

FIT1049 - IT Professional Practice

Week 12:

Security, Reliability, Privacy & Whistleblowing

Exam Preparation

Last Week: Professional Issues

- Sustainability
- Discrimination
- Harassment
- Bullying & Cyber bullying

Did you read the e-Pub for week 12?

- A. Yes, It was good.
- B. Yes, It was bad
- C. No, I had technical difficulties
- D. No, I did not get around to it.

Professional Issues



- IT Security
- Reliability
- Privacy
- Whistleblowing
- Exam Preparation

Professional Issues

Interconnection between other issues

- Ethics
- Law
- Communication

- Security
- Reliability
- Privacy
- Whistleblowing

Risks - Accidents

Cause approximately 50% of damages to systems and data



Inaccurate data entry

Employee ability

Procedure compliance

Risks - Natural disasters

Earthquakes, floods, storms, etc.



Cannot be controlled

Must be **planned** for

Risks - Sabotage

Generally **deliberate** action to disrupt or destroy



Individual
Industrial
Unintentional
Vandalism

Risks - Theft

Data theft



Physical theft



Risks - Unauthorised use

- Smarty-pants – outwit designers
- Gain benefit of some kind
- Cause malicious damage

Mostly by
Employees

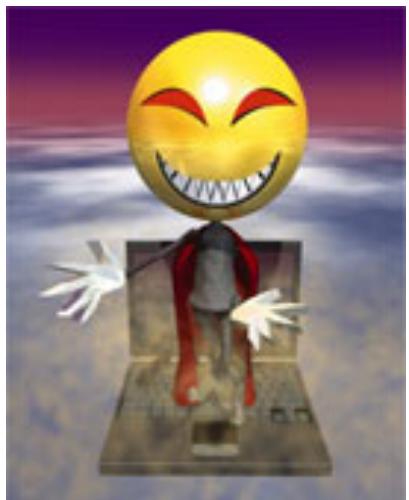


Sometimes by
Hackers

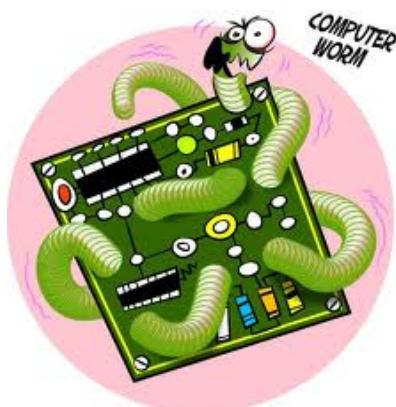


Malware

Viruses



Worms



Trojans



Spyware



Virus

- A. Is a computer program capable of self-replication, allowing it to spread from one machine to another must attach to another program
- B. Presents itself as a legitimate program in order to gain access to a computer system. Used then to gather and deliver information to its owner.
- C. involves trickery that makes a message appear as if it came from an authorized IP address.

Spoofing

- A. is a program that can record all network packets that travel past a given network interface, on a given computer, on a network including credentials
- B. involves trickery that makes a message appear as if it came from an authorized IP address.
- C. are viruses that open a way into the network for future attacks

Adware

- A. where users on-line activities are monitored so that advertising can be targeted
- B. are viruses that open a way into the network for future attacks
- C. is a process by which a user misleads a system into granting unauthorized rights

Trojan

- A. involves trickery that makes a message appear as if it came from an authorized IP address.
- B. presents itself as a legitimate program in order to gain access to a computer system. Used then to gather and deliver information to its owner.
- C. is a process by which a user misleads a system into granting unauthorized rights

Spyware

- A. involves trickery that makes a message appear as if it came from an authorized IP address.
- B. is a program that can record all network packets that travel past a given network interface, on a given computer, on a network including credentials.
- C. Is software intended to collect and transmit confidential information comes hidden in free downloadable software and tracks online movements

Importance of IT Security

IT Systems fundamental to operations

IT Systems must be protected from misuse:

- Intentional / accidental
- Internal / external

System failures can lead to:

- Inconvenience for stakeholders
- Loss of revenue / share value
- Business failure

e-Folio Activity: Security response

- There has been an attack on Monash Universities computer system.
- Student information has potentially been stolen including passwords and account details
- In groups come up with a response strategy
- Then report back.

