Chapter XLVII
Resolving Wicked Problems through Collaboration

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ABSTRACT

Wicked problems (messes) are tangled social situations that are too costly to stay in and too intransigent to get out of. Collaboration is essential to resolving them. This chapter examines five main ideas: (1) Messes and wicked problems are the most difficult in a hierarchy of difficult problems.(2) Why mess resolution usually involves disruptive innovation. (3) Why collaboration is essential and hard to achieve. (4) Collaboration is a practice generated in six kinds of conversations. (5) Someone who understands the practice of collaboration will find many information technology tools to help with the process: exchangers, coordinators, and games, and can design better tools.

Every revolutionary idea seems to evoke three stages of reaction: It's completely impossible. It's possible, but it's not worth doing. I said it was a good idea all along.

—Arthur C. Clark

The Americans can be counted on to do the right thing, after they have exhausted all the alternatives.

—Winston Churchill

INTRODUCTION

The question is simple enough: "How can we resolve a mess, a tangled social situation that is too costly to stay in and has no obvious way out?" Messes are also called wicked problems. The various players cannot agree on the nature of the problem or on solution approaches. Their search for solutions

produces few results and seems open-ended amidst constantly shifting constraints (Denning 2007, Roberts 2000, 2001). The end state is a moving target (Reeves 1991). The purpose of this chapter is to shed light on effective strategies for resolving messes and the technologies available to support those strategies.

We will investigate four main ideas: the nature of messes, why mess resolution is likely to involve disruptive innovation needs collaboration, strategies for organizing collaboration to confront a mess, and technology tools to support collaboration. Most existing "collaboration technologies" are good for information sharing but not true collaboration. However, someone who understands the practice of collaboration will find many tools to help with the process.

SOLVING HARD PROBLEMS IN SOCIAL SYSTEMS

Let us begin by considering messes as a category within a hierarchy of difficult problems. We use the word "system" to mean either a social or natural system.

Problems come in four categories of difficulty (Table 1). The simplest are the ones where the solution knowledge already exists, either in one's own domain (Category I) or in another (Category II). The more difficult require the construction of new knowledge. When the system of interest is complex and governed by fixed (but unknown) laws, its reproducible behaviors can be discovered through experiments (Category III). When the system of interest is complex and adaptive, it tends not to have reproducible behaviors; it adjusts its responses and neutralizes repeated probes (Category IV). The last category is the abode of messes and wicked problems.

These categories blend together ideas from Kurtz and Snowden (2003) and Roberts (2001). Kurtz and Snowden discuss the notions that Category III problems may be complex natural systems governed by unknown laws waiting to be discovered, and that Category IV problems are complex social systems. Roberts lumps our Categories I and II into a single class ("simple problems") and uses the terms "complex problems" for our Category III and "wicked problems" for our Category IV. These categories represent the degree of agreement among the social power centers about the problem and its possible solutions. The simple problems are those in which everyone agrees on the problem definition and there is a power center that can implement the change. The complex problems are those in which everyone agrees on the problem definition, but there is no consensus among power centers on how to proceed. The wicked problems are those for which there is no consensus on the problem definition or on the solution approach, and partisan interests block collaboration.

These categories suggest a strategy for solving a problem of unknown difficulty. We start with the hypothesis that our problem is of Category I, and then work our way upwards through the categories until we find a solution or know that we confront a mess. If our problem is Category I or II, we will

Table 1. Categories of problem difficulty

Name	Category	Characteristics	Actions
Simple Problems	I	Solution knowledge exists in your own domain	Redirect attention.
	II	Solution knowledge exists in another domain	Find an expert. Become an expert and design own solution.
Complex Problems	III	No solution exists in any domain; system is very complex but responds the same way to repeated stimuli	Explore for recurrent patterns by probes and experiments, design resolution around recurrences discovered.
Wicked Problems (messes)	IV	No solution exists in any domain; system is chaotic and adaptive, does not repeat patterns under the same probes	Organize collaboration in a local part of system, then spread the new organization to the whole.

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