

The FBI Sentinel Project

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EXECUTIVE SUMMARY

In 2000, the United States Federal Bureau of Investigation (FBI) initiated its Trilogy program in order to upgrade FBI infrastructure technologies, address national security concerns, and provide agents and analysts greater investigative abilities through creation of an FBI-wide network and improved user applications. Lacking an appropriate enterprise architecture foundation, IT expertise, and management skills, the FBI cancelled further development of Trilogy Phase 3, Virtual Case File (VCF), with prime contractor SAIC after numerous delays and increasing costs. The FBI began development of Sentinel in 2006 through Lockheed Martin. Unlike in the case of Trilogy, the FBI decided to implement a service-oriented architecture (SOA) provided in part by commercial-off-the-shelf (COTS) components, clarify contracts and requirements, increase its use of metrics and oversight through the life of the project, and employ IT personnel differently in order to meet Sentinel objectives. Although Lockheed Martin was eventually released from their role in the project due to inadequate performance, the project is still moving forward on account of the use of best practices. The case highlights key events in both VCF and Sentinel development and demonstrates the FBI's IT transformation over the past four years.

Keywords: Agile Development, Automated Case System, Enterprise Architecture, Information System Implementation, Information System Management, Legacy System, Organizational Structure, Oversight, Requirements, Service-Oriented Architecture

ORGANIZATIONAL BACKGROUND

The United States Federal Bureau of Investigation (FBI), headquartered in Washington, D.C. and established in 1908, is an investigative organization whose mission is driven, more than ever, by intelligence. Essential to intelligence is information, some of which the FBI provides on its web site, as stated her, to clarify its mission. With over 33,000 permanent employees, the majority of them in support roles, the FBI has 56 field offices based in larger U.S. cities, over 400 resident offices throughout the U.S., and more than 60 international embassy-based locations. The FBI focuses on ten specific tasks in its overall mission to protect the United States from damage to its national security, primarily via terrorist and foreign intelligence threats, and to sustain and enforce federal criminal laws. As well, the organization supports other domestic and international intelligence and law enforcement agencies and partners. The FBI falls under the U.S. Department of Justice (DoJ) and reports to both the Director of National Intelligence

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and the Attorney General. During fiscal year 2010, the FBI had a total budget of approximately \$7.9 billion, an increase of at least \$500 million over 2009's budget. FBI Director Robert Mueller requested a 2011 budget from Congress of \$8.3 billion which will be utilized to address national security threats, major crime problems and threats, program offsets, reimbursable resources, and operational enablers.

SETTING THE STAGE

In July 2001, the FBI's Assistant Director of Information Resources Division explained to a Senate Judiciary Committee that the FBI, although it had invested greatly in state and local law enforcement agencies information technology systems, had not made significant IT improvements to satisfy the basic investigative needs of its own agents and analysts, and the needs of national security. And, in fact, he testified the FBI had not made any "meaningful improvements" in information technology since at least 1995 (Dies, 2001). The events of 9/11 occurred only a few short months later, and highlighted the need for a redesign of the FBI information systems. Therefore, in order to correct issues, such as outdated hardware and software, reduced network connectivity, and non-existent applications for information storage, the FBI, in partnership with several defense contracting companies, began development on the Trilogy project in 2001.

Four years into the project however, over budget and behind schedule, the FBI terminated Trilogy during its third and crucial phase, virtual case file (VCF) development. Initially, neither the FBI nor the prime contractor, SAIC (Science Applications International Corp.), took responsibility for the failed project. In the end, FBI Director Robert Mueller accepted the FBI's role in the collapse of Trilogy, but still in need of an effective electronic investigative case management system and a solution to permit the retirement of the FBI's legacy automated case system (ACS), he requested Congressional support to create Sentinel (Mueller, 2005). The greatest concern to Congress was whether or not the FBI had learned enough from Trilogy and how the FBI would implement changes so that Sentinel development would be efficient and satisfy system requirements.

In order to successfully develop and implement Sentinel, the FBI would not only have to modify the way in which it worked with defense contracting partners, specifically Lockheed Martin, and its development of procedures and processes, but also its approach to IT in general. Oversight committees and auditors have indicated that the FBI's changes in process and control since the beginning of Sentinel allowed the FBI to better manage its contract with Lockheed, which stands in contrast to the management of the SAIC contract during VCF development. In addition, the FBI restructured its organizational model to guarantee that IT functions work together during full life cycle management of all IT projects and systems. The FBI demonstrates its understanding of the value of IT infrastructure, which involves the addition of new users on a regular basis, at least 50 IT projects in simultaneous development, and updating its obsolete hardware and networks, by its continuing requests for increases in IT funding for personnel, equipment, software, and training every fiscal year. Whether or not this understanding equates to commitment to the efficient and effective development of IT programs, namely its flagship program Sentinel, requires further examination.

Although the case is on-going, both strengths and weaknesses of the system redesign process are reported, as well as some best practices that are being employed to overcome the various challenges. Although the perspective adopted for the case may be relevant and insightful for all parties involved, we believe it is most valuable for executives and managers of large, complex government projects. The results are of practical significance both for other similar government projects, as well as private organizations undertaking large, complex projects.

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