Professional Issues



- IT Security
- Reliability
- Privacy
- Whistleblowing
- Exam Preparation

Sources of reliability issues

- Software errors
- Hardware Faults
- Erroneous information in databases
- Misinterpretation of information



Technology Reliability

How Critical is technology in life?

The more critical the system the more backup that you need.

- Hardware backup onsite/offsite
- Data backup onsite/offsite

Effects of errors

- Inconvenience
- Loss of face
- Loss of Money
 - Hidden Cost
- Bad business decisions
- Fatalities

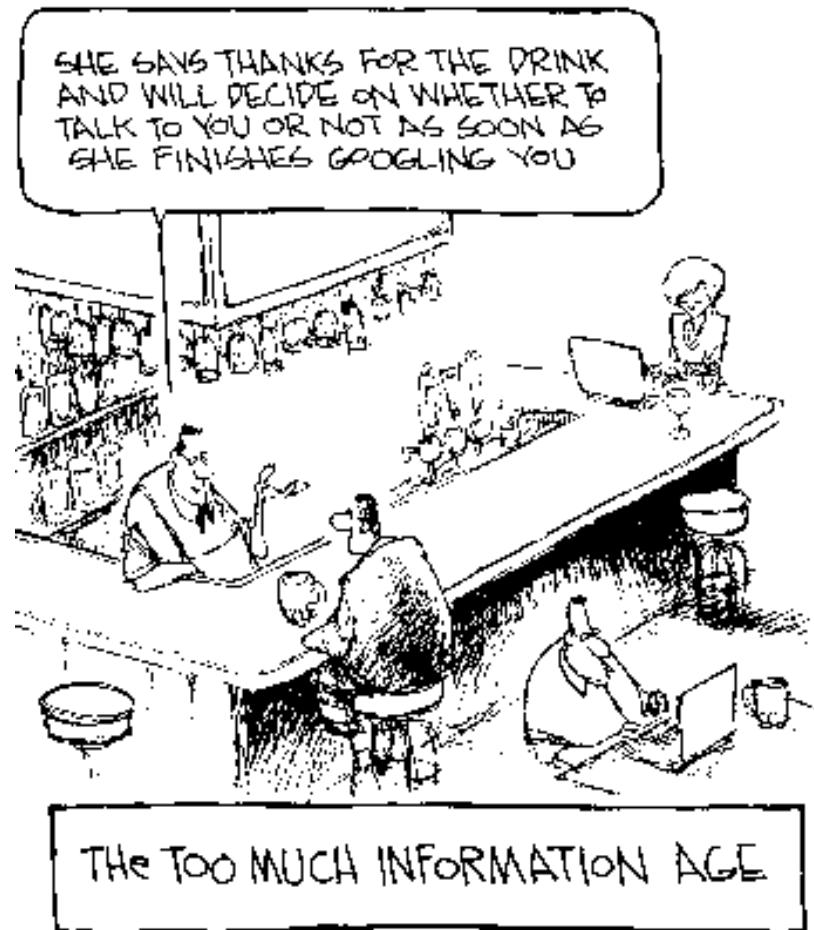
Professional Issues

- 
- IT Security
 - Reliability
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Privacy

Information collection, exchange,
combination, and distribution easier
than ever

More information access
→ less privacy



What is Privacy?

- No precise definition
- “The right of individuals to control the collection and use of information about themselves” (Reynolds, 2007).
- Privacy = **personal dignity** and **autonomy**
- Dignity = from Latin, ‘worthiness’
- Autonomy = from Greek, ‘Independence’

