Stakeholder management in complex product systems: Practices and rationales for engagement and disengagement

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ABSTRACT

Collaboration with stakeholders has become a cornerstone of contemporary business; however, absolute collaboration is not trouble-free. The present study explores how and why firms engage and disengage external stakeholders in their value-creating activities in complex product systems over time. From the existing research on stakeholder management, we know that actor roles, strategies, reasons and challenges of engaging external stakeholders in innovation and business activities vary across contexts. However, additional research is needed to construct a more comprehensive understanding of the practices as well as their rationales by which firms engage or disengage external stakeholders in complex product systems. Our empirical study of a European district development megaproject improves the current understanding of stakeholder management in complex product systems contexts. We derive nine practices and four rationales that timely describe the engagement and disengagement of external stakeholders. The study develops a processual model of stakeholder management in complex product systems with implications for both stakeholder management literature and managerial practice.

1. Introduction

Business and management research has focused increasing attention on external stakeholder engagement in business activities in different contexts, including innovation management (Mol & Birkinshaw, 2014), marketing (Lacoste, 2016), complex product systems (Hobday, Rush, & Tidd, 2000), service-based value creation (Töytäri, Rajala, & Alejandro, 2015), project management (Missonier & Loufrani-Fedida, 2014) and supply chain management (Mackelprang, Robinson, Bernardes, & Webb, 2014). These studies emphasize the increasingly collaborative nature of value creation in contemporary business (Filieri, McNally, O'Dwyer, & O'Malley, 2014), where organizations are more dependent than ever on external resources and inputs in meeting complex market needs (Lusch, Vargo, & Tanniru, 2010). In addition to internal stakeholders who belong to the formal decision-making coalition of a complex system (Cova & Salle, 2005) external stakeholders' participation in value-creating and decision-making activities can be crucial for firm performance and long-term survivability (Reypens, Lievens, & Blazevic, 2016).

Previous research of stakeholder management in the context of complex product systems (CoPS) is founded on a firm-centered perspective, in which stakeholder engagement is explicated from the perspective of a single firm, where the focus is on the performance outcomes of that firm emphasizing its value capture possibilities. This research has explored the distinct reasons for a firm to engage external stakeholders (Scott & Lane, 2000), the varying roles of actors in the system (Cova & Salle, 2005), and the engagement strategies utilized (Aaltonen & Sivonen, 2009). Also, the challenges of engaging external stakeholders have been studied extensively (Aaltonen, Kujala, Havela, & Savage, 2015).

Recent advancements have shifted to a network-level perspective (Rampersad, Quester, & Troshani, 2010), in which stakeholder engagement is explicated from the incorporated views of a network of actors. This has been supported by a systemic view that shifts the outcome focus to system-wide benefits, such as joint benefits to a network of actors and overall value created for the system (Meynhardt, Chandler, & Strathoff, 2016). This research has explored factors and conditions that can lead to effective engagement of a network of stakeholders (Rampersad et al., 2010), the influence of different forms of engagement interaction (i.e. collaboration and cooperation) (Nissen, Evald, & Clarke, 2014), and, the varying generic engagement processes that can lead to systemic value outcomes (Reypens et al., 2016).

While recent advancements have advocated the benefits of engaging external stakeholders, it is clear that less attention has been directed to the disengagement of external stakeholders, and particularly to the interaction of stakeholder engagement and disengagement over time,

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which can be considered a salient feature of governing a complex product system. To augment the explanatory power of previous research in the field, we analyze inter-organizational practices and rationales, through which internal stakeholders engage in and disengage external stakeholders from the decision-making and value-creating activities in a complex product system over time. By inter-organizational practices, we mean the routines and activities that occur at a detailed, fine-grained level between different stakeholders, including both internal and external sides. Moreover, we investigate the schemes of reasoning, the rationales, for engaging and disengaging external stakeholders timely in CoPS. We pose the following research question for our empirical analysis: How and why do internal stakeholders engage and disengage external stakeholders over time in a complex product system?

To address our research question, we have taken on a qualitative and inductive research approach. Specifically, we utilized stakeholder theory as a lens for our theory elaboration approach (Ketokivi & Choi, 2014). We drew on a single case study design, and conducted loosely structured interviews with informants from several organizations over many years. We also gathered archival data for triangulation purposes. Our case context is a district development megaproject located in Europe inside a metropolitan area. Megaprojects that contain physical constructs, intangible services or hi-tech engineering solutions and systems (Flyvbjerg, 2014) are special cases of CoPS (Hobday et al., 2000). Hence, a megaproject provides a highly dynamic, multi-actor environment, which is suitable for our empirical enquiry. This megaproject started in 2004 and is estimated to be completed in 2020. The district is known as a spacious garden district and a cultural cradle of the metropolitan area. The cultural and historical heritage is to be valued and preserved in the development project. The scope of the megaproject is to demolish the entire district center and rebuild a commercial shopping center and residential complex with multiple modern transportation facilities as well as an environment that conveys the cultural heritage of the area. The total development volume over the project's lifecycle exceeds EUR 3.4 billion.

In the empirical study, we found distinct practices that the internal stakeholders employed to engage the external stakeholders in the decision making and further development of the megaproject. Conversely, we also found practices used to uncouple the external stakeholders from the decision-making process of the megaproject. In addition, framing of the system, legitimating the governance structure of the system, maintaining dynamic stakeholder interaction in the system, and expanding the design rights within the system, were identified as rationales for whether or not to engage the external stakeholders in a timely manner. Our study has three major contributions for stakeholder management literature. First, our findings highlight the crucial role of timely disengagement of external stakeholders in governing CoPS. This means that while it is certainly true that stakeholder engagement is important for overall value creation and system-wide benefits in CoPS contexts, it is just as important to timely disengage external stakeholders for reaching the systemic outcomes. Second, our four novel rationales are empirically driven and bound to the lifecycle of CoPS forming a processual description, which elaborates the more theoretically oriented general rationales found in literature in this specific context of CoPS. More importantly, our findings suggest a temporal ordering for these schemes of reasoning and show how the rationales may change when the CoPS proceeds on its lifecycle, providing new knowledge of the justification for engaging and disengaging stakeholders timely from a systemic view. Third, our overall findings provide new fine-grained understanding of the nuances of stakeholder management in CoPS contexts, particularly, by adding causal logics, empirical grounding and elaborating new conceptual relationships.

The paper is organized as follows. First, we review stakeholder management literature in CoPS contexts as the necessary background for our research. Next, we outline the research design, methods and analysis protocol for our empirical enquiry. We then provide a synopsis of our key findings in form of a narrative with necessary results-figures. We conclude by discussing and translating our findings into theoretical contributions and practical implications for managers along with research limitations and future research suggestions.

2. Background for research

2.1. Rationales for stakeholder engagement and disengagement

Stakeholder theory (Parmar et al., 2010) ultimately deals with the question of how different stakeholders should be managed and taken into account in a firm's decision-making. However, the presented rationales and approaches for stakeholder engagement and disengagement have differed considerably across different schools of thought.

The dominant traditional instrumental approach in the context of CoPS assumes a bargaining mode by adopting the "management of stakeholders" perspective (Donaldson & Preston, 1995). It focuses on a single firm's performance outcomes and value capture in dyadic stakeholder relationships, highlighting the boundaries of decision-making between internal and external stakeholders. In this discourse, the rationale for stakeholder engagement is the prioritization and balancing of most salient stakeholders' interests and requirements in a manner that ensures the attainment of the goals of the single firm (Mitchell, Agle, & Wood, 1997). Frooman (1999) accentuates the resource-based view as rationale for engaging stakeholders, where stakeholders are considered merely as valuable resource and information providers for the firm's self-centric purposes. The identity-based rationales for stakeholder engagement have broadened our understanding of the symbolic role that stakeholder involvement may play in the formation of desired organizational identity (Scott & Lane, 2000). Instead of value contributors, external stakeholders, such as citizens' associations, are often portrayed through a conflict-driven approach and considered in a negative light as an opposing and homogeneous group of actors who should be approached primarily through disengagement or symbolic engagement (Aaltonen & Kujala, 2010; Ritvala & Salmi, 2011; Rowley & Moldoveanu, 2003). The disengagement of non-salient stakeholders is therefore considered as rational, since the engagement of those actors who do not possess critical resources for the project' survival is not beneficial from the perspective of the focal firm (Eskerod, Huemann, & Ringhofer, 2015). Aaltonen and Kujala (2016) in turn show that the rationales to use certain strategies to engage or disengage external stakeholders in CoPS have revolved around short-term related project efficiency indicators of time, budget and scope.

