Introduction to Security
Cyberspace, Cybercrime and Cybersecurity

OVERVIEW

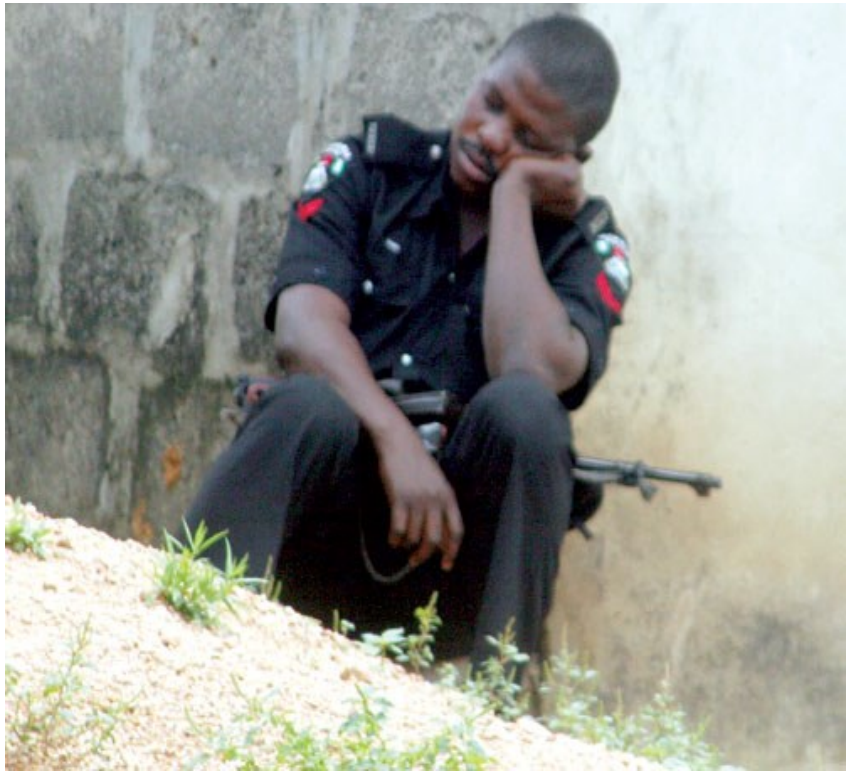
- Brainstorming
- Definition Security
- Security Features
- Concept of Cyberspace
- Concept of Cybercrime
- Concept of Cybersecurity
- The way forward

Brainstorming

Brainstorming

What is Security?

Security according to two boys of 10 years old



Brainstorming

What is Security?

Security According to Junior High School ICT teacher

Brainstorming

What is Security?

Definition Security

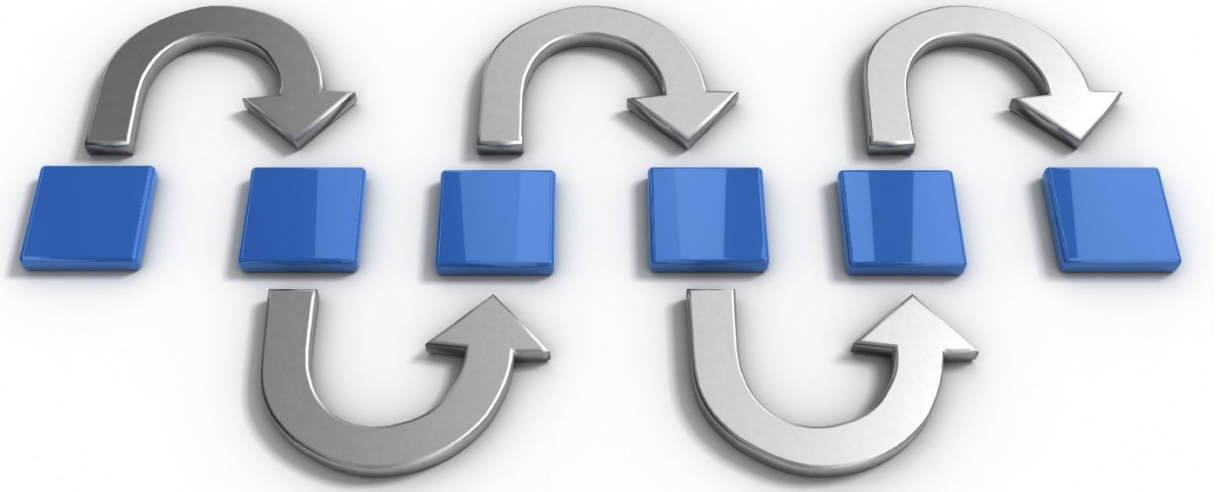
Definition Security

There is no clear cut definition

Definition Security

Security is a process, not an end state.

Definition Security



Security is the process of maintaining an acceptable level of perceived risk.

Definition Security

No organization can be considered "secure" for any time beyond the last verification of adherence to its security policy.

If your manager asks, "Are we secure?"

you should answer, "Let me check."

If he or she asks, "Will we be secure tomorrow?

" you should answer, "I don't know."

Such honesty will not be popular, but this mind-set will produce greater success for the organization in the long run.

