Software Glitch Delays U.S. Travel Documents

Cause Map

1 Problem

The Consular Consolidated Database (CCD) is the global database used by the U.S. State Department to process visas and other travel documents. On July 20, 2014, the CCD experienced software issues and had to be taken offline. The outage lasted several days with the CCD being returned to service with limited capacity on July 23. The CCD is huge, one of the largest Oracle-based warehouses in the world, and is used to process a hefty number of visas each year and the effects of the software glitch have been felt worldwide. The State Department processed over 9 million immigrant and non-immigrant visas overseas in 2013 so a delay of even a few days means a significant backlog.

What	Problem(s)	Consular Consolidated Database Issues
When	Date	July 20, 2014
	Different, unusual, unique	Recent maintenance on database
Where	Facility, site	US government facilities worldwide
	Unit, area, equipment	Consular Consolidated Database
	Task being performed	Issuing US travel documents

Impact to the Goals

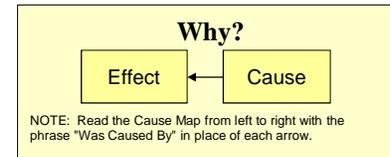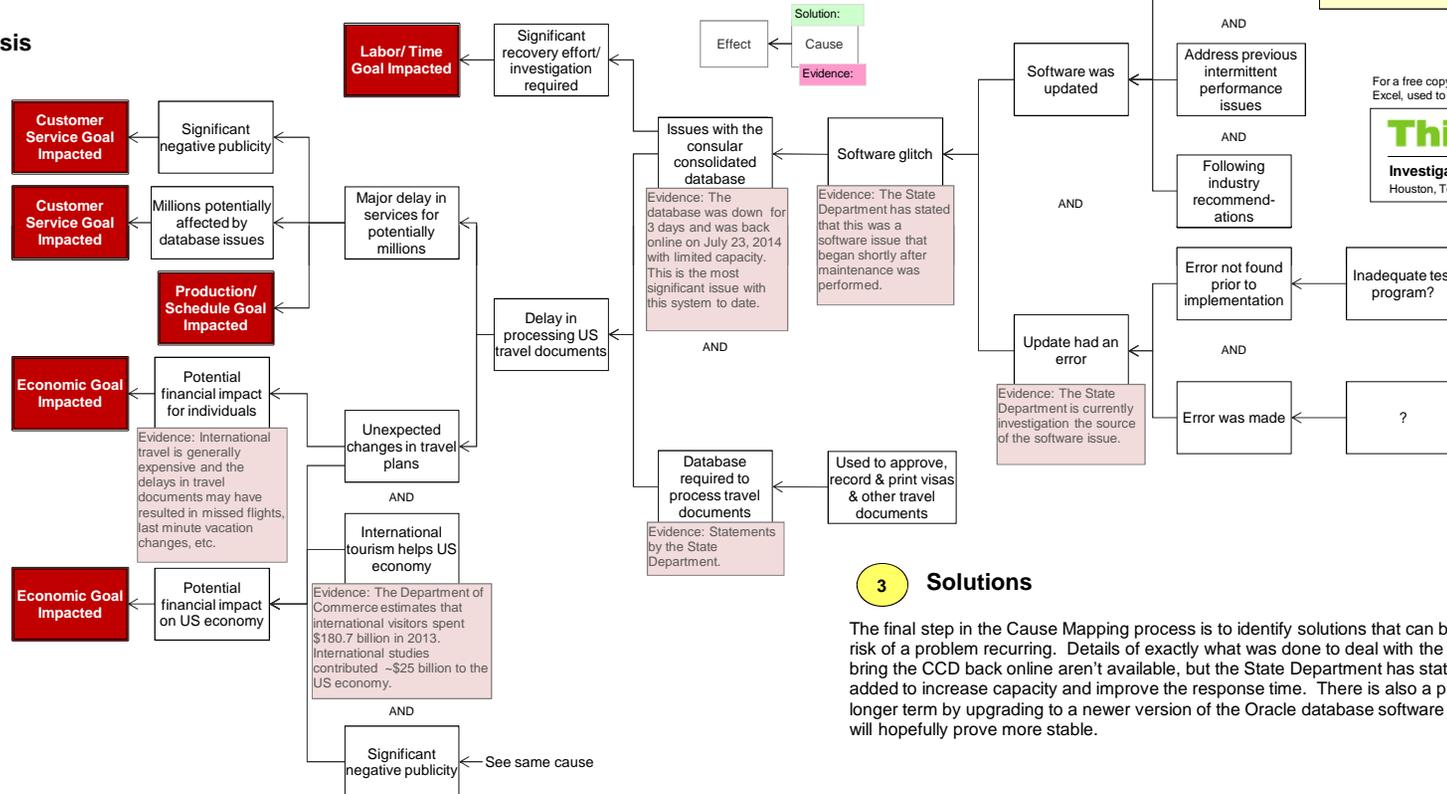|	
Customer Service	Significant negative publicity
	Millions potentially affected by database issues
Production/ Schedule	Major delay in services for potentially millions
Economic	Potential financial impact for individuals
	Potential financial impact on US economy
Labor/ Time	Significant recovery effort/investigation required

The State Department is "working urgently to correct the problem and expect our system to be fully operational soon...We do not believe there was any malicious action or anything untoward here - this was a technical issue."

-Marie Harf, a State Department spokeswoman

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?

Why?

Effect ← Cause

NOTE: Read the Cause Map from left to right with the phrase "Was Caused By" in place of each arrow.

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.

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2 Analysis

Legend:
Solution: / Cause
Effect / Evidence:

Labor/ Time Goal Impacted ← Significant recovery effort/ investigation required ← Issues with the consular consolidated database

Customer Service Goal Impacted ← Significant negative publicity

Customer Service Goal Impacted ← Millions potentially affected by database issues ← Major delay in services for potentially millions

Production/ Schedule Goal Impacted

Economic Goal Impacted ← Potential financial impact for individuals ← Unexpected changes in travel plans

Economic Goal Impacted ← Potential financial impact on US economy ← International tourism helps US economy

Significant negative publicity ← See same cause

Delay in processing US travel documents ← Issues with the consular consolidated database

Issues with the consular consolidated database ← Software glitch ← Software was updated ← Address previous intermittent performance issues ← Improve overall system performance

AND

Software glitch ← Following industry recommend-ations

Software was updated AND

Update had an error ← Error not found prior to implementation ← Inadequate test program?

AND

Update had an error ← Error was made ← ?

Database required to process travel documents ← Used to approve, record & print visas & other documents

Evidence: The database was down for 3 days and was back online on July 23, 2014 with limited capacity. This is the most significant issue with this system to date.

Evidence: The State Department has stated that this was a software issue that began shortly after maintenance was performed.

Evidence: The State Department is currently investigation the source of the software issue.

Evidence: Statements by the State Department.

Evidence: International travel is generally expensive and the delays in travel documents may have resulted in missed flights, last minute vacation changes, etc.

Evidence: The Department of Commerce estimates that international visitors spent $180.7 billion in 2013. International studies contributed ~$25 billion to the US economy.

3 Solutions

The final step in the Cause Mapping process is to identify solutions that can be implemented to reduce the risk of a problem recurring. Details of exactly what was done to deal with the issue in the short term and bring the CCD back online aren't available, but the State Department has stated that additional servers were added to increase capacity and improve the response time. There is also a plan to improve the CCD in the longer term by upgrading to a newer version of the Oracle database software by the end of the year which will hopefully prove more stable.