New Models of Collaboration
A Guide for Managers

Information Sharing, Communication and Coordination in E-government Collaborations

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Introduction

Worldwide executives and managers of public organizations who aspire to improve the quality of government services are increasingly deploying E-government strategies that involve collaborations among government agencies, businesses, and non-governmental organizations. Our multinational research study "New Models of Collaboration for Delivering Government Services" examined various partnerships in place around the world where government organizations form cooperative alliances with other organizations to support the design, implementation, operation and maintenance of E-government services. By collaborating, these public organizations build partner-based outsourcing relationships with service providers. As partners they share risks, obtain access to new markets and technologies, speed products and services to market, and pool complementary skills (Auster, 1994; Powell, Koput, and Smith-Doerr, 1996). This approach gives government organizations a flexible partnership with their service providers that helps both sides work together to overcome many of the limitations inherent in building a complex system under a contractual agreement (Lee et. al., 2003). Through our case studies, we learned that a high level of information sharing, good communication and well-orchestrated coordination are necessary to success. In most of the cases, we gained insight from collaborations that are evolving from a typical arms-length contractual relationship to a highly-integrative partner-based outsourcing relationship. In this essay, we examine how the ability of a public organization to work integratively with its partners influences the extent to which the government managers and executives can reposition their services around an E-government agenda.

Many of the executives and managers we interviewed lament the challenge of E-government and worry that they simply may have limited capabilities in-house to develop or adopt innovative approaches quickly for delivering government services online. E-government systems consist of complex process innovations and reengineering strategies that rely heavily on the systematic integration of old and new information and communication technology components with critical functions of the service delivery system.

E-government systems also involve some level of coordination and communication with almost every functional unit of the organization, where working relationships among employees are constrained by new and old business processes, and layers of complex institutional and organizational policies, practices, and norms. For many government agencies, the pool of employees with the requisite information technology skills is small. Veteran employees have mainframe and PC-era skills and lack such internet-era skills as managing and developing client-server software-based solutions.

And it is difficult for managers to overcome the growing wage gap between public and private sector IT employees. For example, the managers from British Columbia's OneStop Business Registration noted that government policy mandates that government agencies acquire information technology services from the private sector in a move to avoid hiring full-time personnel whose jobs might become obsolete as technologies

evolve or to avoid competing with the high-tech salaries of the private-sector. Consequently, as many managers we interviewed conclude, implementing E-government is as much about the technology as it is about dealing with inertia of existing business processes and pushing against the weight of a bureaucratic organization.

However, many public organizations turn to collaborations to capture the expertise needed for dealing with the challenges of designing, implementing and operating E-government systems. The City of Bremen, Germany, for example, operates its Bremen Online Service through a partnership venture with Deutsche Telekom, Sparkasse Bremen (a local bank), and several private local information technology. Rather than operating alone, the City of Bremen turned to these private sector partners so that the city would quickly gain technical expertise and speed up the development of its online services. The partnership also evolved into a highly integrative relationship as the boundaries between the City of Bremen and its private sector partners are blurring. The public and private partners are sharing risks and rewards, their employees are working seamlessly together, and their employees are also co-developing and exchanging ideas and knowledge and learning through joint problem-solving activities.

The likelihood that a government organization will find success in its E-government strategy depends on how well its managers can leverage its technology, organizational, and human resources in coordination with its collaborating partners. These collaborations require employees of all of the partners to work in a highly coordinated fashion. For this to happen, the partnering organizations must provide the motive, opportunity and structure.

Relationships among employees in an organization are a critical source of performance. They provide the infrastructure for creating organizational knowledge. Researchers have concluded that "organizations function courtesy of a social network of employees giving, hoarding, influencing or accumulating information" (Hildebrand 1998, p. 1). Underlying the formal organization chart of a company is a thriving, complex, and dynamic world of informal employee relationships that serve as the infrastructure through which information and knowledge flow to all parts of each partnering organization. From this network sprout the innovations that will produce the next design for a web-portal interface, the problem-solving solutions that will enhance integration of a legacy database with a data warehouse, or the incremental improvements that will fine-tune the performance of the E-government system. Simply stated, the working knowledge necessary to achieve these goals lies in the relationships among employees of the collaborators.

Through our case studies, we found that public organizations are taking several approaches to ensure a high-level of communication and coordination among the employees of the collaborating partners.

Establish Clear Governance and Formal Roles and Relationships for Each Partner

Typical of efforts to build E-government applications, complex system development projects fall victim of having "too many cooks in the kitchen". One of the consequences of partner-based outsourcing collaborations is that the service provider begins to take on management responsibility and risks and quickly joins its client as a stakeholder in the project (Lee et. al., 2003). As this occurs, the roles and responsibilities of each partner can become ambiguous. Managers must also sort through the competing goals of each stakeholder. The Internal Revenue Service experienced these problems as it developed E-File, an online tax filing service.

