IN THE NEWS

Poorly Written Software that Kills

Would you trust you life to some of the commercial software packages today? It is worth looking at the history of software problems in light of malware attacks and poorly written programs. One report described a software coding problem in a drug dispensing device that was killing patients a few years ago [1]. In another report, 21 people died when they were overdosed by the Cobalt-60 radiotherapy machine [2]. One of the best documented cases of a software bug killing people was the Therac-25 that dispensed lethal doses of radiation resulting in patient death or injury [3].

According to the FDA, in Panama City, Panama products made by Multidata Systems Intl. contributed to 28 patient deaths after receiving excessive radiation treatment [4]. It was later determined that the problem was due to a software bug [5]. For the US Army, a software problem that set elevation to a default of 0 resulted in the death of a soldier at Fort Drum during life fire artillery training [6]. In a scene out of a terminator movie, a software bug in robot controlled anti-aircraft gun killed 9 and wounded 14 in South Africa [7]. In another case, software problems were examined as a cause for an inadvertent patriot missile shooting down a British jet killing two [8].

While many users are reluctant to migrate to Windows Vista, Microsoft will no longer make XP available [9]. While forcing operating system upgrades may be good for Microsoft, is it good for consumers? How many legacy systems are they that currently can't support Vista? How many applications are using XP that could cause loss of life?

Then there are cases where computers and software create economic havoc. Case in point, Moody's had a software bug that inflated the rating for constant proportion debt obligation (CPDOs) that when corrected cost some investors 60% of their capital [10].

1. Rockoff, Jonathan D., Baltimore Sun, *Flaws in medical coding can kill*, June 30, 2008.
2. Germain, Jack M., TechNewsWorld, *Can Software Kill You?*, April 13, 2004.
3. Leveson, Nancy G, and Turner, Clark S., IEEE Computer, *An Investigation of the Therac-25 Accidents*, July, 1993.
4. FDA, http://www.fda.gov/bbs/topics/NEWS/2003/NEW00903.html
5. McCormik, John, eWeek, *Can Software kill?*, March 8, 2004.
6. Stockman, Dan, The Journal Gazette, *A single zero turns training to tragedy*, May 18, 2008.
7. Shachtman, Noah, Wired, *Robot Cannon Kills 9, Wounds 14*, Octo-

Special points of interest:

- Hackers stole Citibank ATM PINs netting them $ millions
- French Commission noted significant weaknesses in Société Générale bank's computer security system

Weak Dollar

When revenue value decreases, typically security is the first item to be sacrificed. For example, in New York, due to reduced revenue, the security protecting art works will be reduced by $4 million [1].

In other news, according to Treasury Secretary, Henry Paulson, the biggest driver in the high cost of oil is the weak dollar [2]. This was seen on Wednesday after the dollar weakened oil hit a new record [3]. The increased price of oil is also forcing the stock market into bear territory [4]. Each week, some manufacturers are receiving letters from their suppliers that prices are going up [5]. Even Starbucks is feeling the pain and announced it will close 600 stores in the US [6].This as the number of private sector jobs decreased by 79,000 [7].

Poorly Written Software that Kills

ber 18, 2007.

8. Roberts, Paul, IDG News Service, *Software Bug May Cause Missile Errors,*

March 27, 2003.

9. McDougall, Paul, Information Week, *Windows XP Officially* Retired By Microsoft, June 30, 2008.
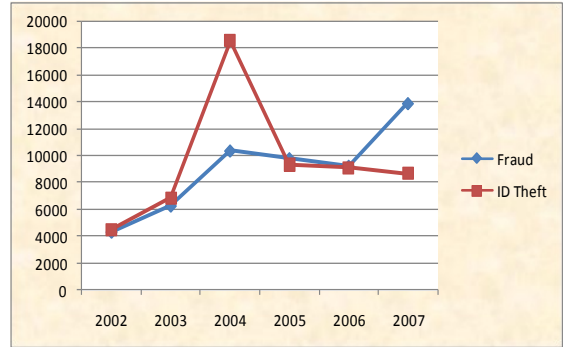
10. Jones, Sam, and Tett, Gillian, Financial Times, *Moody's to investigate staff over rating bug*, July 1, 2008.

Crime in the Candidate's Home State

G iven it is an election year, it is worth looking at the reported incidents of fraud and identity theft from the presidential candidate's state. The information used for the graphs came from the FTC's Sentinel Consumer Site [1]. The numbers depicted represent only cases reported. Also note that the census estimates 6.17 million people in Arizona versus 12.83 million in Illinois. Consequently, the numbers per 100,000 people are higher in Arizona. What these charts confirm is thou-

and identity theft. It is interesting to note the increase in fraud during 2007 given the mortgage meltdown. We expect the numbers for 2008 to be far worse. For example, since March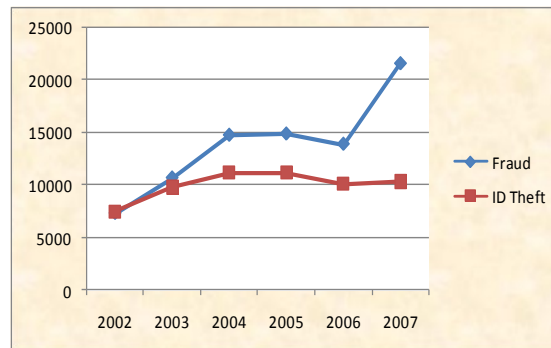, the FBI has arrested over 400 people for mortgage fraud [2]. Of these, 67 in Chicago were charged with Mortgage fraud [3]. Similarly, 38 people in Arizona were charged in

