

## More Never Agains II

February 2009

Despite its title, this is the fourth in our semi-annual series of brief recaps of some of the many computing-system failures that have occurred over the last six months.<sup>1</sup> Unlike prior recaps, power outages do not lead the list of failures this time. Network outages were the most predominant, accounting for over a third of all failures. Operator errors accounted for almost 20% of faults, ranging from one that destroyed a company to Google's disabling of its search engine.

### **Operator Error Denies Paychecks to Tens of Thousands**

The Age, Friday, July 3, 2008 – Tens of thousands of Australia's Westpac bank customers missed their weekly paychecks, were overpaid, or had direct debit payments taken out twice on Thursday, July 3<sup>rd</sup>. The bank is responsible for providing payroll services to hundreds of thousands of people. The problem was evidently caused by the transmission of an interbanking file containing duplicate entries. The bank's staff had been under considerable pressure related to job security as a result of a pending merger with St. George's bank.

### **Software Glitch Stalls iPhone Rollout**

CNN, Saturday, July 12, 2008 – Software bugs around the world stalled the rollout of Apple's new iPhone on Friday, July 11<sup>th</sup>, 2008, when sales opened in twenty-one countries. Unlike their rollout a year before, Apple dictated that the phones be activated in the store before customers left. An unanticipated heavy demand defeated this concept. Apple's iTunes servers experienced problems, preventing activation. In the U.K., network partner O2's servers overloaded. The Telstra mobile billing system in Australia collapsed. Customers waited for hours in long lines or were finally allowed to activate at home.

### **The Sinking Data Center**

WHIR News, Monday, July 14, 2008 – Once in a while, a site disaster can be clearly predicted and steps taken to protect the data center. A 70,000 square-foot facility in Tennessee is being relocated by the U.S. Army Corps of Engineers because it is slowly sinking. In addition to having been built on an unstable landfill 21 years ago, it is also just downstream from one of the five dams in the U.S. at most risk of failing; and it has only one power source. The site will be replaced with two 35,000 square-foot buildings, one acting as a backup site for the other.

### **Network Problem Takes Down Johannesburg Stock Exchange**

ITWeb, Tuesday, July 15, 2008 – An undisclosed network problem shut down the Johannesburg Stock Exchange in South Africa for most of the day on Monday, July 14<sup>th</sup>. The problem prevented the Exchange from disseminating trade data from its morning opening until late in the afternoon. Affected were the Stock Exchange New Service, equity trading, and equity derivatives. It was estimated that billions of rands in trades were lost. The Exchange reports that the network had an availability of 99.6% over the last six years. Is that an availability to be proud of?

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<sup>1</sup> [So You Think Your System is Robust?](#), *Availability Digest*, August, 2007.  
[So You Think Your System is Reliable?](#), *Availability Digest*, January, 2008.  
[More Never Agains](#), *Availability Digest*, August, 2008.

### **Queensland Telephone Service Severed by Cable Cut**

news.com.au, Tuesday, July 15, 2008 - A fiber-optic cable was cut by workers laying a pipe for Australia's Queensland water grid, collapsing the Optus communication network for over four hours. Communications throughout Queensland were abruptly terminated for more than a million customers when rerouting failed. Airports, hospitals, 000 emergency calls, government services, stockbrokers, and Internet access were all affected. Unhappily, a hardware fault had taken down the state's backup link the night before; so services weren't restored until the fiber could be repaired. Backbone networks do go down. This illustrates the need for a company seeking high availability to have connectivity to two independent communication networks.<sup>2</sup>

### **NIC Closes Dublin Airport**

Examiner, Thursday, July 17, 2008 – Aircraft position and identification information started to intermittently disappear from controllers' screens in early June, 2008, as aircraft departed and approached Dublin Airport, Ireland's busiest air-traffic hub. The problem continued through early July, when it finally became so bad that controllers shut down the air traffic control system on Wednesday afternoon, July 16<sup>th</sup>, and rerouted planes to other airports. The problem was ultimately traced to a faulty Network Interface Card (NIC) providing radar data to the control systems. There was no backup link. Tens of thousands of passengers were left stranded or delayed over a several day period.

### **Operator Errors Can Be Fatal**

blogs.zdnet, Wednesday, August 27, 2008 – It took just a simple operator error to put a company out of business. Online storage company MediaMax offered each customer 25 GB of perpetual free storage. After nine years, this resulted in hundreds of terabytes of data stored in a few million non-active and non-paying accounts; so MediaMax decided to delete all of the inactive files. In May of 2008, a click of the Enter key destroyed the business. A lone system administrator ran a script that misidentified active accounts, and he deleted the data for thousands of active customers. MediaMax management apologized profusely to their irate customers and then promptly closed the doors. As a data-storage company, management evidently didn't buy into the concept of data backup.