Security Features

Security has three features

Security Features

Confidentiality

Confidentiality is roughly equivalent to privacy. Measures undertaken to ensure confidentiality are designed to prevent sensitive information from reaching the wrong people, while making sure that the right people can in fact get it:

Confidentiality

Assurance that information is shared only among authorized persons or organizations.

Security Features

Integrity.

Assurance that the information is authentic and complete.

Integrity

In information security, data integrity means maintaining and assuring the accuracy and consistency of data over its entire life-cycle.

Security Features

Availability

Assurance that the systems responsible for delivering, storing and processing information are accessible when needed, by those who need them.

Availability

Availability of information refers to ensuring that authorized parties are able to access the information when needed

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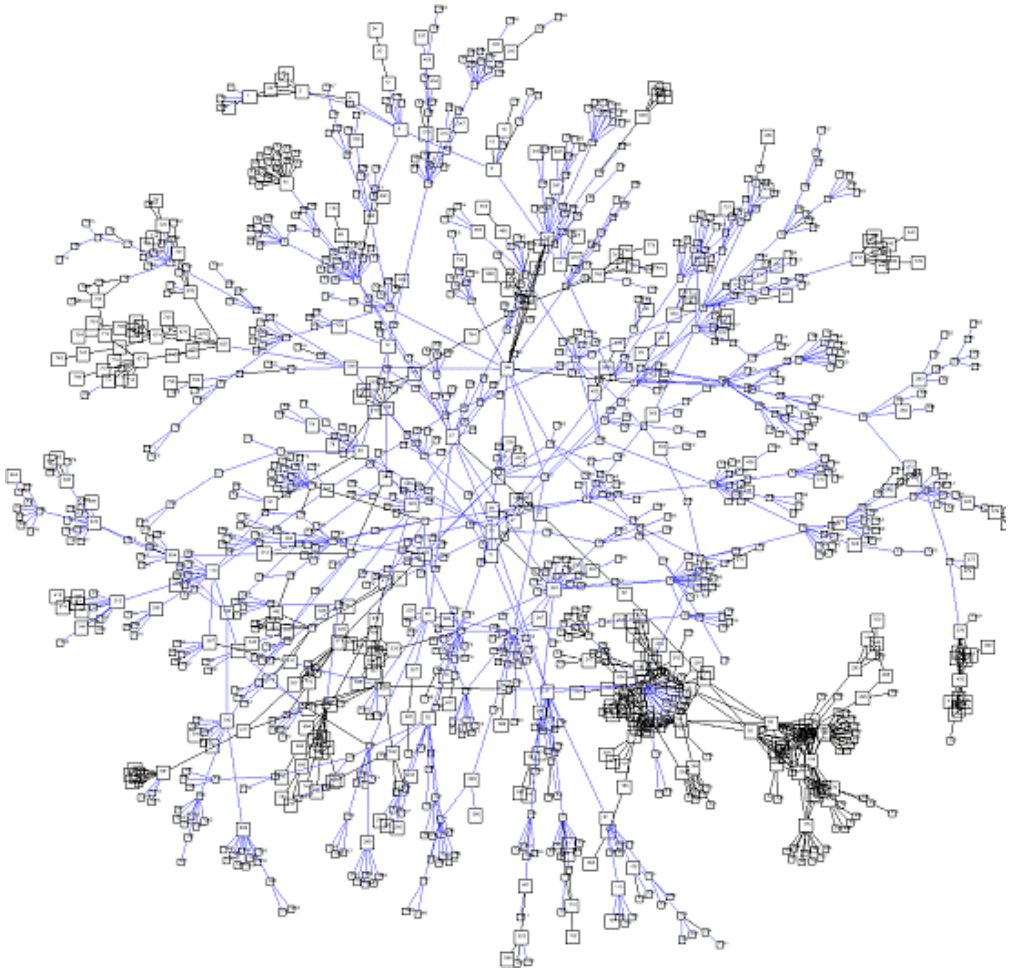
Concept of Cyberspace

Concept of Cyberspace

Cyberspace

Cyberspace is "the environment in which communication over computer networks occurs.“



