as developing the innovation, but also social roles, such as communicating internally and externally. We used secondary data, that were collected as part of a related study, to test this hypothesis. The secondary data are about 189 innovation projects in the domain of energy transition that received a subsidy from the EOS program of Agentschap NL (previously SenterNovem). Of all 189 innovation projects, a document analysis has produced an inventory of the stakeholders involved. Furthermore, the secondary data contain survey data from a sample of 120 project leaders of the innovation projects and survey data from a sample of 52 project participants. In this way, we have a rich secondary data set at our disposal.

Summary of results

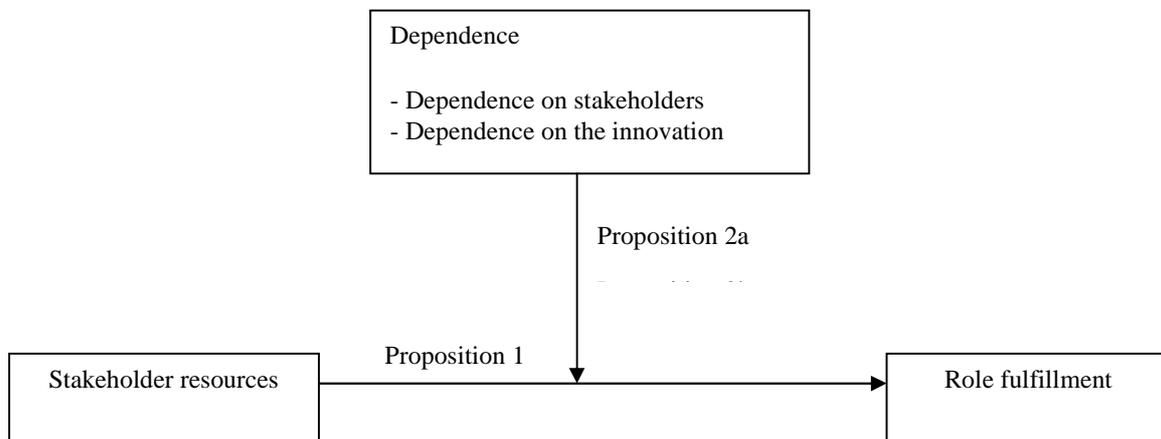
The results of the project will be discussed for each of the three studies below.

1. Literature study: *Explaining innovation success in the context of multiple stakeholders*

The results of the literature study imply that innovation takeoff requires a specific combination of resources that are brought together by a network of stakeholders. More specifically, takeoff

depends on stakeholders fulfilling specific roles in a specific combination and in a coordinated way.

Figure 1: Conceptual model resulting from the literature study



The literature study resulted into three propositions, with argumentation from the existing literature (see figure 1 for a graphical depiction of the propositions). We argue that stakeholders will undertake the activities that they are best at, i.e., for which they possess the needed resources. The underlying reason for this effect is that the stakeholders would like to obtain a competitive advantage or create value. The possession of resources is a precondition for the deployment of the resources, and makes it possible that stakeholders are able to fulfill specific roles well. This leads us to the first proposition: *Proposition 1: The more resources of a specific type a stakeholder has, the more effort he will put into fulfilling a role that makes use of the resources of this specific type.*

Moreover, stakeholders can be dependent on other stakeholders. The dependence of the stakeholders on other stakeholders shows itself in three different effects. First of all, the dependence results in the collaboration between the stakeholders. They have to work together on a joint project in order to let the innovation succeed on the market. Second, the dependence between stakeholders leads to the fact that resources have to be exchanged between stakeholders in order to make the innovation successful. Third, the dependence between stakeholders results in a situation in which the resources of the stakeholders have to be combined in order to create the most effective mix for the success of the innovation. We argue that the dependence of a stakeholder on other stakeholders would influence the behavior of the dependent stakeholder regarding the effort he will put into deploying the resources, i.e. fulfilling a role that is beneficial for the innovation. That means that the relationship between resources and roles would be

stronger if the stakeholder is dependent on other stakeholders. Therefore, we propose: *Proposition 2a: The relationship between resources and role fulfillment is stronger if the stakeholder is highly dependent on other stakeholders.*

