

## **Chapter VII**

# **Challenges for Research and Practice in Distributed, Interdisciplinary Collaboration**

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## **Abstract**

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*As private sector and government research increasingly depends on the use of distributed, interdisciplinary and collaborative teams, particularly in scientific endeavors, we are faced also with an increased need to understand how to work in and study such teams. While much attention has been paid to issues of knowledge transfer, the impact of many other consequences of distribution—disparate disciplines, institutions, career paths, time zones*

*and technologies—have been understudied and underestimated. In this chapter, we describe how distributed, interdisciplinary work puts pressure on existing disciplinary, institutional and personal practices—many of which are second nature to team members, and thus easily overlooked. Reflecting on our own and others’ studies of such teams, and our group’s experiences as a distributed, interdisciplinary and collaborative unit, we describe some key challenges facing such teams, including issues relating to working and learning together as experts, defining and crossing boundaries, managing external relations and working with and through technologies.*

## Introduction

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Recent trends in work and research have encouraged businesses and research institutions to integrate knowledge from widely disparate fields, to increase the use of computing capabilities and to form inter-organizational connections; in consequence, increasing the dependence on distributed, interdisciplinary and collaborative teams. Private sector investment in alliances has been paralleled by large-scale government investment in research infrastructures, programs and centers, and both have called on researchers to work across knowledge domains, organizational norms and physical and conceptual boundaries. While earlier research has suggested that the main problem for such work is making tacit knowledge explicit for transfer to others, we suggest that contemporary teams face a more complex set of issues as they engage in joint knowledge construction. Contemporary team members find that they cannot simply transfer their previous collaborative skills to a widely distributed, interdisciplinary arena, but must continually renegotiate a wide range of research and work practices thought to be already established. As Knorr-Cetina (1999) has remarked about scientific teams, current research initiatives often bring together quite disparate disciplines, locations and technologies, often leaving a single researcher of such teams woefully at a disadvantage to understand a team’s work. Studying contemporary teams requires a more comprehensive examination than is commonly employed, encompassing interdisciplinary processes, group interaction, institutional practices, career interests and uses of information and communication technology. Moreover, contemporary views that consider technology as providing the solution to the “problem” of collaboration—e.g., through faster connection, seamless integration of geographically distributed people and projects and new information and communication technology infrastructures—fail to acknowledge the negotiation of practices and the coevolution of practices and

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