And almost everybody in one way or the other is connected to it

Concept of Cyberspace

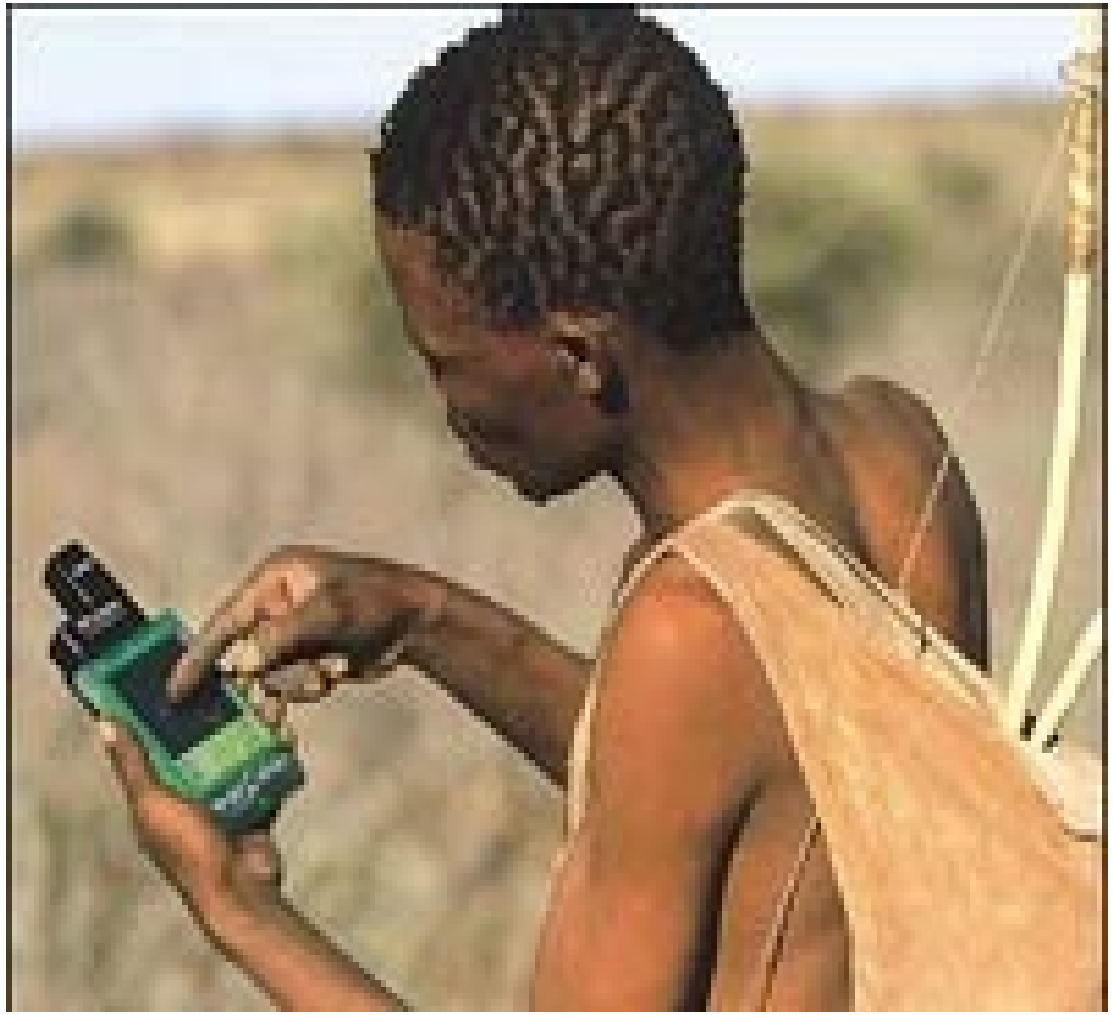
Ladies in the market are connected to is to run their businesses

Concept of Cyberspace

Shepherds are connected to locate their cattle

Concept of Cyberspace

Hunters are connected to it to locate their prey



Concept of Cyberspace

Our friend, the farmer is connected to it and "Facebooking" in the coconut tree

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Concept of Cyberspace

Our friends in the remote areas are also connected to it

Concept of Cyberspace

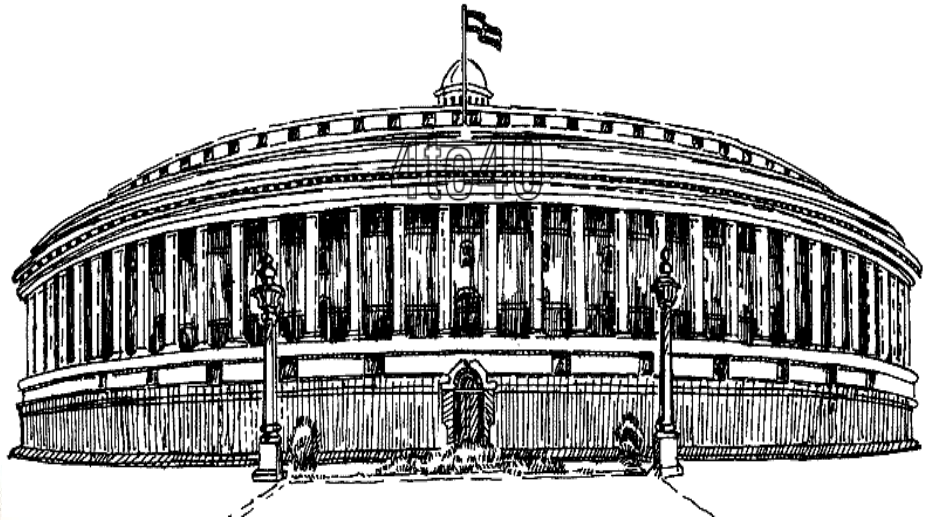
Huum! isn't amazing? They are also connected.