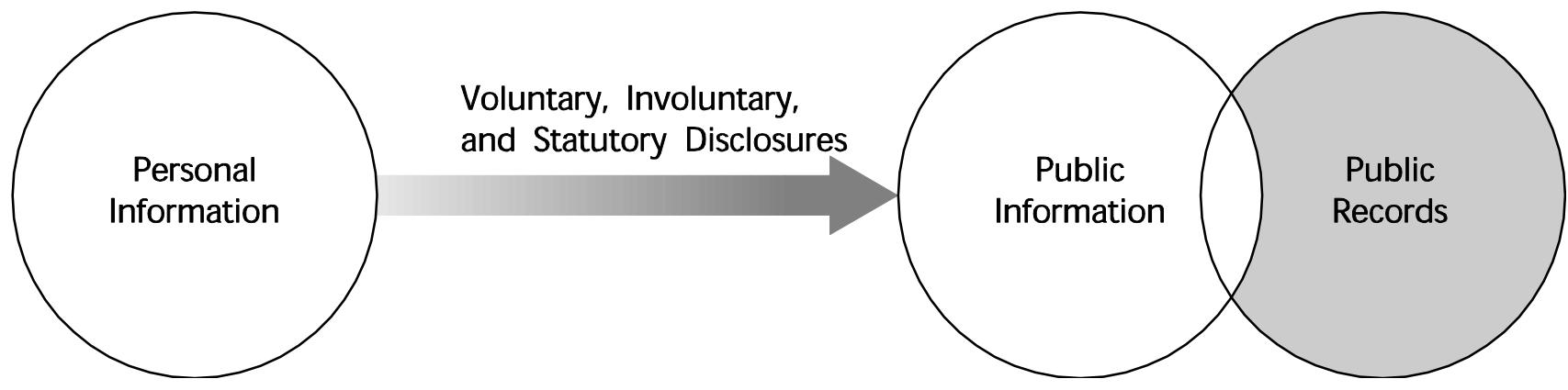


Disclosing Information

Public record: information for public access

Public information: information revealed to an organization that has right to share it

Personal information: undisclosed information



Quinn, Fig 5.2

Ways Information Becomes Public

- Rewards or loyalty programs
- Body scanners
- Digital video recorders
- Automobile “black boxes”
- Enhanced 911 service
- RFIDs
- Implanted chips
- Cookies
- Spyware



Quinn, Fig 5.3



Quinn, Fig 5.4

Implications for IT professionals

Software should be secure so that users' information is

- not disseminated widely
- not used without consent

ACS Code of Ethics:

1.2.1. The Primacy of the Public Interest:

- g) endeavour to preserve the confidentiality and privacy of the information of others.

Privacy in the age of ‘Big Data’

- Big Data
- Advanced analytics
- ‘Anonymizing’ data
- Opt-out rather than opt-in
 - What exactly what users have consented to

Case Study: Pregnancy Prediction

Target were able to discern that customer's were pregnant

- Based on their purchase history
- Predicted delivery date with some accuracy

Can be almost impossible to hide your presence

Professional Issues

IT Security

Reliability

Privacy

Whistleblowing

Exam Preparation



Whistleblowing

“A whistleblower is someone who breaks ranks with an organization in order to make an unauthorized disclosure of information about a harmful situation after attempts to report the concerns through authorized organizational channels have been ignored or rebuffed.”
(Quinn, p. 446)

Whistleblowing

Whistleblowing ≠ Leaking

Morality of Whistle-blowing?

