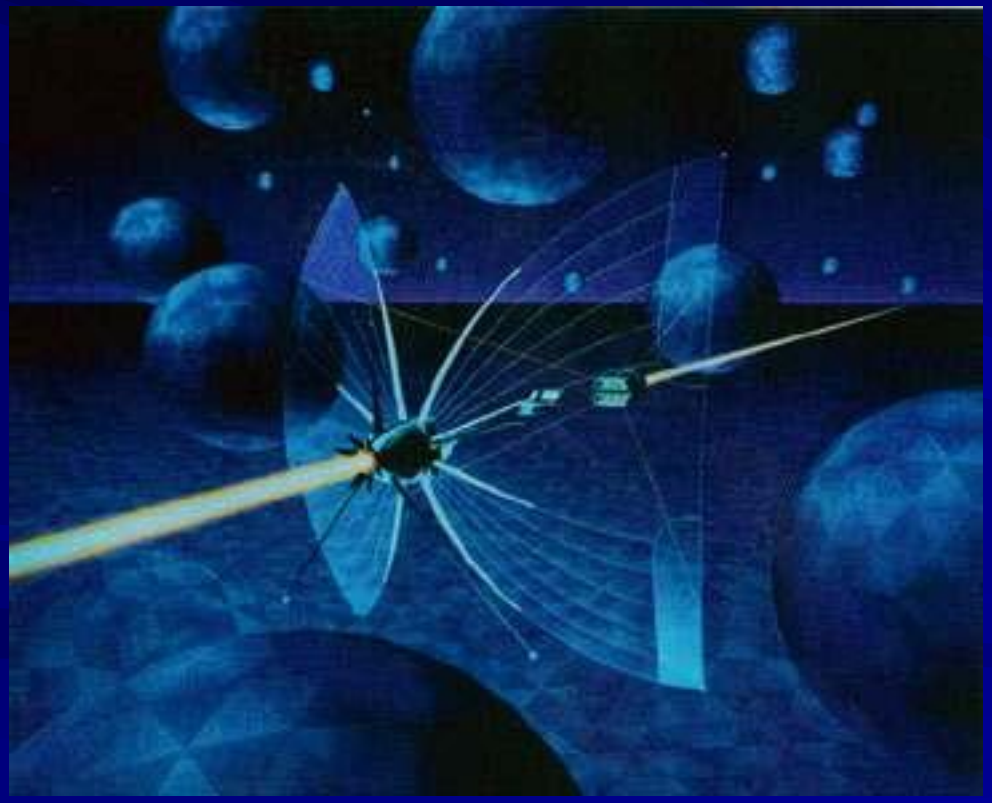
Cybercrime: Challenges for Law Enforcement



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University of Dayton

Real-world & cybercrime

- Current approaches evolved to deal with real-world crime

- Cybercrime occurs in a different context and therefore presents different issues

Example #1: Theft

- Real-world theft: possession of property shifts completely from A to B, i.e., A had it now B has it

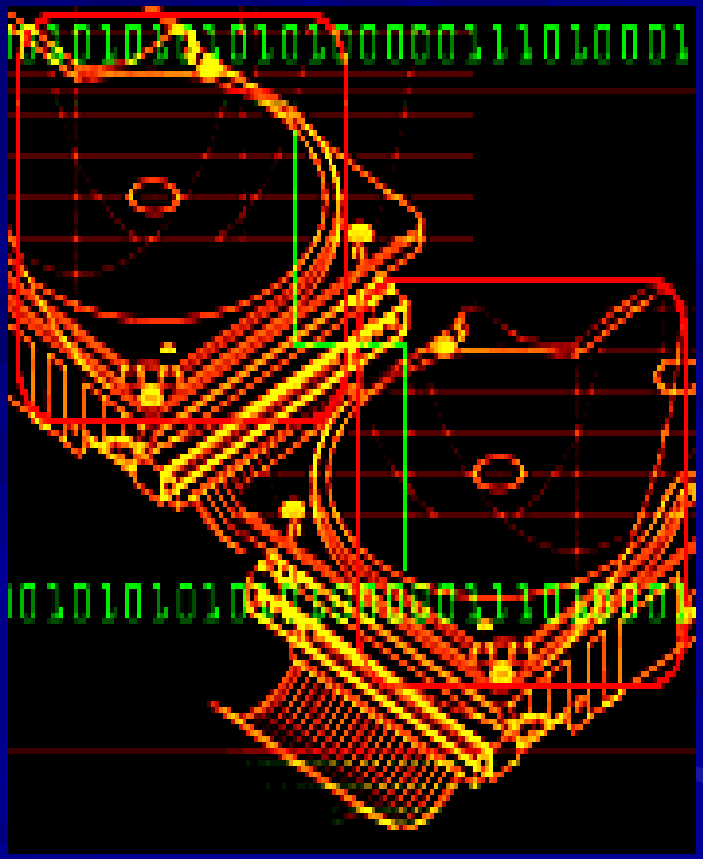
- Cyber-theft: Property is copied, so A "has" it and so does B