Furthermore, stakeholders might be dependent on the innovation or the success of the innovation. There are several reasons why stakeholders might be dependent on the success of the innovation. The word ‘stakeholder’ already suggests that stakeholders have a ‘stake’ in the success of the innovation, i.e. they want the innovation to become successful on the market. A reason for this could be that the survival of the stakeholder is linked to the success of the innovation, e.g. an organization that invested all its money in the development of an innovation would be very dependent on the success of the innovation. That means that the innovation may be more important for one stakeholder than for another. Another reason might be that the stakeholder wants the innovation to succeed because he really appreciates the new product and sees a huge market potential. The effect of this form of dependence is that a stakeholder for whom the innovation is very important would do his best in order to contribute to the success of the innovation. That means that a stakeholder who is highly dependent on the innovation would put more effort into fulfilling a role than a stakeholder who is not that dependent on innovation success. This leads us to the following proposition: *Proposition 2b: The relationship between stakeholder resources and role fulfillment gets stronger if the stakeholder is highly dependent on the success of the innovation.*

A main conclusion of this study is that it is not enough that stakeholder *possess* resources, but that they also have to *use them* in the innovation project. Stakeholders will be more likely to use the resources, if they are either dependent on innovation success or other stakeholders. The study also showed us what we didn’t know. In order to really understand the interdependence between stakeholders, we shifted the focus of our analysis one level up and conducted a study at the network level. We would like to understand what the stakeholder network looks like, i.e., what relationships there are between the stakeholders. Furthermore, we would like to gain an understanding of how the network and the dependencies are managed.

2. Explorative qualitative study: *An explorative study on what network governance in innovation networks entails: Towards a taxonomy*

Results of the study show that governance mechanisms emerge in specific combinations. Furthermore, some mechanisms (planning, monitoring, coordinating communication) are applied in all of the cases. We therefore label them as basic governance mechanisms, which appear to be necessary to govern a network at all. However, not all networks are governed in the same way.

More specifically, we distinguish three modes of network governance. *Minimally-managed networks* do not use any governance mechanisms beyond the basic ones. The other two types of network governance do go beyond the basic governance mechanisms in different ways. *Control-oriented networks* focus on social control and sanctioning. *Reward-oriented networks* use mechanisms that focus on rewarding network actors for their achievements and on creating a stimulating atmosphere. We found that the choice for one of these modes is not entirely voluntary. For example, when asymmetric dependence is present, the network has to rely on the minimally-governed mode and cannot use any additional mechanisms. Furthermore, some factors make the emergence of a specific mode of network governance more likely, for example, in order to let the reward-oriented mode of network governance emerge, trust is needed. Apart from dependence and trust there are other factors that might influence the emergence of a specific mode, namely goal alignment, familiarity and type of leadership. Finally, we found that one mode has advantages over another under specific circumstances. We can give tentative insights on the relationship between the mode of network governance and performance (innovation success). We found that networks applying the reward- or control-oriented mode perform better than networks that only use the basic governance mechanisms. After having conducted this study we now know how stakeholder networks are managed and how the stakeholders know which role to fulfill. We moreover conclude that the management of the network has an effect on the performance of the innovation. In order to understand how the stakeholder roles influence innovation success, we conducted the third study.

3. Quantitative study: *The influence of stakeholder roles on innovation success*

This study is in progress, but preliminary results show that a division between task and social roles is important. We found that especially social roles have an influence on innovation success. *Persuasive communication*, i.e., the communication that is focusing on the promotion of the innovation and the building of contacts (a boundary spanning and legitimating role) has a positive influence on innovation success. Furthermore, *coordinating communication*, i.e., the coordination of tasks and communication with internal project partners, has a positive influence on innovation success as well. Based on these preliminary results, we conclude that it is very important that a stakeholder network pays attention to social roles, as these may have a strong influence on innovation success.

