Incident Response & Evidence Management

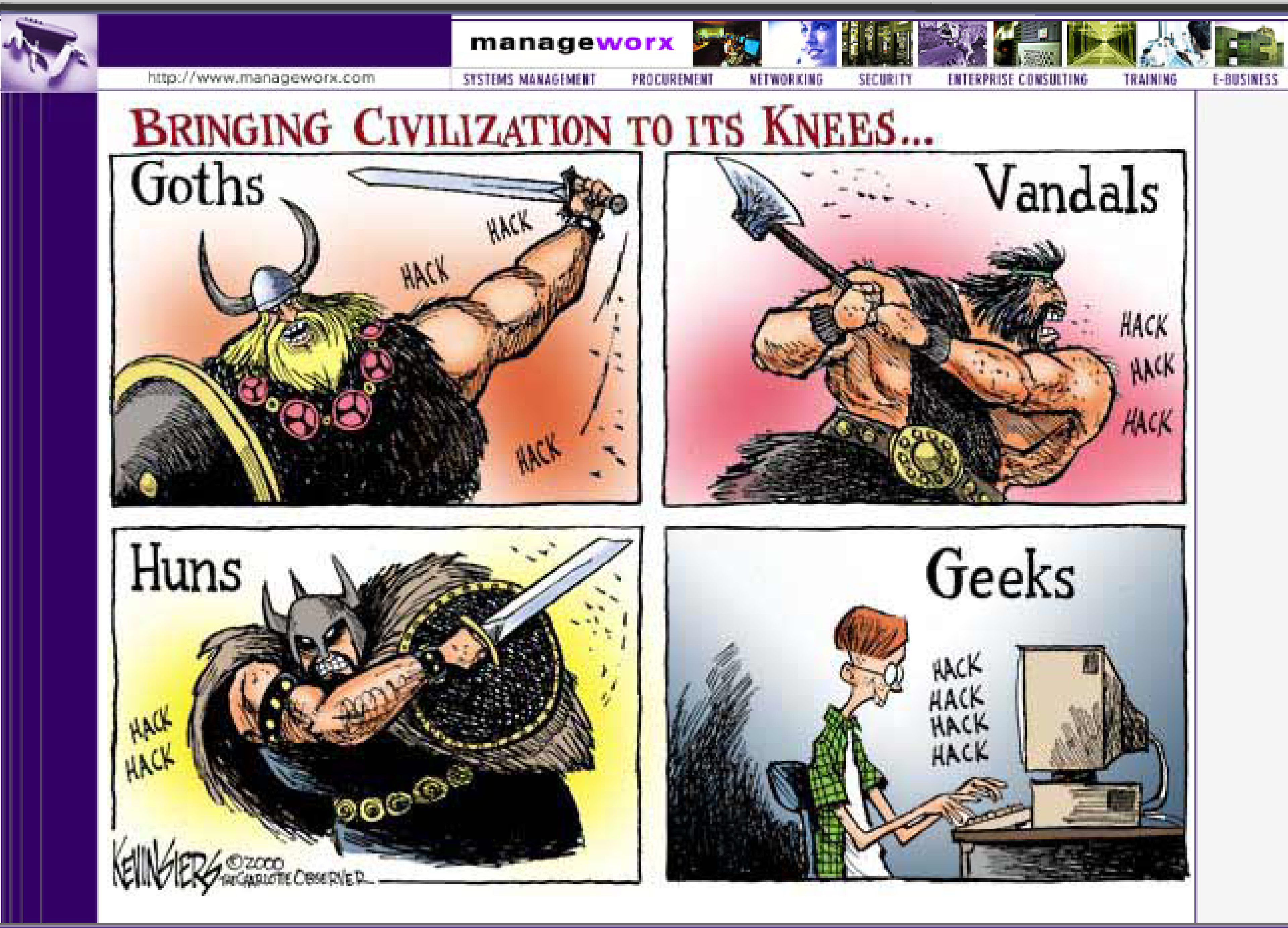
CIPS Brandon Chapter
November 28 2002

CIPS

Dr. Marc Rogers PhD, CISSP

Agenda

- Current State of the IT World
- What is Incident Response
- What is Evidence Management & Handling
- Tie into DRP/BCP
- Summary



