Computer Ethics

CHAPTER 1

INTRODUCTION

PROF. ALAA EL-HALEES

Outline

Introduction

Ethics

Ethical Issues

Organization Ethics

Computer Ethics

Information Technology Ethics

Computer Ethics

Computer ethics are the ethical guidelines that govern the use of computers.

It address issues related to the misuse of computers and how they can be prevented. It primarily imposes the ethical use of computing resources

Computer Ethics

Example: Netiquette is short for "Internet etiquette." Just like etiquette is a code of polite behavior in society, netiquette is a code of good behavior on the Internet.

This includes several aspects of the Internet, such as email, social media, online chat, web forums, website comments, multiplayer gaming, and other types of online communication.

Computer Ethics

For example:

- Include context – When commenting on a message or conversation thread it is good netiquette to include a relevant quote from the original message to give context to your comment.

- Don’t SHOUT – Avoid writing whole words or sentences in capital letters. This is the equivalent of someone SCREAMING IN YOUR EAR!

Examples:

https://www.cybersmile.org/advice-help/category/examples-of-good-netiquette

Computer Ethics

Ethical Problems in Computing:

The main areas of computer ethics are:

1) Privacy:

Privacy in **computer ethics** refers to the ethical dilemmas that computer users face in some situations that may lead to the violation of another person's privacy through the use of computers or mobile system , all this information is at his/her can be reveled .

In Mobile all information such as private chat, private photos , history of locations…etc can be reveled.