Copying as theft?

- Randall Schwartz worked for Intel
- Charged with computer theft for copying a password file
- Claimed it wasn't theft because Intel did not "lose" anything – Intel still had the passwords, and so did Schwartz

Example #2: Seizure

- Is copying files a seizure under the Fourth Amendment
- Same as theft?
- Nicky Scarfo logger



Nicky Scarfo logger

- FBI executed warrant at Scarfo's office
- Seized files from his computer – one was encrypted
- Agents installed a keystroke logger on his office PC, copied his passphrase – seizure?

What is cybercrime?

Cybercrimes are divided into 3 categories:

- crimes where a computer is the target of the crime,
- crimes where a computer is a tool of the crime, and
- crimes where a computer is incidental to the commission of the crime.

Computer as Target

- Hacking (trespass)
- Cracking (burglary)
- Malicious code (viruses, worms, Trojan horses)
- Vandalism (web site defacement)
- Denial of service attacks

Target case: John Sullivan

- Hired to develop software program for Lance, Inc.
- Demoted, he hid a logic bomb in the program
- It shut down 824 handheld computers sales reps used to contact headquarters, costing Lance, Inc. over $100,000
- *U.S. v. Sullivan,* 40 Fed. Appx. 740 (4th Cir. 2002)

Target Case: Czubinski

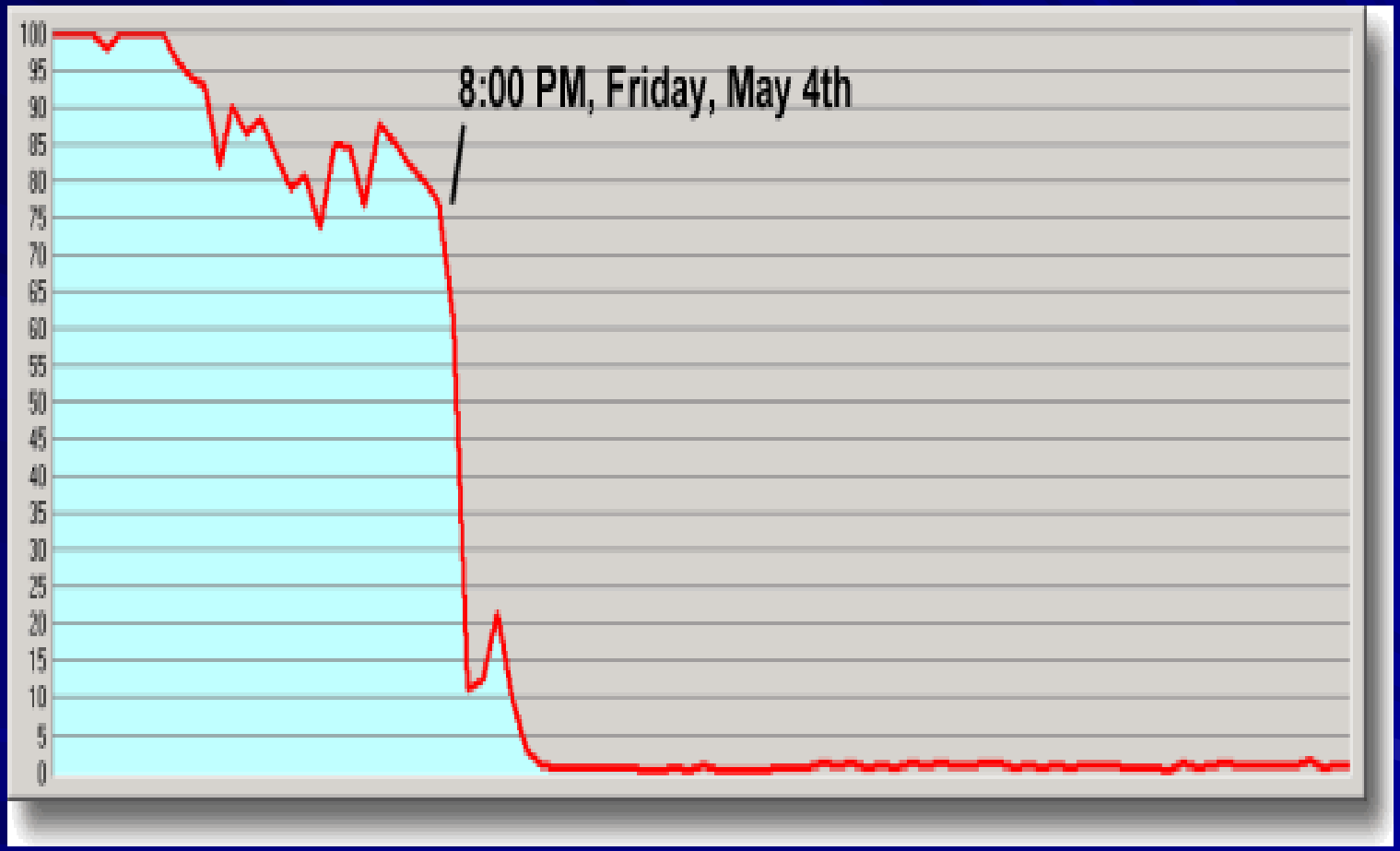
- IRS customer service rep who could use IRS computers to answer customer questions
- Looked up tax returns of a woman he dated, ADA prosecuting his father, etc.
- Charged with wire and computer fraud
- Charges dismissed – no evidence of scheme to defraud

