

## Radical changes in inter-organizational network structures: The longitudinal gap

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### Abstract

The main goal of the research presented in this paper is to provide an overview of the available insights concerning radical changes in inter-organizational network structures. The following research question has been formulated: *what is known about the way organizations in networks deal with, and are affected by, radical changes in inter-organizational network structures?*

In order to answer this question, a review of the most relevant literature dealing with changes in network structure over time is presented. The literature reviewed has been analyzed by comparing the role of change in the analysis (independent vs. dependent variable) as well as the manner in which change is conceptualized (incremental vs. radical change and dyadic vs. network change).

It is found that studies that observe networks changing over time are scarce. Nevertheless, the available studies provide some interesting insights concerning the formation, evolution and termination of dyadic ties, network evolution, and the effects of (radical) changes in network structure. However, more research on several specific topics seems necessary. These topics are: the link between dyadic change and change at the network level, the evolution of network structures, the processes through which critical events lead to changes in network structures, and the effects of radical changes in network structures.

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## 1. Introduction

Inter-organizational networks are in vogue. Interest in these networks has been steadily increasing across a wide variety of fields for several years [1]. The interest in networks is especially strong in the field of economics and organization science. In the corporate world, network mapping is becoming a standard diagnostic and prescriptive tool [2]. Furthermore, the Academy of Management conference 2002 was dedicated to networks, as were several special issues of its journals (for a recent example see: *Academy of Management Journal*, December 2004).

This upsurge of interest in networks has come at a time in which environmental (or market) uncertainty is very high [3]. Product ranges have become more diverse and new technological breakthroughs have given rise to many new technology-product-market combinations, resulting in markets characterized by high levels of dynamics and many (radical) changes. Simultaneously, the acceleration of technological development forced firms to specialize and subsequently led to an intensified division of activities between organizations. This specialization has resulted in firms not being able to generate all necessary knowledge and resources internally and, therefore, induces inter-organizational collaboration and networking [4,5]. Networks, as new organizational forms, are on the one hand an answer to these dynamics that could be potential sources for radical change, but on the other hand, these networks are under the influence of these changes as well.

Given the importance of networks as a governance system and the dynamics and complexity of the environment, researching changes, and in particular radical changes, in and of inter-organizational networks is a topic of great scientific and practical value. This leads to the following research question: *What is known about the way organizations in networks deal with, and are affected by, radical changes in inter-organizational network structure?* In this context, radical change in network structures is defined as significant variation in the underlying pattern of relationships that bind a given set of actors [6]. This definition implies that radical change can take place between two actors (radical dyadic change) as well as between several or all actors in the network (radical network change). The goal of this paper is to explore the available literature concerning the causes and consequences of radical changes in and of network structures to come to a “state of the art” overview.

The remainder of this paper is structured as follows. First, the research methods applied in this paper will be discussed (Section 2). In Section 3, the three distinct groups of papers that were found in the literature dealing with network change are discussed. Next, the patterns that can be found in this body of literature are presented in Section 4. Finally, in Section 5, the findings are discussed and some conclusions are drawn with respect to future research.

## 2. Research methods

An approach similar to the one applied by Oliver and Ebers [7] has been used for this literature review. A selection of the available literature has been made by means of the ISI database (available at: [www.isiknowledge.com](http://www.isiknowledge.com)). Using the ISI database, the five most influential journals (based on their impact scores) in the field of organization science were subsequently determined. This yielded the following journals: *Academy of Management Review*, *Academy of Management Journal*, *MIS Quarterly*, *Strategic Management Journal*, and *Administrative Science Quarterly*. However, since the *Academy of Management Review* published only non-empirical papers, the number six of the list,

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