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Hong Kong Reuters Office Hacked:
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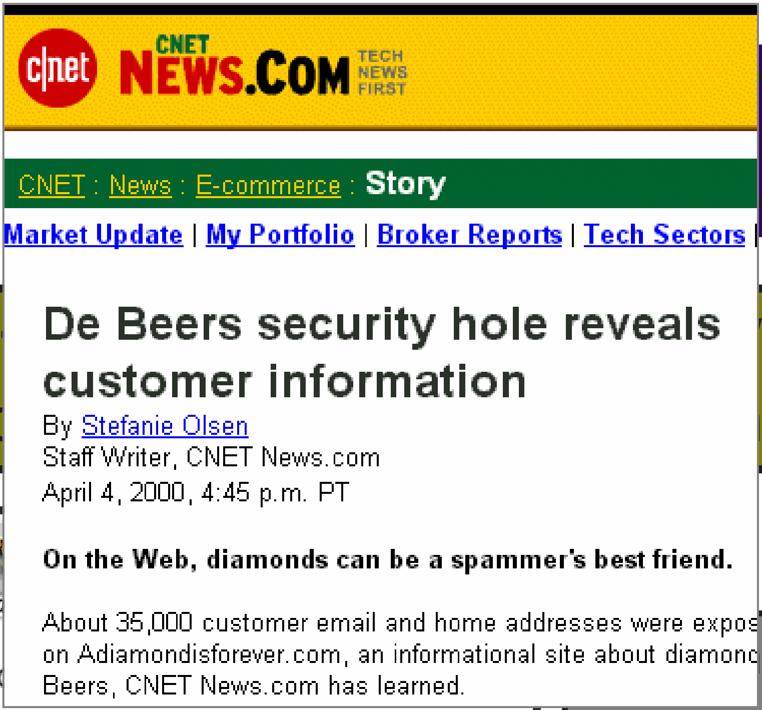
36 hours

PA Teenager Charged With 5 Counts of Hacking:
Southwestern Bell, BellCore, Sprint, and SRI hit
Costs to Southwestern Bell alone exceed $500,000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CNET : News : E-commerce : Story
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De Beers security hole reveals customer information

By Stefanie Olsen
Staff Writer, CNET News.com
April 4, 2000, 4:45 p.m. PT

On the Web, diamonds can be a spammer's best friend.

About 35,000 customer email and home addresses were expos
on Adiamondisforever.com, an informational site about diamond
Beers, CNET News.com has learned.

Million Hack:
inside help.
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Computer At **eb Sites**
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Trick: Allows someone to control your PC remotely--without authorization.
Treat: Your archenemy deletes your files just for the heck of it.