Concept of Cyberspace

On a more serious note, are connected

Government

Judiciary



Law makers

Concept of Cyberspace

Militaries

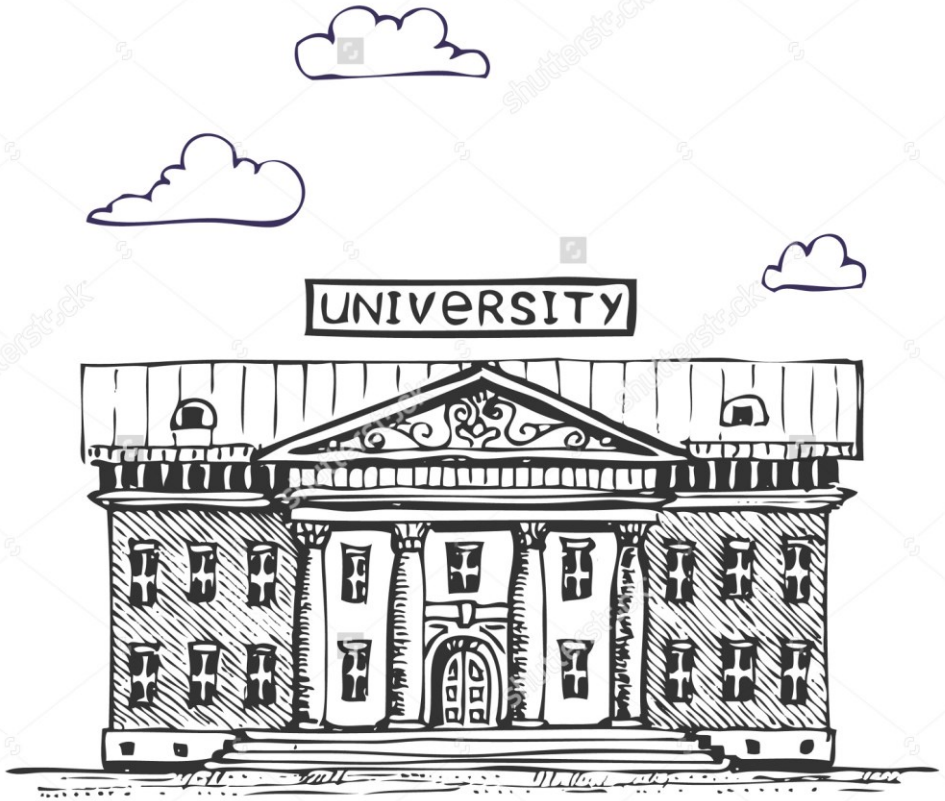
Concept of Cyberspace

Banks

Transportation Sectors

Health Sectors

Concept of Cyberspace



Concept of Cybercrime

Concept of Cybercrime

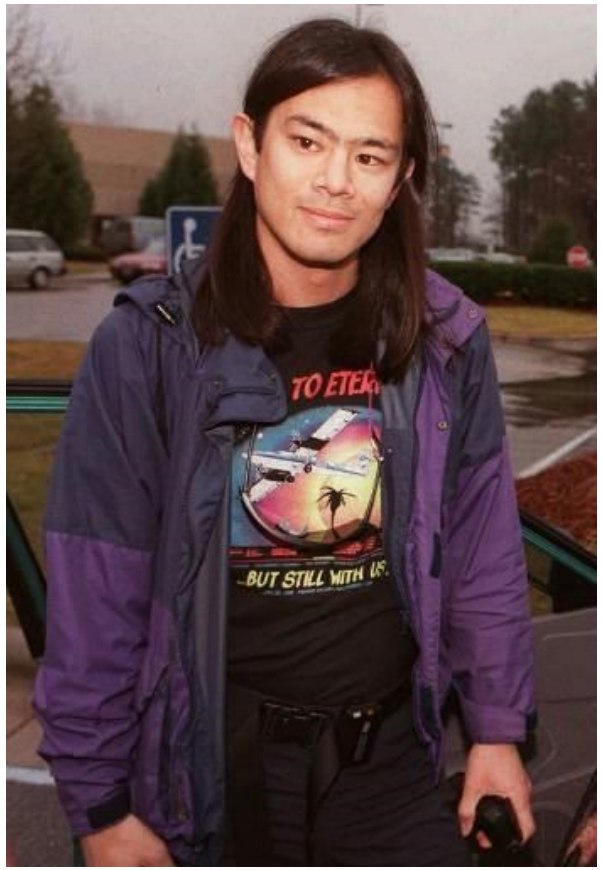
Cyber Crime

Computer crime, or cybercrime, is any crime that involves a computer and a network.

The computer may have been used in the commission of a crime, or it may be the target.

