

This guide is designed to help you and your organization make good decisions about when and how to invest in information technology (IT). Put another way, it will help you avoid becoming one of the statistics that dominate reports on information technology investments.

Reports on failure rates range from 50 to 80 percent and sometimes more. Failures don't happen because people aren't smart or trying hard. But failures do happen every day - mostly because people fail to realize and appreciate the complexity of these decisions and the way they affect nearly every other aspect of an organization's work.

Failure is almost inevitable if decisions about IT are hasty, unrealistic, or uninformed. To help you avoid this fate, we lead you through the complex and challenging process of analyzing an information problem or need - and its context. We help you identify, evaluate, and choose possible solutions. And we guide you through the process of building a solid business case for investing in your recommendations.

Everything in this guide is based on years of experience working with dozens of government and nonprofit agencies that needed to improve or change the way they gather and use information. Here at the Center for Technology in Government, we have worked on projects in human services, criminal justice, financial management, and environmental protection, among others.

The agencies we've worked with range in size from enormous federal departments to tiny towns, and everything in between. Their goals focused on a wide variety of functions including case management, direct citizen contacts, research and analysis, general administration, and regulatory affairs. Some had many years of experience in using IT; others were novices.

Regardless of their differences, every project encountered similar basic challenges. Early conceptualizations of their problems were often oversimplified. The influences of their larger organizational and political environments were underestimated. The ways in which current work would have to change were not fully considered. In those cases where new ways of working were considered, estimates of the effort needed to identify how people and processes work now (and how they would have to change) were vastly insufficient. Agencies sometimes hoped that "the right" technology would solve almost any problem.

These challenges that confront every organization do not mean that the people working on them are not focused, skilled, or well versed in their fields. They emerge from highly complex work environments and from unexpected interdependencies among organizations and processes. They require an appreciation for the critical importance of "up front" business and risk analysis.

Too often, the quest for action - purchasing, hiring, designing, and programming - pushes critical knowledge-building activities aside. "Don't you know enough to move forward with an RFP yet?" is a question many of our agency partners have heard after just a few weeks - along with, "We don't have time to study the business problem any more, we need a system in place in six months." In our experience, when the pressure to act exceeds the ability to understand the consequences of action, the risks of failure soar.

The Center for Technology in Government is an applied research program at the University at Albany/SUNY. Established in 1993, the Center works with government to develop information strategies that foster innovation and enhance the quality and coordination of public services. We carry out this mission through applied research and partnership projects that address the policy, management, and technology dimensions of information use in the public sector.

This guide offers our best thinking about how to define an information technology project and make a solid case for needed financial and organizational investments. It has been completed in two parts.

Part One has four chapters and begins by considering the special characteristics of the public sector as an environment for making management decisions and IT choices. In the second chapter, we describe an analytical process that accounts for program goals, stakeholders, processes, costs, and technology alternatives. In chapters three and four, we guide you through the process of turning your analysis into a business case and presenting it to various audiences.

Part Two presents a wide variety of skills, techniques, and tools that can help you through the exercises introduced here. We will also publish a series of case studies that provide practical examples of how these concepts, tools, and techniques were used in some of our projects.

We know that no single formula can guarantee success in developing and implementing a new IT resource. But

this guide does offer a well-tested approach to reducing the risk of failure. The first principle is to apply the familiar principle of modern architecture-that form follows function. Accordingly, the initial focus of any IT effort needs to be on the service objectives and underlying business processes of the organization(s) involved, rather than on the technology itself. The best technology will not correct outdated policies, inadequate management practices, or poorly designed workflows.

The second principle is to identify all of the internal and external stakeholders and to understand clearly their different needs, resources, and expectations. Each stakeholder group needs to be taken into account in identifying and considering the costs and benefits of various options.

We also describe some ways to evaluate and choose among an ever-expanding array of technologies, including how to recognize when the best solution is no new technology at all. Finally, we offer some advice about how to use performance measures to evaluate your results.

How the material is organized

This guide is organized to lead you through a careful analytical process that results in a sound business case for investing in a significant IT project. Along the way, we refer you to specific tools and techniques that can assist you. We also offer case illustrations that show the tools in action in the context of specific, real projects.

The analytical process, Part One, has four chapters. The first discusses the risks of IT innovation. The second describes the kinds of problems that are worth the time and effort of careful analysis, and then progresses through a three-stage analytical process that helps you understand the problem and its context, identify and test solutions, and evaluate alternatives and make smart choices.

Chapter three addresses the process of turning your analysis into a business case. Chapter four suggests ways a business case can be presented to various stakeholders, including top management, budget officers, and elected officials, as well as to users and customers.

Part Two describes dozens of tools and techniques that are useful at various stages of analysis and case building. Many of them are well within the skills of any competent manager. Others require the help of an expert. You may already be familiar with many of them. For each, we describe its purpose, strengths, and limitations. We also cite books and articles that go into more detail. In some cases, we also present "how tos" that you can apply on your own.

Illustrations drawn from the following cases are used throughout this guide:

- The Adirondack Park Agency (APA) and its need to manage information and improve both customer service and records management related to land use permits.
- The Internet Services Testbed which involved seven state and local government agencies in a process of defining, designing, and building their very first information services on the World Wide Web.
- The Bureau of Shelter Services and a score of nonprofit service providers and local governments who need to share information in order to evaluate services to homeless people.
- The Municipal Affairs Division and its effort to create a consistent statewide information repository to support regional staff working on the financial affairs of local governments.
- The Council on Children and Families and its 13 member agencies who wanted to offer a wide variety of statistical information about children over the World Wide Web.
- The Office of the State Comptroller and its effort to ground a redesign of the Central Accounting System in a rigorous analysis of stakeholder needs.

We acknowledge, with thanks, the energy and collaboration of the federal, state, local, and nonprofit agency managers and technical staff who have participated in projects at CTG. We also thank the corporate partners and university faculty who contributed their expertise. Without their willingness to experiment with new approaches and their strong commitment to improving government services, the work we describe here could not have been accomplished.

We hope that these lessons and experiences will help other public sector organizations make their own smart IT choices.