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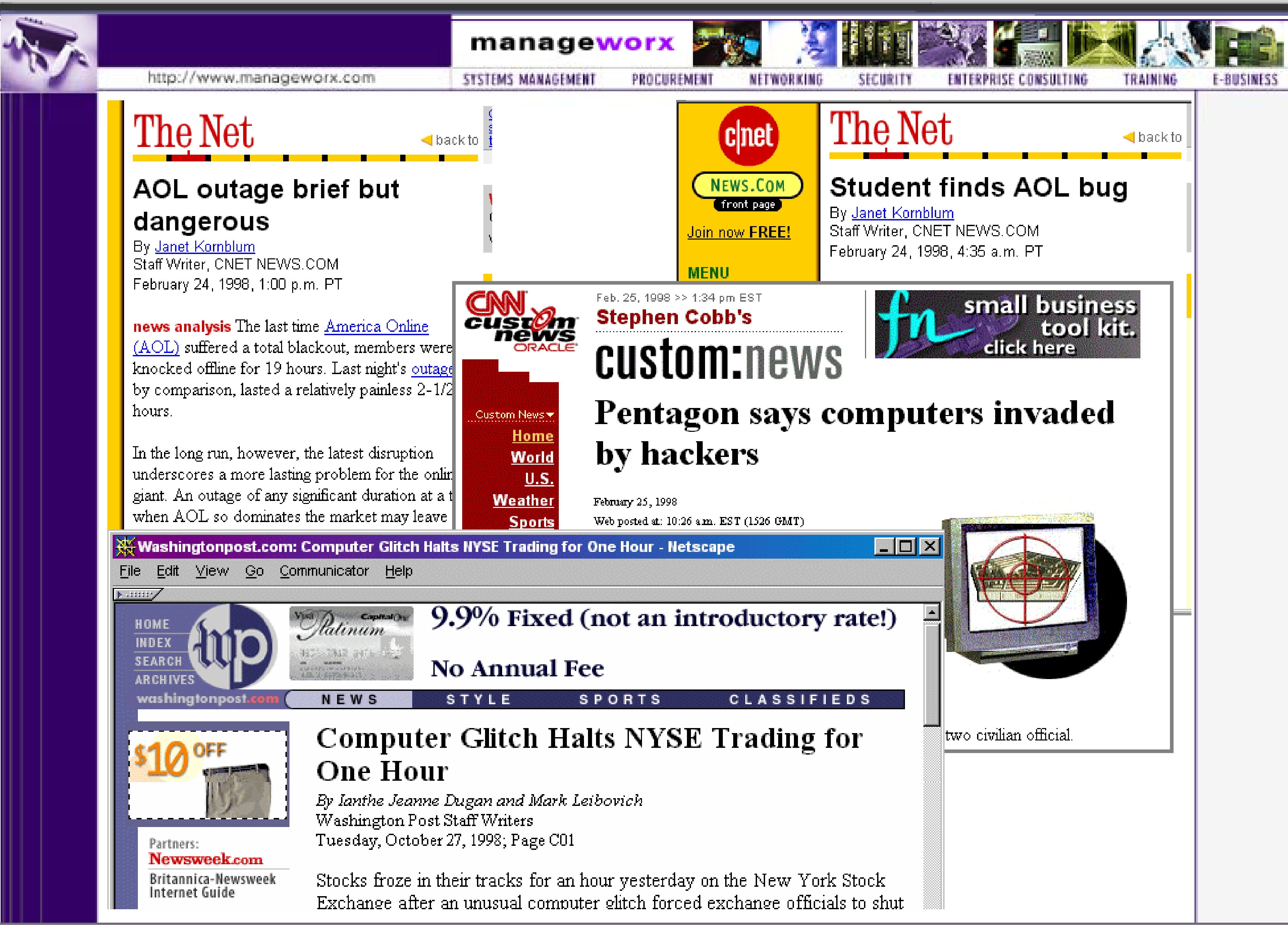
Virus Taints Big Japanese Debut



AOL outage brief but dangerous

By Janet Kornblum
Staff Writer, CNET NEWS.COM
February 24, 1998, 1:00 p.m. PT

news analysis The last time America Online (AOL) suffered a total blackout, members were knocked offline for 19 hours. Last night's outage by comparison, lasted a relatively painless 2-1/2 hours.

In the long run, however, the latest disruption underscores a more lasting problem for the onlin giant. An outage of any significant duration at a t when AOL so dominates the market may leave

Student finds AOL bug

By Janet Kornblum
Staff Writer, CNET NEWS.COM
February 24, 1998, 4:35 a.m. PT

Feb. 25, 1998 >> 1:34 pm EST
Stephen Cobb's
custom:news

Pentagon says computers invaded by hackers

February 25, 1998
Web posted at: 10:26 a.m. EST (1526 GMT)

two civilian official.

