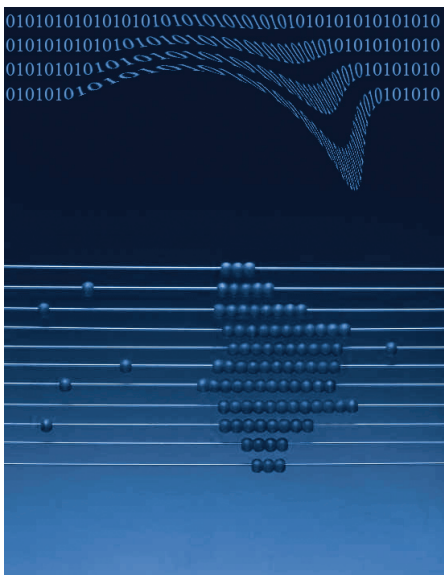
What Makes the Soft Side So Hard?



Achieving Implementation Success through Sociotechnical Systems Design

by
Matt Minahan
Barry Bateman
Robert D. Shepherd

SAPIENCE
Organizational Consulting

8 Why Is the Soft Side So Hard? |

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With government and business spending hundreds of millions of dollars on major IT projects, such as new hardware or ERP implementations, managers naturally want to maximize the e ectiveness of every dollar spent. Yet, we know that most such projects 85 percent to be precise fail to meet some or all of their intended objectives.

And, in the end, it is seldom the technology that fails. It s not the software or the hardware that breaks. It s not the routers or wires or servers or any of the hard technical variables that fail.

It s the soft variables, the human factors, that put these large IT projects at risk. Of the interrelated project elements described in the STAR Model for Designing Organizations (page 3), the most easily managed components are the business process and technology variables.

As the now well-known Silence Fails study notes,[1] it is shortcomings on the more human dimensions that cause catastrophic failures of immense and expensive IT and infrastructure projects. Most major IT contractors handle the business process and technology variables deftly . . . and still fall far short of their cost or e ciency goals.

To what soft side variables should managers attend? Of course, they need to identify within their organizations, or through recruitment, people with the proper skills to operate the new systems and to put proper documentation and training systems in place. In addition, appropriate changes generally need to be made in the organizations incentivization structure and performance management processes to ensure that these are in keeping with the project s success. And those are the easy tasks!

e projects that succeed are ones in which serious work is also done to understand and respond to the changes in jobs, roles, and organizational structures that the technological change entails.

Unfortunately, many large IT contracts awarded by the government pay lip service to such factors, but in the end, do little to

1. *Silence Fails: The Five Crucial Conversations for Flawless Execution.* A study conducted by VitalSmarts and The Concours Group. http://www.silencefails.com.

address them o cially or systemically. And the predictable result is that the projects awarded under these contracts end up in the pile of nonperformers, among the failed 85 percent.

To be clear, it is hard work to address these soft side issues. Dealing with them successfully requires a body of knowledge and skills and a way of thinking that most technology rms don t have, including familiarity with sociotechnical systems (STS) design.

e fundamental principle of sociotechnical systems design is that technical and social systems must be designed concurrently (i.e., they must be jointly optimized). As the Star Model chart to the right illustrates, changes in technology interact complexly with existing systems. In projects that are not jointly optimized, these interactions often cause unintended and disastrous changes in jobs, roles, structures, skills requirements, sta ng needs, and processes problems that sink those projects. In a jointly optimized system, each of these areas (and the areas of compensation, incentives, performance management and incentives systems as well) is consciously addressed as part of the implementation, and systems are set in place for continuous monitoring and improvement of the jointly optimized system. In addition, attention is paid to how the new sociotechnical system design interacts with the external social environment (customers and stakeholders). Fortunately, STS design provides mechanisms for achieving such joint optimization of technological and social change. For an overview of some of the key principles of STS, see the sidebar on this page.

e best way to avoid contributing yet another project to the failure heap is to acknowledge

Some Key Principles of Sociotechnical Systems Design

Joint optimization. Design for system optimization, not maximization of one aspect at the expense of the other. Design technical, social, and þnancial systems jointly.

Self direction. Develop self-directed, responsible teams, and give them the information, authority, and freedom to act. Trust but verify.

Minimum critical speciþcation. Specify only that which is critical, and keep speciþcation to a minimum. Specify what, not how.

Multifunctionality. When possible, accomplish multiple goals or tasks with one design choice.

