

### Many points of view are an asset, not a liability

Unless you are the sole designer and sole user of your system or program, other points of view count. It takes time and special skills to draw out the different perspectives that matter in your initiative. Get these different ways of looking at the world out in the open as early as possible. Work with people in groups to craft a shared understanding of the effort. Use these different perspectives to describe the big picture that no one can see fully on their own.

### Untested assumptions are not a short-cut

Assumptions can be very helpful as long as they are explicit and periodically tested against reality. One commonly untested assumption is that a new system stands on its own. In most cases it is connected in complicated ways to lots of other things. Another problematic assumption is that a system is readily usable. Again, seldom true—especially when it will be used in different locations by different professionals. A third risky assumption is that data integration is a technical problem. It is, but it's also an organizational, political, intellectual, and managerial one.

### Data can't speak for itself

Accessing, managing, sharing and disseminating data pose difficult challenges. Data collected for one purpose may not be suitable for another. Meta data may be inadequate or simply missing. Different terms can have the same meaning or the same terms used by different organizations can have different meanings. The list of challenges goes on. Allow plenty of time and resources to tackle them and be judicious about which ones matter most.

### Sorry, no silver bullets

The simple fact about information problems is that there are no easy solutions. These problems are tough because they are meaningful and complicated. They take time, money, and effort. No particular method or technology will cut through the maze of complexity in short order. The good news is that there are many useful techniques and tools that can help you manage this kind of work to a successful conclusion.

### Good enough is often good enough

Even with the best tools and intentions, it is safe to assume that you will not have enough time, money, or other resources to devise the perfect solution. But if you pay attention first to thorough analysis and then look for reasonable alternatives, you'll be able to make an informed decision about what is really important to do.

### Strategy sets the stage

Whether in business or in government, strategic thinking is concerned with mission-critical objectives, with an emphasis on customers and stakeholders. Strategies

place a high value on human, organizational, and technological resources and seek maximum return on those investments, rather than minimized costs.

A sound strategy includes:

- a clear and agreed upon picture of the business, policy, or program need
- an understanding of the needs of all stakeholders, including users, customers, who pays, who benefits, and who gets hurt
- consideration about how the new information system will fit in with existing older information systems, business processes, standard operating practices, and organizational culture
- an eye for future agency goals, anticipated legislation, budget cycles, and regulatory actions
- a communication plan made up of a brief, high-level statement to explain the expected outcome

### Policies guide action

Policies are one of the basic building blocks of government. Laws, regulations, executive orders, and official statements guide how agencies fulfill their missions. Information policies guide actions and decisions about why, how, when, and who uses information. Government information policies can serve two different, but complementary, purposes—information stewardship and information use.

Information stewardship policies address:

- confidentiality, privacy, and records management
- system security, data definition, quality, and integrity
- long-term preservation of information with enduring social, legal, or historical value

Policies that promote the usefulness of your information address:

- innovative ways to use information to improve the quality or lower the cost of services, or to create new services or better ways of doing business
- interagency and intergovernmental information sharing
- information handling skills of public employees
- public access

### The devil is in the data

Data quality issues occur in every system. The quality of the data often has to be enhanced to be sure it is “fit for use.” Whether you are using a single source, reusing information for a new purpose, sharing it with others, or integrating multiple sources, the following issues must be addressed.

- Data standards are necessary for effective information use, especially when involving several agencies.
- Meta data is a crucial piece of the data quality puzzle. You need to know the background and history of the data in order to make decisions about its appropriateness for use.
- Contextual knowledge is indispensable to understanding the program environment in which data is collected and used.

### Underestimating costs is costly

The costs of information technology initiatives are almost always underestimated. We tend to under-appreciate their complexity and we lack good models or guides for identifying all cost factors.

The following factors demand serious consideration in up-front analysis and cost estimation. The better we get at accounting for them, the more useful our cost models will become.

- The more complex the network of relationships, the more costly it will be to establish, maintain, and manage.
- The further your current environment is from your envisioned one, the more costly.
- The less similar existing technologies are to desired technologies, the more costly.
- The more interdependent the tasks, the higher the risk of failure.
- The more integration intended in the final product, the more costly.
- The more data sources and the greater their differences, the more it will cost to make use of them.

### Become a skilled information user

Organizations, like people, must be adept information users. Regardless of the size and makeup of your team, you have to do these things well:

- analyze a situation and identify the problems it contains
- find, assess, and use information and technical tools to address the problems
- produce and communicate a usable product
- evaluate the results
- manage a project that probably involves many people from more than one organization

No organization has the perfect mix of skills, abilities, and experiences for every situation. Start by giving assignments to people with the proper skills to carry them out. Or assign activities to those who have the aptitude, desire, and responsibility to develop the necessary skills. Additional skills can be acquired through training, mentoring, brokering, contracting, or outsourcing.

### Technology choices matter

Technology choices are choices about the present and the future. Whatever technology is chosen for your project will have powerful long-term implications throughout your organization. New technology often comes with new business rules, practices, and processes that are very hard to change. Because of these long-term effects, every initiative needs to pay attention to three things.

- Mapping out business processes allows you to identify how well current and new technologies support them.
- Making users an integral part of planning and decision making helps a system fit well with the real work of the organization.
- Recognizing and accounting for diversity in environments and infrastructures helps ensure that technology will work wherever it is deployed.

Stay abreast of cutting-edge technologies as well. Many government organizations are now working with researchers to develop and test technologies that handle very complex problems such as environmental modeling, emergency management and response, and manipulation of huge data sets. These experimental systems may lead to future products that address a wider range of information problems.