IRS
Department of the Treasury
Internal Revenue Service

Denial of Service - 02/2000

- Yahoo, Amazon, eBay, CNN & Buy.com were all attacked
- 15-year-old pled guilty to the attacks, which did an estimated $1.7 billion in damage
- 8 months in a juvenile detention center

DDos Attack on GRC.Com

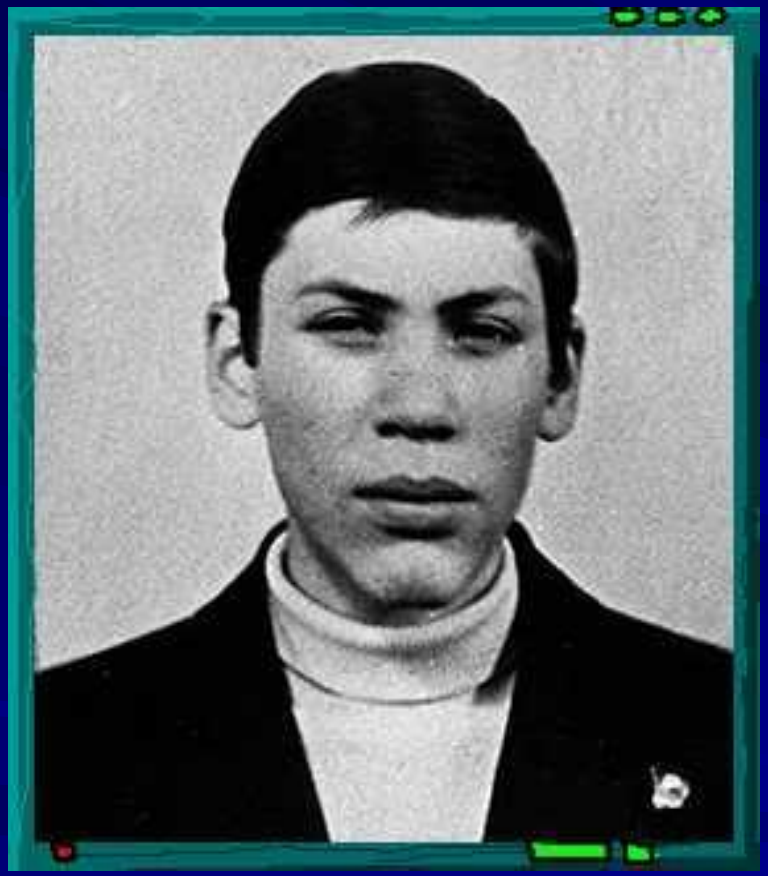


“I just ddosed you,” Wicked, 13

Computer As Tool

- Fraud
- Theft
- Extortion
- Stalking
- Forgery
- Child pornography
- Other???