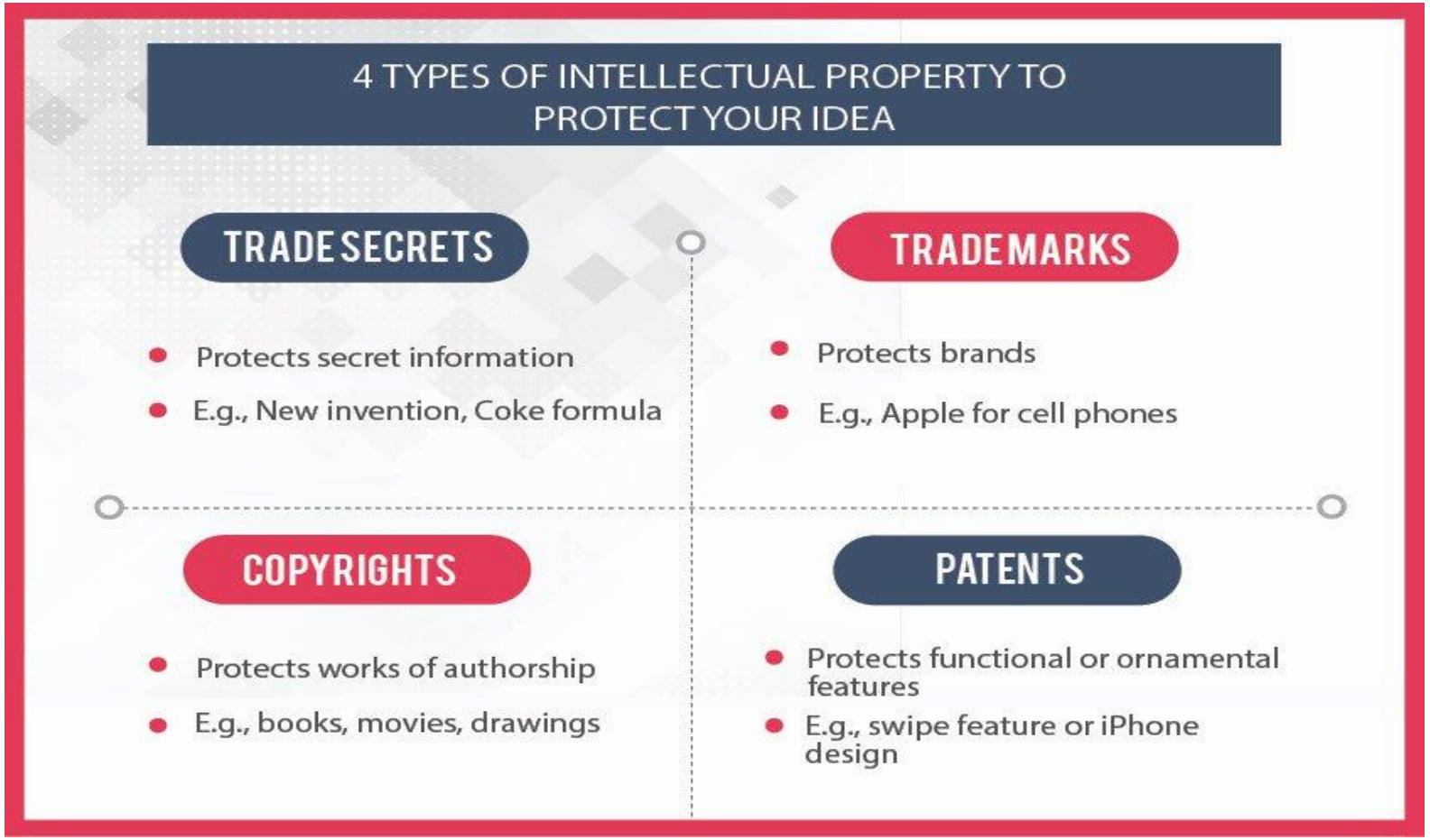
Computer Ethics

Computer Ethics

2. Intellectual property:

- Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce and computer programs and Websites.