Arizona Consumer Complaints

Illinois Consumer Complaints

sands of people are complaining about fraud

the FBI mortgage-fraud case [4]. Each candidate has a good justification for fur-

thering IT security.

1. http://www.ftc.gov/sentinel/reports.shtml

2. Ryan, Jason, ABC News, *Hundreds Arrested in Mortgage Fraud Sweep*, June 19, 2008.

3. Coen, Jeff, and Lighty, Todd, Chicago Tribune, *67 from Chicago area charged in U.S. crackdown on mortgage fraud*, June 19, 2008.

4. Reagor, Catherine, The Arizona Republic, *Big Arizona mortgage-fraud bust*, June 19, 2008.

Weak Dollar

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2. Reuters, *Treasury's Paulson says believes in strong dollar*, June 30, 2008.

3. Tuttle, Robert, Bloomberg, *Oil Rises to*

Record After Crude Supplies Fall, Dollar Weakens, July 2, 2008.

4. The Washington Post, *Oil Prices Drive Stocks to Bear Market*, July 6, 2008.

5. Simon, Ellen, AP Business, *Manufacturers struggle to overcome rising prices*,

July 1, 2008.

6. Mintz, Jessica, AP Business, *Starbucks to close 600 US stores, rein in growth*, July 2, 2008.

7. CNN Money, *Payroll report: 79,000 private sector jobs lost in June*, July 2, 2008.

Citibank ATMs Hacked

When a bank get hacked and suffers financial loss, the losses are typically kept quiet. A case in point deals with hacked Citibank ATM machines. As we explore the history, we see this story actually started last year and is still continuing.

ATM Infrastructure machines running on Microsoft Windows operating systems at 7-Eleven convenience stores have been hacked [1]. Indications are the hacking took place between October 2007 and March 2008 [2].

This story follows reports that up to 2,000 Citibank ATMs will be replaced at 7-Elevens following indicates their ATM system was successfully hacked [3]. In February, two Brooklyn men were alleged to have stolen over $750,000 from hacked Citibank ATM machines [4]. It may be that the exploit used against Citibank is a risk to other financial institutions as well. For example, it seems that the First Federal Bank of California was victimized earlier this year when Fiserv Inc. experienced a security breach [5]. Given the secrecy of successful hacker attacks, we can only infer the actual scope. Case in point, in Canada, eight people were charged in a sophisticated ATM fraud scheme [6].

One report indicates that the FBI was alerted to the breach months prior to when an alert Citibank employee noticed suspicious ATM activity that netted 6 bad actors last May [7]. A key point in this exploit is that hackers appear to have obtained the actual customer PINs [8]. As information becomes available, we may learn more of the actual exploit. It is interesting to note that Citibank is claiming their ATMs were not compromised [9]. Perhaps it can be explained away as a symptom of the sub-prime crisis.

So the question is how long will financial institutions continue using security weak magnetic ATM cards instead of smart cards? Even if a bad actor knew the smart card PIN, without the card, impersonation is mitigated.

1. Robertson, Jordan, AP, *Citibank ATM breach reveals PIN security problems*, July 1, 2008.
2. Eiland, Travell, KLAS (Las Vegas), *FBI Investigating Major ATM Hacking Ring*, July 1, 2008.
3. Krebs, Brian, Washington Post, *Citibank to Replace ATMs Following Crime Spree*, June 19, 2008.
4. Poulsen, Kevin, Wired, *Citibank Replaces Some ATM Cards After Online PIN Heist - Update*, June 20, 2008.
5. Walker, Cheryl, Orange County Register, *Bank customers urged to take precautions because of security breach*, April 15, 2008.
6. GlobalTV News (Canada), *8 People Charged in Massive ATM Fraud Bust   8 People Charged in Massive ATM Fraud Bust*, June 18, 2008.
7. Poulsen, Kevin, Wired, *Stakeouts, Lucky Breaks Snare Six More in Citibank ATM Heist*, June 24, 2008.
8. Ritter, Paul, KTHV, *Citibank ATM Breach Reveals PIN Security Problems*, July 3, 2008.
9. KTNV, *Citibank Says Hacked ATM's Were Not Compromised*, July 2, 2008.