### **Spanish Blackout Shuts Down U.K. Internet Bank Users for Over a Day**

Daily Mail, Thursday, October 16, 2008 – Concerned with the current banking economic crisis, customers of Internet bank Cahoot, which has 750,000 U.K. customers, panicked when they were unable to access their accounts for over a day starting at 8 AM on October 15<sup>th</sup>. The problem, which took down not only the online bank's Web site but also its call center, was caused by a power failure at the bank's Spanish facility. As a result, customers could not make transactions either online or by telephone. Neither were any scheduled debt payments made, leaving customers at risk of default on their automatic payments. Service was finally restored by 1 PM the next day, but transaction posting was not completed until a day later.

### **Wegmans Stores Shut Down for Hours Following False Alarm**

WIVB TV, Friday, October 17, 2008 – With 71 stores in five states in the U.S., Wegmans is a major supermarket chain with offices near Rochester, New York. On October 15<sup>th</sup>, 2008, a fire alarm in its data center triggered the shut-down of all of its computers for over four hours. During this time, no store could process debit or credit cards or gift certificates. However, no fire was ever detected. Essentially shutting down all of its stores for four hours except for cash transactions had to carry a hefty price tag for Wegmans. Where was the business continuity plan? Reversion to manual swipe imprinters would have reduced the effect of the problem for very little investment.

### **Google Apps Updates Take Down Google Apps**

Network World, Friday, October 17, 2008 – Google Apps is an SaaS (Software as a Service) offering aimed at easing the movement of small businesses to the cloud. A "Start" portal page

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<sup>2</sup> Avoiding Networks, *Availability Digest*, January, 2009.

provides a single sign-on for remote access to a company's email, instant messaging, voice, video, calendar, storage, document, intranet, and collaborative services provided by Google. In October, 2008, Google decided unilaterally and without prior warning to update its portal pages to look more like its iGoogle personalized home pages following a major upgrade to iGoogle. Suddenly, links were broken, buttons were misconfigured, and strange "gadgets" caused confusion, preventing access to many Google Apps services. It took days for Google to correct the problems. This followed a Google Apps fifteen-hour outage on August 6<sup>th</sup>.

### **Router Failure Delays Showing ALCS Game**

USA Today, Saturday, October 18, 2008 – With sports bars crowded for the American League Championship Series (ALCS) Game 6 between the Tampa Bay Rays and the Boston Red Sox on October 18th, howls of anger were raised when the TV sets showed instead the Steve Harvey show. It turned out that circuit breakers for Turner Broadcasting System's master router and its backup in its Network Operations Center in Atlanta both independently tripped, causing routing of the live feed to fail. By the time the game went live, the Rays were ahead 1 to 0. The Tampa Bay Rays went on to win Game 7 and the American League slot in the World Series, but lost to the Philadelphia Phillies in the Series.

### **Bell Canada Takes Down Air Canada**

The Star, Monday, October 20, 2008 – Air Canada, Canada's major airline, saw its computer operations come to a halt for several hours on the morning of October 20<sup>th</sup>. The culprit was a nationwide glitch caused by a routing problem in Bell Canada's trans-Canadian backbone communications network. The outage affected all of Air Canada's online IT operations, from self-service kiosks to sign-in desks, gate operations, ticketing, and reservations, causing massive delays in boarding passengers. Bell Canada finally corrected the problem around noon by routing around the fault. What? No automatic rerouting? Backbone networks do fail!<sup>3</sup>

### **Royal Bank of Canada Loses Its POS/ATM Network**

Canadian Press, Tuesday, October 21, 2008 – On the morning of October 21<sup>st</sup>, the Royal Bank of Canada (RBC) lost its national Interac point-of-sale (POS) and ATM network for several hours following an upgrade by Moneris Solutions, the network manager, which is a joint venture of RBC and the Bank of Montreal. This network connects POS and ATM terminals provided by other banks and serviced by RBC to the RBC data center. Customers trying to make purchases or withdraw money with debit cards from these terminals were left holding the bag.