Washingtonpost.com: Computer Glitch Halts NYSE Trading for One Hour - Netscape
File Edit View Go Communicator Help
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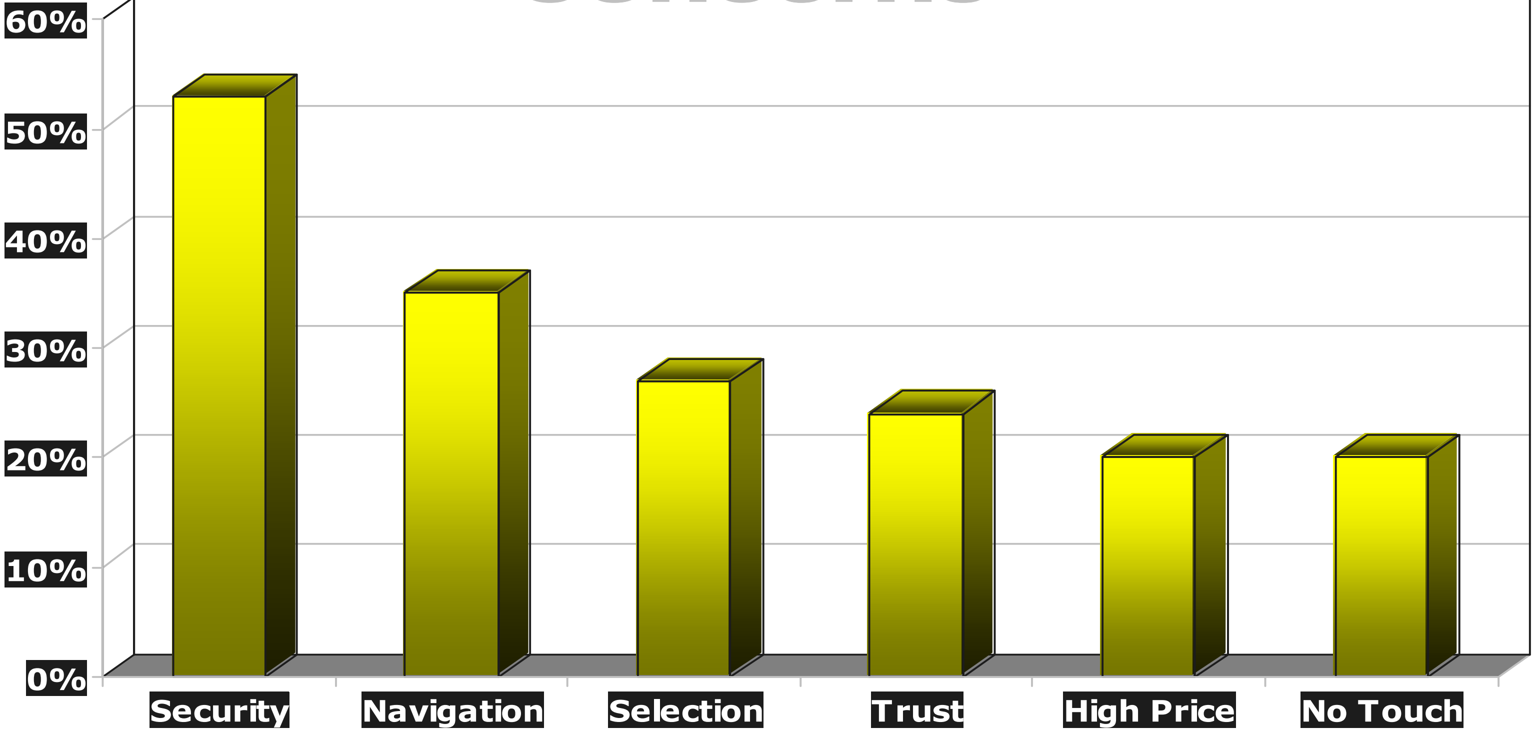
Computer Glitch Halts NYSE Trading for One Hour

By Ianthe Jeanne Dugan and Mark Leibovich
Washington Post Staff Writers
Tuesday, October 27, 1998; Page C01

Stocks froze in their tracks for an hour yesterday on the New York Stock Exchange after an unusual computer glitch forced exchange officials to shut