Types of Intellectual Property



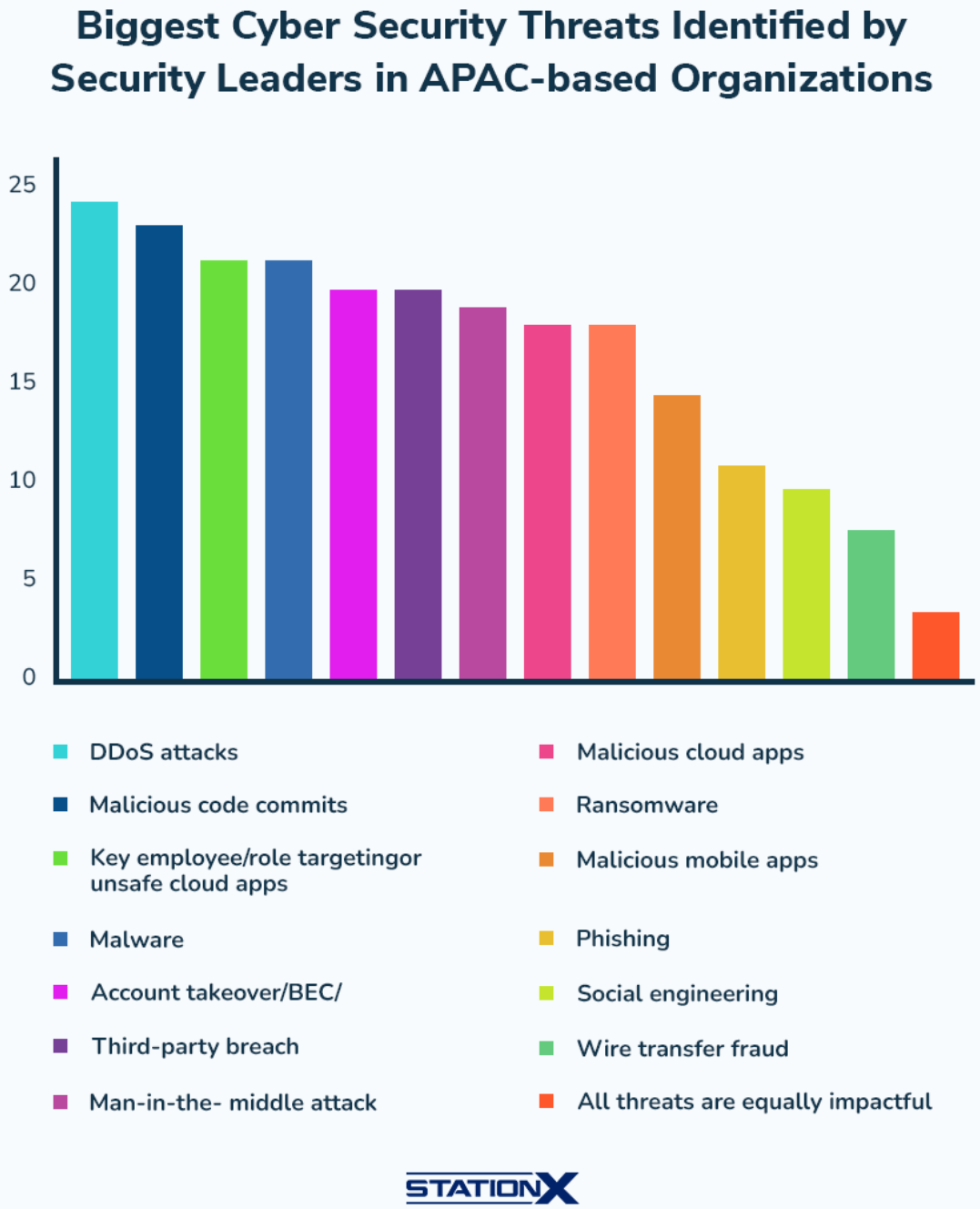
Computer Ethics

3) Computer Abuse

It refers to the use of computer that is seen as harmful.

Computer abuse is the legal term for the use of a computer to carry out improper or illegal activities.

Computer Ethics



Computer Ethics

4) Computer Professional ethics

Expert in field is called Professionals .

So we can say Expert in Computer is called Computer Professionals.

It is the field of applied ethics which sets standards for IT profession responsibilities to the public, their clients, employers and the profession.

Computer Ethics

It Concerns one's behavior and practice when carrying out Computer Professional work

e.g. Software development, Web development, Games development, Mobile App., Multimedia products, Computer Networks, …etc.

Computer Ethics

Example:

If a developer develops an application for factory/company, then this will be his responsibility to include tax payment option in this application although the owner is disagree.

Why we study Computer Ethics

1) Because doing so will make us behave like responsible professionals.

2) Because doing so help us to know what is good or bad in using or controlling the computers.

3) To become familiar with the major cases / scandals that have arisen in the past. Why repeat the same mistakes?

4) Because the advance of computing technology will continue to create temporary policy vacuums.

Policy Vacuum

Technology is changing faster than law.

A policy vacuum is said to exist when there is no sufficiently standard law to govern a given situation.

Example

"Wardriving" is issue that has a policy vacuum. Wardriving is using a Wi-Fi connection without authorization. Some people view wardriving as stealing property.

Currently, there are no national laws in the United States that attempt to regulate wardriving.

Policy Vacuum and Computer Ethics

A typical problem in Computer Ethics arises because there is a policy vacuum about how computer technology should be used.

Computers provide us with new capabilities and these in turn give us new choices for action. Often, either no policies for conduct in these situations exist or existing policies seem inadequate.

A central task of Computer Ethics is to determine what we should do in such cases, that is, formulate policies to guide our actions.

Policy Vacuum and Computer Ethics

Another Example:

عصر الأصول الرقمية.. مَن سيرث صفحتك على فيسبوك بعد موتك؟

https://www.aljazeera.net/midan/miscellaneous/2022/1/3/%D8%B9%D8%B5%D8%B1-%D8%A7%D9%84%D8%A3%D8%B5%D9%88%D9%84-%D8%A7%D9%84%D8%B1%D9%82%D9%85%D9%8A%D8%A9-%D9%85%D9%8E%D9%86-%D8%B3%D9%8A%D8%B1%D8%AB-%D8%B5%D9%81%D8%AD%D8%AA%D9%83-%D8%B9%D9%84%D9%89

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Information Technology Ethics

Information Technology Ethics

Information technology ethics *identifies and analyzes the impacts of information technology on such social and human values as health, wealth, work, opportunity, freedom, democracy, knowledge, privacy, security, etc.*

Information Technology Ethics

Each new development in information technology raises new social, economic, ethical and moral issues.