Theft: Citibank



- Vladimir Levin took responsibility for siphoning $10 million from Citibank and transferring it into foreign accounts
- Sentenced to 3 years in prison

Identity Theft/Fraud

- Abraham Abdallah, a bus boy, stole the identifies of Oprah Winfrey, George Lucas, Ross Perot, etc.
- Transferred funds from their accounts to ones he set up using computers in public libraries

Fake Escrow Sites

- Dentist Bruce Lachot sent $55,000 to an escrow site to buy a BMW from a German seller
- Fake site
- Lachot never got his BMW or his money back

Fraud? Theft?

- Hacker fixes online casino's server so people playing craps and slots could not lose
- Players won $1.9 million
- Others have done similar things, then demanded money not to repeat it

Stalking a School

- 1999 – Massachusetts middle school is stalked by an unknown person
- Students, faculty, parents and the entire town are panicked
- Christian Hunold, a 20 year old paraplegic, eventually identified as the stalker

The Nuremberg Files

Black font (working)

Grey font (wounded)

Strikethrough (dead)

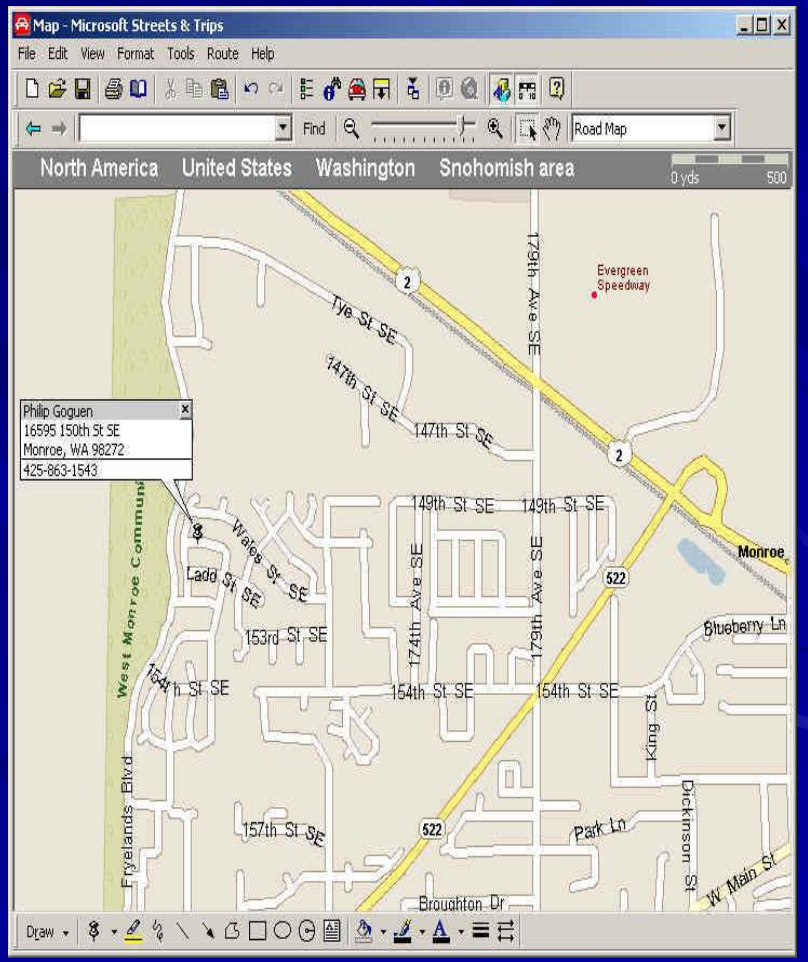
http://www.christiangallery.com/atrocity

JusticeFiles.org

Philip C. Goguen, Kirkland Police officer

This is a picture of Officer Goguen's home.

This is a map to Officer Goguen's home.