Consumer e-Commerce Concerns



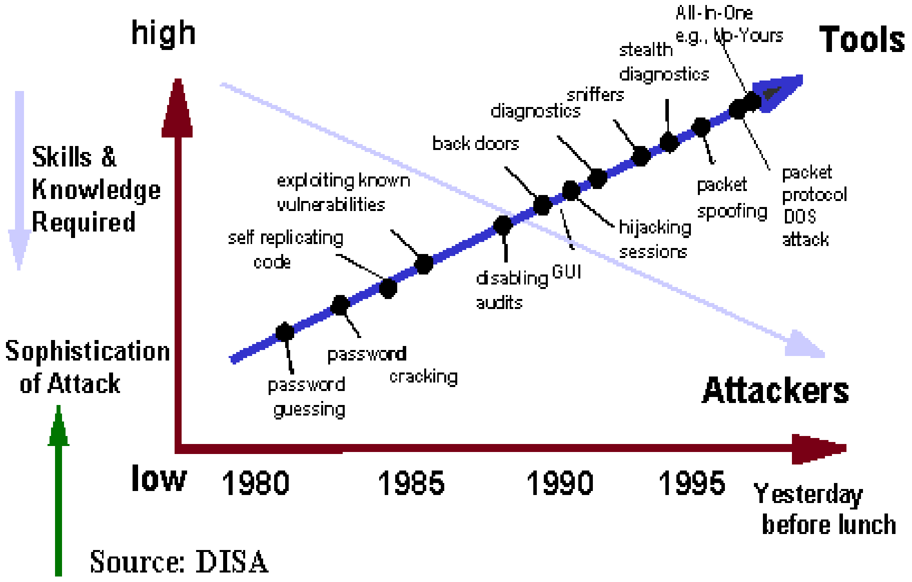
Privacy/Security issues could potentially put an $18 billion dent in the projected $40 billion 2002 e-Commerce revenue (Jupiter Communications, 2000).

Attackers

- Attacks are becoming more sophisticated

  Progressed from simple user command, script and password cracking (sniffers, crackers) in 1993-94, to intricate techniques that fooled the basic operations of IP (spoofing etc.)

- But Attackers less skilled



Source: DISA

CSI/FBI 2002 Survey

- 90% of respondents (primarily large corporations and government agencies) detected computer security breaches within the last twelve months.
- 80% acknowledged financial losses due to computer breaches.
- 223 respondents reported **$455,848,000** in financial losses.
- 74% cited their Internet connection as a frequent point of attack than cited their internal systems as a frequent point of attack (33%).
- 34% percent reported the intrusions to law enforcement. (In 1996, only 16% acknowledged reporting intrusions to law enforcement.)

Incident Response Goals

- Provide an effective and efficient means of dealing with the situation in a manner that reduces the potential impact to the organization.
- Provide management with sufficient information in order to decide on an appropriate course of action.
- Maintain or restore business continuity.
- Defend against future attacks.
- Deter attacks through investigation and prosecution.