Concept of Cybercrime

Kevin Mitnick



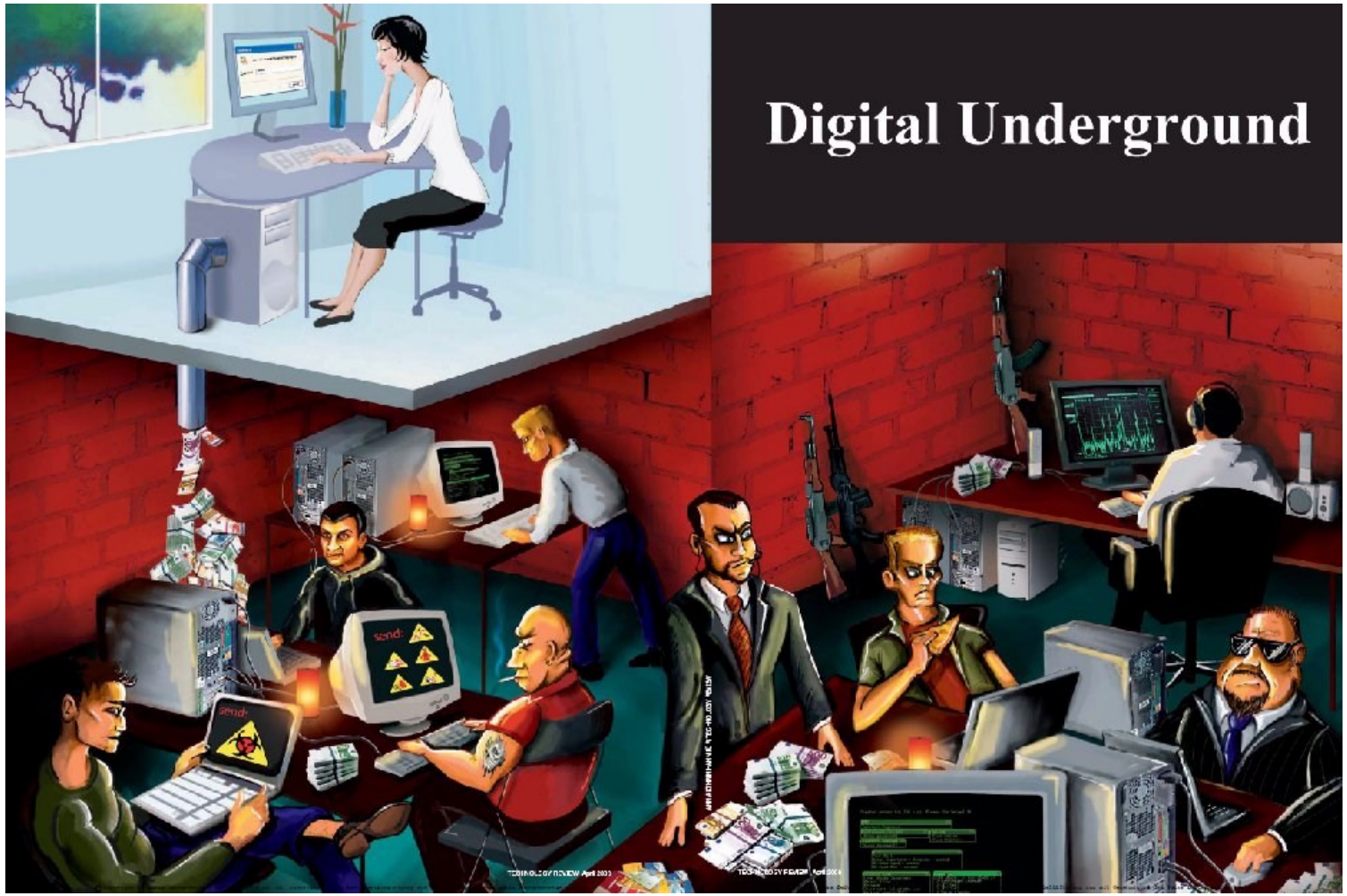
Tsutomu Shimomura

Concept of Cybercrime

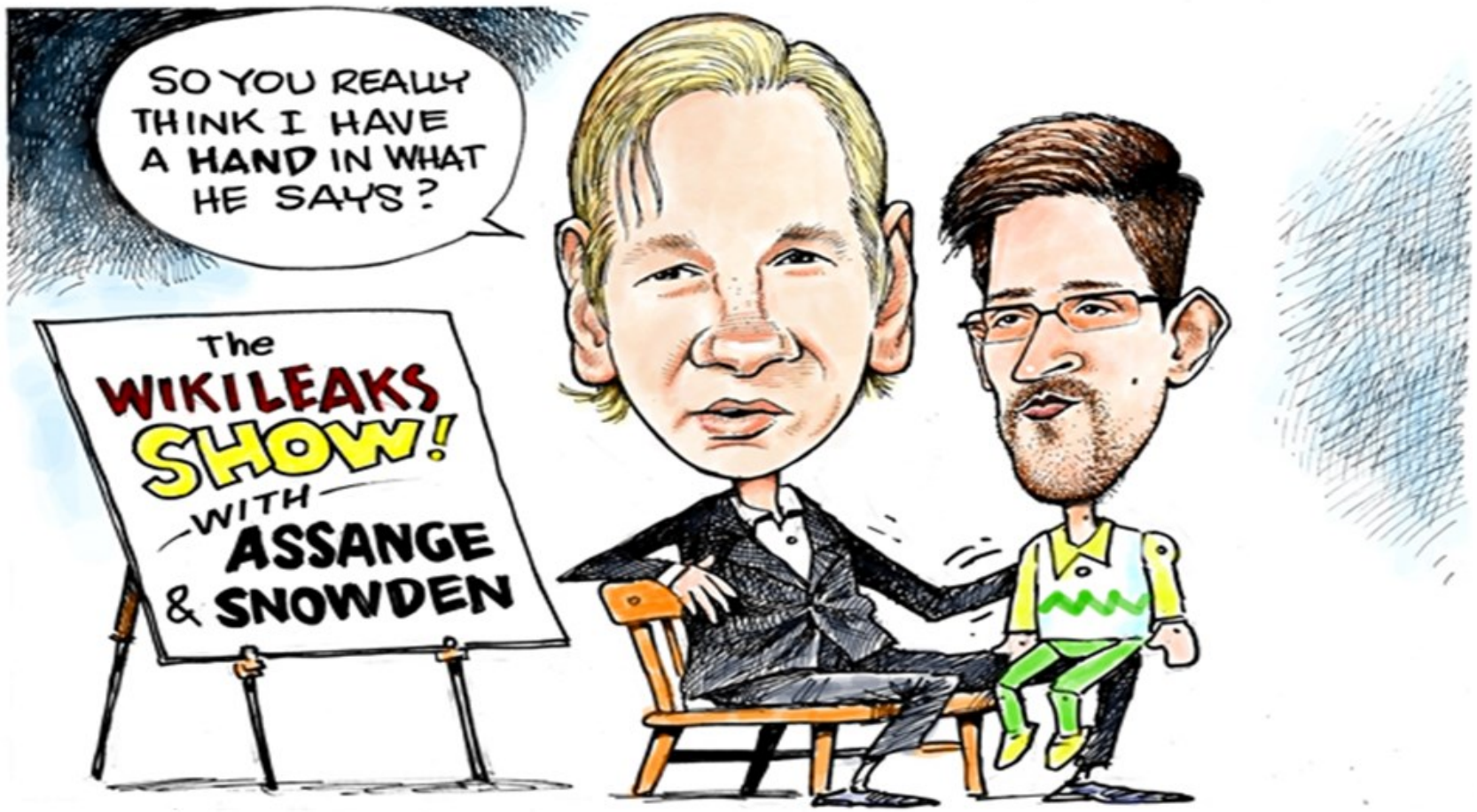
Commonwealth Bank, Australia - March 2011:- Automatic teller machines (ATMs) spat out tens of thousands of free dollars in Sydney Tuesday after a