



Case Study from Jeff Sutherland' book 'The Art of Doing Twice the work in half the time'

March 2010: Killing the project after 10 years of pain ...

Jeff Johnson was pretty sure it wasn't going to be a good day. On March 3, 2010, the Federal Bureau of Investigation killed its biggest and most ambitious modernization project (Sentinel) —the one that was supposed to prevent another 9/11 terrorist attack, but that had devolved into one of the biggest software debacles of all time. For more than a decade the FBI had been trying to update its computer system, and it looked as if they would fail. Again. And now it was his baby.

He'd joined the FBI seven months earlier and had been asked to fix something that everyone believed to be unfixable. "It was not an easy decision," Jeff says. He and his boss had decided to declare defeat and kill a program that had already taken nearly a decade and cost hundreds of millions of dollars.

How the FBI used technology in 2001

The system the Bureau used was called the Automated Case Support system. It ran on gigantic mainframe computers that had been state of the art sometime in the eighties. Many special agents didn't even use it. It was just too cumbersome and too slow in an era of terror attacks and swift-moving criminals.

Instead, they moved pieces of paper around the office – that was how the FBI kept track of all its case files. This method was so antiquated and porous that it was blamed in part for the Bureau's failure to "connect the dots" that showed various Al Qaeda activists entering the country in the weeks and months before 9/11.

The 9/11 commission report in 2002

The 9/11 Commission drilled down after the attack and tried to discover the core reason it was allowed to happen. Their report singled out lack of technological sophistication as perhaps the key reason the Bureau failed so dramatically in the days leading up to 9/11. “The FBI’s information systems were woefully inadequate,”

2002; we have a solution ...

When senators started asking the Bureau some uncomfortable questions, the FBI basically said, “Don’t worry, we have a modernization plan already in the works.” The plan was called the Virtual Case File (VCF) system, and it was supposed to change everything. Three years later, the program was killed. It didn’t work. Not even a little bit. The FBI had spent US\$170 million in taxpayer money to buy a computer system that would never be used— not a single line of code, or application, or mouse click. The whole thing was an unmitigated disaster. People’s lives were, quite literally, on the line.

2005; the FBI announced a new program, Sentinel.

This time it would work. This time they’d put in the right safeguards, the right budget procedures, the right controls. They’d learned their lesson. The price tag? A mere US\$451 million. And it would be fully operational by 2009. What could possibly go wrong?

Fast forward to March 2010 and Jeff Johnson..

In March of 2010 the answer landed on Jeff Johnson’s desk. They had already spent \$405 million and had only developed half of the project, and it was already a year late. An independent analysis estimated it would take another six to eight years to finish the project, and the taxpayers would have to throw in at least another \$350 million.

What was the real problem?

It wasn’t that these weren’t smart people. It wasn’t that the Bureau didn’t have the right personnel in place, or even the right technology. It wasn’t about a work ethic or the right supply of competitive juices. It was because of the way people were working. The way most people work. The way we all think work has to be done, because that’s the way we were taught to do it.

Fixing the FBI: late 2010 FBI press release

“The FBI stated that it will employ an “agile methodology” to complete the development of Sentinel, using fewer employees. Overall, the FBI plans to reduce the number of contract employees working on Sentinel from approximately 220 to 40. The FBI told us it believes it can complete Sentinel with the approximately \$20 million remaining in the Sentinel budget and within 12 months of beginning this new approach”

Start with prioritisation

The first week they did what a lot of people in these circumstances do: they printed out all the requirements’ documentation. No one actually reads all those hundreds of pages. They can’t. That’s the point. They’ve set up a system that forces them to endorse a fantasy. “There were 1,100 requirements. The stack was a few inches thick,” says Johnson. Just thinking about those documents makes me feel for the people who had probably spent weeks of their lives producing those documents that had no purpose.

They went through and prioritised each requirement in the huge stack. Often people simply say that everything is important. But what they need to ask is, what will bring the most value to the project? Do those things first. In software development there is a rule, borne out by decades of research, that 80 percent of the value in any piece of software is in 20 percent of the features. Making people prioritize by value forces them to produce that 20 percent first. Often by the time they’re done, they realize they don’t really need the other 80 percent, or that what seemed important at the outset actually isn’t.

Using Scrum

Scrum works by setting sequential goals that must be completed in a fixed length of time. In the FBI’s case, they decided on two-week cycles, with the understanding that, at the end of each cycle, there would be a finished increment of product. That meant they’d have something working, something that could be shown to anyone who cared to look but certainly the stakeholders and, optimally, the people who’d actually be using the thing.

Jeff Johnson says his teams increased their productivity by a factor of three. They were going three times as fast once they got moving as compared to when they started. Why? They got better at working together, yes, but most important, they figured out the things that were slowing them down, and

each cycle, each Sprint, they'd try to get rid of them. It eventually took the Sentinel project eighteen months of coding to get the database system deployed, and another two months to deploy it to the entire FBI.

July 2012 : Go live

Finally, in July of 2012, they turned Sentinel on. The effect of Sentinel on the FBI has been dramatic. The ability to communicate and share information has fundamentally changed what the Bureau is capable of.

In the basement of the FBI the Sentinel team is still there, the panels removed from their cubicles so they can see one another. There's a poster-size copy of the "Agile" principles on the wall. Amazingly enough for a room without windows, a healthy lavender plant thrives under fluorescent lights as you enter the room. "Lavender" was the code name of the Sentinel prototype. The team members are still at their posts, making improvements and adding new functionality to the system they built.

Reflections

How many times do you hear about some massive project costing millions and millions being cancelled not only because of the cost overruns, but because it simply doesn't work? How many billions of dollars are spent each year producing nothing? How much of your life is wasted on work that both you and your boss realize doesn't create value? You might as well be digging holes and filling them in again, for all the impact you're having.

It doesn't have to be this way. It really doesn't. Just because everyone has always told you that's the way the world works doesn't mean they're right. There is a different way of doing things—a different way of working. And if you don't do it, you'll be outsourced. Or your company will die.