



## **Chapter V**

# **Ability of the Actor Network Theory (ANT) to Model and Interpret an Electronic Market**

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## **ABSTRACT**

*The nature of information systems is often complex and involves both human and nonhuman components. This is particularly true in an electronic market. Actor Network Theory (ANT) can be used in general to describe the actors, intermediaries, framing and power that are the most important components of such an electronic market, which we call a network. This chapter explores whether ANT can help to analyze electronic trading systems. And if so, can ANT help us to filter the success factors of a computer trading system like Eurex, the largest derivatives electronic market in the world? It highlights how ANT is useful to define the various*

*components involved within an electronic market. Moreover, the chapter analyses ANT's limitations in modeling computer-trading systems. This chapter concludes that ANT is useful to analyze an electronic market such as Eurex.*

## INTRODUCTION

Globalization of financial markets has increased rapidly in the last few years due to a combination of deregulation and dramatic advances in information technology (Beck, 2000; Giddens, 1998; Kapstein, 1997; Young & Theys, 1999). Increasingly, financial institutions conduct their trades through electronic markets. Electronic trading markets like the German/Swiss European Exchange (Eurex) have had a major impact on the participants (e.g., banks) on the one hand and on the markets (e.g., exchanges) on the other hand. Electronic trading has been globally successful since 1997. Most financial products are traded electronically on a relatively few electronic trading systems such as Pats Systems and Trading Technologies.

Actor Network Theory (ANT) is introduced to describe with a specific vocabulary to what extent technology influences human behavior. ANT shows that the use and development of an information infrastructure is a socio-technical process of negotiation. ANT has been widely adopted in the social science literature and also in the information systems literature. It can provide a framework to describe global networks. ANT will help us to understand the electronic markets and, in particular, it can tell us about Eurex's success. ANT has its origins in studies of the networks of social practices within science and technology. Latour (1996) recognized that both human actors and nonhuman participants were equally actants. The neologism actant is often used as a neutral way to refer to human and nonhuman actors, thus eliminating the strong human bias in the word actor. They are defined by how they act within the networks of practices.

In this chapter, Eurex is used as a case study to analyze how a market can be interpreted as a heterogeneous network. Financial products traded on the German/Swiss electronic exchange Eurex are accessible from any location in the world. In order to understand an electronic market like Eurex, we discuss the role of an actor network. Heterogeneous actor networks will be described with the help of ANT. A network consists of different components. Analyzing such networks gives us a broader perspective and provides insight into markets based on electronic exchanges. It also allows exploring the differing interests of actors within a market. A market can also be seen as an exchange. Direct accesses from actors like institutional or private market participants to an electronic market are an important factor for the network. Without this direct access, electronic trading systems like Eurex would not exist.

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