

1 Problem

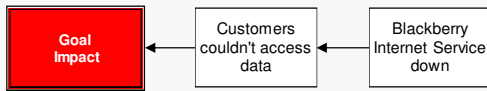
Step 1. Define the Problem

What	Problem(s)	Widespread and extended service outage
When	Date	Oct-11
Where	Different, unusual, unique	World-wide impact
	State, city	United States, Europe
Impact to the Goals	Task being performed	Users accessing data
	Cust. Service	Customers unable to access data
	Property, Equip, Mtls	Potential loss of revenue

This incident Up to \$100M

2 Analysis

Basic Level Cause Map - Start with simple Why questions.



Basic Cause-and-Effect

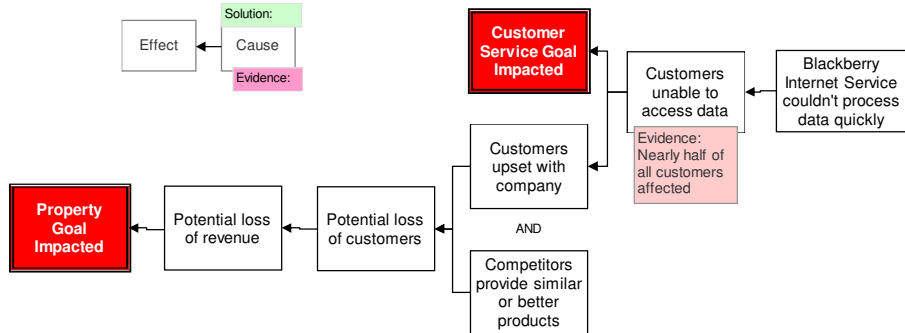
The Blackberry Internet Service went down for over 72 hours in some areas, preventing users worldwide from accessing text messages, emails and data stored on the Internet. With limited information coming from the corporate headquarters, customers became increasingly frustrated as service seemed to improve only to crash yet again.

More Detailed Cause-and-Effect

A root cause analysis can help identify what occurred. The first step is to outline the incident. The service outage originated in Europe, then spread to four other continents over a 72 hour period. Customers were furious with the service outage and the slow PR response from the company. This outage impacted two major RIM goals – to generate revenue for shareholders and maintain customer satisfaction. Working backwards from these goals, the Cause Map shows what events led to the catastrophic failure and where further investigation is needed.

The company faces a potential loss of revenue if it loses customers. The company may not have had to worry about the impact of such service outages in the past...except that now there are viable alternatives such as Apple and Android devices. Continuing to work backwards, customers were upset because of a service outage. At this point, it helps to examine the BlackBerry network architecture.

More Detailed Cause Map - Add detail as information becomes available.



3 Solutions

No.	Action Item	Cause
1	Set up regional data centers	Company filters all data messages internally
2	TBD	Core & backup switch failures

BLACKBERRY CRASHES

Cause Map

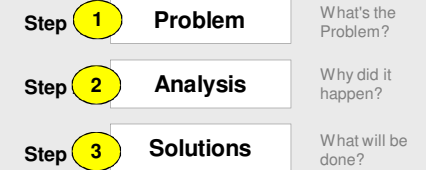
BlackBerry faced yet another setback last month when service went down world-wide for multiple days. The company, already facing stiff competition from other smart phone vendors, apologized profusely for the outage and vowed to woo back its customers. What caused the extensive and possibly business-ending service outage?

"You've depended on us for reliable, real-time communications, and right now we're letting you down." - Robin Bienfait, RIM CIO

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



BlackBerry's architecture is fundamentally different from that of Apple and Android. All data is filtered through the company's internal service network, before being passed on to carrier networks such as Sprint and Verizon. Apple and Android don't provide processing in the middle. When BlackBerry's core switch failed in an English data center, a backup switch was supposed to take over. It had been tested successfully. Unfortunately the backup didn't work, leading to a buildup of messages waiting to be processed. That mountain of messages led to backlogs in other data centers worldwide. When the switch failed, it also corrupted the database software managing all the messages within the network.

It turns out that this network architecture is both a liability and at the heart of the company's business success. By centrally processing all data messages – both compressing and encrypting them – RIM provides additional security and reduces the processing required at the user device, meaning lower energy use and a longer battery life. Despite these strengths, RIM would be wise to find out why their network crashed. As users store more data within the network – as with cloud computing – outages could cripple the system for even longer.

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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