E-File is one of the modernization initiatives underway at the IRS that was built through a collaboration with multiple organizations. Mandated by the IRS Restructuring and Reform Act of 1998 (RRA), the IRS was directed to reorganize from its current structure into one that is more customer-focused, serving groups of taxpayers with similar needs. The RRA established the governance mechanisms that enabled the collaborating organizations to form formal relationships with the IRS and help to formally define how each partner would participate in the E-File collaboration. The main players initially involved in the implementation of E-File included the Internal Revenue Service, and such key leaders in the tax preparation and technology industries as Intuit, H&R Block, Jackson Hewitt, and Computer Sciences Corporation.

Given the extremely sensitive nature of tax policy and processes, the formal governance structure and formal working relationships were critical for the projects' success. The formal governance structure defined the parameters in which the partners could work together to make E-File possible. For example, in developing the project, there was a range of issues that the partners needed to collaborate on and resolve including making online tax filing more convenient, authenticating each transaction, securing personally identifiable information, and thwarting fraud. After identifying these particular problems, the partners were able to work out solutions within this framework. The formal guidelines and structure helped each partner know its role and responsibilities. They also ensured transparency and legitimacy in a situation where each partner has a stake in the new processes and final service outcomes. If these factors were not present, it is likely that E-File would have suffered under Congressional and public scrutiny.

Formal Structure Needs to Support Informal Structures

While the IRS modernization plan uses a top-down approach to formally govern its partnership with the E-File service providers, other collaborations flourish through the informal grass-root level relationships of employees involved in the collaboration. Although defining the formal structure of the collaboration is still important, it is also critical to let the informal network evolve. As Krackhardt and Hanson (1993) argue, "these informal networks can cut through the formal reporting procedures to jump start stalled initiatives and meet extraordinary deadlines" (p. 104). Employees in the

collaboration need the opportunity, resources, and discretion to access colleagues who can help them complete their work.

Architects of the New York State GIS Clearinghouse, for example, relied on an informal network of employees to get the project off the ground and successfully implemented. The New York State Geographic Information Systems Coordination Program developed an innovative model building a statewide spatial data infrastructure and relied on both formal and informal mechanisms to stimulate information sharing, communication, and coordination. The project was formally governed through a multi-agency Coordinating Body with work groups responsible for such areas as education and data standards, plus three advisory committees representing local and state government and the private sector.

As described in the case, the informal networks among employees were critical for the success of the initiative.

- "As experts met regularly, personal relationships were forged and trust developed. It became clear to the community of practice that none of their goals would materialize unless they cooperated in both formal and informal ways to make significant progress. As they developed trust and respect as individuals, collaboration became easier. The ability of the participants to put aside individual goals or predisposition for the good of the whole effort has been a major characteristic of the work groups".

- "Some of the most effective instruments of the Coordination Program were developed very informally due to the synergy in the work groups. For example, the Legal Working Group was one of the first to be established. About 10 people participated from the public and nonprofit sectors. Its first focus was on the idea of data licensing agreements. One member drafted three different agreements: a state-state license, a state-local license, and a state-private license. After discussing these, it seemed to the group that many one-to-one custom agreements would be needed. Another member suggested the possibility of one standard agreement for "people who want to be inside the circle." It was an insightful moment and led the group quickly to develop the basic outlines of the Data Sharing Cooperative.

Build a War Room

Information sharing, communication, and coordination occur frequently among high level executives and managers of the collaborating organizations. As in the case of the IRS, many E-government initiatives in the public sector fall under the oversight of quasi-regulatory bodies, committees, and task forces that are comprised of high-level decision-makers. These "bodies" deal with policy, planning, and strategic issues. But, what type of information sharing, communication, and coordination goes on at the operational and tactical levels, especially to deal with day-to-day issues, technical problems, and development concerns?

In the cases of Access Indiana and Partners in Change, managers adopted "war-room" practices where employees from each partnering organization were required to work through solutions to difficult problems together. While the meetings were tense, forcing employees together generated greater understanding across the partners, the functional areas, and the levels of expertise.

The cross-agency development teams on early Access Indiana e-government projects were often unsure about which part of the application they were responsible for and how to coordinate application development with tightly coupled requirements between the state agency and the private sector service provider, Indiana Interactive. For example, the Indiana Interactive team, experts in building web interfaces, often faced decisions about the extent to which the work agreement required them to resolve problems with databases residing on legacy mainframe systems. Expertise about the legacy databases clearly lay with the state agency MIS department.