Societal relevance

Based on the results gained from our studies we see that stakeholder networks can be managed and that it is important to do so. The governance of stakeholder networks influences innovation success. The taxonomy based on different governance mechanisms gives an overview of what can actually be done, i.e. which mechanisms can be used, in order to govern a network. Our results have specific managerial implications, both for managers and institutions like TransForum:

- Network governance matters. Network actors and TransForum-like organizations should think ahead about the mode of network governance, as the modes have different performance outcomes. It is not only about finding the right mix of stakeholders (as we assumed at the start of the project), but also which mode of network governance is used.
- Having several governance mechanisms works better. It is advisable to make use of additional governance mechanisms instead of just applying the basic ones. We found that networks applying the reward- or control-oriented mode perform better than networks that only use the basic governance mechanisms. Therefore, managers are advised to think carefully about what specific mode of network governance they could and should use based on the intentions and preferences they have.
- The configuration of stakeholder roles is important. That means that attention should be paid to the total of roles that the stakeholders in the network fulfill. It is not only important that the innovation is for example developed and designed, but the internal and external communication is important as well. That means that roles such as boundary spanner, legitimizer and coordinator have to be present in the network in order to increase innovation success.
- Networks can be designed for success. Knowing that social roles have a positive impact on success, networks should be designed in a way that enhances the chances for success, i.e. the configuration of stakeholder roles has to be optimal and the governance of the network has to be ensured.

During our second study we gained insights into three TransForum projects and therefore we also learned what such an institution can mean for a project. We argue that TransForum has fulfilled a role in the stakeholder network formed around a specific project. Respondents told us that the presence of TransForum had an added value for the project. Reflection sessions organized by TransForum were valued very much and respondents argued that they learned a lot

from these sessions. For example, it was said that due to these sessions the motivation in the network increased, and it was important to also see what each others' stakes in the project are. Furthermore, a feeling of togetherness and a shared vision could be created. Another issue that was highly appreciated by the respondents was TransForum's network and the contacts it has. TransForum was able to bring stakeholders in contact with each other due to the big network that the organization has. That means that TransForum fulfilled the stakeholder role of a boundary spanner in the network.

Publications

Because the shift in focus, some delay has occurred. Please find an overview of planned and realized output below.

Books

Janzen, K. (2012). *Dissertation (title unknown)*. In preparation

Journal articles

Ziggers, G. W., Gagalyuk, T., & Hanf, J. (forthcoming). Network Governance at the firm and network level: goals, routines and social mechanisms. *International Journal of Foodsystem Dynamics*

Janzen, K., Hillebrand, B., Ziggers, G.-W., Driessen, P. H., & Bloemer, J. (in preparation). An explorative study on what network governance in innovation networks entails: Towards a typology. Targeted at *Organization Studies*.

Janzen, K., Hillebrand, B., Driessen, P. H., Ziggers, G.-W., & Bloemer, J. (in preparation). Explaining innovation success in the context of multiple stakeholders.

Janzen, K., Hillebrand, B., Driessen, P. H., Ziggers, G.-W., & Bloemer, J. (in preparation). The influence of stakeholder roles on innovation success.

Presentations

Driessen, P. H., & Hillebrand, B. (2009). *Special Interest Group on stakeholder marketing*. Presented at the EMAC Conference, Nantes, France, May 24, 2009.

Driessen, P. H., & Hillebrand, B. (2010). *Special Interest Group on stakeholder marketing*. Presented at the EMAC Conference, Copenhagen, Denmark, June 4, 2010.

Janzen, K. (2008). *Identifying Critical Stakeholders for Sustainable Products (Ph.D. research proposal)*. Presented at the Radboud University Nijmegen, Nijmegen, The Netherlands, December 15, 2008.

Janzen, K. (2008). *The Impact of Stakeholders on the Takeoff of Sustainable Products*. Presented at the PREBEM Conference, Amersfoort, The Netherlands, November 10, 2008.