Contemporary business, however, increasingly shifts toward the collaboration of multiple actors, including a combination of for-profit and non-profit actors (Filieri et al., 2014). In line with this change, the more modern systemic approach emphasizes the importance of shifting from the management of stakeholders to the broad engagement of stakeholders (Meynhardt et al., 2016). This perspective focuses on system-wide benefits and overall value created for the network of actors, where even the peripheral or external stakeholders' participation in value-creating and decision-making activities can be crucial for firm performance and long-term survivability (Reypens et al., 2016). For instance, the value of peripheral stakeholder engagement in the development and diffusion of new ideas and innovations has been found to be an important rationale for stakeholder engagement in the context of new product development and innovation research, where the concept of open innovation has gained particular prominence (Aarikka-Stenroos, Jaakkola, Harrison, & Mäkitalo-Keinonen, 2017). Moreover, a shared knowledge base and knowledge sharing have been identified as rationales for stakeholder engagement in Public-Private-Innovation processes (Nissen et al., 2014). Further, Rampersad et al. (2010) found that the rationale for stakeholder engagement in innovation networks is to distribute power and create trust among stakeholders that eventually lead to network-level efficiency. Finally, the institutional perspective has highlighted the role of stakeholder engagement in the formation of

organizational legitimacy and reputation (Orr & Scott, 2008). Nevertheless, the knowledge of the rationales for stakeholder engagement, and particularly for stakeholder disengagement in systemic perspective is rather limited and unilateral. Understanding these rationales in-depth is relevant for developing a more contextualized understanding of stakeholder management in CoPS.

2.2. Temporal dynamics of stakeholder engagement and disengagement in complex product systems

There exists a broad spectrum of stakeholder management strategies ranging from disengagement through symbolic engagement, to genuine engaged participation, where stakeholders can truly affect the decision-making processes of CoPS (Eskerod et al., 2015). Research has identified various general strategies to include external stakeholders into an organization's decision-making processes (Aaltonen & Sivonen, 2009), although empirical and, in particular, processual investigations on the actual practices through which these strategies are enacted in the context of CoPS have been more limited. In their empirical analysis of two complex projects, Aaltonen et al. (2015) show how proactive influence strategies consisting of active dialogue and early stakeholder engagement shifted the opposing external stakeholders into neutral ones, and also provide early indications of how the use of stakeholder management strategies may actually change over time. Savage, Nix, Whitehead, and Blair's (1991) and Olander and Landin's (2005) typologies also suggest that managers should differentiate their stakeholder management strategies based on the position and attributes of stakeholders. For example, collaboration and informing strategies can be used to increase the most crucial stakeholders' degree of supportiveness, while the strategy of defending can be used to decrease the power of non-supportive stakeholders (Olander & Landin, 2005; Savage et al., 1991).

Even though stakeholder management literature offers a set of tools and frameworks for stakeholder analysis and classification, decisions on whom to engage in the decision-making, as well as when and how to engage them, are highly challenging in practice and also constantly debated among scholars in the field of CoPS (Eskerod et al., 2015). For instance, Missonier and Loufrani-Fedida (2014) argue that transparency and broad engagement of external stakeholders as early as possible contribute to a successful CoPS as all stakeholders' opinions and interests are incorporated into the success criteria and objective definition. However, in practice, many practitioners experience this kind of boundaryless and inclusive approach to stakeholder management as extremely resource-intensive and costly, and they perceive the risk of extremely painful and challenging decision-making with lock-ins and dead ends (Aaltonen & Kujala, 2010). Therefore, exclusion and disengagement approaches can also be favored during the early lifecycle phase by the internal stakeholders to secure the go-decision for the CoPS (Flyvbjerg, 2014).

In practice, the internal stakeholders in CoPS have the complicated task of balancing, and still timely engaging, a heterogeneous group of external stakeholders, ranging from authorities to neighborhood associations, who often have conflicting goals (Lundrigan & Gil, 2016). Prior research on stakeholder management strategies, however, tends to portray their use as rather static and dependent on the attributes of the stakeholders instead of associating the rationales for the engagement and disengagement to the actual context of the developing multi-stakeholder system. Consequently, what are almost completely missing in prior literature are in-depth and fine-grained portrayals of how external stakeholders are engaged and disengaged over time in practice, and how the interplay of engagement and disengagement practices may unfold over time. Furthermore, what makes stakeholder management particularly challenging in the context of CoPS is the evolving inter-organizational nature of operations. In this context, the practices that are employed to engage and disengage external stakeholders are not enacted and coordinated by one single organization in a dyadic

relationship with its stakeholders, as suggested in the traditional hub-and-spoke stakeholder models (Fassin, 2009), but are formed and enacted through the interactions of internal, and even external, stakeholders in a networked setting. The temporal dynamics of stakeholder engagement and disengagement over the system lifecycle and deciphering the paradox of engaging versus disengaging external stakeholders are therefore particularly important for developing a more contextualized understanding of stakeholder management in CoPS.

3. Research method and analysis

We investigate CoPS in a megaproject context with a theory-elaboration approach (Ketokivi & Choi, 2014). We approach this context using stakeholder theory as a lens and seek to deepen existing concepts and their relationships regarding engaging and disengaging external stakeholders, using empirical context and theory concurrently in a balanced manner. In so doing, we employ a single-case study design. Following the principles of theoretical sampling (Eisenhardt & Graebner, 2007), we selected a district infrastructure development megaproject as our case context. We consider this kind of a megaproject as a theoretically suitable context for this study, because it involves highly dynamic, inter-organizational and temporary nature of operations that enable to illuminate and deepen existing concepts and their relationships regarding engaging and disengaging external stakeholders.

3.1. Case context

Our case context is a district development megaproject located inside a European metropolitan area that started in 2004 and is scheduled for completion in 2020. The initial plan was modest: renovate two district center buildings and enhance the district center's streets with new pavement flagstones and streetlights. However, the scope gradually expanded during the project's lifecycle. The final plan is to demolish and rebuild the entire district's center area. This means the demolishment of five massive buildings and rebuilding of a new commercial shopping center and residential (e.g. luxury condos and apartments) complex with modern transportation and surveillance facilities, including a new metro station, centralized car parking for over 2000 vehicles, a centralized area surveillance and a new regional main bus terminal. All these new facilities are integrated together with several park-and-ride systems and other interfaces. The new complex includes 12 stories (stories in underground, ground and above ground levels) spread across five massive buildings.

This district is internationally famous for its spacious garden district ambience and for being the cultural cradle of the metropolitan area. The district's architecture highlights post-war modernism: famous center tower, public pool and fountains (ice-rink in winter), culture center, modern art museum, theater, library and many other cultural subjects that all served inhabitants during the World War II recovery period. This cultural heritage is to be valued and preserved in the project at the national level, which contributes to a very complex stakeholder environment.

The Park City (pseudonym) and a major investor of the megaproject, a real estate investment and development department of Insurance Company (also a pseudonym), are the owners of the project who together invest more than 3.4 billion euros. In 2004, the project involved only few stakeholders, which included the real estate owners of the district center and the department store tenants. However, during the gradual expansion, the stakeholder network broadened to several stakeholders including new customers, real estate owners, resident's association, political actors, contractors, end-users, private investors, consultant and architect and designer companies. We introduce the megaproject's stakeholders (pseudonyms) with a short description of their role, whether they are internal or external stakeholders, and our collected interview data in Table 1.

Table 1
Stakeholders participating in the case project and related interviews.

