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Characteristics of a Troubled Development Project: The Defense Travel System

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Abstract

The Department of Defense (DoD) is attempting to cut travel costs through a new system, the Defense Travel System (DTS). The system is currently well behind schedule and lacking in promised functionality. DTS has not implemented essential project management practices. It was developed without the requirements, cost, performance and schedule documents, and analyses needed to assess system effectiveness and ROI. The DTS project has failed to keep pace with current technology, which is evidence of failure to implement effective software processes. DoD is piloting five-year-old technology and paying to modify it. There are features in the original solicitation that are no longer required by DoD personnel, although they are still paying for the features. Full deployment of the DTS is not expected until FY 2006. This paper reviews the process that DTS has followed for development, the missed timelines, the problems that DTS encountered, and how the problems could have been avoided.

Introduction

The Department of Defense (DoD) is involved in a costly travel management system, the Defense Travel System (DTS), which is DoD's attempt to cut travel expenses. DoD has pushed commercial-off-the-shelf software (COTS) to development this system as well as other systems within the DoD since the early 1990's (DSB). DTS has failed operational testing, exceeded all budgets, and missed all deadlines, though promised since 2001.

This paper reviews the process that DTS has followed for development, the missed timelines, the problems that DTS encountered, and how the problems could have been avoided. The paper examines prior research on managing large IT projects, and reviews other IT projects in the federal government. The paper revisits DoD's decision to use COTS, discusses the pros and cons of the decision, and determines its impact on the DTS project.

Overview

In March 1993 President Clinton created the National Performance Review (NPR) as an initiative to reform the way the federal government worked, by creating a government that worked better for less. He gave NPR a six month deadline with a report due by September 1993 (ECPI, 1996). NPR examined the DoD travel reimbursement business process and concluded it was convoluted. In 1995 a DoD Travel Project Management Office (PMO) was created to reengineer the entire DoD travel process (PMO - DTS). The office pushed laws to simplify the rules for travel entitlements.

The PMO decided that a new DoD travel system was needed; it became known as the Defense Travel System Project Management Office (DTS PMO). It wrote specifications for the system in December, 1995 and reviewed similar systems at large firms as a benchmark. Benchmarking was a problem because no firms traveled as much as DoD; its personnel file five million travel reimbursement vouchers for $5.5 billion annually (Taylor, 2003). The DTS PMO reviewed COTS, because NPR wanted to avoid DoD-unique software. COTS was driven by DoD executives, who felt it had to take advantage of technology investments in the private sector instead of performing in-house development (DSB, 1994).

In June 1997 the PMO released an RFP asking vendors to develop a common user interface to serve all Defense sites worldwide, and provide travel management services for Defense Travel Region 6, which included eleven Midwest states. DoD divides the U.S. into six regions to allow different contractors to bid on travel management, in order to comply with contractual rules concerning small and minority owned businesses. The estimated price of the project was $267 million over eight years. The RFP was written so that the contractor would receive a portion of the award for the travel system, but would receive most of the funds from fees for each transaction processed through the system by DoD personnel.

DoD was seeking disparate capacities with COTS travel management software and travel services, in addition to the user interface. Defense officials specified that the prime contractor had to use a team of partners (Taylor, 2000). In May 1998, a contract valued at $263.7 million over five years was awarded to a team of contractors (Saldarini, 2000). The Office of Management and Budget (OMB) forecasted a decrease in travel spending for 1999 as a result of the system. The Deputy Defense Secretary expected the system to save the department $1 million a day, although there were no studies to substantiate the claim. However, the cost savings never materialized, because of project delays. See Table 1 for the project timeline.