Computer Incidental

- Blackmailer uses computer to write blackmail letters
- Drug dealer stores records on computer
- Computer used to research murder methods

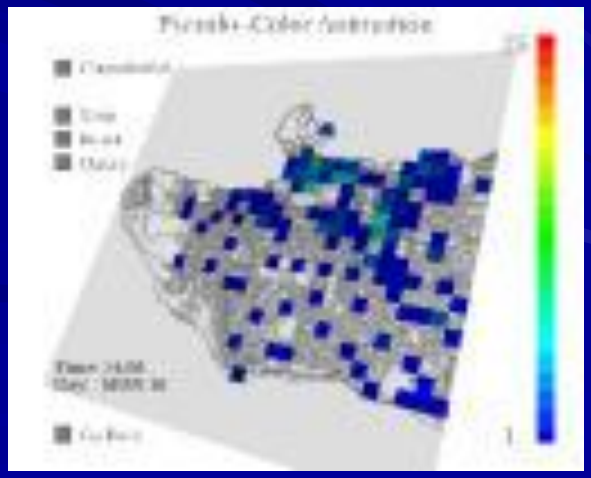
Divergences

- Real-world crime and cybercrime differ in several respects

- Differences make it difficult to apply traditional principles of criminal law and law enforcement to cybercrime

Real-world crime

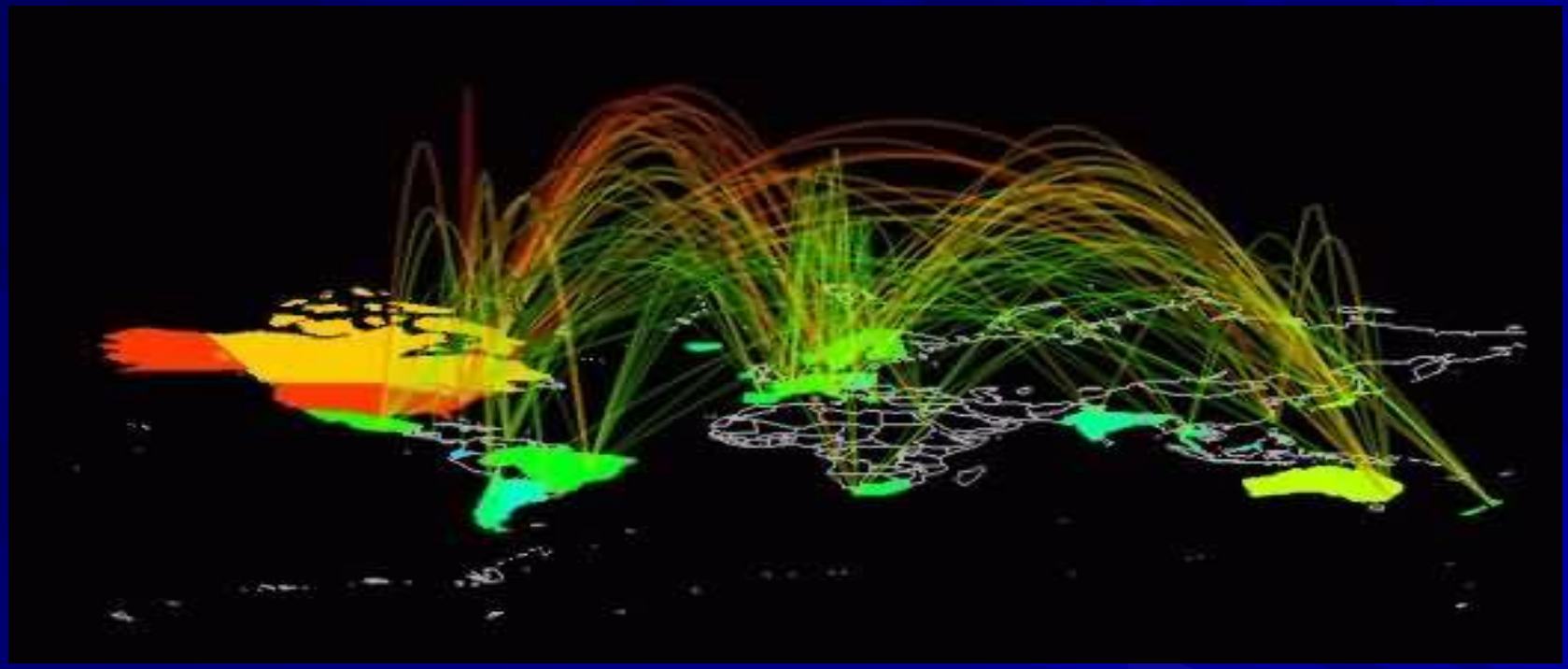
- Proximity
- Limited Scale
- Physical constraints
- Patterns



Real-world crime shaped law enforcement

- Reactive model
- Crime committed
- Investigation
- Apprehension
- Conviction
- Deterrence
- Crime controlled

Cybercrime: proximity



"In the networked world, no island is an island."

