



Chapter XIV

**Network Topology of
the New Economy:
Organizational Passages from
Knowledge to Innovation**

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ABSTRACT

This chapter develops a framework of analysis of the emerging organizational network topology of the new knowledge-driven economy in order to identify critical factors that underpin sustainable processes of innovation. The central argument of the chapter is that in the new economy innovation constitutes the foundation of the competitiveness and value-creating capabilities of economic organizations. Innovation has emerged as a strategic issue because of the disarticulation of established economic and social structures and processes that the new economy and the new society bring in their path. This disarticulation is the product of the interplay of technological, industrial, economic and social transformations. In this context, innovation is not something happening “inside” organizations but rather at the interface of organizations with the business, regulatory and institutional environment within which they operate. The process of innovation is increasingly driven by open-source networks of cooperation and involves dynamic interrelationships between technological transformations, organizational capabilities of firms, and public institutional and regulatory structures supportive of innovation and entrepreneurship. In other words, for new information and communication technologies that power the new economy to be able to spread throughout the whole economy, thus enhancing productivity growth, business firms, the institutions and culture of society, and the factors implicated in the production process need to undergo substantial change.

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INTRODUCTION

Information and communication technology (ICT) is today recognized as the epicenter of a profound economic dislocation associated with what has come to be known as the transition to the new knowledge-driven economy. In this transition the capacity of organizations to engage in learning processes has increasingly come to be viewed as a crucial determinant of innovation, enterprise performance, and economic development (Lunvall & Johnson, 1994; Nonaka & Takeuchi, 1995; OECD, 2001). In the emerging new economy, innovation constitutes the foundation of the competitiveness and value-creating capabilities of economic organizations. Innovation has emerged as a strategic issue because of the disarticulation of established economic, industrial and social structures, and processes that the new economy and the new society bring in their path. This disarticulation is the product of the interplay of technological, industrial, economic, and social transformations. The alignment and re-articulation of technological capabilities, especially ICT, through novel knowledge-creating organizational forms geared to constant innovation and value creation is the intangible quality that today determines the competitiveness of economic organizations, and the national and regional environments within which they operate (OECD, 2001; Damaskopoulos et al., 2002; World Bank, 2002).

In this context innovation is not something happening “inside” organizations, but rather at the interface of organizations with the business, regulatory, and institutional environment within which they operate. The process of innovation is increasingly driven by open-source networks of cooperation and involves dynamic interrelationships between technological transformations, organizational capabilities of firms, and public institutional and regulatory structures supportive of innovation and entrepreneurship. In other words, for new ICTs that power the new economy to be able to spread throughout the whole economy, thus enhancing productivity growth, business firms, the institutions and culture of society, and the factors engaged in the production process need to undergo substantial change. This is why the agenda of research on the dynamics of adoption of new economy practices, innovation, and economic growth needs to be expanded beyond the level of the firm. It needs to be built around the dynamic interrelationships between technological transformations, firms’ organizational and knowledge-creating capabilities, emerging market and industry structures, and public institutions (Boyer & Saillard, 1995; Berger & Dore, 1996; Castells, 2000; Crouch, 2001; OECD, 2001; World Bank, 2002).

The chapter is structured around three sections. The first advances an analysis of the pattern of change associated with the passage to the new economy, with specific attention to the networked nature of innovation. The main argument here is that in the emerging economic environment, it is networks, not firms, that are increasingly becoming the basic units of economic activity and analysis. The second concentrates on the emerging organizational forms that underpin processes of innovation. Innovation is a function of organizational forms that generate synergistic relationships between technology, organizational flexibility, and highly skilled labor. Organizational passages that convert knowledge into innovation and improved economic performance run through networks within, between, and across organizations. In this context, the chapter explores the concept of the “network organization.” The third section develops an analysis of the interfaces between firms and their public regulatory and institutional environment. Paths

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