Information Technology Ethics focusing on the result of computing technologies on social and economic contexts

Information Technology Ethics

Examples of Information Technology Ethics are:

1) Unemployment
2) Digital Divide
3) Freedom of Expression
4) Health and Health care
5) Education
6) Green Computing

1. Unemployment

Computers don't require sleep, they don't get tired, they don't go home ill or take time off for rest and relaxation.

At the same time, computers are often far more efficient than humans in performing many tasks.

This encourage people to replace humans with computerized devices .

1. Unemployment

Indeed, in the industrialized world many workers already have been replaced by computerized devices -- bank tellers, auto workers, telephone operators, typists, graphic artists, security guards, assembly-line workers, and on and on .

1. Unemployment

1. Unemployment

In addition, even professionals like medical doctors, lawyers, teachers, accountants and psychologists are finding that computers can perform many of their traditional professional duties quite effectively.

For example: By the mid-2030s, up to 30% of jobs could be automatable.

1. Unemployment

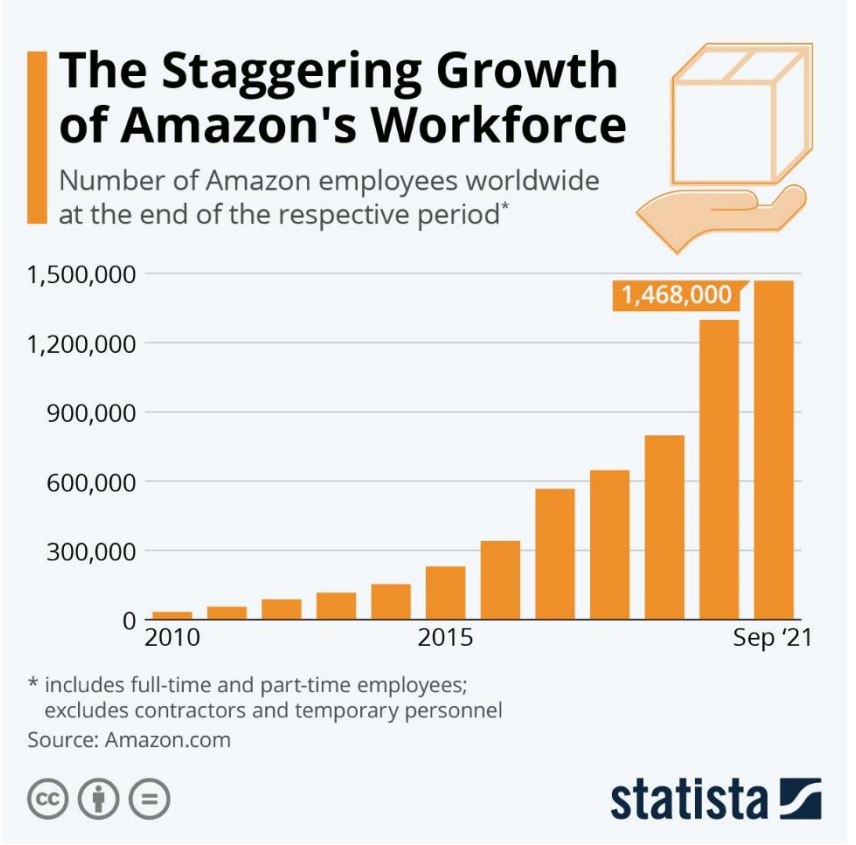
But, Technology has created more jobs than it has destroyed.

Mainly, Hardware and software

Some claim that companies using the Internet are creating jobs at a faster rate than they lose them, including jobs in the service sector to support all those new computer scientists and engineers.

