HIPSSA Project

Support for Harmonization of the ICT Policies in Sub-Sahara Africa ITU/HIPSSA CYBERSECURITY TECHNICAL ASSISTANCE FOR THE REPUBLIC OF RWANDA 2013

Capacity Building on Investigation

11-12 July 2013



WHY LEA AND NOT ONLY CYBERCRIME INVESTIGATORS NEED TRAINING



OPPORTUNITIES

 Case example 1: Within an investigation of a murder case law enforcement was unable to identify a murder based on search engine history. They were able to use search engine logs on the suspects computer to identify places he was interested in.

European

SEARCHING FOR E-EVIDENCE

• Law enforcement is also in general prepared to identify computer systems and typical computer equipment

• Examples are desktop computer, screens, scanner

European Commission

page: 4

SEIZING TRADITIONAL EVIDENCE

- Law enforcement is now prepared to deal with storage devices
- Typical storage devices are discs, CDs, DVDs

page: 5



CYBERCRIME

- Identifying storage devices can be difficult as the technology is developing so fast
- Storage devices are getting smaller and smaller and can be integrated in various tools

European Commission

HOW CYBERSECURITY ISSUES CHALLENGE EXISTING STRUCTURES



COMPARING RW AND INTERNET

- When it comes to tangible goods such as books, guns and drugs they can only be brought into the country by physically moving them to the territory
- The same is relevant for anti-money laundering measures
- This does not only limit the ability of offenders to import/expert such goods but also enables to implement control mechanism

Page: 8

European

ENFORCEMENT

- To act in line with their mandates customs have means of control
- Example: X-Ray
- The x-ray allows customs to inspect check-in luggage without time consuming procedures of opening every bag
- The technology also allows customs to identify objects that that visitors bring into the country

Pane o

European Commissio

ENFORCEMENT

- Technology is constantly developing and enables customs to explore new was of exercising their mandate
- One example is container security. X-ray allows to screen basically every container that comes into the country

European Commissio

3D PRINTER

- 3D printer allow the production of devices within a country that previously had to be imported
- New technology that will most likely become very popular in the coming years
- Princes already dropped below 5.000 USD

European Commission

3D PRINTER - GUNS

- Recently there were several reports about plans/approaches to "print" a gun with a 3D printer
- Led to a controversial discussion about the technical possibility as well as legal considerations
- Some of the provider of templates for the "printing" of such guns removed them – however, there are concerns that even if the process of making available such templates they could widely be spread



OPPORTUNITIES



OPPORTUNITIES

- Availability of computer technology improved the ability of law enforcement to carry out investigations
- DNA sequence analysis and finger print databases are examples for an emerging use of information technology in traditional criminal investigation



AUTOMATE

- Software tools are available to automate investigations
- Significant reduction of time for an investigation
- One example is the Software PERKEO that detects child pornography pictures on the basis of hash values



AUTOMATE

- Automation techniques can also be used to identify copyright violations
- One example is file-sharing monitoring where software tools can automatically detect copies of copyright-protected art-work made available
- Another example is the automatic scanning of scientific working work we have a scientific and the scientific and the science of the science o

Page: 16

European





DEVICES PROCESSING DATA

- Devices do often store information that are valuable for traditional investigation
- The user do not necessary have knowledge about such operation
- One example is the iPhone that stored the geo-location of the user and thereby enabled the reconstruction of movements/travel



DEVICES PROCESSING DATA

• In addition to "general" meta data the photos might include GPS data that shows where the photo was taken



DEVICES PROCESSING DATA

- Criminals taking photos and placing them online might leave traces that can be used by law enforcement officers to identify them
- In addition to the "photo" graphic files might contain meta data
- Several camera models include the serial number of the camera in the meta data of each file



TRACES

- "Nobody knows you are a dog" ?
- Internet users leave traces

Page: 20

 Access-Provider for example often for a certain period of time keep records to whom a dynamic IPaddress was assigned

> European Commission

AUTOMATE

• Example: If an offender is online and law enforcement is trying to identify him in real time anonymous communication systems might prevent the detection. However if law enforcement is able to get access to the cookies stored by the suspects browser they might be able to search for cookies stored during online banking. This could lead them to the suspect



STORED DATA

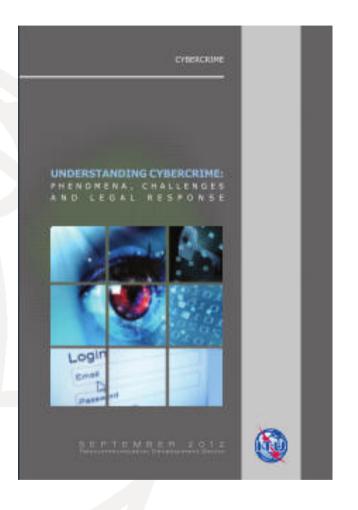
- Even if the offender manages to delete evidence on his storage systems it might be possible to collect evidence at other sources
- One example: Archive.org maintains copies of websites

European Commissio

CAPACITY BUILDING!!



Understanding Cybercrime ITU





Seite: 24





