

Software Glitch in Electronic Voting System during Belgium's Federal Election

1 Problem

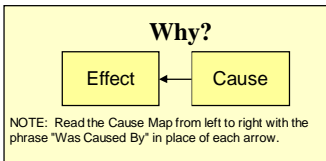
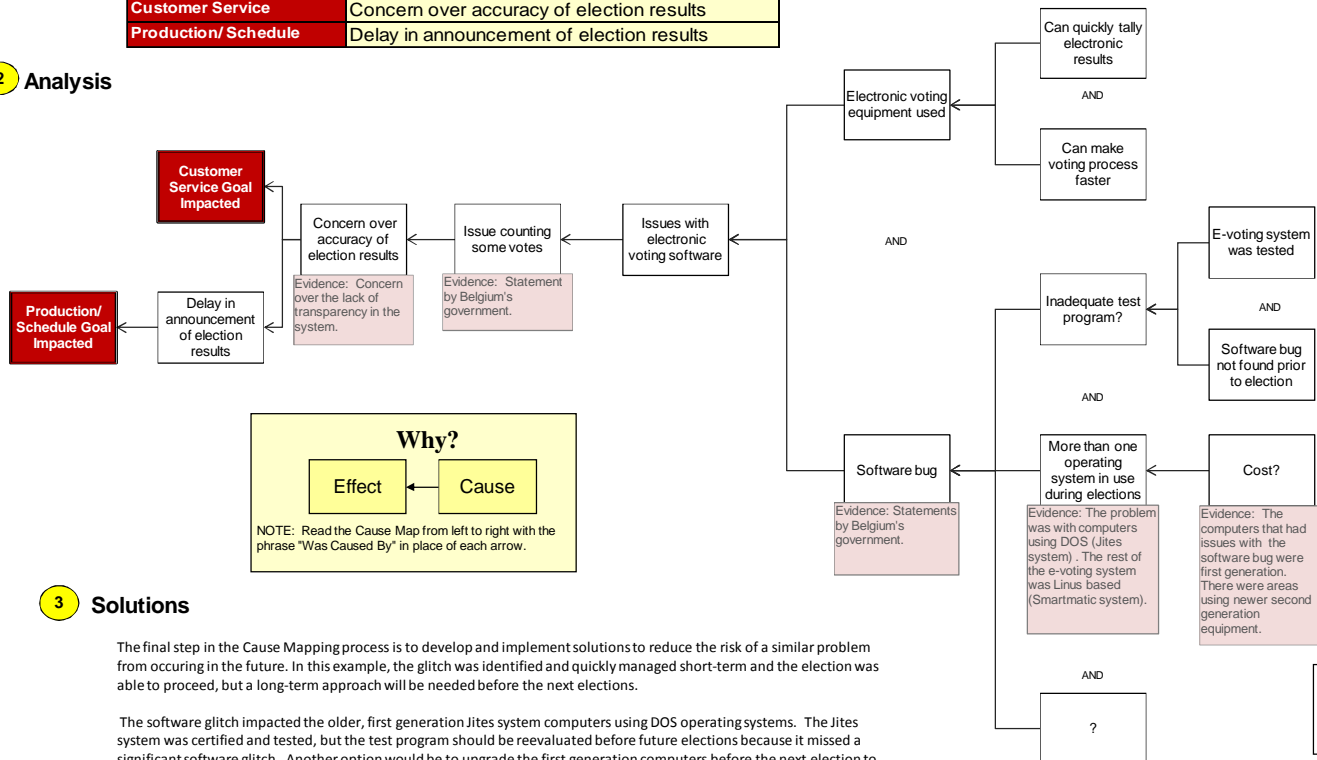
What	Problem(s)	Delay in announcement of election results, software bug in e-voting system
When	Date	May 25, 2014
	Different, unusual, unique	E-voting used for election
	Facility, site	Belgian
Where	Unit, area, equipment	x86 PCs using DOS
	Task being performed	Belgian federal elections

At the most basic level, the idea behind elections seems very simple - let every citizen vote one time and count them. But in reality, it often proves difficult to quickly and accurately collect and count thousands and thousands of votes. The recent software bug during the May federal elections in Belgium illustrates some of the technical difficulties that can come into play during an election.

Impact to the Goals

Customer Service	Concern over accuracy of election results
Production/Schedule	Delay in announcement of election results

2 Analysis



3 Solutions

The final step in the Cause Mapping process is to develop and implement solutions to reduce the risk of a similar problem from occurring in the future. In this example, the glitch was identified and quickly managed short-term and the election was able to proceed, but a long-term approach will be needed before the next elections.

The software glitch impacted the older, first generation Jites system computers using DOS operating systems. The Jites system was certified and tested, but the test program should be reevaluated before future elections because it missed a significant software glitch. Another option would be to upgrade the first generation computers before the next election to reduce the risk of future issues by only having one system to test and maintain.

Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.

CAUSE MAPPING

Problem Solving • Incident Investigation • Root Cause Analysis

- Step 1 Problem** - What's the Problem?
- Step 2 Analysis** - Why did it happen?
- Step 3 Solutions** - What will be done?

Belgium held federal elections on May 25, 2014 and used an electronic voting system to collect and count many of the votes. While computing election results, officials realized that some of the votes weren't calculating correctly. Announcement of the election results was delayed while the problem was addressed, but the bigger problem is that any software hiccups during elections make people question the validity of the vote. Government officials have stated that the problem was quickly addressed and that the impacted votes would not have changed the outcome of the election, but the lack of transparency in the process worries some. In fact, many countries have banned the use of electronic voting because of concern over potential issues and Belgium is one of the only European countries to still use e-voting machines.