Machines will create 58 million more jobs than they displace by 2022, World Economic Forum says. 75 M Lost and 133 M new jobs.

1. Unemployment



2. Digital Divide

A **digital divide** is an economic and social inequality with regard to access to, use of, or impact of information and communication technologies (ICT).

A term used to describe the difference between people who have access to the e-resources to use new information and communication tools, such as the Internet.

And people who do not have the e-resources and access to the technology. .

2. Digital Divide

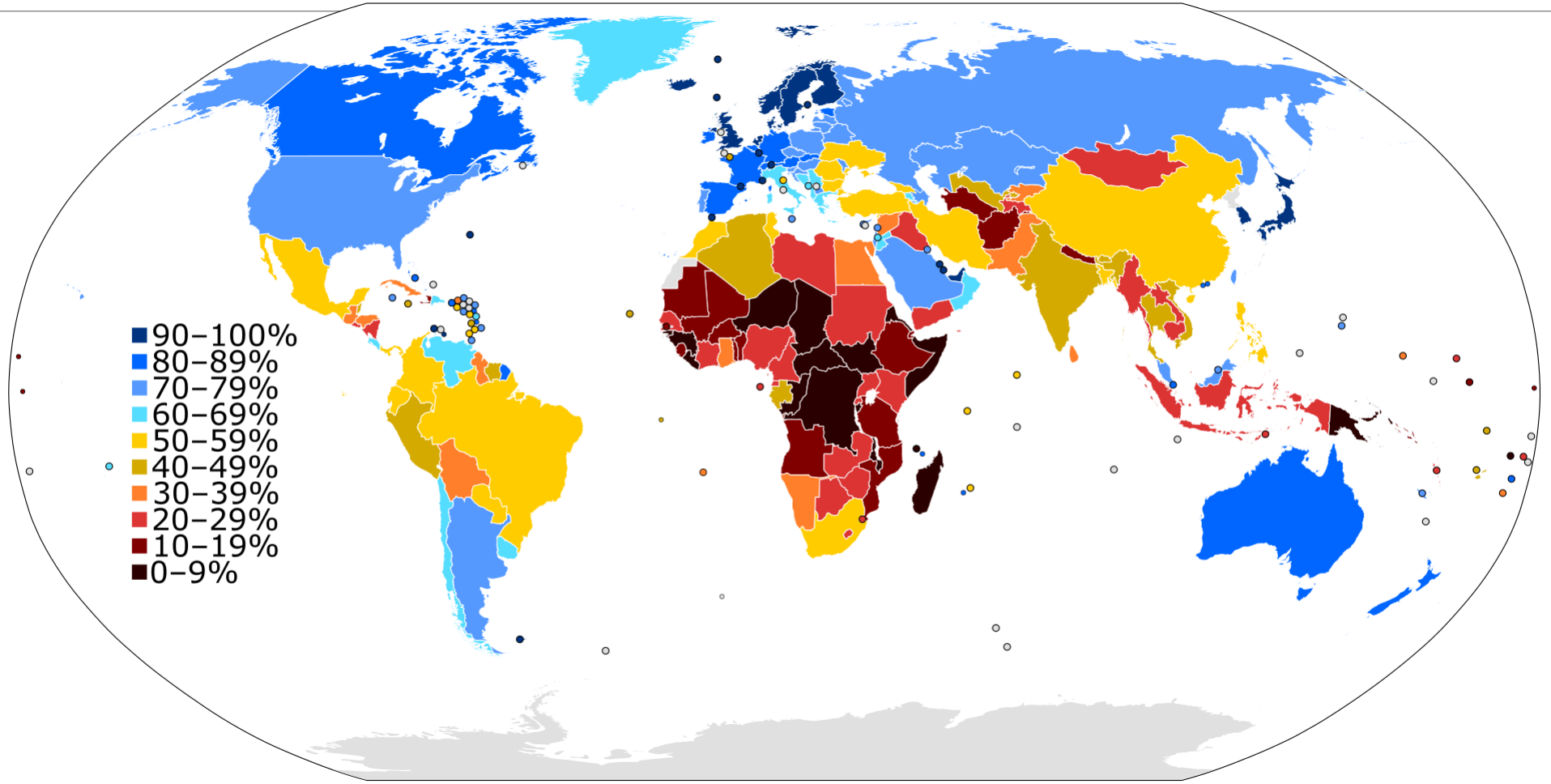
The digital divide can exist between those living in rural areas and those living in urban areas,

