

The Use of Collaborative Technology to Solve Science, Engineering, and Technology Challenges in Federal Agencies

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Collaborative technology, also known as groupware or workgroup support systems, is software designed to help people involved in a common task achieve their goals. Government agencies are using collaborative technology to flatten their respective organizational structures and facilitate communication with offices and programs to solve challenges related to organizational culture; policy and governance; and science, engineering, and technology.

“The Collaboration Project” is a website hosted by the National Academy of Public Administration (the National Academy), and was established by a forum of leaders to share ideas, examples, and the benefits of collaborative technology to solve complex challenges within government. The Collaboration Project allows staff to contribute and share content with colleagues and the public. The National Academy encourages the user community to add ideas, challenges and opportunities to help each other successfully implement collaborative technology.

The National Academy has taken on, as part of its mission, a requirement to provide guidance to federal agencies on the following question:

When, and in what circumstances, should agencies use collaborative technology to solve organizational challenges?

The Executive StEPPs Team is comprised of nine federal employees who, working with the National Academy, identified and analyzed case studies in an effort to document instances where agencies use collaborative technology to solve organizational challenges.

The Team surveyed collaborative technology projects across the federal, state, local, international, nonprofit and private sectors to build a viable database from which to derive common traits and best practices. Two mechanisms were used: Team member-facilitated interviews, and Web surveys. The interview and survey questions addressed the following four elements of each collaborative technology case study:

1. The **business challenge**, or **need**, the organization must solve
2. The **decision and approach taken** to solve the challenge using collaborative technology
3. The **results achieved** by the organization
4. The **lessons learned** by the organization

Using the results and lessons learned from the case studies, the Team summarizes findings in the federal guidance report regarding effective use of collaborative technology to solve agency challenges related to organizational culture; policy and governance; and science, engineering, and technology. For science, engineering, and technology applications, collaborative technologies offer the following benefits, based on case study examples:

- Optimize technical transfer, support, and education to connect experts and provide solutions to those in need
- Promote the formation of self-initiated groups around similar data or projects to undertake analysis and solve challenges
- Catalyze innovation and process improvement, for example, public peer review and input
- Improve internal and external communication, as well as better delivery of services for stakeholders and clients

Other general recommendations to improve the business case for collaborative technology use in government are:

- Officially obtain senior leadership backing.
- Find a champion, ideally outside of the information technology group.
- Define a clear vision of direction and purpose.
- Be realistic about how collaborative technology fits into the organization.
- Utilize sound management practices for collaborative technology projects.
- Plan for and dedicate adequate financial resources and staff.
- Classify criteria for success and failure.
- Measure return on investment.
- Create adequate, but not excessive, security.
- Design the collaborative technology sites to be simple to use.
- Integrate project use and maintenance into regular employee workload.
- Include incentives to keep the audience engaged.
- Account for the culture of the stakeholders in the use of collaborative technologies.