# SOFTWARE QUALITY ASSURANCE

# John Abbott College Quality Assurance Failures

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# Quality Assurance Failures

- Intuit -- Feb 96
- Chase Manhattan -- Mar 96
- California Demographics -- May 96
- Washington DC traffic -- May 96
- First Natl Bank Chicago -- May 96
- ISP Outages -- June Dec 96
- Microsoft Files Offensive in Spanish -- July 96
- General Motors Recall -- July 96
- Stock Exchange Problems July Dec 96
- Ent Federal Credit ATMs -- Oct 96
- WorldNet Outage -- Nov 96
- Amtrak Reservations -- Nov 96
- CIBC Debit Cards -- Nov 96

# Intuit Tax Software

#### Intuit Inc -- Feb 96

- Calculations wrong in US tax-preparation software
  - **-** TurboTax
  - MacInTax
- Updates on Web site
  - workarounds
  - pay penalties

# Chase Manhattan --

#### Mar 96 -- New York Times

- Letter intended to go to 89 credit-card customers
  - let them know their accounts default
- Went to 11,000 (of a total of 13,000) customers in error
  - users of secured credit-cards

# California Demographics

#### May 96 -- RISKS 18.10

- CA legislator constantly receiving mail for single parents
- Algorithms in state demographics programs
  - include assumption that different parental surnames on a birth certificate mean parents were not married to each other
- Credibility of statistics in doubt
- Dec 96: similar furor over Consumer Price Index definitions
  - rooted in agricultural/industrial past
  - not suitable for post-industrial service / information economy

# **Washington DC traffic**

#### May 96 -- Washington Post

- . New version traffic-control software
- Switched to wrong pattern
  - from rush-hour (50 seconds of green)
  - to the weekend cycle (15 seconds of green)
- Resulting chaos doubled many people's commute time
- Estimate \$\$ cost to economy....

# First Natl Bank Chicago

# May 96 -- AP

- Single largest accounting error in history
  - **900 customers received erroneous transfer**
  - \$900M each
- Total error \$763.9B

# ISP Outages

June 96 -- Reuters; RISKS 18.23; others

- Netcom
  - major Internet Service Provider
  - 13-hour blackout on 18 June
  - 1000s customers unable to receive / send e-mail
  - Share price fell from \$33.24 to \$28.75
- . AOL
  - went down 1 hr day after Netcom's problem when new software installed
  - also down 19 hr in Aug 96

# Microsoft Files Offensive in Spanish

#### **July 96 -- AP**

- Microsoft provides "localized" versions of thesaurus, dictionary, & speller
- Spanish translations caused uproar in Mexico
  - synonyms for "Indian" offensive; e.g., "savage" and "man-eater"
  - "vicious" and "inverted" for "homosexual"
  - "vicious" and "pervert" for "lesbian"
- Public relations disaster
- Company scrambled to provide substitute files

# **General Motors Recall**

# **July 96 -- RISKS 18.25**

- Major problem with engine software
  - could result in a fire
- 1996 and 1997 model years
- 292,860 Pontiacs, Oldsmobiles and Buicks

# Stock Exchange Problems July - Dec 96

- July -- Johannesburg exchange down twice
  - new software being installed
- Oct -- Cairo Bourse
  - new software
  - significant drop in share prices
- Dec -- Hong Kong Stock Exchange
  - error in automated calculations of index
  - caused panic selling

# Ent Federal Credit ATMs

- Oct 96 -- RISKS 18.53
- Software
  - failed to register multiple identical withdrawals
  - from same account on same day
  - registered only 1st withdrawal
- Consequences embarrassing
  - had been told repeatedly by customers months before
  - forced to debit 12,000 accounts by \$1.2M in total

# **Amtrak Reservations**

#### Nov 96 -- RISKS 18.64

- On 29 Nov, Amtrak lost access to nath reservation & ticketing software
- Just before heaviest travel period of year
- Agents usually had no paper schedules or fares
- Lack of backup caused major delays in helping customers

# CIBC Debit Cards

Nov 96 -- RISKS 18.65

- 30 Nov in Ontario
- Major Canadian bank's debit-card system failed several hours
- Flaw in software upgrade
- Half of all transactions across eastern Canada were prevented

# Miscellany & Fun

- 2 Belindas -- Feb 96
  - NZ women w/ identical names and birthdates
- Jewish Publication Society -- May 96
  - Judaica CD-ROM got Christian screen saver
- Baby Bonus from IRS -- June 96
  - Pittsburgh 3-yr- old got \$219,495 income-tax refund
- XXX Jeopardy -- June 96
  - Chicago cable TV showed porn in middle
- Dentist's Patience is Taxed -- Dec 96
  - 16,000 copies of same tax form delivered

# **DISCUSSION**

- Were you surprised by the QA errors you have studied today?
- What do you think the effects of these QA failures were on
  - the organizations involved?
  - the programming managers?
  - the programmers responsible for the bad code?
- Why do you think these errors became public?
- What lessons do you draw from these cases for your own work?