simultaneously. We call this the Full Dimensional Systems Model (FDSM), a perspective which draws heavily on the concepts associated with complex adaptive system (CAS). The FDSM perspective assumes there are multiple, interrelated domains of influence that impact change and that these domains must each be appreciated and addressed simultaneously to achieve sustainable performance improvements. The FDSM provides a valid and powerful rationale for determining how to implement meaningful change within organizations as well as identifying probable outcomes and consequences from those changes.

Flaws in Traditional Approaches to Thinking About Change

The fact that organizational change frequently fails underscores the flaws inhering in traditional approaches to change. These approaches to change are flawed in four ways. First, the need for change is framed in almost exclusively objective terms, thus overlooking important subjective issues. Second, the change problem is viewed as a puzzle to be solved (Ackoff, 1974; Mansfield, 2010), and the challenge is collecting and analyzing enough data until all the pieces form the right solution. Third, using this approach means that decisions are often based on flawed and/or incomplete information. Fourth, decision makers tend to develop detailed change strategies (often based on the data collected around the need for change), assuming that, if they follow the plan, the puzzle will be solved and the organization will come through the process better structured to meet the needs of their clients. This typical mental model leads to a misalignment of how decision makers perceive and respond to the "hard reality of reality itself" (Wolfberg, 2006).

Myths and Other Dangerous Half-Truths About Change

Adherence to traditional approaches to thinking has produced a number of myths, or dangerous half-truths, about how to make change happen (Kelly, Hoopes, & Conner, 2005; Pfeffer & Sutton, 2006).

Myth 1—Change starts at the top. Organizational change starts with a goal and a plan created by senior management. This approach is usually met by what is referred to as *resistance* and typically does not work in the fast changing systems of today because the change strategy reflects the same paradigm that created the problem in the first place. The truth seems to be that change depends on the participation of many system members (agents) in an essentially self-organizing process. It may also depend on change agents who consciously influence self-organization toward new and more adaptable patterns of relationship.

Myth 2—Efficiency comes from control. Change is possible only when every detail is mapped out in precise terms. This prejudice ignores the fact that every process improvement adds new and/or changes existing subsystems, which adds even more complexity to subsystems/systems that already have problems. The result is that many efforts to solve problems actually lead to more serious ones.

Myth 3—Prediction is possible. It is assumed by many managers that an action in one place will have a replicable effect in another. This, it turns out, is usually false, in part because a complex system consists of many agents, with different ideas, biases, prejudices, and expectations, and each of these concepts interact with many subsystems to determine outcome. Even small variations in the patterns of interaction can produce enormous variation in outcomes. In other words, complex systems are usually very sensitive to inconsistencies in mind-sets and processes.

Myth 4—Change is manageable. Assuming the course of change is predictable, many managers make a related assumption—that you can manage the change process by developing and then implementing complex plans. The fallacy of this myth was very clearly illustrated by the recent Gulf of Mexico oil tragedy that cost 11 lives and did untold damage to the Gulf's ecosystem. The assumption was made that through design and control alone, the company could achieve the aim of hazard elimination—This turned out not to be the case.

The validity of these myths is not supported by the facts. Decisions made in the manner described above often produce unanticipated and unintended consequences. A typical occurrence is illustrated in one of the organizations we studied (Owen & Mundy, 2005) where a shared services human resources model was created to improve the efficiency and effectiveness of human resource delivery. Although the delivery model seemed very efficient, it produced the unexpected and unintended consequences of bringing about a loss of direct contact with customers and direct accountability at the local level. The result was that the quality of service delivery actually declined significantly as did the level of customer satisfaction and, instead of saving money, costs soared as a quiet revolt of internal customers ensued.

An important effect of these flaws is the creation of what might be thought of as ripples of dissonance in an organization. These ripples, which represent the diverse patterns of self-interest (significant differences) that exist relative to the change, behave like attractors and exhibit all the properties associated with attractors, that is, the emergence of self-organized, adaptable networks, and so on. The "psychological mathematics" of how this region of dissonance is resolved, then, is at the root of much of the wasted energy observed when an organization tries to implement *a large-scale* (organization-wide) change or intervention. Any change that involves new patterns of relationships among members, new ways of behaving, and new processes requires a different mental model than the one that is typically used to understand and execute change.