It is necessary for us to learn from others' mistakes. You will not live long enough to make them all yourself–Admiral Hyman G. Rickover

Oil Alternatives

With oil hitting all time highs, limited oil supplies, concern over carbon emissions and the desire for green alternatives, it is worth seeing what US industry has put together. Hydrogen has long been considered a green alternative to gasoline. Ford has developed hydrogen internal combustion engines with about 30 busses in pilot use Some of these 12 passenger vehicles are in use at Orlando International Airport and get 13% better fuel economy over their fossil fuel counterparts [1]. Most major manufacturers have hydrogen car pilots based on fuel cells. For example, Honda FCX Clarity [2].

Before hydrogen can be adopted, there needs to be fuel stations to service customers. One company, H2Gen believes Hydrogen can be made for the equivalent of $2.50 per gallon [3]. On the plus side, the first commercial Hydrogen fuel station recently opened in Los Angeles [4].

1. Krisher, Tom, Associated Press, Ford: Hydrogen Cars Close to Production, July 10, 2007.
2. CNN Money, *Honda rolls out fuel cell car*, June 16, 2008.
3. Woodall, Bernie, Reuters, *U.S. hydrogen maker sees car filling stations soon*, July 1, 2008.
4. Nguyen, Daisy, AP, *Hydrogen Fuel Station Opens In L.A.*, July 3, 2008.

On-line Games Replacing Passwords

Using tokens to overcome password weaknesses was discussed in previous Newsletters. For some time, on-line games have been subjected to password hackers [1]. Password grabbing Trojan horses have been used by hackers to interact in the game and cash out (game) accounts [2]. The problem can best be summarized with the release of the Microsoft Malicious Software Tool that removed over a million gaming password stealers [3].

For the game maker Blizzard, this has highlighted the need for increased security. In response, the company is now offering a multifactor token for logging into the on-line game [4]. The new devices provide a one-time password generator and sell for $6.50 [5]. So if the gaming industry discovered the need to use multifactor authentication, how long will it be before the Government and financial institution industries follow? In another twist, visitors to the Sony PlayStation web site were presented with fake warnings that their PC was infected [6].

1. Spring, Silvia, mywire, *Games: Virtual Thievery*, December 11, 2006.

2. Keizer, Gregg, Information Week, *Trojan Snags World Of Warcraft Passwords To Cash Out Accounts*, May 2, 2006.

3. Kaplan, Dan, SC Magazine, *Microsoft reports mass cleanup of gaming password stealers*, June 23, 2008.

4. Mills, Elinor, Cnet, *'World of Warcraft' to sell token device for added security*, June 30, 2008.

5. PC Magazine, *Blizzard Provides Security Hardware for WoW*, June 27, 2008.

6. Claburn, Thomas, Information Week, *Sony PlayStation Site Hacked With 'Scareware'*, July 2, 2008.

In a dangerous situation we have chosen the most dangerous of courses...we have chosen not to face our danger! –Edward Teller

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Fewer Government Tax Revenues

For the most part, Government relies on taxes to fund various programs. As industry and employment cools, the tax base shrinks. So far, 29 states plus the District of Columbia have reported budget shortfalls [1]. Moreover, the Treasury Secretary, Henry Paulson, is predicting that home prices will continue to fall [2]. As the prices decrease, the property taxes will continue to shrink for local municipalities. For example, in addition to lower property taxes, sales tax revenue is down in 30 North Texas cities [3].

In one state, Arizona, the current $10.2 billion budget will be cut to $9.9 billion [4].

1. Gopal, Prashant, Business Week, *The Next Victim of the Real Estate Crisis*, June 30, 2008.

2. Reuters, *Paulson: U.S. home prices to fall*, July 2, 2008.

3. Parsons, Jay, The Dallas Morning News, *Drop in revenue strains municipal budgets*, June 28, 2008.

4. The Daily Dispatch/AP, *Governor signs $9.9 billion Arizona budget*, June 28, 2008.

Security Vulnerabilities

It is estimated that 40% of web browser users do not apply security patches [1]. France's banking commission fined the Société Générale $6.3 million and noted significant weaknesses in the bank's computer security system [2]. Société Générale is France's second largest bank and recently suffered a $7.8 billion loss due to a single insider. So how many US financial institutions have the same level of computer security?

In other news, Google confirmed that employee information prior to 2006, maintained in unencrypted format by an outsourced company, was stolen in a burglary [3]. Stolen employee information was not the limit of Goggle's privacy issues in the news. A court has ordered Google to give Viacom approximately 12 trillion bytes of audit logs of people's YouTube viewing habits [4].

1. Hulme, George, Information Week, *Hey You. Yeah, You: Patch Your Web Browser*, July 1, 2008.

2. Associated Press (Paris), *SocGen fined over trading scandal*, July 5, 2008.

3. Chase, Brendon, Cnet, *Stolen: Google employees' personal data*, July 3, 2008.

4. Jones, K.C., InformationWeek, *Google Ordered To Release Data On YouTube Users*, July 3, 2008.

Correction–The company helping the DC Government implement their one card is SECTECS.