Table 1. DTS Project Timeline

Year	DTS Activity
1993	NPR review of DoD travel processes
1995	DTS project office created
1995	DTS project specifications created
1997	Request for Proposal released
1998	Contract awarded - $263.7 million; 120 day initial deployment, 38 month final deployment
1998	3-month delay due to contract dispute
1999	2-year delay due to firewall incompatibility
1999	COTS requires major modification to meet project specifications
2000	Testing declared “successful”
2001	DoD review of project functionality and technology
2002	Inspector General recommends project cancellation
2002	Estimated costs $491.9 M
2004	Estimated costs $537 M

Problems with Large-scale IT Projects

IT projects commonly exceed budgets and miss deadlines, and 75% of large-scale IS projects are failures (Peterson and Kim, 2003). Extremely large public project failures are especially troublesome (Montealegre and Keil, 2000). The causes for project failures includes misunderstood or changing requirements, lack of an effective development process, poor project management, artificial deadlines and poor/nonexistent controls (Schmidt et al., 2001). It is important to understand why specs are wrong and why projects are managed poorly (Curran and Connally, 2001).

There are several common characteristics in failed or dysfunctional software projects (Evans et al., 2002). First is the failure to apply essential project management practices. Software tasks may be reasonably well planned and implemented, but the project runs the risk of failure without project management practices, including cost estimation, project scheduling, earned value reporting, performance-based metrics, re-estimation, and quality assurance and testing (Evans et al., 2002). IT project managers may not be equipped to lead projects that are expected to transform a business, and are poorly equipped to set technology priorities that affect more than one corporate unit (Curran and Connally, 2001). Metrics and re-estimation often provide managers with more information than they care to know (Evans et al., 2002).

The second problem is unwarranted optimism and unrealistic management expectations, which stem from staff members having insufficient experience and unrealistic optimism because they are unaware of the magnitude of the tasks (Curran and Connally, 2001). Third is failure to implement effective software processes. Adaptation of technology and processes to meet the unique challenges of a specific project are important (Evans et al., 2002). Projects continue to be built to original specifications even though the company has adopted new products or means of interacting with customers (Curran and Connally, 2001). Fourth is premature victory declarations, which are be caused by politics, fear, and pressures to deliver timely products (Evans et al., 2002). Fifth is a lack of program management leadership (Evans et al., 2002). Project leaders must communicate the role of technology in the organization, prioritize key projects, balance requirements against capabilities, manage political issues, and identify the impact of competitive, internal, societal, and governmental threats (Curran and Connally, 2001). Untimely decisions, where managers avoid making time-critical decisions until it is too late, are a problem. Finally, dysfunctional IT projects lack proactive risk management and are constantly reacting to problems

(Evans et al., 2002). Management must be aware of both internal and external risks associated with a project, and they must be prepared with contingency plans and fallback positions (Pyra and Trask, 2002).

DTS Project Problems

DTS has several characteristics in common with other dysfunctional IT projects. First, DTS did not implement essential project management practices, as pointed out by an Inspector General Audit in 2002 (Inspector General, 2002). DTS was being developed without the requirements, cost, performance and schedule documents, and analyses needed to assess system's effectiveness and ROI. Thus the project carried the risk that the additional funding of $377.1 million being requested to develop DTS between 2002 and 2007, along with the $114.8 million and six years of effort already invested, would not fully realize all system goals (Inspector General, 2002).

Unwarranted optimism was apparent; the initial DTS contract required deployment within 120 days from the effective date of the contract (September 1998) and complete deployment within 38 months (Inspector General, 2002). However, after testing began in 1998, project management officials discovered that the travel system was more cumbersome than anticipated. In 1999 it was obvious to project management officials that the COTS would require major development and modifications to meet requirements. The PMO does not expect full deployment of the DTS until FY 2006 (Taylor, 2003). The DTS project has failed to keep pace with current technology, which is evidence of failure to implement effective software processes. DoD is piloting five-year-old technology and paying to modify it (Taylor, 2003). The PMO included features in its original solicitation that are no longer required by DoD personnel, although they are still paying for these features (French, 2004). Premature victory declaration was a DTS characteristic. The first declaration was in November 1998 when DTS was supposed to be used by 50,000 DoD travelers, and the system would be fully implemented in three years (Taylor, 1998). In 1998, OMB continued to discuss their optimism in DTS saving DoD money by 1999 (Taylor, 1998). In 2000 PMO declared that testing had been successful and they were excited to move forward (Saldarini, 2000). Critics of the project declare DTS a complete failure, costing tax payers in excess of $400 million and costing approximately $33,000 per transaction (French, 2004). The DTS project has gone through several leaders since its inception (Taylor, 2003).