### **Friendster Finds Failover Tests Are Not So Friendly**

Datacenter Knowledge, Monday, November 17, 2008 – Friendster, the third-largest social website in the world, went down for over three days when its data-processing center in Santa Clara, California, abruptly crashed. Outsourced to Quality Technology Services, the data center went down when Quality Tech pulled the plug on utility power as part of normal failover testing. The diesel generators failed to come up due to a voltage regulator problem. As a consequence, the fire suppression system was triggered in the enclosed battery room; and the Emergency Power Off switch was thrown, taking down the entire data center. Many of Friendsters' 85 million users lost their friends' lists, which were subsequently restored days later. Failover tests are frightening!

### **Brisbane Bank Plagued by Series of Computer Glitches**

Brisbane Times, Thursday, December 4, 2008 – For the umpteenth time over the last half year, the Commonwealth Bank of Brisbane, Australia, had to field irate customer calls. The latest incident was due to a technical glitch that crippled its online banking system, Netbank, for the second time in two weeks. In late November, thousands of dollars disappeared from 200,000 accounts after transfers were duplicated due to batching errors. In October, Centrelink payments were delayed to thousands of customers due to another computer glitch. Despite continuing assurances to their customers, there has to be a growing angst in the Bank's customer base.

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<sup>3</sup> See Footnote 1.

### **Southeastern Nevada Telecommunications Service Interrupted for Two Days**

Las Vegas Review Journal, December 11, 2008 – All of Southeastern Nevada lost Embarq services and some Verizon services on the morning of December 10<sup>th</sup>. A construction crew digging trenches for a new sewer system in downtown Las Vegas severed a conduit carrying several copper and fiber cables used by Embarq. It took two days to restore service. Verizon leases some of these channels from Embarq, and their services were consequently affected. This supports our rule that you should be sure that your redundant communication links do not use some common third-party carrier, or your redundancy may be rendered meaningless by a fault in the third-party's network.<sup>4</sup>

### **Network Woes Isolate African Capital**

African News, Tuesday, December 23, 2008 – Located in Southeast Africa, Malawi is among the world's least developed and most densely populated countries.<sup>5</sup> On December, 2008, the country was isolated by a massive communications fault. During an upgrade of an auxiliary switch in the capital city of Lilongwe by the nation's largest mobile carrier, Zain, a technical glitch took down the country's entire mobile network for over four days. The problem was compounded by Zain's initiative to provide cheap, subsidized phones to the Malawian population. This led to a mass of repeated dial-in attempts, further overloading the operating remnants of the system. In this case, perhaps the only viable backup communication link was satellite.

### **Network Problem Costs UK Punter £1 Million**

Sunday Herald, Saturday, December 27, 2008 – A network fault took down the U.K.'s National Lottery network just two days after Christmas, preventing ticket sales for that day's lottery drawing. In addition, the network fault crashed the online games' Web site. Sales in excess of £1 million pounds were lost, the margin on which would have been applied to good causes throughout the U.K. A single ticket won the Lotto jackpot, netting the lucky winner £3.4 million pounds. However, he would have been £800,000 pounds richer if the other tickets had sold.

### **TD Canada Trust Drops Service to 11 Million Customers for Hours**

CBC, Wednesday, December 31, 2008 – A software bug brought down the computers of TD Canada Trust bank on New Year's Eve day, 2008. Its 11 million customers were denied access or had only limited access to their banking and investment accounts for several hours, from 11 AM to 4 PM. Down were the branch systems, online banking, telephone banking, and ATMs. Oh, well! So much for last minute transfer of funds between accounts to minimize tax obligations.

### **Microsoft's Zune MP3 Player Doesn't Survive the New Year's Celebration**

Cnet News, January 1, 2009 – Microsoft's 30-GB Zune MP3 players stopped playing on New Year's Day, 2009. It turned out that the Zune's clock software crashed when rolling over the last day of a leap year and totally locked up the device. It could not even be turned off since the software was looping in the date routine. Microsoft said that the only correction was to let the battery drain and then to bring it back to life after noontime GMT on January 1<sup>st</sup>. After the efforts to avoid Y2K problems, one would like to think that Microsoft would have been sensitive to the leap-year problem.

### **State Unemployment Systems Are Crashing**

Associated Press, Tuesday, January 6, 2009 – New York, North Carolina, and Ohio have been seeing their computer systems crash as they have been asked to process an unprecedented volume of unemployment-compensation requests. Other states have been scrambling to upgrade their systems to avoid similar problems. About 4.5 million Americans are collecting jobless benefits, a 26-year high. With the extension of jobless benefits from thirteen weeks to twenty weeks, callers have been left on the line for hours or disconnected with a 'try again' message. In New York, 10,000 people per hour tried to get through. North Carolina's call volume has tripled.

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<sup>4</sup> See Footnote 1.