Frustrated by the lack of progress among employees from both the public and private partners, the CIO for the State of Indiana and the General Manager of Indiana Interactive took matters into their own hands and instituted a new meeting policy. Adopting lessons from war rooms, the two leaders required members of the technical teams to remain in a closed meeting room until they resolved the technical issue, wrote up a solution for the project knowledge base, and developed processes for dealing with similar problems in future.

One important breakthrough that sped up the development of Access Indiana occurred in these war room meetings. Learning from these earlier experiences, the State of Indiana and Indiana Interactive divided the application development work around the different information technology architecture layers. This IT architecture is divided into three major layers – the presentation layer; middle-wear layer; and back-end layer. Indiana Interactive is responsible for all work associated with building the presentation layer. The respective MIS departments, and as appropriate, the State of Indiana central Information Services Division are responsible for all back-end work. For example, the Bureau of Motor Vehicles plans to retire its legacy mainframe system and replace with a client-server based enterprise database system. The BMV in this case is responsible for this work. The middleware layer requires coordination between both sides. This structure has reduced conflicts significantly. And through a number of communication efforts by the State of Indiana Information Services Division and the Governor's Task Force on Information Technology, employees across the agencies and Indiana Interactive are also beginning to share a common mental model of the architecture and the respective roles and responsibilities of each organization.

The War Room also helped to improve communication among the partners involved in the Partners in Change E-government service. The Government of New Brunswick, Canada Department of Human Resources operates the Partners in Change, a web-based case management system in collaboration with Accenture. Communication and coordination were clearly a problem during the projects' development phase, especially since 140 people worked on the project and were located in dispersed locations

throughout the province. The project partners created a war room to address these problems.

The war room provided many benefits to the project. It facilitated greater communication vertically and horizontally throughout the project and helped to create an environment where employees learned how to best communicate with each other. As the relationship among the employees matured, cross-partner teams were often formed including one that developed the interface for the E-government applications. The strategy also improved the flow of information between the Minister's Office to the smallest regional branch, and among team members and teams. The war room also helped communication occur among employees in the regional office and the central office.

Conclusions

These cases highlight how information sharing, communication and coordination play a critical role in the success of E-government collaborations. As we are learning from academic research, relationships are critical underlying mechanisms in knowledge creation and facilitate the creation of new intellectual capital (Nahapiet and Ghoshal,1998). The social structure of an organization provides the conduit through which information flows, communication happens, and coordination occurs. This structure exists through the complex web of formal and informal relationships among employees and is an important determinant of the feasibility and productivity of any activity. It influences the development of intellectual capital by affecting the conditions necessary for creating knowledge. In particular, the pattern of linkages among employees and the relationships built through them are the foundation through which knowledge is combined and exchanged making it available for such critical organizational tasks as resolving the uncertainties associated with producing products. In other words, who you know affects what you know (Burt, 1992) and these relationships among employees help facilitate the coordination and cooperation of activities within an organization (Putnam, 1993).

The cases illustrate examples where open and frequent communication establish and build trust among the collaborating organizations and with such overseeing bodies as the legislature, oversight commissions, and the general public. The communication channels facilitate the flow of information among employees who are dealing with many uncertainties related to building complex IT-enabled process innovations and reengineering work required to implement E-government solutions. Not only do employees have to work among their agencies, the collaborations also require them to work integratively with employees from the partnering organizations. They are often separated from understanding each other by differences in their organizational culture, level of technical or business process expertise, or other factors. Given that the collaborations tend to evolve from arms-length relationships into tightly-coupled partnerships, more communication is required rather than less; formal roles should be defined, widely understood, and allowed to evolve; and informal relationships need to flourish.

Simply implementing a policy of more communication is not the answer. Instead, managers from high performing organizations say that success relies on adopting a suite of practices to build communication practices to support the collaboration. The mechanisms for influencing employee involvement in collaborations include the following seven sets of human resource management and work-place practices (Ichniowski, Shaw, and Prennushi, 1997):

- Problem-solving teams provide employees with direct input into improving the government service.
- Rotation across jobs improves ideas for teamwork and makes use of broader worker skills.
- Information sharing is important to provide the information and motivation for greater involvement and decision making.
- Training is needed to do problem solving and to increase skills for day-to-day decision making.
- Incentive pay, in the form of some type of pay-for-performance, offers the incentive for greater employee involvement.
- Job security provides the understanding that improving a service performance will not result in the direct loss of jobs.
- Careful screening and selection of workers leads to a workforce more skilled in both direct job-related (technical and analytical) skills and the "team skills" to work together to solve problems and to respond to rewards on the job.

Collaborations are critical in the current approach to building E-government systems. As public organizations turn to outside partners, they must build mechanisms that will allow information sharing, communication and coordination. The better this is done, the greater the chance that public organizations can develop high performing E-government systems by reducing the uncertainty of marrying new technologies with old technologies, revamping well entrenched business processes, and exploring innovate ways to integrate emerging technologies and practices.