between the educated and uneducated,

between economic classes, and on a global scale between more and less industrially developed nations.

Between Young people and Old.

2.Digital Divide



3. Freedom of Expression

Right to express one's ideas and opinions freely through speech, writing, and other forms of communication but without deliberately causing harm to others' character and/or reputation by false or misleading statements.

3. Freedom of Expression: Key Issues

1) Controlling access to information on the Internet:

Internet filtering (Countries and organizations)

2) Anonymity on the Internet: Anonymous expression is expression of opinions by people who do not reveal their identity

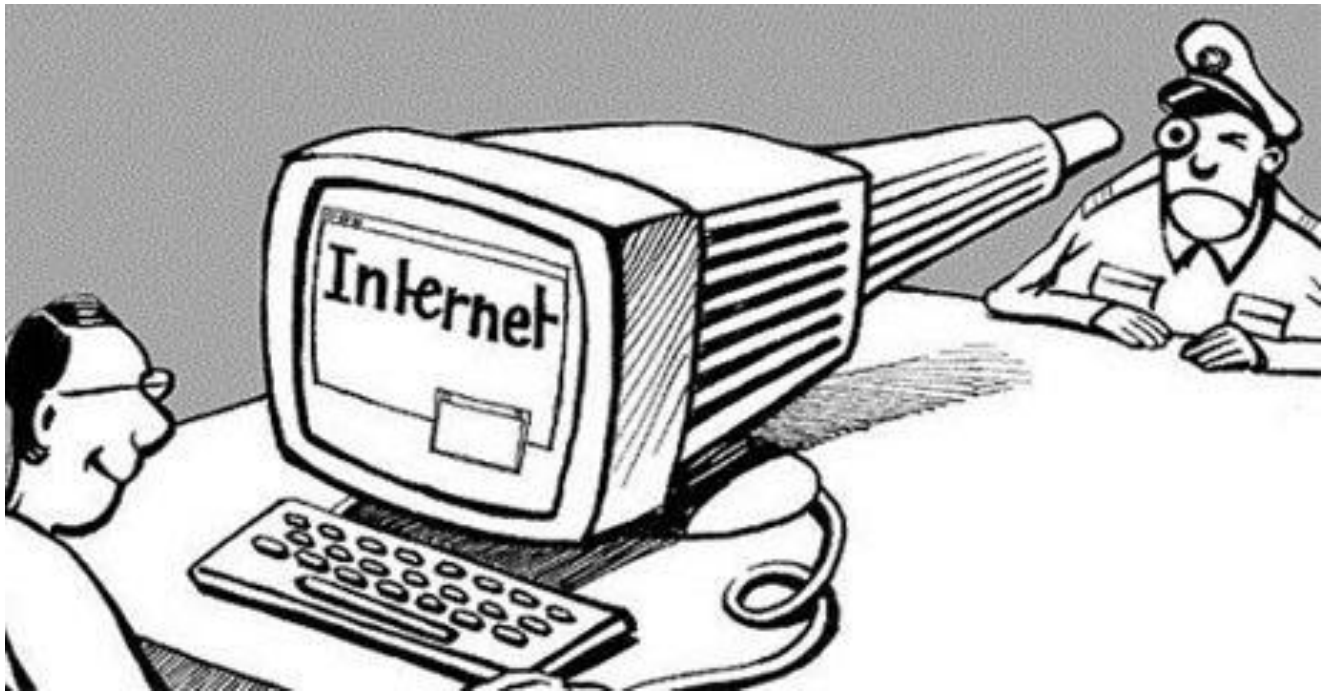
3) Defamation and hate speech: Oral or written statement of unproven fact that is: False and Harms another person

4)Pornography: The Internet has been a advantage to the pornography industry

3. Freedom of Expression

People must often make ethical decisions about how to use such remarkable freedom and power. Like the popular quote goes “with great power comes great responsibility”.