McConnell International, ***Cyber Crime . . . And Punishment Archaic Laws Threaten Global Information (2001).***

Proximity: example #1

- Onel de Guzman, accused author of the “Love Bug” virus
- $10-$12 billion in damage in over 20 countries
- Not a crime in the Philippines, never prosecuted, anywhere

Proximity: example #2

- Attacked companies in 10 states
- Extorted money by threatening to sell stolen data/return and cause damage
- FBI identified Vasiliy Gorshkov and Alexey Ivanov as the hackers

Gorshkov Ivanov

Example #2 - continued

- Interview with Invita

- Used FBI laptop to access a Russian computer and demo hacking skills – arrested

- FBI used information obtained by a logger on the laptop to access the Russian computer and download evidence without a warrant

Invita: Implications

- Cybercrime is transborder, transnational crime
- Russians would not assist FBI -- no MLAT in effect
- In August, the Federal Security Service charged an FBI agent with hacking

Cybercrime: scale

- Thomas & Janice Reedy provided a gateway to child porn sites

- 350,000 subscribers (35,000 in US & 1,300 in the UK)
- Estimate: it takes 80 hours to process one computer, which is only part of prosecuting

Physical constraints

- Anonymity
- Easier to avoid leaving trace evidence
- Crimes are committed quickly – more easily concealed

Concealment: framing

- NY executive discovered email was being tapped
- Traced to former employee, Joe Smith, in St. Louis
- Smith said he did not do it
- Further investigation showed Fred Doe, former employee in Seattle, tapped email and framed Smith

Cybercrime Patterns?

- Lack of accurate statistics
- No standard offense definitions
- Hard to parse a cybercrime into "offenses" – was the Love Bug one crime or thousands of crimes?

Different Approaches

- Collaborative model – commercial
- Prevention (information sharing, etc.)
- Informal reporting of cybercrimes
- Reacting – private resources supplement law enforcement resources

Legal issues

- Must private personnel abide by rules governing law enforcement?
- Permissibility of using private personnel in evidence-gathering
- Locus of the decision to prosecute

Private Person case

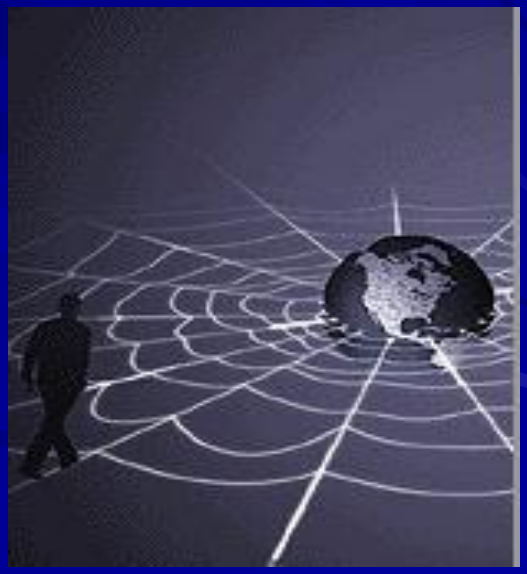
- Person claiming to be Turkish hacker gives police evidence of child porn/molestation
- Investigation and arrests
- Turkish hacker agent of the police?

- U.S. v. Steiger, 318 F.2d 1039 (11th Cir. 2003) (no); U.S. v. v. Jarrett, 229 F. Supp.2d 503 (E.D. Va. 2002) (yes_

Shift

- Emerging model is a shift from a law enforcement, primarily reactive model, to a collaborative preventive-reactive model

- Emphasizes prevention because of the difficulties involved in reacting to cybercrime



Expanding the Model

- Collaborative approach for individuals?
- Prevention? (Assumption of the risk?)
- Increased reporting?
- Reacting? Vigilantism? Victim reaction?

Institute

- University of Dayton School of Law establishing new institute
- International Institute for Technology, Security and Law
- Cybercrime research, training, policy analysis
- Formal announcement in August

The University of Dayton School of Law

Cybercrimes

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http://www.cybercrimes.net