Janzen, K., Driessen, P. H., Hillebrand, B., Ziggers, G. W., & Bloemer, J. (2009). *The Impact of Stakeholders on the Take-off of Innovations: A Conceptual Framework*. Presented at the EMAC Conference, Nantes, France, May 24, 2009.

Janzen, K., Driessen, P. H., Hillebrand, B., Ziggers, G. W., & Bloemer, J. (2009). *The Impact of Stakeholders on the Take-off of Network Innovations*. Presented at the Research seminar series in relationship management, Radboud University Nijmegen, Nijmegen, The Netherlands, May 19, 2009.

Janzen, K., Hillebrand, B., Ziggers, G.W., Driessen, P. H., & Bloemer, J. (2010). *An explorative study on what network governance in innovation networks entails: Towards a taxonomy*. To be presented at 5th International European Forum on Innovation and System Dynamics in Food Networks, Innsbruck-Igls, Austria, February 14-18, 2011.

Ziggers, G. W., Gagalyuk, T., & Hanf, J. (2010). *Managing Network Goals: The Interplay of Network and Firm Levels*. Presented at the 4th International European Forum on Innovation and System Dynamics in Food Networks, Innsbruck-Igls, Austria, February 8-12, 2010.

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Appendix

In addition to the preliminary report delivered in November 2007, several deliverables were mentioned in the proposal. The table below elaborates on each deliverable.

Deliverable	Realization	Files
Theoretical models of the impact of stakeholders on the diffusion of sustainable products.	See results of the literature study in this final report. For richer detail and background of the models: Powerpoint presentation, presented at the 2009 EMAC conference	EMAC2009.ppt
A dataset of the market success of various sustainable innovations and stakeholders.	Realized in a different form – in agreement with theme coordinator – because of the shift in focus of the project: <ol style="list-style-type: none"> 1. Inventory document for case study selection, contains overview of potentially interesting cases 2. Overview of case data about network governance from the qualitative study, with governance mechanisms used, performance, and description 	<ol style="list-style-type: none"> 1. Inventory.doc 2. Casedata.docx
Presentations at academic conferences	<ol style="list-style-type: none"> 1. PREBEM conference 2008 2. European Marketing Academy doctoral colloquium 2009 3. European Marketing Academy conference 2009 4. IGLS/International European Forum on Innovation and System Dynamics in Food Networks 2010 5. IGLS/International European Forum on Innovation and System Dynamics in Food Networks 2011 <p>In addition, a Special Interest Group on stakeholders in marketing was organized twice during the EMAC conference, to discuss recent insights in the field.</p>	<ol style="list-style-type: none"> 1. Prebem.ppt 2. EMAC2009dc.ppt 3. EMAC2009.ppt 4. IGLS2010.ppt 5. (in preparation)

Deliverable	Realization	Files
Presentations for practitioners and participating organizations upon request	Not applicable (no requests received)	Not applicable
Papers submitted to top journals in marketing, strategic management, and/or innovation management	<p>Some delay because of change in project focus:</p> <ol style="list-style-type: none"> 1. An explorative study on what network governance in innovation networks entails: Towards a taxonomy (draft paper, not for distribution) 2. Network Governance at the firm and network level: goals, routines and social mechanisms (accepted for publication in <i>International Journal of Foodsystem Dynamics</i>) <p>Future papers (p.m.):</p> <ul style="list-style-type: none"> - Explaining innovation success in the context of multiple stakeholders - The influence of stakeholder roles on innovation success 	<ol style="list-style-type: none"> 1. Draftpaper.doc 2. IJFDS.doc
A doctoral (Ph.D.) thesis (the project is part of a Ph.D. project, which is to be completed one year after the end of the project described here).	Not applicable, to be completed in 2012, in accordance with the project proposal. Preliminary results are summarized in this report.	Not applicable
Through the intensive contact with stakeholders involved in sustainable products during the data collection, we will build a network of interested parties. The knowledge generated in this project will be disseminated among the network members by 'research briefings' and a workshop	Network building has been informal and delayed because of the change in project focus. In January 2010, however, a workshop was held in cooperation with EIM and SenterNovem as a proof of principle	Not applicable