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Real-time foresight — Preparedness for dynamic networks

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ABSTRACT

Foresight processes help decision makers plan for potential, desirable or probable futures. With increasing unpredictability, under pressure of time and in multi-agency situations, however, traditional foresight and strategic management fail. In this paper, we redefine a foresight process for real time network management instructed by the extreme case of collaboration in global disaster management. We use an actor–network approach to explore on global and local levels emerging networks. We find that ad hoc and long term network dynamics are governance structures for unpredictable collaboration just as traditional goal setting and targeting is conducive to stable environments. Altogether five dynamic network patterns are found that underlie successful ad hoc collaboration: (1) identification of heterogeneous network actors and early alignment of interests (2) development of a shared vision for heterogeneous goals (3) use of boundary objects (4) punctual directness and distance among implementing actors (5) intense local integration of the focal actor. Governmental decision makers, corporate actors and voluntary associations who are cognisant of dynamic network patterns can use them for rapid collaboration instead of long-range foresight and constituent planning. To base leadership on dynamic network principles instead of traditional strategic management means to adopt a new real-time foresight for collaborative innovation.

"*Something like that you should have*: *a kind of a study on the NGOs*, *more or less who can be doing what*, *who will be able to do it*, *their management style and their capacity*, *the infrastructures and their credibility*" (Yesu Anthony, 2011).

CEO of Indian NGO in relief and reconstruction (Tsunami 2004, Tamil Nadu).

1. Introduction

In corporate and governmental planning around the globe, traditional leadership increasingly faces problems in how to respond to complex real time issues. Hierarchical regulation and traditional corporate planning miss the mark in settings of multiple autonomous actors and volatile partnerships. Mass cooperation and ad hoc collaboration are inherently different from traditional strategic management of individual institutions. In its complexity, it is still hardly understood. And the need to understand "network leadership" and planning becomes even stronger in looming digital societies with both virtual and local players in emerging global centers and peripheries.

In this context of rising unpredictability, foresight processes have seen a boom around the millennium (Georghiou et al., 2008; Miles, 2010; Carabias et al., under review). Foresight processes support decision makers in handling complexity and perceived uncertainty about the future (Coates, 1985; Loveridge, 2001; Giddens, 2013), especially with regards to the development of science and technology. For this purpose, systematically, different methods as scenarios, Delphi studies, roadmapping or gaming for probable or feasible futures are developed by experts (Linstone and Turoff, 1975; Linstone and Turoff, 2011;

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Popper, 2008). Technological, demographic and cultural trends are projected in long terms, so that different futures become visible and tangible for planning and resource allocation. From its beginnings in the last century, foresight kept traditions of national governmental, central actors' perspectives (Cuhls, 2003) but it spread widely into organizational (Slaughter, 1996) and corporate realms (Rohrbeck and Gemünden, 2011) as well. One particular feature that makes foresight so powerful is its capacity to learn from past developments to guide future policies. But methods of relating past to future trends fail in unstable environments with complex relational dynamics (Nugroho and Saritas, 2009). Furthermore, foresights' traditional focus on technological development still often omits other and less tangible influencers (Kuusi and Meyer, 2002), and, most notably, it fails in ad hoc which contradicts long preparation periods (Gordon and Pease, 2006). As careful design is essential for serious scenario development, ad hoc situations slip away recent foresight modes.

Global disaster management offers a good example to illustrate the challenges of ad hoc collaboration under high pressure of time, among multiple actors and with unexpected dynamics. After disasters of a global scale, numerous actors from professional to volunteer, from naked hands to technological expertise rush in to help the affected. But governmental agencies, nongovernmental organizations (NGO) and private stakeholders recurrently follow particular pre-set goals. Information is preliminary, aid is time critical and competition between organizations is strong, so a good governance would have to go beyond simple command and control (Castells, 2000; Burt, 2001; Law and Callon, 1992; Latour, 1999; Powell et al., 1996). It is extremely difficult to forecast "real" local needs after mass destruction. It is likewise demanding to pick the right partners from numbers of foreign actors in long term reconstruction. The only certitude after a crisis is rapid technical, environmental and social change. But how can processes of discontinuous change succeed without central planning and leadership?

