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# Question no 1:

The Standish group CHAOS conducted a survey on software crisis in 1995. This group reported that only 16 percent of the application development projects were successful in terms of being completed on time and within budget. Moreover,

Moreover, about 31 percent of the projects were canceled before completion, while 53 percent were completed but those projects were either over budget or over scheduled and those projects were not meeting the original specifications. The average cost overrun for a medium-size company surveyed was about 182 percent of the original estimate, while the average schedule overrun was about 202 percent. That is, the results of the survey suggest that a medium-size project estimated to cost about $1 million and take a year to develop actually cost about $1.8 million, took just over two years to complete, and only included about 65 percent of the envisioned features and functions.

The main purpose of this case study was to focus on IT projects in the United States. The results of this study were similar to CHAOS studies:

* 62% of the IT projects failed to meet their time schedules
* 49% were over budget
* 47% had higher maintenance cost
* 41% failed to deliver the expected business value.

Therefore, the purpose of this study is to provide a rich qualitative analysis of the challenges and decisions that led to the failure of a major U.S. government project.

# Question no 2:

Answer:

In September 2000, congress approved $379.8 million for FBI information technology upgrade project which was scheduled for three years. Later this project was divided into three parts which was renamed as trilogy. Project was under the direction of FBI Director Louis Freeh.

Following were the conditions defined in that project. The trilogy project centered on

* Upgrading the agency’s 56 field offices
* 22000 agents and support staff
* New desktop
* New servers
* Web-enabling a number of the most important investigative database systems
* Virtual Case File system
* Automated Case Support system

The VCF was agreed to help FBI agents efficiently share data about cases in progress, especially terrorist investigations. The system would also enable agents anywhere in the United State quickly to search various documents and allow them to connect possible leads from different sources. In addition, the VCF would include a case management system, an evidence management system, and a records management system. The intention was to eliminate the need for FBI employees to scan hard-copy documents into computer files.

# Question no 3:

Answer:

Matthew Patton was hired as part of the security team. Mathew Patton and his team reviewed the design documents describing VCF’s overall structure, logic, and user interface. He was B.S in information and decision systems. He also had spent four years of military duty in the Office of Secretary of Defense in the Pentagon where he helped develop a Web-based database system.

Patton identified many issues in project. When he began expressing his concerns regarding potential security and design issues, he realized that SAIC was not interested in hi opinions. He was told “not to rock the boat”.

As he stated, “They were trying to design the system layout and then the whole application logic before they had actually even figured out what they wanted the system to do”.

He stated that 800 plus pages of requirements were too complicated. He added that there was nothing done by SIAC to control the cost of the trilogy project. There were 200 programmers in the staff to work while couple dozen would have been sufficient. He also pointed out the attitudes of company’s people regarding use of the money. The company’s attitude was like that its other people’s money, they will burn it like the way they want to use it.

Patton also claimed that FBI is already using novel’s GroupWise email system so there was no need to write much of the VCF code. He added that it is better to use that system instead of coding a new email application from scratch. He was told to calm down and be a team player. Due to frustration he posted a message in InfoSec News that as he working on the trilogy project and one is taking the security issue seriously. He asked for help for someone at FBI who could manage its contractors and check the accountability. Sherry Higgins saw the message and Patton was reported to the FBI’s security division where he was investigated for breaching the security. He resigned three months from the project after posting his concerns related to project.

# Question no 4:

The trilogy project was referred as tragedy by some FBI agents because it was sum of many failed projects. To investigate the causes of the failure the US National Academy of science provided an in depth study that describes the reason for the failure of the trilogy project and VCF system. The study is called “A Review of the FBI’s Trilogy Information Technology Modernization Program” by McGroddy and Lin. Four main areas of failure were identified.

* Enterprise architecture
* System design
* Program and contract management
* Human resources.

According to McGroddy and Lin the FBI failed in defining the strategic view of project’s goals and missions, and requirements that could be linked through information technology to its operations and processes. The FBI could manage the cost required to complete its objectives, there was no planning involved in budget management.

The second area of concern reported by McGroddy and Lin (2004) centers on System Design, or, more specifically, the FBI’s plan for a “flash cutover” from the old ACS to the new VCF. Their opinion was that a limited initial rollout would provide an early warning for potential problems. Moreover, the committee expressed its concern that the rapid development approach and compressed project schedule presumes success at every stage and did not give adequate consideration to testing. This would in effect implement a prototype throughout the bureau where users would most likely be the testers after implementation.

Thirdly, the committee expressed serious concerns regarding the approaches and processes used to develop its IT infrastructure and applications. A major weakness included the lack of “user vetted prototypes in its applications development processes.” Even the most experienced IT professionals cannot anticipate all of the functional requirements and specifications, so internal and contracted developers should make use of extensive prototyping and usability testing with real users. The notion is that iterative development with ample user feedback and involvement increases the likelihood of delivering a system that meets their needs. Lastly, McGroddy and Lin (2004) identified human resources and external constraints as the fourth area of concern. They point out that the FBI does not have an adequate human resource and skill base needed to deal with the FBI’s modernization project. For example, they point out that the FBI had an extreme shortage of experienced project managers, contract managers, and senior IT managers with good communication skills. On the other hand, the FBI hired highly qualified IT professionals “without requiring them to make excessive financial sacrifices, and to borrow personnel from other agencies and even from the private sector.” Furthermore, the FBI operates under a number of external constraints that inhibit its flexibility. For example, congressional approval is needed to take any actions or make any changes that exceeded $500,000. The committee pointed out that such constraints are inconsistent with the expectation that the FBI could move quickly to redesign itself and deal effectively with new challenges.