Stakeholder name	Brief description of the role in the case	Interviewees	Interview years	Total interviews 27
Insurance Company	A real estate investment, owner and development department of a large insurance corporation with a strong ownership and interest in the studied district, also the main investor and developer of the megaproject (Internal stakeholder)	• CEO † • Real estate investment manager • Fund manager • Head manager of real estate investment † • Manager of real estate development † • Real estate manager † • Shopping center manager	2011*, 2015****	11
Architect Company	An architect company nationally known for its many recognized designs and references, hired by Insurance Company and Consultant Company. This architect company was responsible for master planning and designing the new complex's single building architectures as well as the new bus terminal (Internal stakeholder)	• Architect (partner) • Architect	2012**, 2015****	2
Designer Company	A famous design and architect company in the metropolitan area, hired by Insurance Company and Park city. This actor was mainly responsible for reference planning and designing the underground parking facility in the project (Internal stakeholder)	•	–	–
Consultant Company	A nationally recognized project management and real estate construction consulting company hired by Insurance Company and Park city to aid in project planning, supervision and execution (Internal stakeholder)	• Consultant (partner)	2015****	1
Residents' Association	Organization for promoting residents' the interests and opinions in the district area and its development. Members are protective when it comes to the district's cultural heritage and environment (External stakeholder)	• Chairman • Member	2012**	1
Park City	The district is located in Park City's area; this actor is the original project owner who sought for a development project already in 1990's. Park City also has some real estate ownership in the district center and is responsible for the socio-political regulations in the development project (e.g. land use fees, construction rights etc.) (Internal stakeholder)	• Project manager † • Property manager • Leader of urban planning unit • Trade promoter • Development director • Chairman of the urban planning unit board †	2011*, 2012**, 2014***	8
Local Cultural and Environmental Bureau	A local government authority with the purpose to preserve and protect historical and cultural heritage and particularly in this district (External stakeholder)	• Department manager • Senior specialist	2012**	1 (Joint interview)
End-users (inhabitants and individuals interested in the project)	All the former, existing and new individuals, inhabitants or users of the district and its services, who pay interest in the development project (External stakeholder)	• Inhabitant (Retired architect)	2011*	1
Customers (commercial and residential tenants)	The former, existing and future customers of the district, including various commercial, non-commercial and residential tenants, entrepreneurs and housing investors (External stakeholder)	• Director of the department stores in Nordic and the Baltic countries	2016****	1
Regulatory agencies and authorities	Different regulatory agencies and authorities such as: Building inspection and Surveillance authority, Urban planning authority, National cultural and environmental bureau and Construction office, whose regulatory demands are justified by law	•	–	–
Railway company	Railway company whose purpose is to construct the metropolitan's new metro extension, and thus it is responsible for developing the new metro station in this particular district and negotiating with this district's development project and various organizational and technical interfaces (Internal stakeholder)	• Former CEO	2016****	1

Interviewed twice †.
Interview round 1) *, round 2) **, round 3) ***, round 4) ****.

Our study analyzes and describes the megaproject from the perspective of internal stakeholders' (Insurance Company, Park City, Designer Company, Architect Company and Consultant Company) key representatives. Our analysis investigates the context from the early project initiation 2004 up to the mid project execution and early operation in 2016.

3.2. Data collection

We collected data through loosely structured interviews that lasted approximately 60 to 90 min. We supported our interview data by collecting an archive of open and closed access data for triangulation (Jick, 1979). We selected knowledgeable informants purposefully (Denzin & Lincoln, 2005), and during the interviews we used the snowball sampling method (Biernacki & Waldorf, 1981) to identify other knowledgeable interviewees. We interviewed some informants more than once, as they were extremely relevant informants in multiple times and were key personnel related to significant events in the case context. We interviewed nine organizations from both internal and external stakeholders' side, and persons in several different roles to cover a large range of different perspectives for transverse coverage and reduced bias. In total, we organized four interview rounds that ensured longitudinal data coverage and limited post-hoc rationalization. We audio recorded and transcribed interviews for further analysis.

We had a common interview guideline agreed among interviewers. First, we focused on the interviewee's personal history and career background in the studied organization and project. Next, we asked the informant to provide her/his own rich unfiltered narrative of the project event by event. We focused on interviewee's own interpretation of all kinds of stakeholder interactions: decisions, actors, events, actions and activities that included multiple actors with as accurate dates as possible. We intervened with open-ended and guiding follow-up questions to stimulate dialogue, keep focus and gather details. We fostered a confidential, transparent and communicatively active atmosphere. We also utilized a critical incident technique (Flanagan, 1954) by asking the interviewee to memorize certain positive or negative events during the project to advance our understanding of the temporality of significant stakeholder related events and activities.

We also collected a data archive of documented material retrospectively from 2004 and then in real time from 2011. The archive contains more than 200 unique sources of newspaper articles, project reports, presentations, brochures, company reports, and detailed plans. We used this data for triangulation (Jick, 1979) and for producing a valid background information. In practice, we verified the chronology of key events, actions, decisions and activities that had a crucial role in how the project and its stakeholder landscape developed.

3.3. Data analysis

We conducted an inductive thematic analysis of the interview data (Braun & Clarke, 2006) in three phases. Simultaneously, we used archival data for triangulation. We performed the analysis at the organizational-level using ATLAS.ti and MS Office software.

In the first phase, we inductively recognized general themes and patterns from raw interview data to produce a broad depiction and proper background comprehension of our research context. The different themes and patterns were recurring and non-recurring activities, actions, events, relationships and roles described at a very empirical level (i.e. descriptive phrase or quotation) with as accurate timestamps as possible, ranging from years to exact dates. For example, different project and company meetings, and operation plans. We first analyzed from single stakeholder and interviewee perspective and then combined the different accounts to reduce biases. We concurrently triangulated the timestamp information from our data archive whenever possible to ensure the trustworthiness and chronology of our descriptions.

In the second phase, we identified the practices that internal

stakeholders used to engage and disengage external stakeholders based on the previous analysis phase's empirical themes and patterns. We developed these practices with the information of who did, what, how, why, when, where, with whom and to whom, to provide fine-grained descriptions. For instance, in 2004, the Park City's Development director and Property manager and Insurance Company's former CEO founded a joint decision-making board together with other real estate owners to draw the stakeholder boundaries into internal and external, and ease planning procedures through more unified decision-making. We reflected similarities and differences among the practices to distil them properly from each other.

In the third phase, we interpreted and developed more abstract reasons for the found practices. That is, what the internal stakeholders' rationale behind employed practices to engage or disengage external stakeholders is from a systemic view. For instance, the internal stakeholders sought to frame the CoPS toward the external stakeholders by establishing a joint decision-making organ to delineate decision-making boundaries and by implementing a novel planning tool to actively inform external stakeholders about the developing megaproject concept. All this contributed to system-wide benefits such as successful governance and timely progress of the megaproject planning.

We followed some best practices to assess the trustworthiness of our methodology and findings. We have reported illustrative interview quotations from multiple stakeholder perspectives grounding our findings to data, we have utilized constant data triangulation, and we organized a formal validation workshop to discuss the initial findings of this study. The workshop participants from Insurance Company shared our findings and saw that their practical experience resonated very much with our analysis results. Further, this manuscript version has been sent for review to Insurance Company's representatives and they have been given a chance to comment our final findings.

Our analysis resulted in writing a detailed narrative of the case, distinct engagement and disengagement practices, and related rationales. In total, we found nine practices and four rationales that internal stakeholders used for both engaging and disengaging external stakeholders. Based on these steps we built two models, first an empirical depiction of the found practices and then a theoretical model of the rationales and enacted practices. We represent our findings in the following chapter.

4. Findings

4.1. Founding a joint organization: decision-making boundaries and communication channels

In 2004, the former CEO of Insurance Company had discussions with Development director and Property manager from Park City, and rounded up all the real estate owners of the district to a joint meeting held in the district's old premises. The real estate owners agreed upon and established a joint organization and decision-making body District Area Development (DAD). In terms of (dis)engaging external stakeholders, there were two main purposes.

First, this kind of umbrella organization constituted and formalized the boundaries between the internal and external stakeholders of the project. As a closed system, DAD would be used to disengage external stakeholders, such as the End-users of the district, residents' association and Local Cultural and Environmental Bureau from the project's early phase decision-making. In practice, internal stakeholders did not communicate the project idea creation or planning to the external stakeholders or listen to their proposals. The scope of the project in 2004 was ambiguous and internal stakeholders iteratively envisioned and developed it. DAD formed a manageable organizational ensemble and unified decision-making and thus made it easier for internal stakeholders to organize preliminary studies and divide responsibilities. Even though the planning ideas were modest in the beginning of the project, the internal stakeholders realized that it could be easier to keep the

planning in own hands, instead of trying to satisfy every stakeholder. An excerpt from the data illustrates this thinking:

> "We are not there [in DAD], because residents are not "actors". Real estate owners, landowners and commercial community are. There [in DAD] they decide what is to be done. Reputedly, they write memos in the DAD, but the memos are being tore after and no information is left on paper for outsiders." (A Chairman from Resident's Association)

Second, this joint organization represented the collective interest of the internal stakeholders, such as Park City, Insurance Company and other real estate owners, to authority related external stakeholders, such as Construction office, Urban planning unit authority and Building inspection authority, who acted as gatekeepers for project development ideas in the political decision-making. In other words, the internal stakeholders engaged authority related external stakeholders to the project's early value-creating activities. The district's fragmented ownership caused challenges, because real estate owners proposed multiple parallel but divergent ideas to authorities, which hindered the project initiation and choosing of direction for development. DAD as the new communication channel would unify these ideas, represent the collective interest of internal stakeholders, and ease the communication and interaction with authority related external stakeholders. The CEO from Insurance Company described this:

> "We [actors] collectively thought that we must generate some kind of community over the development project where actors together contemplate issues. Then [DAD] was established, and I would say that it was the coalition of the most significant actors, and still is. It became the essential communication channel toward [external stakeholders]. It is easier to organize concrete dialogs since [DAD] is the conversation partner toward [external stakeholders]." (CEO from Insurance Company)

4.2. Implementing a visualization tool: active informing

Soon after forming DAD, the internal stakeholders set up a so-called designer team that consisted of key representatives from Insurance Company (Manager of real estate development), Consultant Company (Consultant and partner), Designer Company (Designer) and Architect Company (Architect and partner). The designer team invented a novel planning tool, reference planning, which they utilized over the project lifecycle to engage external stakeholders in value-creating activities. In particular, it was the idea developed by Designer and Consultant to overcome stakeholder interaction challenges related to regular bureaucratic town planning procedure, which would have been too slow hindering development'. The reference plan visualized the 'big picture' of the district in 2D and 3D forms, how the district would look like in the future in various different phases with alternatives. This big picture was available for anyone in a public website and it steadily introduced the planning ideas to external stakeholders, such as Residents' association, End-users and Customers, who had the possibility of providing feedback, decreasing the chance of rebuttals. Building inspection and Surveillance authority, Urban planning unit authority and Local Cultural and Environmental Bureau gave tentative acceptance, feedback and guidance in choosing the planning direction before official lock-in decisions. Two interview quotes from different stakeholders describes the new planning approach:

> "In my opinion, a critical starting point for solutions was the using of reference planning… it has surely been an innovative tool, but from the authority perspective, undeniably… it has developed some

teething problems with the administrative proceeding."(A senior Specialist from Local Environmental and Cultural Bureau)

> "The formal town planning procedure was too burdensome for timely progression. Thus, we invented this so called reference planning, which shows to anyone who's interested in, how [garden district] looks like in 2020 and in 2030." (A Consultant and partner from Consultant Company)

4.3. Implementing reinforcement tool: justifying and defending governance

The designer team's Consultant and Architect invented and started to utilize a second novel planning tool, master planning as a reinforcement tool, to disengage authority related external stakeholders from decision-making activities. Particularly, the master planning idea emerged from the interactions between Consultant and external stakeholders' Building inspection authority to overcome external stakeholders' opposition regarding building permissions. Some buildings lacked detailed analyses (e.g. sewage, maintenance, and firewalls), which authorities could not inspect from the reference planning that was too abstract and generic level visualization, and were therefore unable to grant building permissions. The master planning was a more detailed in-depth analysis of the district built upon the reference planning, which would show the building specific analyses. The designer team used this master planning protocol to actively argue, justify and defend the planning development and their decisions. Particularly, against external stakeholders such as, Building inspection and Surveillance authority and Urban planning authority to gain acceptance for building permissions with minimal opposition, bureaucracy and changes. The designer team described this:

> "This [master planning] started when building inspection authority's head said to me that this building will not get construction permits, unless we can indicate that it is a functioning entity… Then we piloted this master planning tool toward the authorities… It includes these functional plans, there was human safety, fire safety, heat and smoke venting, and everything… But with this [master planning] we actually managed to work the holdouts into this." (A Consultant and partner from Consultant Company)

> "It was a challenge to depict all the necessary safety and fire precautions toward authorities and other [external stakeholders]. We came up with the idea of master planning that shows detailed 3D plans of everything in the [development project]. And then everything has to be done according to the master planning [in future] and everything needs to be connected to it accordingly. This has been the tool to justify what we do and gain clearance from [external stakeholders]."(Architect from Architect Company)

4.4. Forming platforms: active dialogs

The Park City's, Trade promoter and Project manager held several different briefings for external stakeholders, especially for Residents' association, National and Local Cultural and Environmental Bureaus and End-users of the district to actively engage them in value-creating activities by providing platforms for external stakeholder to influence and engage in project planning. The purpose to organize such briefings ascended from interactions with National and Local Cultural and Environmental Bureaus and residents of the district, who strongly opposed the more modern planning development, because of the district's cultural and historical heritage value. Internal stakeholders needed a straightforward, transparent and honest way of communicating the

planning to these external stakeholders, and to collect feedback. Park City's Project manager and Chairman of the urban planning unit board organized various information seminars open for anyone at the district's famous movie theater and art museum. Trade promoter created a website for the project to introduce even more graphical material, analyses and to provide information openly, such as PowerPoint presentations of the plans that anyone could comment. To illustrate, two quotes from both stakeholder sides emphasize the role of the platform for communication:

> "There was also this Tower Seminar that was held in [modern art museum] if you remember. It [Tower seminar] dealt with issues regarding high-rise construction…" (A Department manager from Local Environmental and Cultural Bureau)

> "Actually in the quite early phases yet over several years, the chairman from [Park City] organized all sorts of workshops among authorities and other [external stakeholders]. These workshops were held in the old movie theater of [garden district] and all participants openly brainstormed ideas for future development which were incorporated into future plans to some extent." (A Consultant and partner from Consultant Company)

4.5. Ignoring references: concealing specific information

However, the transparency and active informing about the project planning had its downsides. The designer team on the other hand disengaged external stakeholders from value-creating activities by concealing specific information and by not responding to all references from external stakeholders. This practice emerged from the interactions between Park City's representatives, Residents association, End-users and Local and National Cultural and Environmental Bureaus in distinct briefings. Many of these external stakeholders wanted to know more specific details about the project's development, especially concerning economical aspects, such as total construction volume, floor and square meter prices, and other financial factors behind the planning development. The internal stakeholders interpreted that in order to have a manageable ensemble and protect and proceed with the planning robustly, every stakeholder could not be satisfied or listened to, and some issues were better to be kept in one's own hands. Thus, the internal stakeholders concealed certain information on purpose and did not return certain references from these external stakeholders. Two quotes to illustrate the ways selective referencing occurred:

> "Residents' Association is not against the development basically, but they support Local Environmental and Cultural Bureau's opinion that high-rise construction should be forbidden. But we [internal stakeholders] know that there exists no profitable economical function for demolishing low-rise buildings and re-building low-rise buildings, hence, we have to hold some information about the total construction volume to ourselves and believe that we can see this through even after appeals." (Project Manager from Park City)

> "We discussed with them [internal stakeholders] about the architectural aspects and about how this district is going to be developed. We also highlighted the [cultural] boundary conditions [that we valued]. But, we realized that the [hidden] economic and financial boundary conditions are the stumbling block. These were never discussed properly with us, and we then of course think that they [internal stakeholders] try to only maximize efficacy and profits. The transparency particularly ends at the side of the real estate owners and private sector. The economic and financial parameters are never brought up, even though they de facto affect." (A Senior Specialist from Local Environmental and Cultural Bureau)

4.6. Utilizing heralds: harnessing specialists to communication and arbitration

Residents' association, Construction office, Building inspection and Surveillance authority, Urban planning authority and Local Cultural and Environmental Bureau still fostered and held tight to the cultural heritage values, which was contradictory to the project plans that aimed at creating modern high-rise buildings and businesses, slowing down late project planning phase'. Previously, a representative, Designer, from Designer company had been the specific individual who would have discussions and represent the master and reference planning to these external stakeholders for timely engagement and disengagement. However, this Designer was not effective enough in long-term, and the designer team decided to change their tactic, and put another individual forth, this time Architect and partner from Architect Company who held a professorship in local university, and was nationally famous for his designs and references. This specific individual had the capability and prestige to arbitrate diverging interests among internal and external stakeholders. Architect could especially engage these external stakeholders by opening a communication channel and opportunity for external stakeholders to influence, but concurrently disengage these external stakeholders by defending how the new plans would also take into account the cultural and historical heritage values with novel park and garden areas. Several informants described the role of this Architect in the project:

> "[Architect] is now here thinking about the district center and the display of the architecture. He then for instance justifies these [plans] for the authorities and how do they look like and why do they look like that. And when they [authorities] provide distinct comments [and critique], he is of course very capable of addressing [and defending] them." (A real estate manager from Insurance Company)

> "[Architect and partner] from [Architect Company] has for sure been a significant person in gaining acceptance from [holdouts] for future plans and operations." (A Manager of real estate investment from Insurance Company)

Project manager from Park City and Consultant and partner from Consultant Company also participated in several meetings and discussions and acted as heralds in arbitrating the interests between the external and internal stakeholders. These heralds simultaneously provided a communication channel and opportunity for external stakeholders to influence, yet still defended existing ideas and plans. To illustrate, several stakeholders promoted these two persons:

> "If I remember correctly, the [Park City] wanted [Project manager] to be the trustworthy contact person toward [external stakeholders]. He for instance conveyed information from the authorities to us." (A Development director from Park City)