<sup>5</sup> Malawi, *Wikipedia*.

Ohio's call volume has gone up by a factor of 10. As we've said, a system with seriously degraded performance due to volume is a down system.<sup>6</sup>

### **The Salesforce Cloud Crashes Again**

eWeek, Wednesday, January 7, 2009 – Salesforce, the granddaddy of Customer Relationship Management (CRM) services provided as SaaS (Software as a Service), experienced another catastrophic failure. On January 6<sup>th</sup>, following a “core network device” failure, a Salesforce outage thwarted 177 million transactions issued by thousands of corporate users in a 38-minute period. In late 2005 and early 2006, Salesforce suffered several outages of several hours each, many due to an Oracle upgrade.<sup>7</sup> Salesforce since then has brought into service other data centers configured to act as mirrors to each other for fast failover. The search for six 9s of availability in SaaS goes on.

### **Immigration Computer Glitch Causes Airport Chaos for 36 Hours**

The China Post, Wednesday, January 7, 2009 – The immigration computers used by Taiwan's National Immigration Agency crashed early in the morning of Tuesday, January 6<sup>th</sup>. Service was not restored until late the next afternoon. In the meantime, thousands of passengers waiting for clearance to leave Taiwan queued up at airports and cruise ports around the country. It was reported that two backup systems had failed, one after the other, as a result of damage to their hard drives. There was a suspicion the failures may have been caused by a disgruntled employee.

### **Avalanche Hits Juneau – Again**

Juneau Empire, Wednesday, January 14, 2009 – Last April, a mile-and-a-half-wide avalanche wiped out power transmission lines and three towers delivering power from the Snettisham hydroelectric dam to Juneau, Alaska's capital.<sup>8</sup> Power was lost for a month-and-a-half as the city converted to diesel generators, raising electricity rates by 400%. Lightning never strikes twice, right? Wrong. Just nine months later, another avalanche recently took down one of the three towers that had been replaced, throwing Juneau once again into the dark. The good news? Oil prices are now \$2.25 a gallon, down from \$4.13 last April.

### **Denial-of-Service Attack Takes Down GoDaddy**

net news, Wednesday, January 14, 2009 – GoDaddy suffered a denial-of-service attack that took down thousands of hosted Web sites for several hours. Email services were not interrupted. To add to the anger of its customers, GoDaddy's voicemail system pointed to its support page for more information on the outage and when it would be corrected. No such information was posted. Not good! Perhaps its Web site was a victim also. GoDaddy suffered a similar attack in November, 2005, when 600,000 customers were affected. With GoDaddy's plethora of servers, these had to be massive attacks. We wish GoDaddy well in protecting itself from such attacks in the future. GoDaddy hosts the *Availability Digest* Web site.

### **Electronic Medical Records – Is the Cure Worse Than the Disease?**

Kaiser Network, Wednesday, January 14, 2009 – The automation of Electronic Medical Records (EMRs) will give doctors and nurses up-to-date information on their patients, thus improving medical care and reducing costs. Leading this charge is the U.S. Veterans Administration (VA). However, after an August, 2008, upgrade of the VA's EMR system, medical record reporting itself became ill in the 153 VA hospitals. This lasted through December, 2008. Doctors reported that an EMR for a patient often included the medical history of the previous patient reviewed, such as clinical results, medical histories, and vital signs. The result – improper medications and delayed or extended treatments. Fortunately, there were no reports of serious consequences – yet.

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<sup>6</sup> Configuring to Meet a Performance SLA – Parts 1, 2, and 3, *Availability Digest*; December 2008, January and February, 2009.

<sup>7</sup> On-Demand Software Utility Hits Availability Bump, *Availability Digest*; October, 2007.

<sup>8</sup> “Avalanche Wipes Out Juneau Power,” More Never Again, *Availability Digest*; August, 2008.

### **Goggle Declares Itself to be Malware**

Computerworld, Saturday, January 31, 2009 – Google works with StopBadware.com, a non-profit project headed by Harvard and Oxford, to identify suspicious sites that export malware such as viruses and Trojans. Whenever Google lists such a site in response to a search, it cautions the user with the message, “This site may harm your computer,” and links the user to StopBadware.com for further information. On the morning of Saturday, January 31<sup>st</sup>, Google did a periodic update of its malware site list. Unfortunately, this update included the URL “/” - a wild card meaning all URLs. Thereafter, for an hour, every site included in a search result was given this warning message. Google dutifully even labeled itself a malware site. The load on StopBadware.com was so great that it went down under a denial-of-service attack.