DTS has suffered from untimely decision making. The project was put on hold in 1998 for three months during a dispute over the contract award (Friel, 1998; Taylor, 1998). There was a delay caused by the incompatibility of DTS with DoD firewalls, which took two years to resolve (Taylor, 2000). There was uncertainty about the future of DTS during 2001, when Defense officials conducted functional and technical assessments to determine if it was meeting department requirements (Lunney, 2001a). It was feared that the project would be completely scrapped (Lunney, 2001b). In 2002, the PMO requested $86 million in additional funding; the request was denied by Congress (Ballard, 2002). In 2002, the Inspector General recommended cancellation of the project (Inspector General, 2002). These delays have severely affected the DTS project (Taylor, 2003). DTS lacked proactive risk management, which the Inspector General blamed on DoD not managing it as an acquisition investment in IT, but as a special-interest initiative. DTS officials by-passed the Clinger-Cohen Act, OMB guidance, and DoD policy on managing IT projects. DTS officials have reacted to issues, rather than be proactive, because of a lack of risk management. Officials were unaware of the state of the project because of the lack of oversight (Inspector General, 2002).

COTS Decision

DoD examined the benefits of COTS in the early 1990's. A 1994 study (DSB, 1994) stated that "DoD's investment in software requires greater DoD-wide management control and oversight in the coming years if the department is to exploit the use of commercial software acquisition practices fully, as well as rapid advances in software technology." The study recommended that the under secretary of defense (acquisition and technology) have responsibility for DoD-wide software technology, practices, and acquisition. Unfortunately, DTS was not considered an investment in IT but a special interest initiative. Therefore, there was no DoD management control or oversight on the project board (Inspector General, 2002).

PMO should review lessons learned from other DoD COTS projects, because COTS does not normally suit all DoD needs. PMO should have decided early in the process if the performance gap could be accepted without degrading performance (ITRB, 1999). The analysis was not completed, because it was not until 1999 that the PMO decided that the COTS would require major redevelopment and modifications to meet DoDs requirements (Taylor, 2003). PMO would have been aware of this gap in COTS before acquisition if a gap analysis had been completed (ITRB, 1999). COTS can save development time, but once customization begins, cost and time savings are often eliminated (Alford, 2000). Once the DTS is deployed throughout DoD the contractor will have a virtual monopoly that will allow them to continue to overcharge the government (French, 2004). Critics believe the DTS project should have been stopped once it was obvious that COTS would not meet DoDs requirements (Taylor, 2003).

Conclusion

DTS has been a problem since its inception. The estimated cost of DTS in 2002 was $491.9 million, therefore each of the 15,000 tickets issued as of September, 2004, have cost taxpayers $33,000. The project is projected to cost $537 million by completion (twice the amount of the original contract), but it is highly unlikely that a fully functional DTS will be achieved by September, 2006 (French, 2004). Missed deadlines and budget overruns are characteristic of other dysfunctional IT projects. In addition, DTS doesn't seem to have followed the lessons learned from other DoD COTS projects. Despite the problems, DoD continues to spend money on DTS, and has refused to look at better e-travel alternatives although they provide quicker and cheaper solutions (French, 2004).

References

Alford, L. (2000). "Supporting Commercial Software", *The Journal of Defense Software Engineering,* September, 2000, http://www.stsc.hill.af.mil/crosstalk/2000/09/alfrod.html , accessed 11/04/04.