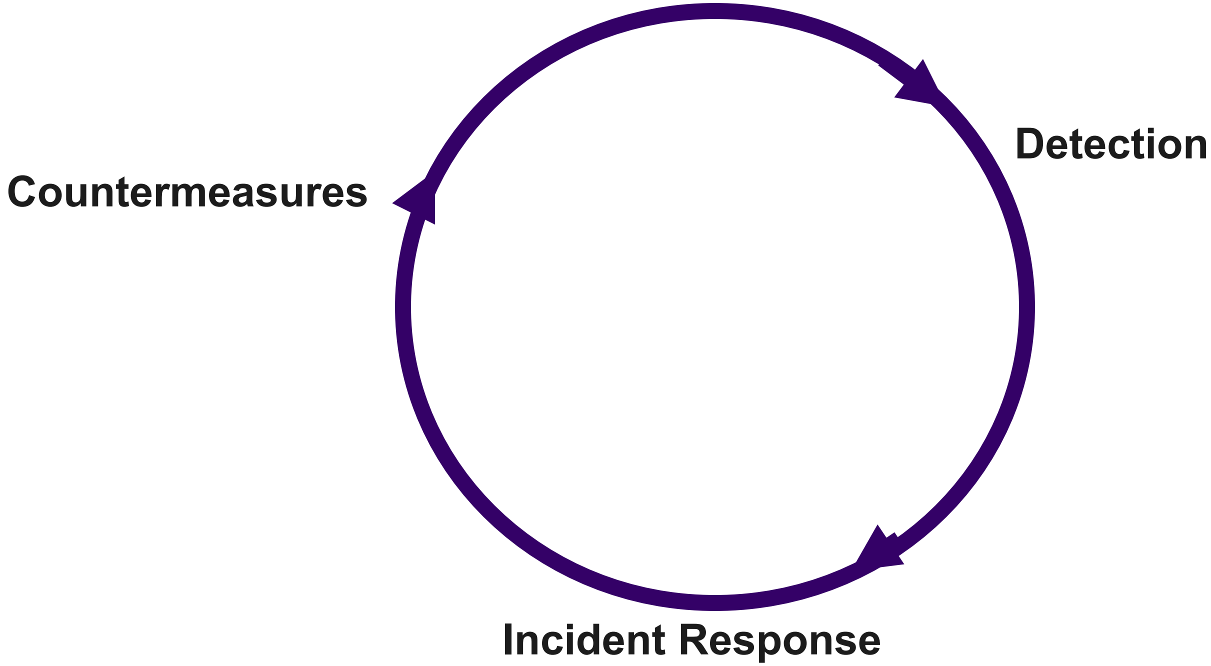
Relationship to InfoSec

- The IAC triad can be expanded to include:
    - Non-repudiation
    - Accountability
- Incident Response is directly linked to InfoSec goals
- It can help restore the IAC

Information Security Lifecycle

- Countermeasures
  - Defenses that counter threats
  - No defenses are fool proof
- Detection
  - Indicates that security has been breached
- Incident Response
  - After the incident has been noticed responding to it is critical

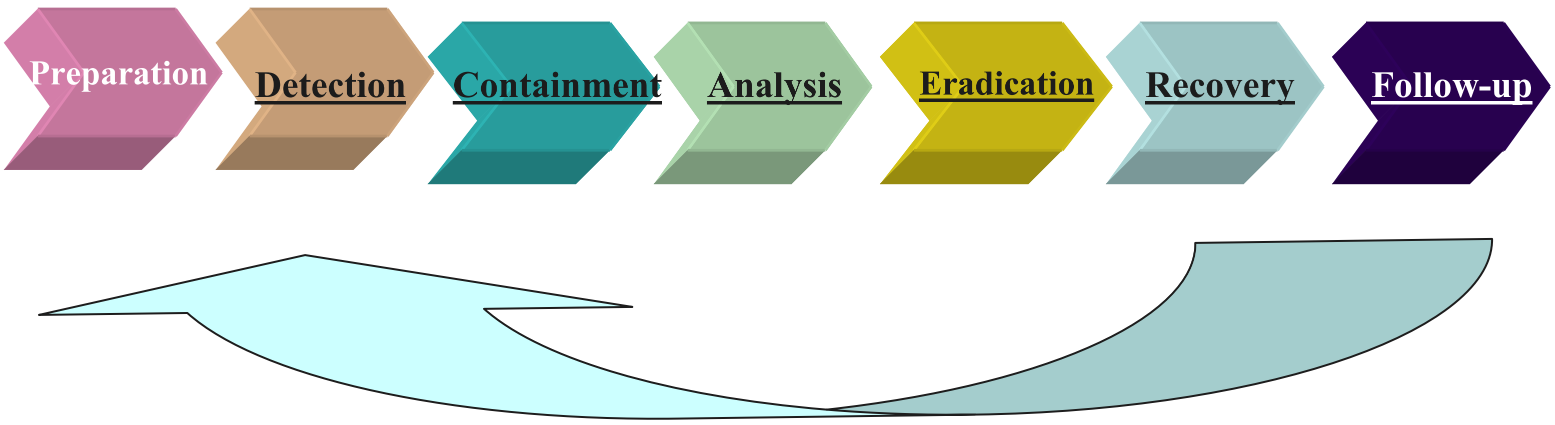
Information Security Lifecycle



Seven-Stage Methodology

- Methodology has been around since about 1989
- DOE under Dr. Schultz matured the model
- Definitely not the only method
- Has become part of the Common Body of Knowledge
- Very pragmatic & logical approach
- Although presented as a linear model some stages may happen in parallel or like the “waterfall” method feedback into the previous stages

Response Methodology (PDCAERF)