> "[Consultant and partner] has been a significant person indeed. He and their organization possesses capabilities in following through these kinds of large projects. He is excellent in terms of contractual issues but also in integrating other [stakeholders] to the process of doing this project." (A Real estate manager from Insurance Company)

4.7. Forming development theses: incorporating external perspectives

However, the opposition from the Local Cultural and Environmental Bureau, Residents' association and End-users was still very strong

during final planning phase, resulting in the rejection of the first town plan proposal in court. During the first town plan proposal, the internal stakeholders had active discussions with the external stakeholders about boundary conditions for development, even though this first proposal ended up rejected. The designer team interpreted that they have to engage external stakeholders better in the planning, to get the official town plan proposal approved in the future. Thus, the designer team's representatives invented a novel practice, so called District's Development Theses (in short: Theses) for engaging external stakeholders. In practice, the Park City's Project manager wrote theses about district development that functioned as a common guideline or ground rule, and published them in the earlier opened website. The contents of the Theses described how the new development direction would take into account the external stakeholders' boundary conditions and integrate the cultural and historical heritage values. The Theses of course required the internal stakeholders to somewhat restrain own planning ideas, for instance regarding high-rise construction. Both external and internal stakeholders characterized the role of the development theses:

"It [the theses] is of course partly official propaganda, but there are of course good things included. There are good things… such as enlivening the district." (A Member from Residents' Association)

"The [Theses] were important and still are, as they set the common direction for the development and in a positive way, we can advance things according to it." (A Head manager of real estate investment from Insurance Company)

4.8. Organizing personal meetings: maintaining dialogs with external stakeholders

During the construction and early operations phase, the internal stakeholders comprehended that they need to engage external stakeholders even more to progress further. The internal stakeholders' Consultant and partner, Architect and partner, Designer, Project manager, Trade promoter, Development director and Manager of real estate development collectively altered their approach, and started to actively organize meetings and discuss with the external stakeholders' Local Cultural and Environmental Bureau, Construction office, Building inspection and Surveillance authority and Urban planning authority in particular. These representatives from internal stakeholders listened to their expectations about future phases, similarly as in the early project phases in the different briefings, but now even more personally and transparently. The dialogs enhanced joint benefits for internal and external stakeholders, and created harmony, securing official town plan in near future. Two quotes to illustrate this:

"I think it was [Project manager] who personally went to meet them [external stakeholders] and tried to discuss ideas of the future development." (A Fund manager from Insurance Company)

"Well in regard of some smaller issues, I have personally visited and had discussions with the Park City's preparatory officer. [Especially] when [a new issue] has turned up, then I have familiarized myself with it, and maybe provided some viewpoints to it." (Chairman from Residents' association)

4.9. Organizing inquiries: gathering feedback

The designer team began to engage the Residents association, Customers and End-users, even more by incorporating their ideas during the later construction phase and early operations phase. In particular, Insurance Company's CEO, Real estate investment manager, Fund manager and Head manager of real estate investment hired

commercial consultants to conduct a commercial enquiry of the district area. The hired consultants conducted a large survey in the district by interviewing and collecting data and feedback from the district's current and potential End-users and Customers. They also gathered similar data from other rival districts for comparison. The aim was to disentangle a more advanced commercial profile and garden district atmosphere including interior designs for the future premises, by listening to the actual End-users, and Customers and comparing the existing profile to other districts. The internal stakeholders could also interpret from the feedback and dialogs that what was working in current solutions and what was not, helping to adjust the contents of the Theses accordingly. Two quotes from different stakeholders to illustrate the gathering of feedback.

"I think that everything started to fall into place, when we started to collect feedback via the market research." (A Consultant and partner from Consultant Company)

"Actually, they [Commercial consultant] conducted this kind of enquiry about what is needed in this district and what kind of End-users do we have here and then they compared the results with the capital downtown's profile. They did interviews and approached this issue, a bit, if I may say so, more from a psychological perspective. Like what would the new atmosphere be like in the new district in future, so that it would serve the people who visit there. They depicted the people that visit the district in four elements, whether you are rational or more impulsive and so forth. They developed this kind of synthesis, and based on that we would start to create the district or actually the feeling there for End-users and Customers." (A Shopping Center Manager from Insurance Company)

4.10. Summary of observed practices – the pacing strategy

We have depicted and summarized the identified nine practices in Fig. 1. We divided the practices by whether the internal stakeholders utilized them for engaging or disengaging the external stakeholders. Here, we have grouped external and internal stakeholders into one entity for clarity in analyzing the practices. Doing so also served an analytical purpose, because creating the model would have otherwise been impossible. However, in practice, stakeholders do not form a monolithic group of actors. Founding a joint organization and utilizing heralds were two practices that the internal stakeholders used simultaneously for both engaging and disengaging the external stakeholders. The lifecycle axis is relational and we have used it as means of illustrating the order of the practices.

As illustrated in Fig. 1, the practices to engage or disengage the external stakeholders changed back and forth over time through the interactions among the external and internal stakeholders. The figure demonstrates that the practices did not evolve linearly, but were interrelated and contributed to each other through a highly dynamic nonlinear process. The establishment of DAD both formalized stakeholder boundaries and set a mutual communication channel between the external and internal stakeholders. The internal stakeholders instigated this; by implementing the visualization tool for informing external stakeholders and simultaneously implementing the reinforcement tool, they also defended their governance structure to the external stakeholders in a timely manner. These tools ultimately set two rather closed systems of internal and external stakeholders, which led to the need for discussion platforms between the two. We can see from the figure that, even though discussion platforms actively engaged the external stakeholders in the decision-making, there were downsides due to this rather boundaryless approach. As a result, some specific information had to be concealed and some external stakeholders'
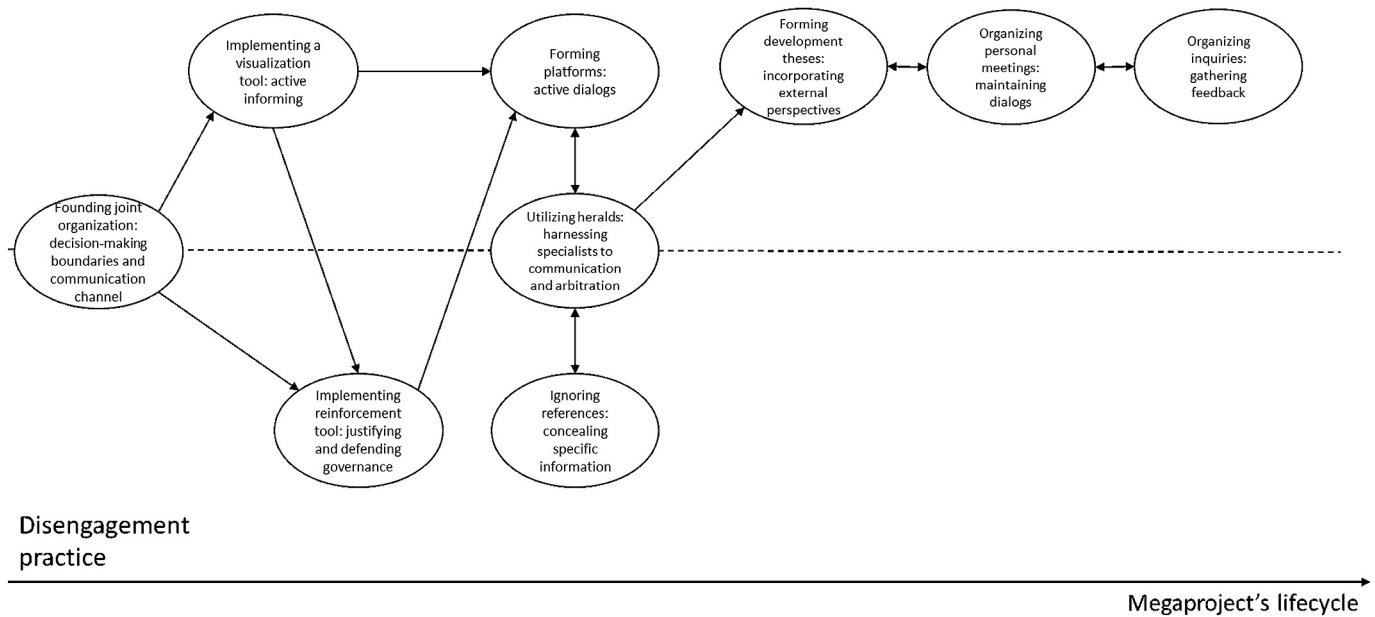
Fig. 1. The interaction of engagement and disengagement practices over the megaproject lifecycle.

references were not answered. The interesting thing is that the aforementioned heralds facilitated this dichotomy, meaning that they controlled the discussion platforms as gatekeepers and decided, which information and ideas were shared and listened to, and, ultimately, which were not, as depicted by the double-headed arrows in Fig. 1. Due to this mediating process, one of the heralds established the Development Theses as ground rules for future development, which met the external and internal stakeholders' requirements halfway. This led rather linearly to maintaining active personal dialogs and gathering feedback from the external stakeholders. However, as seen in Fig. 1, the last three practices were interrelated and contributed to each other in the following way: The Theses set the guidelines for the contents of further dialogs, which led to gathering of feedback about how they functioned. The internal stakeholders then received this feedback in the personal dialogs and fed it back to the Theses, which they updated over the system lifecycle.