Curran, C. and M. Connally (2001). "A Value-centric Perspective for Managing Information Technology", *Viewpoint Whitepaper,* (2, 1), http://www.diamondcluster.com/ideas/viewpoint/Viewpointv2n1.asp accessed 10/2/04

DSB - Defense Science Board (1994). "Report of the Defense Science Board Task Force on Acquiring Defense Software Commercially, Office of the Under Secretary of Defense for Acquisition & Technology", http://www.stsc.hill.af.mil/crosstalk/1994/12/Defense.asp , accessed 10/02/04.

ECPI - Electronic College of Process Innovation (1996). "A Brief History of the National Performance review", http://www.defenselink.mil/nii/bpr/bprcd/4128.htm, accessed 9/22/04.

Evans, M., A. Abela, and T Beltz (2002). "Seven Characteristics of Dysfunctional Software Projects," *The Journal of Defense Software Engineering*, http://www.stsc.hill.af.mil/crosstalk/about.html accessed 10/2/04.

French, A. (2004). "Defense Travel System: The Twilight Zone of Travel", *Through the Looking Glass – A CAGW Special Report,* http://www.cagw.org/site/PageServer?pagename=reports_dts accessed 11/02/04.

Friel, B. (1998). "DoD travel system contract protested," *Government Executive Magazine,* http://www.govexec.com/dailyfed/0698/060198b1.htm , accessed 10/0204.

ITRB - Information Technology Resources Board (1999). "Accessing the Risks of Commercial-Off-The-Shelf Applications – Lessons Learned from the Information Technology Resources Board", December, 1999, http://itrb.gov/documents/cotsfinal.pdf , accessed 11/04/04.

Inspector General (2002). "Report on Allegations to the Defense Hotline on the Management of the Defense Travel System (Report No. D-2002-124)", http://www.dodig.osd.mil/audit/reports/fy02/02-124.pdf , accessed 11/12/04.

Lunney, K. (2001). "Future of Defense Travel System to be decided in April", *Government Executive Magazine* March 12, http://www.govexec.com/dailyfed/0301/031201m1.htm , accessed 10/0204.

Lunney, K. (2001). "Defense Travel System testing to continue," *Government Executive Magazine* May 31.

Montealegre, R. and M. Keil (2000). "De-escalating Information Technology Projects: Lessons from the Denver International Airport." *MIS Quarterly* (24, 3), 417-447.

Peterson, D. and C. Kim (2003). "Perceptions on IS Risks and Failure Types: A Comparison of Designers from the U.S., Japan, and Korea." *Journal of Global Information Management* (11, 3), 19-38.

PMO-DTS, "Executive Summary – Background Information," http://www.dtic.mil/travelink/executivesummary.htm , accessed 10/06/04.

Pyra, M. and J. Trask (2002). "Risk management post analysis: Gauging the success of a simple strategy in a complex project", *Project Management Journal,* (33), 41-49.

Saldarini, K. (2000). "New Defense travel system to debut in December", *Government Executive Magazine* October 13, http://www.govexec.com/dailyfed/1000/101300k1.htm, accessed 10/2/04.

Schmidt, R., K. Lyytinen, M. Keil, and P. Cule (2001). "Identifying Software Project Risks: An International Delphi Study." *Journal of MIS* (17, 4), 5-36.

Taylor, L. (1998). "Plotting a New Course", *Government Executive Magazine* August 1, http://www.govexec.com/procure/articles/98top/08a98s5.htm accessed 10/02/04.

Taylor, L. (2000). "The Speed of Flight", *Government Executive Magazine* May 1, http://www.govexec.com/features/0500/0500s4.htm accessed 10/02/04.

Taylor, L. (2003). "Defense Project Down to the Wire", *Government Executive Magazine* February 15, http://www.govexec.com/features/0203/0203travel.htm , accessed 10/02/04.