Preface

Teams are integral elements in today's corporate and industrial worlds, considered by some to be the fundamental units of organizations, and technology has become essential to teamwork. In fact, technology enabled the creation of a new type of work team: virtual teams. These are proliferating exponentially. Organizations assemble and support them for a variety of activities, such as new product development, knowledge sharing, and education. The advantages of such teams are obvious: people no longer must work in the same physical location to work "together"; participants can contribute from any part of the world, at any time of the day (or night). By breaking down the barriers of space and time, a virtual team fully utilizes the expertise of the members of an organization—or of several organizations—without pulling them from other projects or incurring relocation expenses. Hence, at least notionally, such teams have immense potential for improving organizational effectiveness.

This book began as a cross-disciplinary conversation about whether, why, and how virtual teams either do or do not fulfill that potential. As organizations implement more virtual teams, it becomes increasingly important to know how best to structure and manage such teams. There are, of course, research-based strategies for managing traditional work groups, and over two decades of research on the benefits and perils of computer- or technology-mediated communication on individuals. We suspected that the compounding of these two elements—working in a group and using primarily or exclusively technology to do that work—would engender new challenges for participants as well as for those who manage virtual teams.

That suspicion led us to ask academics in a number of disciplines to explore the functioning of virtual teams. The result is this book, in which researchers in Business, Communications, Psychology, Sociology, and Information Technology highlight some of the challenges for virtual teams and offer research-based recommendations to maximize their effectiveness. We believe

that managers who want to use virtual teams more effectively will find the book useful, and the research articles will also interest academics, as they continue investigating these teams.

DEFINING VIRTUAL TEAMS

We use the term *team* in this book in the commonly accepted sense. That is, the term refers to a collection of four to 12 individuals collaboratively working on a common and interdependent task or goal. The goal is often one requiring a decision or a solution to some problem. The elements of common tasks/ goals and interdependence are integral to our definition of a team, at least in respect to an imposed need to arrive at a collective position on a matter under consideration. In addition, the teams we discuss here are distinguished by one additional factor: the dimension of virtuality.

A group of organizationally or geographically dispersed workers brought together to work on a common project through communication and information technologies is a virtual team (Townsend, DeMarie, & Hendrickson, 1998). Such a team conducts all or most of its interactions via electronic means (Grosse, 2002). It holds few, if any, face-to-face (F2F) meetings, because its members are not proximate in physical space. In fact, the team members may be widely geographically dispersed—in different countries or on different continents. They may be members of different organizations, brought together due to their expertise or interests, to find a common solution to a problem.

Virtual teams, then, are teams that meet either partially or exclusively in techno-space. Initially, their team meetings would have been conducted exclusively via communication both *to* and *through* a mainframe computer, primarily through e-mail, the Internet, and groupware. Increasingly, however, computer technology is supplemented by telecommunication: cell phones and videophones.

Technology and virtuality arguably change work groups in three important ways: they introduce new dimensions of communication among members by breaking down traditional barriers of space and time; they modify traditional group processes; and they enormously enhance the group's capacity to access, share, manipulate, retrieve, and store information. While there is a substantial amount of research findings on each of these three effects of technology, the preponderance of it focused on individuals rather than on groups. Over two decades of research has found, for example, that technologically mediated or computer-mediated communication between individuals promotes equality and flexibility of roles but is less "rich" than traditional F2F communication and often leads to feelings of isolation and de-individuation (see, for example, Kraut et al., 1998). This and other research on individuals can certainly contribute to our understanding of teams. Yet, as the chapters in this book show, more deliberate and focused research into virtual teams uncovers information of use to academics and to managers.

ORGANIZATION OF THE BOOK

This book is organized into four sections and has 15 chapters. A brief description of each section and chapter follows.

Section I: Make-Up of Virtual Teams

In these chapters, various ways that a virtual team can exist, and issues around how teams should be composed are discussed.

Chapter 1: Within virtual teams, according to "Virtual Teams as Sociotechnical Systems," by Cuevas, Fiore, Salas, and Bowers, there is much ambiguity and artificiality, a concept that they call "team opacity." Because the team members are in an environment of an increased level of abstraction due to their technology-mediated communication, and because of the influence of the external environment on their work, they run the risk of having lower cohesion and trust than in teams who communicate F2F. Building on the organizational psychology literature, the authors advance relevant ideas for managers to consider when creating a virtual team. While other researchers focused on in-process interventions to keep a virtual team functioning at a high level, this article adds to the literature by suggesting pre- and postprocess interventions that an organization could utilize to get the most out of the virtual team process.