computer glitch turned into a nightmare for the Commonwealth Bank. IT Security Believe that it is a the consequence of hacking.

Concept of Cybercrime

Underground Economy



Concept of Cybercrime



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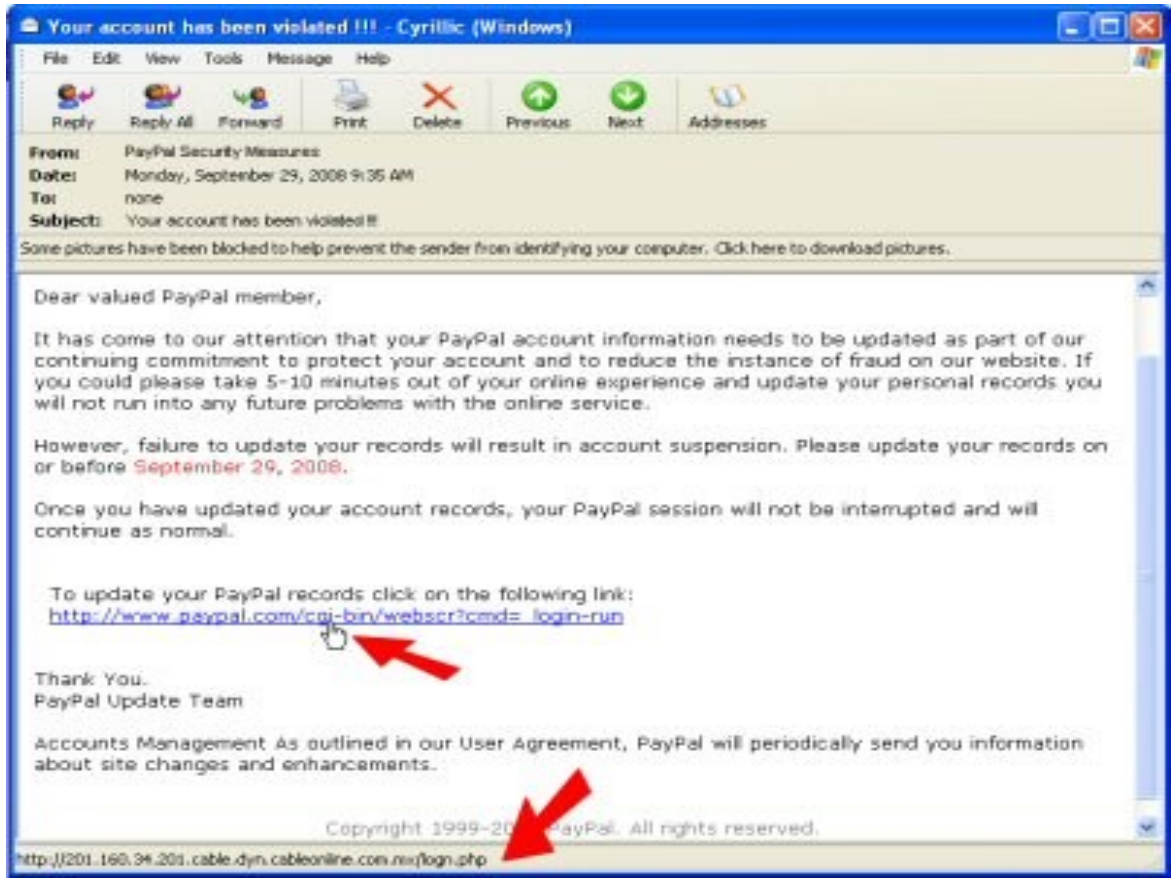
Concept of Cybercrime