The dynamic pattern formed from both engagement and disengagement practices in Fig. 1, is what we named as the pacing strategy. This pacing strategy takes into account the temporary perspective of stakeholder engagement and disengagement practices. We understand that the contents of these practices are contextually specific, but the logic behind the pacing strategy is to represent the dynamic pattern, which goes back and forth between engagement and disengagement (by using different practices each time), highlighting the timely crucial role of disengagement in governing CoPS for systemic benefits.

4.11. Rationales for timely engagement and disengagement of external stakeholders

Based on our analysis, we interpreted four rationales for the identified practices. These rationales describe the more abstract reasons for engagement and disengagement practices from a systemic perspective.

4.11.1. Framing of the complex product system
The internal stakeholders of the CoPS communicated widely about the system via two practices, which facilitated the framing of the megaproject's identity: founding a joint organization and implementing a visualization tool. This framing initially involved the search for a

common goal and the development of the project concept within a limited collective, which included the megaproject's key architects and the area's asset owners. In this process, clear boundaries between the internal and external stakeholders were drawn by founding the DAD organ, which also provided a clear basis for the identification of the governance structure. The exclusion of the external stakeholders from the CoPS during its initial phases ensured a focused framing process of the CoPS. The reason for this exclusion was to eliminate the need for complex negotiation and bargaining processes among external stakeholders with conflicting interests and to avoid the uncertainties, instability and progress delays that could arise from overly complex organizational arrangements (i.e. governance). When the initial project concept was developed, the internal stakeholders implemented the novel visualization tool to actively communicate and frame the newly established megaproject's identity. Furthermore, it supported the interpretation processes of the external stakeholders about what the project is about, how they could attach themselves to it and what their roles could be within it. The framing of the complex product system was conducted in a sequenced manner to manage the growth of the organizational network and the boundary arrangements.

4.11.2. Legitimating the governance structure of the complex product system
The internal stakeholders introduced and utilized the visualization and reinforcement tools for the megaproject to legitimate the stakeholders' roles in the governance of the CoPS. The two planning tool practices formalized the roles of the internal stakeholders as the key architects in the system and on the other hand legitimized and marginalized the roles of the external stakeholders as those whose project-related activities and input provision would be strictly controlled by the internal stakeholders. The visualization tool was used to inform the external stakeholders that the internal stakeholders were the focal designers of the megaproject and in charge of its governance. The reinforcement tool assigned such value-adding roles to the external stakeholders that mainly supported the purposes of the internal stakeholders. That is, the internal stakeholder handled the external stakeholders as instruments (providers of symbolic resources and input, including feedback and rebuttals) to achieve the desired organizational structure for the megaproject and to implement the megaproject in a

timely manner. These tools also established the communication channels that governed the interaction and relationships between the internal and external stakeholders.

4.11.3. Maintaining dynamic stakeholder interaction of the complex product system

To activate the external stakeholders' contributions to the development of the CoPS, the internal stakeholders concurrently created urgency for cooperation, but also signaled the external stakeholders that certain activities were being handled by the internal stakeholders only. The mobilization of the external stakeholders and the maintenance of dynamic interaction with them contributed to desired governance structures of the megaproject and its timely progress. Three diverse practices—forming discussion platforms, ignoring references and utilizing heralds— maintained the momentum for participation.

The formed discussion platforms structured communication and participation processes with clear input and decision-making windows. This formalized and scheduled "gate-based" participation process supported the creation and maintenance of momentum for participation by regularly creating a sense of urgency around selected issues during the system lifecycle, such as high-rise construction. The active dialogs with the external stakeholders also emphasized the positive societal implications that their participation in the provision of system inputs and complementary activities would have, further maintaining the momentum for participation.

It is notable that, to maintain the momentum for participation, "planned" disengagement practices, such as ignoring certain references or requests from the external stakeholders (e.g., about total development volume and profitability), were also crucial, especially to keep the external stakeholders active and on the alert. The disengagement activities may have therefore also played a significant role in establishing urgency among the external stakeholders to mobilize and motivate them. For instance, when Residents' association noticed that their voices were not being heard properly but they still had the opportunity to influence certain issues, they raised their interests to influence the complex system, which prevented collective inaction and maintained the active momentum for participation.

To timely balance this concurrent engagement and disengagement, the use of specialists as heralds seemed crucial in arbitrating the external and internal stakeholders' interests regarding the matters that were open for debate (e.g., cultural and historical heritage), while still "favoring" the internal stakeholders' governance structure and timely progress of the megaproject. That is, the heralds provided further opportunities for the external stakeholders to participate and keep them active, at least ostensibly, i.e., providing a belief of an opportunity to influence.

4.11.4. Expanding the design rights of the complex product system

When entering the later lifecycle phases of the megaproject, all the major and significant issues and challenges regarding the system's scope had been solved. Thus, to proceed with the CoPS in its later lifecycle phases, the interactions between the internal and external stakeholders could be shifted to active engagement of external stakeholders via three practices: forming development theses, organizing personal meetings and organizing inquiries. The rationale behind these practices was to expand the internal stakeholders' governance structure to also include the external stakeholders, and to empower them with design rights for the system concerning remaining minor and medium issues and details without creating too much complexity or uncertainty anymore for the timely progress of the megaproject. Expanding the design rights and opening of the governance structure of the CoPS had positive implications of mutuality and collaboration between the internal and external stakeholders, as the actors were able to aggregate those remaining conflicting interests that contributed to the greater good. The development Theses were means of making the value of collaboration explicit during the later phases of planning and of engaging a variety of

external stakeholders widely and openly in the planning of the CoPS having positive societal impacts. In the early operations phase, the construction site and its logistics caused noise emission and problems for the district's accessibility. Thus, the personal meetings with transparent and active dialogs between the internal and external stakeholders offered additional means to influence the design, open the governance, and make the value of collaboration explicit, which further motivated external stakeholders. Lastly, to completely vouchsafe access to influence the CoPS 's design, organized inquiries and feedback requests were effective means of collaboration, showing every stakeholder that their contribution was needed for the long-term governance, timely progress and problem solving of the megaproject's remaining challenges.

Based on our analysis of the rationales and enacted practices in the investigated megaproject, we suggest a processual model that delineates the findings. The developed processual model of rationales and enacted practices in CoPS is presented in Fig. 2.

5. Discussion

Our empirical investigation of the district development megaproject revealed that stakeholder engagement and disengagement in CoPS is a multifaceted phenomenon. We identified several practices and rationales that internal stakeholders used for engaging and disengaging external stakeholders timely. We discuss the theoretical contributions and managerial implications of this study in the following two subsections. We conclude with limitations and suggestions for further research.

5.1. Theoretical contributions

Stakeholder engagement and disengagement practices in a complex product system form a cyclical process. Our observation of the pacing strategy (Fig. 1) includes varying practices that cycle back and forth between engagement and disengagement of external stakeholders. Our findings about practices contribute to previous knowledge of stakeholder management in CoPS in three major ways.