Preparation

Detection

Containment

Analysis

Eradication

Recovery

Follow-up

Feed Back

Response Methodology

- Why use a methodology?
- Structure/Organization
  - Dealing with incidents can be chaotic
  - Simultaneous incidents occur
  - Having a predefined methodology lends structure to the chaos
- Efficiency
  - Time is often of the essence when dealing with incidents
  - Incidents can be costly both financially and organizationally

Response Methodology

- Process oriented approach
  - Breaks incidents into small manageable chunks
  - Logical order of dealing with issues
  - Includes methods for improving the overall process
- Dealing with the unexpected
  - Provides a mental framework for dealing with incidents in general
  - Promotes flexible thinking to deal with novel situations

Response Methodology

- Legal Considerations
  - Can demonstrate due care or due diligence
  - May limit liability
  - May reduce insurance premiums

Evidence Management

- During an incident, evidence may be collected during any of the 7 phases.
- In early stages we may not know what the final outcome might be (e.g., Job Termination, Civil or Criminal Litigation).
- Network/Computer Forensics may become an issue
- Must collect data in a “Forensically Friendly” manner
- Must maintain the chain of custody
- Important to understand the evidence lifecycle

Forensics

- Computer Forensics: The study of computer technology as it relates to the law.

- Forensic Analysis: Examination of material and/or data to determine its essential features and their relationship in an effort to discover evidence in a manner that is admissible in a court of law; post-mortem examination.

Forensics

- Electronic Evidence:

  Evidence relating to the issue that consists of computer files, or data, in their electronic state.

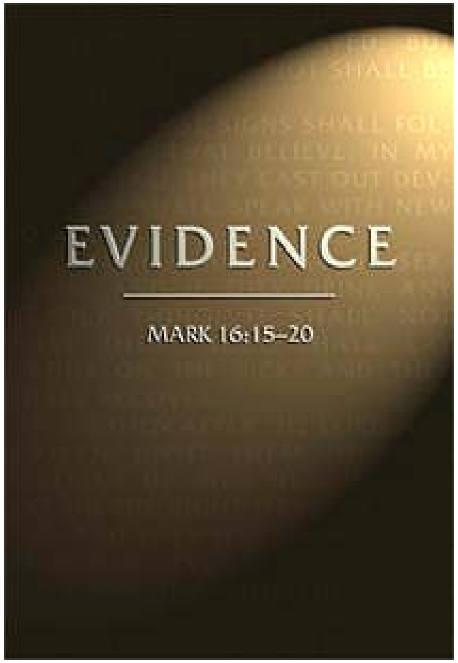
- Electronic Media Discovery:

  The discoverability of electronic data or files.

Forensics

- Chain of Custody: A means of accountability, that shows who obtained the evidence, where and when the evidence was obtained, who secured the evidence, who had control or possession of the evidence.
- Rules of Evidence: Evidence must be competent, relevant, and material to the issue.

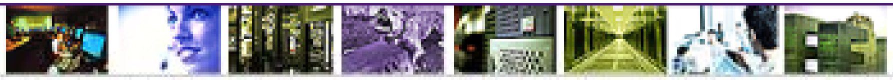
Evidence Life Cycle



- Collection & identification
- Storage, preservation, and transportation
- Presentation in court
- Return to victim or court

IR & DRP/BCP

- Both IR & DRP/BCP use planning and preparation to mitigate the damage of an negative event after it occurs.
- Both require fore thought, formal written policies, procedures, and budgets.
- Both rely on periodic testing and maintenance of the plan.
- IR can be a subset of DRP/BCP process.



Summary

- The rate of network/computer intrusions is increasing
- Most companies/organizations have safeguards such as firewalls, Anti-virus, IDS
- We need to know what to do when the alarms go off
- Like DRP/BCP we must have a IR plan in place before hand
- Proper evidence management & handling procedures are important during the response escalation process
- IR is the next evolution of the IT Security Industry

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Web: www.manageworx.com

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Book References

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Web References

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CERT/AU	www.auscert.org.au
OCIPEP	www.ocipep-bpiepc.gc.ca
CERIAS	www.cerias.purdue.edu
FIRST	www.first.org
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