Phishing



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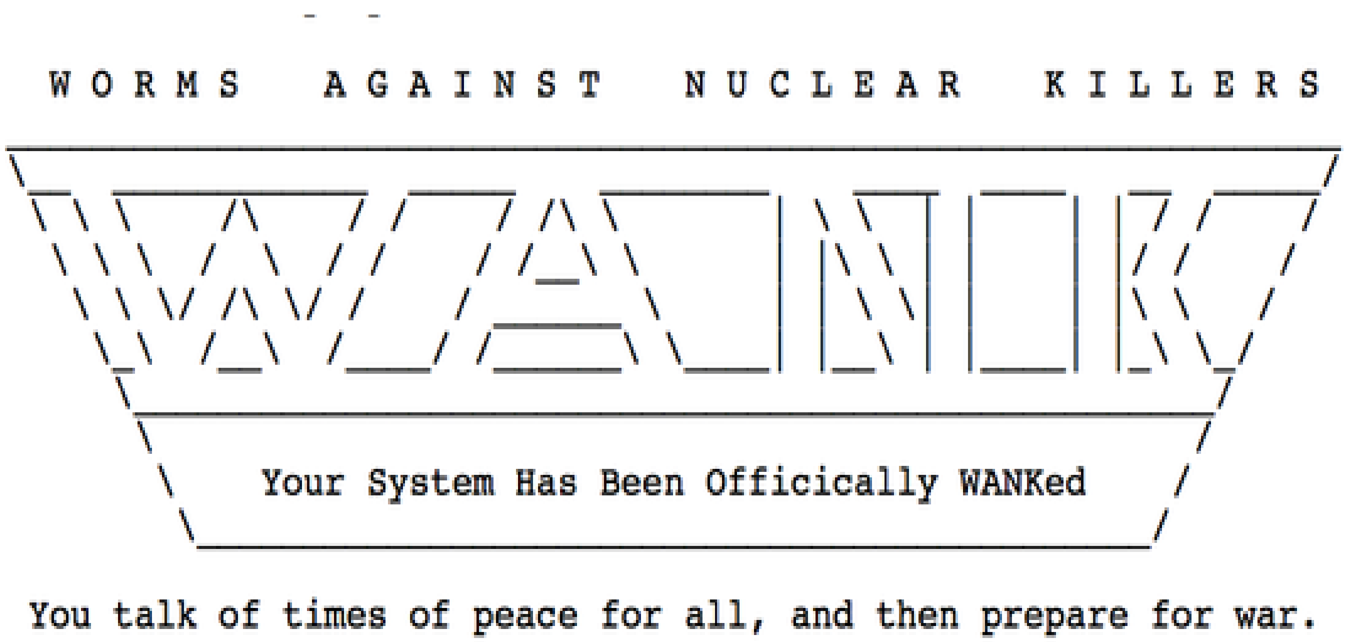
Hacktivism



Concept of Cybercrime

Cyberwar: Estonia Case

Concept of Cybercrime

Tuuli Aug, an editor of the daily newspaper "Eesti Paevaleht," stated the following:

"I felt the country was under attack by an invisible enemy. . . . It was extremely frightening and uncontrollable because we are used to having Internet all the time and then suddenly it wasn't around anymore, . . . You couldn't get information; you couldn't do your job. You couldn't reach the bank; you couldn't check the bus schedule anymore. It was just confusing and frightening, but we didn't realize it was a war because nobody had seen anything like that before".

Concept of Cybercrime

Stuxnet

HACKERS CAN TURN YOUR HOME COMPUTER INTO A BOMB

. . . & blow your family to smithereens!

WASHINGTON — Right now, computer hackers have the ability to turn your home computer into a bomb and blow you to Kingdom Come — and they can do it anonymously from thousands of miles away!

Experts say the recent "break-ins" that paralyzed the Amazon.com, Buy.com and eBAY websites are tame compared to what will happen in the near future.

Computer expert Arnold Yahweon, president of the Washington-based computer group National CyberCrime Prevention Foundation (NCPF), says that as far as computer crime is concerned, we've only seen the tip of the iceberg.

"The criminals who knocked out those three major online businesses are the least of our worries," Yahweon told Weekly World News.

"There are brilliant but unscrupulous hackers and those who have developed technologies that the average person can't even dream of. Even people who are familiar with how computers work have trouble putting their minds around the sorts of things that can be done.

"It is already possible for an assassin to send someone an e-mail with an innocent-looking attachment connected to it. When the receiver downloads the attachment, the electrical current and molecular structure of the central processing unit is altered, causing it to blast apart like a large hand grenade.