Chapter 2: Unlike traditional teams, virtual teams often do not have stability, regular interaction, and team member proximity. Rather, they exist primarily in the minds of the members and the organizations that support them. In "Effective Virtual Teamwork: A Sociocognitive and Motivational Model," Kyriakidou and Millward offer insights gleaned from interviews with 40 team-building experts and two focus groups on the creation of intelligent virtual teams. These intelligent teams share common goals, manage their own processes, and self-regulate. By actively engineering and managing team focus and team competence, the team leader will create a more effective group. According to their research, it is important for teams to keep a shared mental model of their potency, and of the fact that they are really a team.

Chapter 3: Who should an organization put on virtual teams? Is it better to have complementary expertise or to have people who will interact well? Potter and Balthazard explain, in their chapter "Understanding Composition and Conflict in Virtual Teams," that it is much better to have good interaction styles if the organization wants a high-level performing team. Based on multiple studies, they contend that a constructive communication style is critical to team success. In particular, a team should have some extroverts to spur conversation, but having too many will lead other team members to be passive. In addition, the authors offer a discussion of the diagnostic tools that practitioners can use to identify the communication styles of potential team members, and interventions that can be undertaken if the team does not appear to be living up to its potential.

Section II: Leading Virtual Teams

The chapters in this section cover leadership issues for teams.

Chapter 4: Based on their interviews with 21 leaders of global teams from a variety of industries, Connaughton and Daly advanced propositions on how successful team leaders approach the challenges of virtual teams in their article "Leading from Afar: Strategies for Effectively Leading Virtual Teams." In this informative chapter, they discuss the importance of the leader's communication skills, cultural nuances, media choice, and the leader's awareness of the challenges. As more organizations adopt virtual teams, it is critical that they understand and adopt the strategies that will work and avoid the ones that will not. With its effective interweaving of "tales from the trenches" with theory building, the information in this chapter will help the reader identify a number of successful and ineffective strategies. The cautionary tales of strategies that did not work will be useful to virtual team leaders.

Chapter 5: Interviewing 39 participants from six teams in three industries allowed Staples and Cameron to test the factors and processes affecting attitudinal outcome variables in their chapter, "Creating Positive Attitudes in Virtual Team Members." One of their interesting findings was that "team spirit" can exist in virtual teams, as it does in F2F teams. By setting aside specific blocks within a team's interaction times for social chitchat, managers may find that team members are more satisfied with the team and with their jobs, and have more motivation and organizational commitment. When viewed in light of prior studies on team effectiveness, the support of this type of attitudinal outcome is productive for the team and for the organization. The results of this study add to our understanding of how to make teams more effective.

Chapter 6: In their chapter, "Trust in Virtual Teams," Bradley and Vozikis contend that virtual team members rely heavily on their prior experiences in setting their expectations for trust within their team context. As they point out, the socialization process that occurs in F2F teams is not usually available to virtual teams. Most members of a virtual group, however, start with the belief that they will be able to trust the other members. Because trust is an important foundation for the success of teams and because the swift trust necessary for virtual interactions is fragile, they contend that it is imperative that each team have a designated leader from the start. Without such a facilitator, a self-organized group may soon deteriorate, as the expectations of the group members are not met. By setting the norms of behavior within a virtual team, a good facilitator can keep the level of trust high. As managers establish these teams, they should be aware of the importance of a good facilitator.

Section III: Communication in Virtual Teams

In this section, the chapter topics range from the socialization of new team members to the types of technologies that can be used by virtual teams.

Chapter 7: When a person joins a new organization, he or she goes through a socialization process, learning about the norms, tasks, and roles in the group. As Picherit-Duthler, Long, and Kohut point out in their chapter "Newcomer Assimilation in Virtual Team Socialization," computer-mediated communication changes the manner in which a new person becomes a real member of the group. After reviewing the literature from communications and management perspectives, this cross-disciplinary team of researchers offers interesting insights for supervisors of virtual teams. One of those insights is that supervisors should not try to manage teams, but rather should act as facilitators of the team. Encouraging "small talk" among members achieves better assimilation and, thus, better outcomes for the group.

Chapter 8: Emphasizing the importance of "small talk" in the creation of teams is the basis of the chapter "Negotiating Meaning in Virtual Teams: Context, Roles, and Computer-Mediated Communication in College Classrooms," by Crider and Ganesh. The authors analyzed the conversation streams across student teams with members from three universities (two in the United States and one in the Philippines), working on a common project. Based on this research, they were able to identify the conversational themes that led to a shared group identity and performance on task. Using typical conversation topics like movies, music, etc., the students were able to develop a shared context in which to work. While this chapter is based on students, the lessons learned are also important to team leaders in other organizational settings: for people to work together, they must exchange information through informal communication so that they can develop a shared work context.

Chapter 9: The focus of much research on virtual teams looked at how to manage members of a team, where the members are physically located away from the organization. In this interesting chapter by Leonardi, Jackson, and Marsh, the reverse is explored: how the virtual team member can manage the distance. In "The Strategic Use of 'Distance' Among Virtual Team Members: A Multidimensional Communication Model," the authors suggest that team members will sometimes manipulate the fact that they are located at a distance to meet their individual needs. Lengthy interviews were conducted with 46 virtual team participants in a variety of industries, and the results are presented here. The authors found that distance is not perceived in the same way by all participants. By looking at the impact of distance on worker's emotions, identity, and communication strategies, this research team adds a new dimension to the study of virtual teams.

