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Evaluating the impact of an electronic business system in a complex organizational setting: the case of Central Contractor Registration

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Abstract

This article describes an evaluation of how an electronic business (eBusiness) system affected the Defense Logistics Agency of the Department of Defense. It is a 'deep dive' into the details of one of three similar evaluations that were conducted. A case study approach is used to convey a sense of the interplay among the formal elements of evaluation (e.g. schedules, feedback), and the reality of evaluating organizational consequences of eBusiness systems in complex organizations. The article contains collective lessons learned which emerged from each of the three efforts, and shows how those lessons were applied to a specific eBusiness system.

Keywords: Electronic business; Defense Logistics Agency; Department of Defense; Information technology; Evaluation

1. Organizational site and context of the case

The Defense Logistics Agency (DLA) of the United States Department of Defense (DoD) coordinates a large volume of very complex transactions involving the transfer of both information and materiel. Two quotes from the DLA website provide a sense of this complexity:

> The DLA is a US DoD defense agency. The DLA Director reports to the Under Secretary of Defense for Acquisition, Technology and Logistics through the Deputy Under Secretary of Defense (Logistics and Materiel Readiness). DLA provides worldwide logistics support for the missions of the Military Departments and the Unified Combatant Commands under conditions of peace and war. It also provides logistics support to other DoD Components and certain Federal agencies, foreign governments, international organizations, and others as authorized. DLA's origins date back to World War II when America's huge military buildup required the rapid procurement of vast amounts of munitions and supplies. A major initiative underway is Business Systems Modernization, a project that will replace DLA's mission critical legacy systems with a new enterprise architecture based on COTS software and best commercial practices (http://www.dla.mil/about.asp).
>
> Since its inception in 1961, the DLA has grown to become a worldwide logistics combat support operation. From its headquarters just outside Washington DC, DLA oversees a staff of more than 23,300 civilian and military employees who work in all 50 states and 27 foreign countries. It supplies almost every consumable item America's military needs to operate, from groceries to jet fuel. In short, if America's forces can eat it, wear it, drive it, shoot it, or burn it, chances are that the DLA helps to provide it. DLA also helps to dispose of material and equipment that is no longer needed. …DLA stands in the forefront of the revolution in electronic commerce and information management, making millions of critical supply items available to the forces worldwide at the click of a computer mouse (http://www.dla.mil/Trifold9-02.pdf).

2. Program evaluated

Set within this context of materiel and information management are a variety of electronic business (eBusiness) applications that are designed to make the DLA more efficient in expending resources, and more responsive to its customers. While this article provides details on only one of the three evaluations that were conducted, this section

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contains descriptions of all three systems. This is done to convey a sense of the genre of systems and evaluations in which the work was set, and to provide context for understanding the 'lessons learned' that are soon to be described.

2.1. Electronic document access (EDA) http://eda.ogden.disa.mil/eda_main.htm

The primary function of Electronic Document Access (EDA) is to allow authorized EDA users to access official DoD documents via a Web browser. EDA is a World Wide Web (WWW) based document repository system that supports information needs of the Defense Finance and Accounting Service (DFAS) and the CINCS/Services/Agencies (CSA) of the DoD. EDA combines Internet and Web technologies with electronic document management to eliminate paper files. EDA facilitates information sharing among DoD communities and provides secure access to single-source DoD official documents. EDA is a reference archive that provides the user a read-only view of various documents such as Contracts and Modifications, Vouchers, Government Bills of Ladings (GBLs), Materials Acceptance and Accounts Payable Reports (MAAPRs), etc. Including recently added new document types, Non-Automated GBLs and Government Transportation Request (GTRs). The system provides users with an efficient method for storing, sharing, and retrieving documents (http://eda.ogden.disa.mil/users_guide/overview/ovr001_index.html).

2.2. DoD Emall http://emall.prod.dodonline.net/scripts/EMlogon.asp

The DoD EMALL strives to be the single entry point for purchasers to find and acquire off-the-shelf, finished goods items from the commercial marketplace and government sources (Standard Emall briefing http://emall.prod.dodonline.net/scripts/EMLearn.asp).
The only WWW site you need to visit to shop for and buy DLA managed items by paying with either a Government Purchase card or the traditional DoDAAC/Fund Cite (Emall FAQ, http://emall.prod.dodonline.net/scripts/emFAQgettingStarted.asp).

2.3. Central Contractor Registration (CCR) http://www.ccr.gov/

In the past, any vendor who wanted to do business with more than one DoD site was required to submit the same business information to each and every site. This redundancy of paperwork not only created an administrative burden for both the government and the vendor, but also was a major source of administrative error and expense in terms of both time and money. Because DoD is the largest purchaser of good and services in the world, the cost savings to be incurred by streamlining these administrative processes are dramatic. CCR was created to be the single repository of vendor data for the entire DoD to avoid this administrative duplication and allow contractors to take responsibility for the accuracy of their own important business information by supplying it directly to the government through a single registration (http://www.ccr.gov/).

All three eBusiness systems evaluated for this project had four important characteristics in common, which, collectively, make impact assessment difficult.

- They all sought to provide specific and limited improvements in functionality within a very complex context of multiple interacting business processes which were supported by numerous applications.
- While each system did in fact provide specific assistance to a well defined group of users, each system also had very strong infrastructural elements, i.e. beyond immediate assistance to specific users, each system made it easier to develop other useful applications.
- At the same time that each system was being developed as a separate initiative, many other systems, which also had both narrow and infrastructural consequences, were also being developed. (This is not to say that efforts at coordination were lacking. Such efforts certainly took place, as for instance, an organizational decision to bring many of the systems under the aegis of a single organization within the DLA.)
- Plans for impact assessment were not put in place during the programs' development or initial deployment. Any such evaluation that was done was post-hoc. (While this is true of evaluation, it is not true of articulating program justifications. Quite a lot of good work is done in business case development.)

3. Conceptual model guiding the CCR program

In order to understand why this work unfolded as it did, it is necessary to appreciate three contextual domains that influenced the scope, content, and methods of the investigation that was carried out:

- program and the organization in which it is embedded,
- requirements for accountability in which the program operated, and
- empirical research on the effectiveness of information technology (IT) in organizational settings.

3.1. Program and its host organization

Why is CCR important? One reason (and the one that motivated CCR's development in the first place) is efficiency. CCR decreases overall labor by contractor and government personnel, and it also decreases error by