"The shocking as this is, it shouldn't surprise anyone. It's just the next step in an ever-escalating progression of horrors conceived and instituted by hackers."

Yahweon points out that these doomsday methods have already:

- Vandalized FBI and U. S. Army websites.
- Broken into Chinese military networks.
- Come within two digits of cracking an 82-digit Russian security code that would have sent deadly missiles hurtling toward five of America's major cities.

"The dangerous as this technology is right now, it's going to get much smarter," Yahweon said.

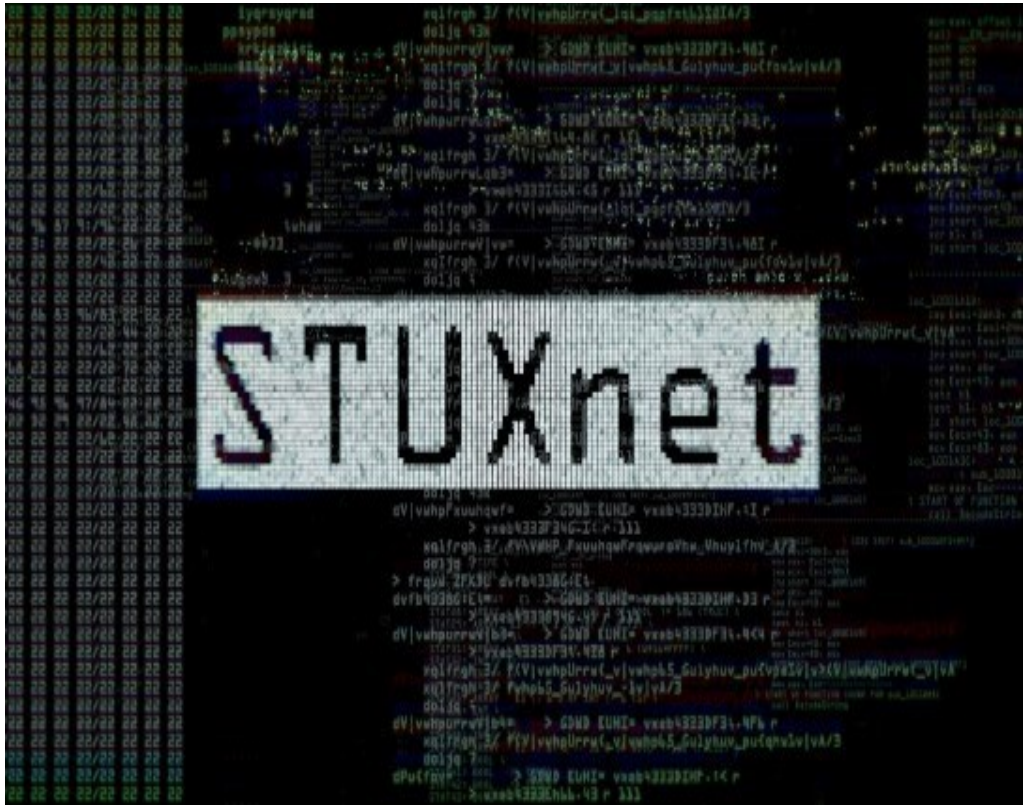
"Soon it will be sold to terrorists, cults and fanatical religious-fringe groups.

"Instead of blowing up a skyscraper, these groups will be able to park into the control computers of a large airliner and blow up hundreds of planes at once.

"And worse, like a small bomb, programs will eventually find its way into the hands of anyone who wants it.

"That means anyone who has a quarrel with you, holds a grudge against you or just plain doesn't like your looks, can kill you and never be found out."

Sickos can wreak death and destruction from thousands of miles away!



Concept of Cybersecurity

The threat is real

Concept of Cybersecurity

Concept of Cybersecurity

Tentative Definitions

Cyber security, also referred to as information technology security, focuses on protecting computers, networks, programs and data from unintended or unauthorized access, change or destruction.

University of Maryland University College

The state of being protected against the criminal or unauthorized use of electronic data, or the measures taken to achieve this.

'some people have argued that the threat to cybersecurity has been somewhat inflated'

Oxford Dictionary

Concept of Cybersecurity

ITU-T X.1205 Definition

- Cybersecurity is the collection of tools, policies, security concepts, security safeguards, guidelines, risk management approaches, actions, training, best practices, assurance and technologies that can be used to protect the cyber environment and organization and user's assets. Organization and user's assets include connected computing devices, personnel, infrastructure, applications, services, telecommunications systems, and the totality of transmitted and/or stored information in the cyber environment.
- Cybersecurity strives to ensure the attainment and maintenance of the security properties of the organization and user's assets against relevant security risks in the cyber environment.
- The general security objectives comprise the following:
  - ***Availability***
  - ***Integrity, which may include authenticity and non-repudiation***
  - ***Confidentiality***

Assignment and discussion

Assignment

Based in the realities of your organization, rank the three features of security with respect to your information system.

The way forward

- ICT is a single point of failure to Businesses.
- IS Security is Achilles heels of ICT
- Your security depends on mine and mine depends on yours,
- Let us come together and protect our cyberspace is creating and managing a CSIRT

HOW?

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Thank
you