Chapter 10: Face-to-face (F2F) meetings may also occur between team members on teams that operate in a virtual environment. Some managers believe that they are critical to the success of projects and are willing to invest significant amounts of travel money to facilitate them. Johnson's chapter, "How Hard Can It Be to Communicate? Communication Mode and Performance in Collaborative R&D Projects," may give those managers cause to rethink that

belief. Based on an analysis of 25 projects sponsored by a consortium funding technology research, the author found that hard modes of communication work equally well, if not better, when the innovation is incremental, and the goals are clear. Only when the innovation is radical and the goals are not agreed upon are soft modes of communication, like F2F meetings, necessary. This finding should be useful to managers, as they evaluate the best allocations of project funds.

Chapter 11: A wide variety of software and technology aids is discussed in the bibliographic essay, "Technology and Virtual Teams," by Ferris and Minielli. Group support systems such as asynchronous and synchronous messaging systems, data management technologies, and proprietary groupware packages are covered. A brief discussion of technologies used as course management systems in education is also found here. To provide assistance to managers interested in exploring the use of this technology, the URLs for the software products highlighted in the chapter are included.

Section IV: Effective Uses of Virtual Teams

In this final section of the book, ways in which teams may be used and ways to measure their effectiveness are given.

Chapter 12: How can teams use creative techniques to improve their performance? Gascó-Hernández and Torres-Coronas outline some helpful ideas in their chapter "Virtual Teams and their Search for Creativity." These authors identify techniques that are particularly suitable for a virtual environment. Their recommendations for divergent techniques—ones that generate a number of ideas—are electronic brainwriting, synectics, and attribute listing. They then consider the pros and cons of each in a virtual setting. According to them, convergent techniques—ones that select the best idea for further study—need more work to improve their utility for a virtual environment due to their time-consuming nature. Provided in this chapter are good ideas for fostering creativity, and highlighted are some areas in which more work should be done by researchers interested in virtual group creativity.

Chapter 13: In their chapter, "Virtual Teams in an Executive Education Training Program," Reeves and Furst tell of their work with teams from two industries, as those teams worked on projects and learned how to function as teams. While the teams had different characteristics, they had a common genesis: their organizations identified the respective team members as having potential for promotion. But, the ways in which the teams were set up, the tasks that the teams were given, and the support they received from top management led to different outcomes. In addition to offering substantial insights into how top management can help a team perform better, this interesting chapter highlights some things that management should not do in setting up teams, unless they want to set up the team for failure.

Chapter 14: Unlike other chapters in this book, which presume that people are placed on virtual teams to accomplish some organizationally defined goal,

this one considers voluntary group membership. It answers the question: why do people join virtual groups and then become a "community"? This question is particularly significant for marketers, because, as Dholakia and Bagozzi point out in "Motivational Antecedents, Constituents, and Consequents of Virtual Community Identity," group members often look to one another for information in buying situations. By identifying the salient characteristics of a virtual group and motives for membership in a group that cause participants to identify more strongly with the group, these authors offer advice of particular interest and use to marketers seeking to organize a virtual group of customers who would then influence other purchasers.

Chapter 15: In "A Model for the Analysis of Virtual Teams," Andriessen and Verburg adapted Andriessen's Dynamic Group Interaction (DGIn) model to the new team environment. Their important contribution is the reminder that teams will vary by degree of "virtuality." All virtual teams are not created equal: they may differ greatly on dimensions of geographic distribution, time frame for the work, and organizational or cultural constraints. They contend that team-building exercises, training in cultural diversity, structuring of communication, and use of groupware tools must be adjusted for these varying levels of virtualness. The information in this chapter serves as a reminder to managers and to researchers that they must be cognizant of such differences as they assemble and research such teams.

THE FUTURE

We believe that the use of virtual teams will continue to grow. People currently entering the workforce after college have been immersed in the use of virtual teams in their classes. They are used to working on projects that involve the coordination and even holding of meetings via technology. They will bring those experiences into the workplace, and it is anticipated that they will continue to use this type of teamwork.

So, too, will organizations expect that virtual teamwork will grow. As organizations worry about their bottom lines and reduce travel, they will more strongly support the existence of virtual teams. They will focus, too, on increasing the productivity of those teams.

This book, then, is but a start. It lays out some of the issues of virtual teamwork and offers suggestions for practitioners to utilize. It also offers some direction to future researchers as they explore this type of collaborative work. We hope that practitioners and academic researchers will find it useful, as they attempt to realize all the promise that these teams hold.

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