First, our Fig. 1 highlights the crucial role of timely disengagement of external stakeholders in governing CoPS. This means that while our findings demonstrate that it is certainly true that stakeholder engagement is important for overall value creation and system wide benefits in CoPS contexts, it is just as important to timely disengage external stakeholders for a balanced approach in reaching the systemic outcomes. Our findings here denote that internal stakeholders can utilize the same engagement or disengagement practices toward the same or different external stakeholders in a value-adding manner without any significant damage to the inter-organizational relationships. This indicates that it is not worthwhile for the internal stakeholders to develop a completely open or closed stakeholder system with clear-cut boundaries for decision-making, but that it is beneficial to have some degree of permeability in the system. This permeability accentuates the importance of timely disengagement of external stakeholders. Previous research of stakeholder management in CoPS contexts from the systemic view has focused unilaterally on stakeholder engagement (Filieri et al., 2014; Rampersad et al., 2010). Particularly, on the benefits of stakeholder engagement in reaching systemic outcomes (Meynhardt et al., 2016). However, the potential downsides of engagement, the benefits of disengagement, and a balanced view of both stakeholder engagement and disengagement in reaching systemic outcomes have remained mainly unexplored. Thus, our findings here are rather antithetical and add to this literature by showing the importance of timely disengagement of external stakeholders for enhancing systemic outcomes, and providing a balanced approach to the interplay of stakeholder engagement and disengagement in governing CoPS. We further argue that this timely disengagement and then re-engagement of specific external stakeholders is a novel and specific feature of CoPS when compared to other
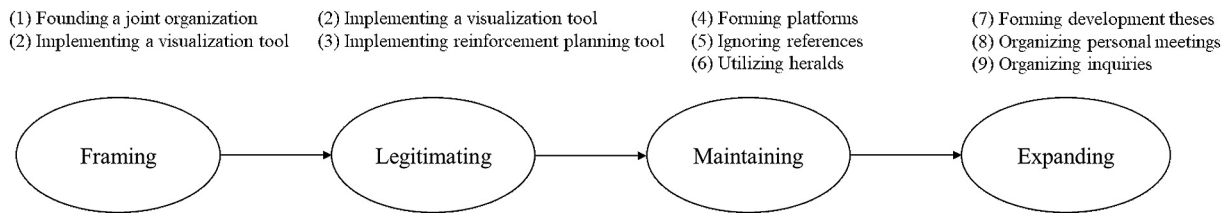
(1) Founding a joint organization   (2) Implementing a visualization tool   (4) Forming platforms   (7) Forming development theses
(2) Implementing a visualization tool   (3) Implementing reinforcement planning tool   (5) Ignoring references   (8) Organizing personal meetings
   (6) Utilizing heralds   (9) Organizing inquiries

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Framing  →  Legitimating  →  Maintaining  →  Expanding
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Fig. 2. A processual model of stakeholder engagement and disengagement rationales and practices in complex product systems.

kinds of contexts, where this kind of behavior may be deteriorating for stakeholder relationships that might result in impossible forms of interaction to reach the desired outcomes.

Second, our narrative of engagement and disengagement practices is described at a very fine-grained level and our practice findings are empirically grounded. Indeed, our processual description provides a temporary perspective to the engagement and disengagement practices that covers the entire CoPS lifecycle from early front-end phase to operations phase. In practice, the internal stakeholders did not have any pre-set toolkit from which they could have chosen practices and deliberately utilized them for specific external stakeholders. In fact, the practices arose from the networked interactions including both internal and external stakeholders. Previous research of stakeholder management in CoPS contexts from the systemic view has provided knowledge of the generic abstract engagement processes, such as coordination, consultation and compromising that can lead to systemic value outcomes (Reypens et al., 2016). Additionally, previous research has highlighted the influence of different general forms of engagement interaction, namely collaboration and cooperation (Nissen et al., 2014). Descriptions of such processes and forms of engagement interaction have remained rather theoretical, static and distant to empirical data. Moreover, extant research of stakeholder management in CoPS contexts from firm-centered perspective has identified various general strategies to manage external stakeholders, ranging from engagement to disengagement (Aaltonen & Sivonen, 2009; Olander & Landin, 2005), even though, empirical and processual investigations on the actual practices through which these strategies are enacted have been more limited. Therefore, our findings here elaborate previous knowledge of stakeholder management in CoPS contexts by providing empirical grounding, causal logics and temporal dynamism over the system lifecycle. This is also unique in the sense that prior research on stakeholder management in CoPS contexts has tended to focus on the interactions of internal stakeholders in early lifecycle phases (Aaltonen & Kujala, 2016), instead of analyzing the interactions between internal and external stakeholders over the entire lifecycle.

Third, our findings address the importance of utilizing both engagement and disengagement practices on a continual basis to maintain interaction and timely progression throughout the entire system lifecycle. Previous stakeholder management literature in CoPS contexts has highlighted a paradox whether to engage or disengage external stakeholders particularly in the early lifecycle phases. That is, some scholars argue that transparency and broad engagement of external stakeholders in early lifecycle phases contribute to systemic benefits as all stakeholders' perceptions are included into the success criteria and objective definition (Missonier & Loufrani-Fedida, 2014). Nonetheless, other scholars argue that this kind of boundaryless and inclusive approach to stakeholder management may be extremely resource-intensive and costly with the risk of extremely complicated decision-making with lock-ins and dead ends (Aaltonen & Kujala, 2010). Therefore, internal stakeholders can favor disengagement approaches during the early lifecycle phases to secure the timely progress of the CoPS (Flyvbjerg, 2014). Our findings show that the answer to this paradox lies not in a dichotomy of engagement or disengagement, but in gradual employment of both engagement and disengagement approaches simultaneously.

The rationales for stakeholder engagement and disengagement in complex product systems are bound to the system lifecycle. Based on our analysis of the rationales for engaging and disengaging external stakeholders in the present case, we suggest a processual model for stakeholder management in CoPS. The model in Fig. 2 identifies four groups of rationales; framing of the system, legitimating the governance structure of the system, maintaining dynamic stakeholder interaction, and expanding the design rights within the system that are bound to the system lifecycle and stakeholder interaction evolution in CoPS context. Previous research of stakeholder management in CoPS contexts from the systemic perspective has provided limited knowledge of such CoPS context specific rationales and their temporary order. Resource-based perspective has highlighted the rationale of external stakeholder engagement in the diffusion of new ideas and innovations (Aarikka-Stenroos et al., 2017). Knowledge-based perspective has highlighted the role of shared knowledge base and knowledge sharing as important rationales for stakeholder engagement (Nissen et al., 2014). Lastly, the institutional perspective has accentuated the rationale of stakeholder engagement in the formation of organizational legitimacy and reputation (Orr & Scott, 2008). These rationales in existing literature are primarily theoretically oriented general insights about engaging external stakeholders and dismiss largely the temporality or the disengagement aspect. The four novel rationales that we identified are empirically driven and specific to the lifecycle of a complex product system. The value of our findings is that we elaborate the previously identified more theoretically oriented general insights on engaging external stakeholders in the specific context of CoPS with the disengagement component. More importantly our findings suggest a temporal ordering for these schemes of reasoning and show how the rationales may change when the CoPS proceeds on its lifecycle. A processual understanding of the functions and reasons behind stakeholder engagement and disengagement in CoPS contexts is valuable for further enlightening the understanding of stakeholder management dynamics in inter-organizational systems.

5.2. Managerial implications

Who of the stakeholders to engage and disengage, when and how, are highly relevant challenges for managers of CoPS. The findings of this study on the interplay of stakeholder engagement and disengagement practices, and particularly the pacing strategy, suggest that managers of CoPS need to adjust their stakeholder management strategies to the changing nature of the context. This means that managers need to adopt a flexible and balanced approach for stakeholder management, and be able to change back and forth from stakeholder engagement to disengagement, when circumstances change. Additionally, both engagement and disengagement practices can be used toward the same stakeholder in a value-adding manner over time. This is an important lesson for managers' stakeholder management process, as practical and academic advice have typically either advocated an in-depth and inclusive engagement of external stakeholders for sustained value creation throughout the system lifecycle or suggested that managers should consistently disengage the non-value adding external stakeholders over the lifecycle.

Another crucial lesson for managers is that the rationales for stakeholder engagement and disengagement in CoPS contexts should be approached from a systemic perspective instead of focusing only on single organization's short-term cost and scope effects. Instead of trying to optimize the stakeholder management activities from their own organizations' perspective, managers need to be concerned about the system-level value creation and outcome of the CoPS, and develop the stakeholder engagement and disengagement activities in co-operation with other actors, including both internal and external stakeholders.

Concrete actions can be derived from our findings concerning the above two lessons for managers. Managers can establish together with other actors and stakeholders jointly controlled inter-organizational bodies and working groups, where further round table discussions and collaborative meeting routines can be set with external stakeholders. Additionally, joint planning tools and principles among stakeholders can help to establish design rules for development. These activities are particularly relevant during the early stages of CoPS. They serve as platforms for receiving inputs and collecting ideas from a wide range of stakeholders that contribute to timely planning. Managers maintain these activities throughout the CoPS lifecycle, but the key is to use feedback to identify whose inputs and engagement are timely needed for further progress, and whose are not. In later CoPS lifecycle phases, managers can design together with other actors distinct workshop and seminar formats, to have active dialogs with external stakeholders, distribute information, test novel ideas preliminary, and more importantly receive feedback about what is currently working and what is not. These kinds of workshops and seminars have at least symbolic value, meaning that stakeholders have at least an ostensible opportunity to influence. Finally, hiring prestigious persons as heralds to arbitrate different stakeholder interests in all of these activities can be crucial for timely progress.