Boundary location. Place boundaries only where absolutely required. Semi-permeable (not siloed and not entirely open) design are usually optimal.

Information ÿow. Do not deþne boundaries in ways that interrupt critical internal and external information ÿows.

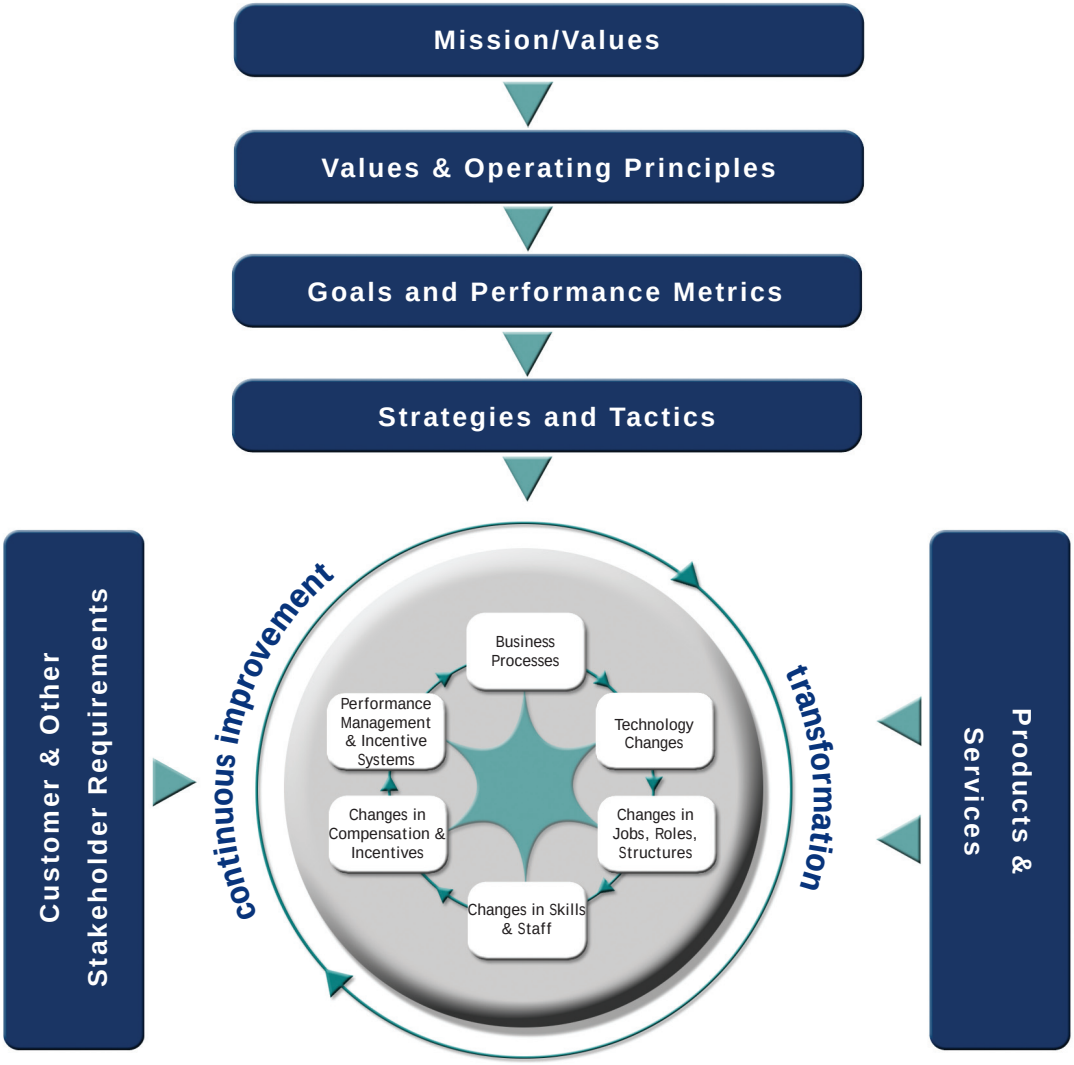
Variance control. All design choices should be geared to maximize control of key variances; place responsibility for variance control at its source.

Alignment/congruency. All aspects of the system must be aligned; support systems must be congruent with overall design.

Equiþnality. There is more than one "right" solution; there are many paths to the goal.

Incompletion. All designs can be improved upon and are, in this sense, incomplete.

Star Model for Designing Organizations



Leveraging and aligning all aspects of an organization are keys to creating high-performance and successful business transformation.