Real-time foresight : preparedness for dynamic innovation networks
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Summary

In a global society, boundaries of time and space are blurring, increasing mobility and digital networks accelerate our lives in many fields to 'global time'. The consequence is an increasing degree of unpredictability and multi-stakeholder environments that are more dynamic than before.

Traditional planning and strategic management stem from the past century, and rely on central actor instead of network actor perspectives. Leadership in public and in corporate management still starts from these planning and decision-making concepts tailored to hierarchical cooperation and predictable environments. This leadership immobilises innovation processes, it blocks ad hoc collaboration and network emergence in urgent response situations. Thus, real-time processes increasingly reveal a managerial misfit for heterogenous actors in dynamic innovation processes.

Observation of the developments mentioned above led to the following problem statement (PS).

PS: *How is it possible to collaborate for successful dynamic innovation processes?*

A process study on sustainable, innovative collaboration in an exemplary, and highly dynamic, field was undertaken. Successful collaboration patterns from dynamic innovation networks (DINs) which arose during global-local disaster management following the 2004 Tsunami were explored. Five research questions (RQs) were asked in response to the PS.

Chapter 1 presented the problem statement (PS) and formulated five research objectives related to the five RQs that guide the reader's way through the chapters. Chapter 2 showed why traditional management theory hinders ad hoc collaboration; chapter 3 explained the design of an incident-sensitive and time-sensitive methodology for exploring non-linear innovation processes; chapter 4 documented the cross-case process analysis that was used to detect dynamic network patterns; in chapter 5, the thesis aimed to identify the innovation strategies that the different DINs deploy in sustainable global relief; chapter 6 developed a new real-time foresight method (RTF) to enable practitioners to switch from traditional management and planning to network governance of dynamic innovation processes. The conclusions are given in chapter 7 together with a perspective on future research.

The research objectives were implemented chapter by chapter in answer to the following research questions. The RQs are listed below, together with the research outcomes.

RQ1: *Why do strategic management and foresight fail in ad hoc collaboration?*

Traditional concepts of foresight, strategic management and network theory were revisited in terms of their impact on conceptual management problems of real-time collaboration (Chapter 2). The findings led to the formulation of the research rationale for this study.

RQ2: *How is it possible to adequately explore successful ad hoc collaboration in DINs?*

The selection of the research method (Chapter 3) and sampling were described in this section and the empirical part of the thesis was ex-

plained. The qualitative research process (GTM) was described as involving waves of data collection and data analysis in the context of long-term innovation processes in global relief. The chapter ended with a methodological rigour check.

RQ3: *Which network patterns facilitate real-time innovation processes?*

Three cases of real-time collaboration towards sustainable ends were showcased and explored in detail using ANT (actor-network theory), CIT (critical incident technique) and GTM (grounded theory methods). The rapidly emerging network collaborations and their successful evolution over the years were retraced from multiple global and local actor perspectives. The combination of ANT and CIT allowed for the detection of successful DIN patterns, and of punctual and continuous dynamics in nonlinear long-term innovation processes.

Five collaborative network patterns were identified as dynamic, collaborative governance structures (Chapter 4) of a successful ad hoc collaboration. These dynamic network patterns are complementary to traditional strategic management in predictable environments. They read as follows: (1) the early and continuous identification of heterogeneous network actors in alignment of interests, (2) the early development of a shared vision that encourages visibility, commitment, monitoring and sequential goal setting, (3) mindful use of boundary objects as intermediaries, (4) punctual directedness and distance among network-actors, (5) local integration by network orientation towards focal actors.

RQ4: *Which network strategies are used by DINs in global relief?*

The study investigated the innovation strategies of the three DINs (Chapter 5) and found that there were variance of three types of network:

(a) the protective network, (b) capacity building network, and (c) global advocacy network. The LNGO profiles strongly influenced successful collaboration strategies, and it was the polar dimensions of (1) media alertness and (2) readiness of an LNGO to scale up that made a difference in ad hoc collaboration. Related to this finding, a tool was offered to improve matching in asymmetric global-local disaster management for sustainable and innovative relief.

RQ5: *How should a well-qualified management team plan and manage dynamic innovation processes?*

Chapter 6 developed a new RTF: the five dynamic network patterns were transformed into managerial principles. As a further application, two robust real-time evaluation tools (RTETs) to identify and measure the performance of dynamic innovation networks in real-time were constructed.

Qualitative studies in social science result in new knowledge that helps to model or measure social phenomena. The managerial method developed here is one of conceptual concern. It advances theory building from vertical to lateral dynamic process management and co-production. It confirms the assumption that investigating collective action with individual actor approaches is first an analytical and then becomes a practical mistake (Arendt & Jaspers, 1955; Ostrom, 1990; Scarry, 2012). The real-time foresight method (RTF) developed here switches (Castells, 2000) strategic management into a collective innovation management. It tries to integrate contingency and chaotic complexity into effective innovation management (Sarasvathy, 2001; Ries, 2011) for the networked and digital society that we live in today.

Real-time foresight (RTF) replaces traditional planning where entrepreneurs from public, corporate or civil aspects of society start collaboration without initially predictable goals and working rules. RTF and the real-time evaluation tools of DINs may be useful for transnational global players as well as for start-up companies, and also for assessment in incubators, in post-disaster areas, in markets, in schools and even in parliaments. Collaborative innovation processes are always a challenge, and each time actors have to start a journey into the unexpected. While many future challenges are unforeseeable today, preparedness for dynamic innovation networks assures actors that they will be able to master the challenge in networked ways.

Summary