Ethics and Legal implications



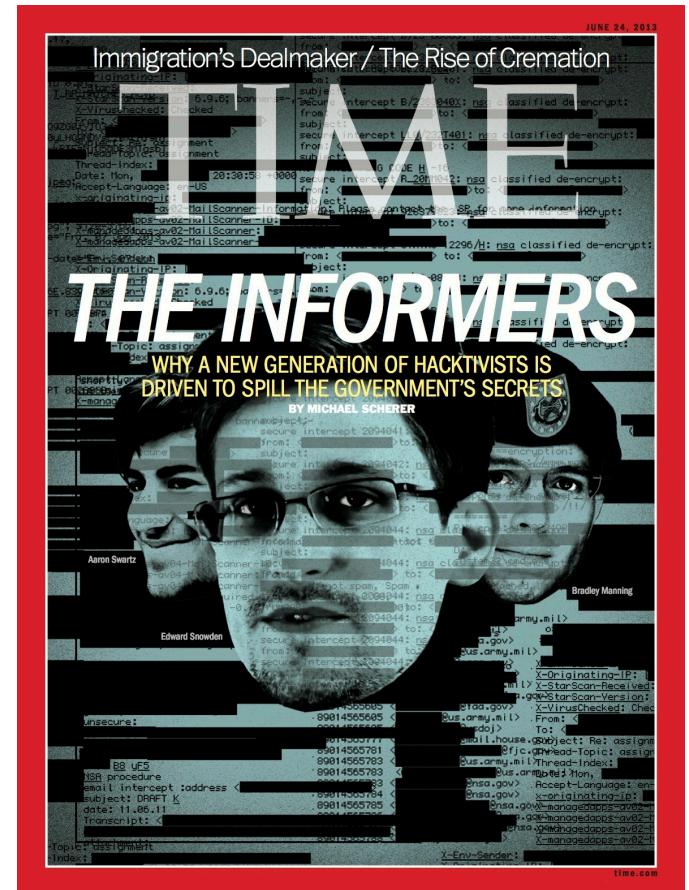
Medical Example

Toni Hoffman: This is about a singular nurse, who for two years tried to raise her concerns with the Bundaberg Base Hospital in Queensland about the lethal activities of a surgeon called Jayant Patel, a man later sentenced in 2010 to seven years' jail for manslaughter and grievous bodily harm.

Edward Snowden

Systems Analyst at NSA

Revealing details of classified United States government surveillance programs



eFolio Activity - Whistleblowing

Write a couple of points on what stops people from becoming whistleblowers even if there are big implications for the community.

Technology in Whistleblowing

Technology has facilitated whistleblowing
It is easier to remain anonymous

Does this change

- Public interest
- Great personal cost
- Creadability

“WikiLeaks is an international non-profit organisation that publishes submissions of private, secret, and classified media from anonymous news sources, news leaks, and whistleblowers.” (Wikipedia)

Attitudes to Whistleblowing

Whistleblowers can cause harm

Whistleblowing is a sign of organisational failure

Whistleblowing is a moral duty

Professional Issues

IT Security

Reliability

Privacy

Whistleblowing

Exam Preparation



FIT1049 Exam

3 hrs = 180 minutes

100 marks

Contributes 35% to the final marks, however, must obtain at least 40% of the exam marks to pass this unit



FIT1049 Exam

Answer **ALL** questions

- Short Answer
- Yes or No
- Root and Stem matching
- Longer Answer

Answer all parts of the question

- 1a. What are three reasons that companies like Google are interested in introducing workplace mindfulness programs (3 marks)

- _____

Scenario: You work for a large company in a multistory building in the city. When the head of the organization takes the lift, other staff wait and take the next lift up so that the boss has an uninterrupted journey.

Read the case study and answer the following questions.
Circle the correct answer for question. (4 marks)

- Yes or No Waiting is an informal norm.

What type of source is each of the following: Match the correct type from the list below in the boxes provided. (4 marks)

- Spoofing - Virus - Trojan

	Is a computer program capable of self-replication, allowing it to spread from one machine to another must attach to another program
	involves trickery that makes a message appear as if it came from an authorized IP address.

FIT1049 Exam

Assesses ability to apply knowledge to:

- Demonstrate knowledge
- Provide examples
- Respond to a case study
- Answer questions about a scenario

Preparing for the exam

Summarise the important aspects of topic

- ePub
- Online lectures
- Lecture slides
- eFolio Activities
- Tutorial work

Test your knowledge

- Online quiz
- Sample exam
 - Complete the exam
 - Take it to a consultation
 - Solution will be released just before the exam

Surveys

SETU

[https://my.monash.edu.au/study/
resources/evaluations/](https://my.monash.edu.au/study/resources/evaluations/)

Please take the time to complete this survey. Student feedback, especially written comments, are very useful for improving future offerings of the unit.

Summary

After this lecture, you should be able to:

- Discuss the importance of information technology security and types of risks
- Describe why reliability is important and the implications of unreliability
- Understand the difficulties with privacy when there is so much information available

Know what whistleblowing is and the implications for all involved

Next Lecture

No more lectures !

Thank you for your participation in
FIT1049

Study hard and all the best!!!