Collaboration between "global players" and local actors is a complex issue in itself. But after disasters, collaboration in relief is also asymmetric with regards to resources and accountability of global and local actors. Local NGO (LNGO) from vulnerable regions tends to be smaller and less powerful with regards to resources, infrastructures and dynamic capabilities (O'Brien, 2010; Eisenhardt and Martin, 2000). But looking at long range local sustainable outcomes of disaster management, LNGO are more relevant than foreign aid (Bennett et al., 1995). In most network studies of disaster research, unfortunately, LNGO barely appear and complex intercultural and technical collaboration is reduced to a "cooperation problem of organizations" (Mendonça et al., 2007; Turner, 1976). It is rarely seen that there is a conceptual bias in treating a collective action problem with concepts rooted in individual behaviorist approaches (Ostrom, 2000). To reduce collective action challenges to strategic single actors' perspectives is both an analytical and practical mistake.

To remedy deficiencies in ad hoc collaboration with long term endeavors, in this article, we want to advance public and corporate foresight to a new real time, dynamic network mode. We present results of a network process analysis of global ad hoc collaboration in long term rehabilitation (Van de Ven, 2007). The theoretic lens to investigate more than organizational or individual actors is actor–network theory (ANT). The network analysis shows evidence that actor–networks (Latour, 1991) in relief are amalgams of organizational and socio-technical artifacts and their dynamic interaction: the standard contracts of rehabilitation programs, ubiquitous cell phones, the typical local buildings and boats destroyed and reconstructed real time in poor or good quality play actor roles in disaster management — just as the organizational partners (Pollack et al., 2013). And more so, not only heterogeneous actors, but network dynamics, too, impact collaboration processes and outcomes. Until now, network dynamics escape the perception of many relief actors, as well as they escaped foresight practitioners in public management and in research.

The unit of investigation in the presented qualitative cross-case study is the emerging network. Three innovative and successful relief networks, emerging after tsunami 2004 from Tamil Nadu, are compared in ad hoc and long term collaboration (Turoff et al., 2013; Yin, 2009). Primary and secondary data, interviews and context material were plotted with critical incident technique (CIT) and evaluated in detailed analysis. The exploration and the coding process of the heterogeneous networks followed Grounded Theory (GT) principles using ATLAS.ti 7.0. The findings result in five dynamic network patterns or principles for successful ad hoc collaboration in any societal field. As real time foresight, we propose to incorporate these network principles in decision making and rapid collaboration processes. Referring to the institutional structure of global relief, we move from the general to the specific. From foresight as decision support process we exfoliate a decision support tool. As robust application, this tool helps to forecast global local matches and relief strategies derived from observed network profiles in the field. It displays two key dimensions of successful network collaboration among more powerful global and more vulnerable local actors.

Foresight provides, at least in principle, "a systematic mechanism for coping with complexity" (Irvine and Martin, 1984). Our findings' implication for corporate planning is institutional preparedness for network emergence and network management by systematic consideration of five network principles. One of these rules is the very initial development of a shared vision. While similar to existing foresight principles, the meaning of a shared vision in the context of rapid network formation is different. It has to be based on heterogeneous worldviews of real time affected and involved instead of converged from rounds of expert bargaining in an intentional community. It is neither to be mistaken for the idea of a uniform "situational awareness", as it relates less to the present as to the future. As central element of network formation and management in mobilization, limitation and monitoring, the "shared vision" is a cornerstone in dynamic network management and corporate foresight.

Our findings are equally useful for governmental decision making processes. In the example of global crises management, national public administrations have to learn to identify and support the local emerging networks and to restrict the influx of transnational NGO without local ties in order to reduce competition, contact overloads, the explosion of market prices and skilled labor fluctuation. Real time foresight as preparedness for dynamic networks advances understanding and the collaborative capabilities of public management agencies in public private partnerships. Empiric evidence from this study

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