Chapter 12
Dimensions of Team Distribution within a Software Team

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ABSTRACT
This chapter broadens the definition of distributed teams to include facets beyond geographic, cultural, and organizational boundaries. Through the example of a typical software development team and its version control process, it shows how varying the ability to share network resources adversely affects collaboration. This network connectedness dimension of variability is solved through progressive adoption of newer tools and techniques, which in turn have unexpected strategic benefits beyond solving the immediate need. From this example, a pattern is extracted that can be applied to any team by identifying a dimension of distributedness, implementing solutions, and capitalizing on those solutions.

INTRODUCTION

Typical Dimensions of Distributed Teams
We usually define a distributed team as one whose members are separated by distance, such as when team members are in different countries. We assume the distribution is either in (a) time, (b) distance, (c) culture, or some combination of these aspects.

Distributed teams have grown dramatically in recent decades accompanying a broader globalization of industry, decreasing hierarchical management barriers, and cross-organizational collaboration using virtual and often dynamically formed teams. Distributed teams have even pierced our popular consciousness. In the popular book The World Is Flat Friedman (2007) links the rise in globalization to a stark rise in telecommunications infrastructure spawned by the dot-com boom and by a simultaneous rise in affordable worldwide travel. Technological advances have dramatically lowered the obstacles to distributed teams and “businesses and multi- and international
organizations are assembling teams of experts who
work together and participate in projects while
remaining physically dispersed in geographi-
cally distributed locations” (Evaristo, Scudder,
Desouza, & Sato, 2004, section 1).

Literature on distributed teams addresses the
communication and managerial challenges that
arise from such physical disconnection. Jarven-
paa and Leidner (1999) identify ways to improve
communication and trust that dispersion usually
damages, but limit their analysis to dispersion in
time, geography, and culture. Others assess man-
agement challenges generally (Hertel, Geister, &
Konradt, 2005), offer specific coping strategies for
distributed teams’ communication conflicts (Hinds
& Bailey, 2003), and techniques for measuring
effectiveness of distributed groups (Maznevski
& Chudoba, 2000).

Indeed physical distance and the resulting
communication challenges are so pervasively assumed
that researchers often burrow exclusively into
communications solutions alone. Some address
broad communications issues (Powell, Piccoli, &
Ives, 2004), while others examine niche solutions
like web-based conferencing as stepping-stones
toward virtual team nirvana (Warkentin, Sayeed,
& Hightower, 1997). The rise in distributed teams
is predictably accompanied by a veritable boon
in new software and infrastructure promising to
meet the challenge. A number of silver bullets
are just inches away from slaying the distributed
team beast.

Atypical Dimensions of
Team Distribution

What are we missing by so narrowly defining
distributed teams? Are there other dimensions or
defining characteristics that need to be equally
solved for a virtual team to reach its full poten-
tial? Can we examine distributedness in aspects
beyond geography and culture?

Some authors address the dimensionality of
distributed teams in an attempt to add formal-
ity to this problem. In “A Dimensional Analysis
of Geographically Distributed Project Teams”
(Evaristo et al., 2004), the authors acknowledge
that current research consistently overlooks defining
exactly what distributed means. Rather than
seeing a team as either distributed or not, they
decompose a distributed project into facets like
perceived distance, the types of stakeholders a
team has, the type of project, or the systems meth-
odologies at work. This formality certainly helps
propel us toward a more disciplined treatment of
distributed teams but, I argue, these still rely on
the assumed nature of what makes a distributed
team: communicative separation. We are left with
the same core assumptions albeit decomposed
more formally.

Other researchers have attempted to broaden
the discussion of distributed teams into other
dimensions besides distance and culture dispar-
ity. Examples include the degree of electronic
dependence (Gibson & Gibbs, 2006), the degree of
team member interdependence required for tasks
(Axtell, Fleck, & Turner, 2004), and the degree of
virtuality a team adopts in its daily routine (Kirk-
man, 2005). These all can affect the distributed
team’s nature and therefore its effectiveness.

Missing from each of these treatments, how-
ever, is a meta-discussion of distributed team
dimensions. That is, how can we define the distrib-
utedness of a team as a function of what aspects
are most varying among the team members?

I propose we broaden the definition of dis-
tributed teams to break out of these assumptions:

A distributed team is one whose members vary from
one another in any dimension which significantly
impacts the normal functioning of the team.

By considering any variability as a form of
distributedness we can attack it directly and
seek remedies to the challenges it brings. We
become aware of important disparities affecting
our team’s efficacy we may otherwise overlook.
This generalized approach also encompasses