5.3. Limitations and further research

While our study reports an in-depth analysis of stakeholder management practices and rationales in a complex product system, it has some limitations. First, the study focuses only on one CoPS in a specific context of a district development megaproject. Other contexts might have different challenges and stakeholder activities and practices. Hence, one should be cautious in generalizing the findings. Second, we suggest that the pacing strategy, a cyclical engagement and disengagement pattern can be found in other contexts, even though the content of this pattern – the actual practices and interactions – will likely be different across contexts. Third, our analysis grouped external stakeholders into one entity for clarity in analyzing the practices pursued by the internal stakeholders. However, stakeholders do not form a monolithic group of actors in practice, whereby more research of stakeholder-specific practices is advised. Fourth, we acknowledge that the rationales for expanding or narrowing down collaboration in CoPS may vary upon several reasons related to, for example, risks, growth aspirations, and factors in the competitive environment. Thus, we call for more research in different contexts for both quantitative and in-depth qualitative analyses to identify other possible practices and rationales for stakeholder engagement and disengagement. Further research could for example assess engagement and disengagement of external stakeholders in other industry and cultural contexts, which would provide an avenue for further enhance the contingency approach to stakeholder management. Moreover, future research could dig deeper into the patterns of engagement and disengagement, assessing, for example how the organizational architecture of the CoPS may affect the interplay of these two and the value creation of the multi-stakeholder system. Finally, building stronger linkages between the stakeholder management, practice theory and strategy-as-practice research streams would provide a fruitful avenue for the development of the stakeholder theory.

References

Aaltonen, K., & Kujala, J. (2010). A project lifecycle perspective on stakeholder influence strategies in global projects. *Scandinavian Journal of Management, 26*(4), 381–397. https://doi.org/10.1016/j.scaman.2010.09.001.

Aaltonen, K., & Kujala, J. (2016). Towards an improved understanding of project stakeholder landscapes. *International Journal of Project Management, 34*(8), 1537–1552.

Aaltonen, K., Kujala, J., Havela, L., & Savage, G. (2015). Stakeholder dynamics during the project front-end: The case of nuclear waste repository projects. *Project Management Journal, 46*(6), 15–41. https://doi.org/10.1002/pmj.

Aaltonen, K., & Sivonen, R. (2009). Response strategies to stakeholder pressures in global projects. *International Journal of Project Management, 27*(2), 131–141.

Aarikka-Stenroos, L., Jaakkola, E., Harrison, D., & Mäkitalo-Keinonen, T. (2017). How to manage innovation processes in extensive networks: A longitudinal study. *Industrial Marketing Management,* 1–18. https://doi.org/10.1016/j.indmarman.2017.09.014 September.

Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods & Research, 10*(2), 141–163.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.

Cova, B., & Salle, R. (2005). Six key points to merge project marketing into project management. *International Journal of Project Management, 23*(5), 354–359.

Denzin, N., & Lincoln, Y. (2005). *Handbook of qualitative research.* SAGE Publications.

Donaldson, T., & Preston, L. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review, 20*(1), 65–91.

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal, 50*(1), 25–32.

Eskerod, P., Huemann, M., & Ringhoger, C. (2015). Stakeholder inclusiveness: Enriching project management with general stakeholder theory. *Project Management Journal, 46*(6), 42–53.

Fassin, Y. (2009). The stakeholder model refined. *Journal of Business Ethics, 84*(1), 113–135.

Filieri, R., McNally, R. C., O'Dwyer, M., & O'Malley, L. (2014). Structural social capital evolution and knowledge transfer: Evidence from an Irish pharmaceutical network. *Industrial Marketing Management, 43*(3), 429–440. https://doi.org/10.1016/j.indmarman.2013.12.011.

Flanagan, J. (1954). The critical incident technique. *Psychological Bulletin, 51*(4), 327–358.

Flyvbjerg, B. (2014). What you should know about megaprojects and why: An overview. *Project Management Journal, 45*(2), 6–19. https://doi.org/10.1002/pmj.

Frooman, J. (1999). Stakeholder influence strategies. *The Academy of Management Review, 24*(2), 191–205.

Hobday, M., Rush, H., & Tidd, J. (2000). Innovation in complex products and systems. *Research Policy, 29*(7–8), 793–804.

Jick, T. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly, 24*(4), 602–611.

Ketokivi, M., & Choi, T. (2014). Renaissance of case research as a scientific method. *Journal of Operations Management, 32*(5), 232–240. https://doi.org/10.1016/j.jom.2014.03.004.

Lacoste, S. (2016). Sustainable value co-creation in business networks. *Industrial Marketing Management, 52*, 151–162. https://doi.org/10.1016/j.indmarman.2015.05.018.

Lundrigan, C. P., & Gil, N. (2016). *Strategic capabilities for megaproject architects: Sequencing network growth and bottleneck removal.* Academy of Management Proceedings.

Lusch, R. F., Vargo, S. L., & Tanniru, M. (2010). Service, value networks and learning. *Journal of the Academy of Marketing Science, 38*(1), 19–31.

Mackelprang, A. W., Robinson, J. L., Bernardes, E., & Webb, G. S. (2014). The relationship between strategic supply chain integration and performance: A meta-analytic evaluation and implications for supply chain management research. *Journal of Business Logistics, 35*(1), 71–96.

Meynhardt, T., Chandler, J. D., & Strathoff, P. (2016). Systemic principles of value co-creation: Synergetics of value and service ecosystems. *Journal of Business Research, 69*(8), 2981–2989. https://doi.org/10.1016/j.jbusres.2016.02.031.

Missonier, S., & Loufrani-Fedida, S. (2014). Stakeholder analysis and engagement in projects: From stakeholder relational perspective to stakeholder relational ontology. *International Journal of Project Management, 32*(7), 1108–1122. https://doi.org/10.1016/j.ijproman.2014.02.010.

Mitchell, R., Agle, B., & Wood, D. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review, 22*(4), 853–886.

Mol, M. J., & Birkinshaw, J. (2014). The role of external involvement in the creation of management innovations. *Organization Studies, 35*(9), 1287–1312.

Nissen, H. A., Evald, M. R., & Clarke, A. H. (2014). Knowledge sharing in heterogeneous teams through collaboration and cooperation: Exemplified through Public-Private-Innovation partnerships. *Industrial Marketing Management, 43*(3), 473–482. https://doi.org/10.1016/j.indmarman.2013.12.015.

Olander, S., & Landin, A. (2005). Evaluation of stakeholder influence in the implementation of construction projects. *International Journal of Project Management, 23*(4), 321–328. https://doi.org/10.1016/j.ijproman.2005.02.002.

Orr, R. J., & Scott, W. R. (2008). Institutional exceptions on global projects: A process model. *Journal of International Business Studies, 39*(4), 562–588. https://doi.org/10.1057/palgrave.jibs.8400370.

Parmar, B., Freeman, R., Harrison, J., Wicks, A., Purnell, L., & De Colle, S. (2010). Stakeholder theory: The state of the art. *Academy of Management Annals, 4*(1), 403–445.

Rampersad, G., Quester, P., & Troshani, I. (2010). Managing innovation networks: Exploratory evidence from ICT, biotechnology and nanotechnology networks. *Industrial Marketing Management, 39*(5), 793–805. https://doi.org/10.1016/j.indmarman.2009.07.002.

Reypens, C., Lievens, A., & Blazevic, V. (2016). Leveraging value in multi-stakeholder innovation networks: A process framework for value co-creation and capture. *Industrial Marketing Management, 56*, 40–50. https://doi.org/10.1016/j.indmarman

2016.03.005.

Ritvala, T., & Salmi, A. (2011). Network mobilizers and target firms: The case of saving the Baltic Sea. *Industrial Marketing Management, 40*(6), 887–898. https://doi.org/10.1016/j.indmarman.2011.06.023.

Rowley, T., & Moldoveanu, M. (2003). When will stakeholder groups act? An interest- and identity-based model of stakeholder group mobilization. *The Academy of Management Review, 28*(2), 204–219.

Savage, G. T., Nix, T. W., Whitehead, C. J., & Blair, J. D. (1991). Strategies for assessing and managing organizational stakeholders. *Academy of Management Perspectives, 5*(2), 61–75.

Scott, S. G., & Lane, V. R. (2000). A stakeholder approach to organizational identity. *Academy of Management Review, 25*(1), 43–62.

Töytäri, P., Rajala, R., & Alejandro, T. B. (2015). Organizational and institutional barriers to value-based pricing in industrial relationships. *Industrial Marketing Management, 47*, 53–64. https://doi.org/10.1016/j.indmarman.2015.02.005.