3. Freedom of Expression



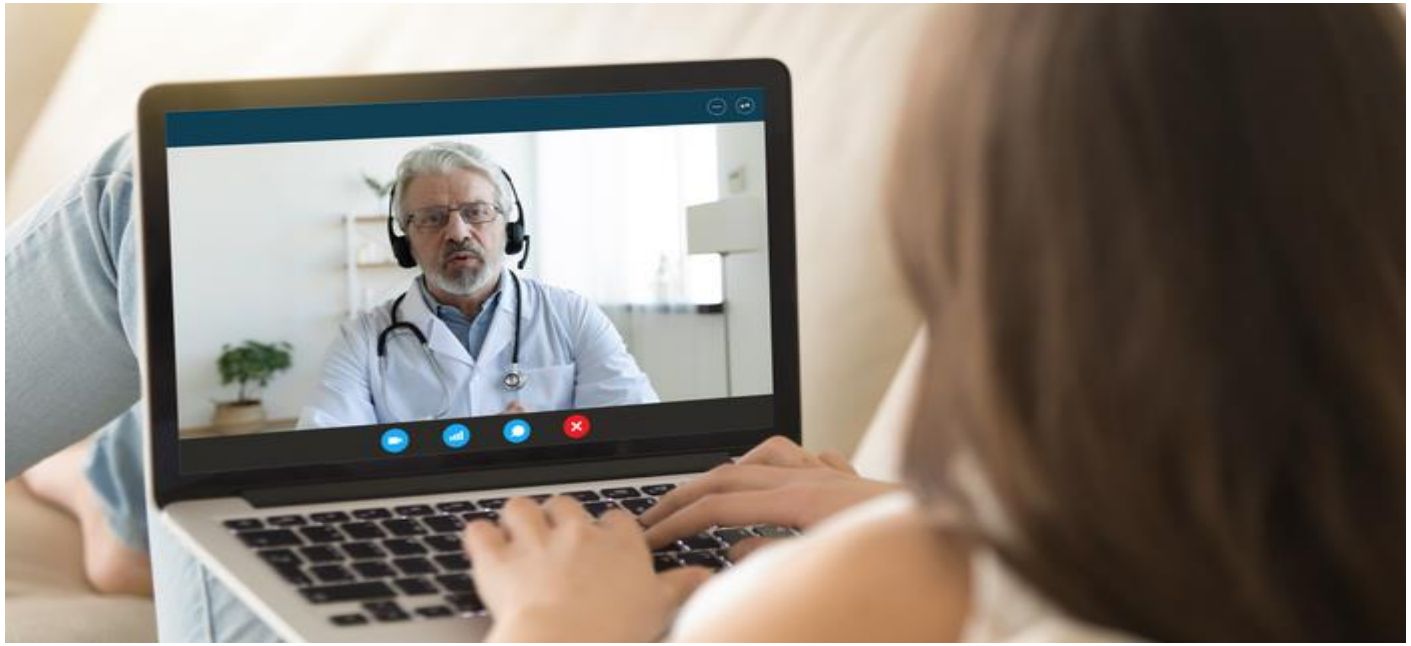
4. Health and Health Care

Health informatics is a discipline at the intersection of information science, computer science, and health care. It deals with the resources, devices, and methods required to optimize the acquisition, storage, retrieval, and use of information in health and biomedicine.

4. Health and Health Care

Computer and Health Care trends:

1) **Telemedicine:** refers to the practice of caring for patients remotely when the provider and patient are not physically present with each other.

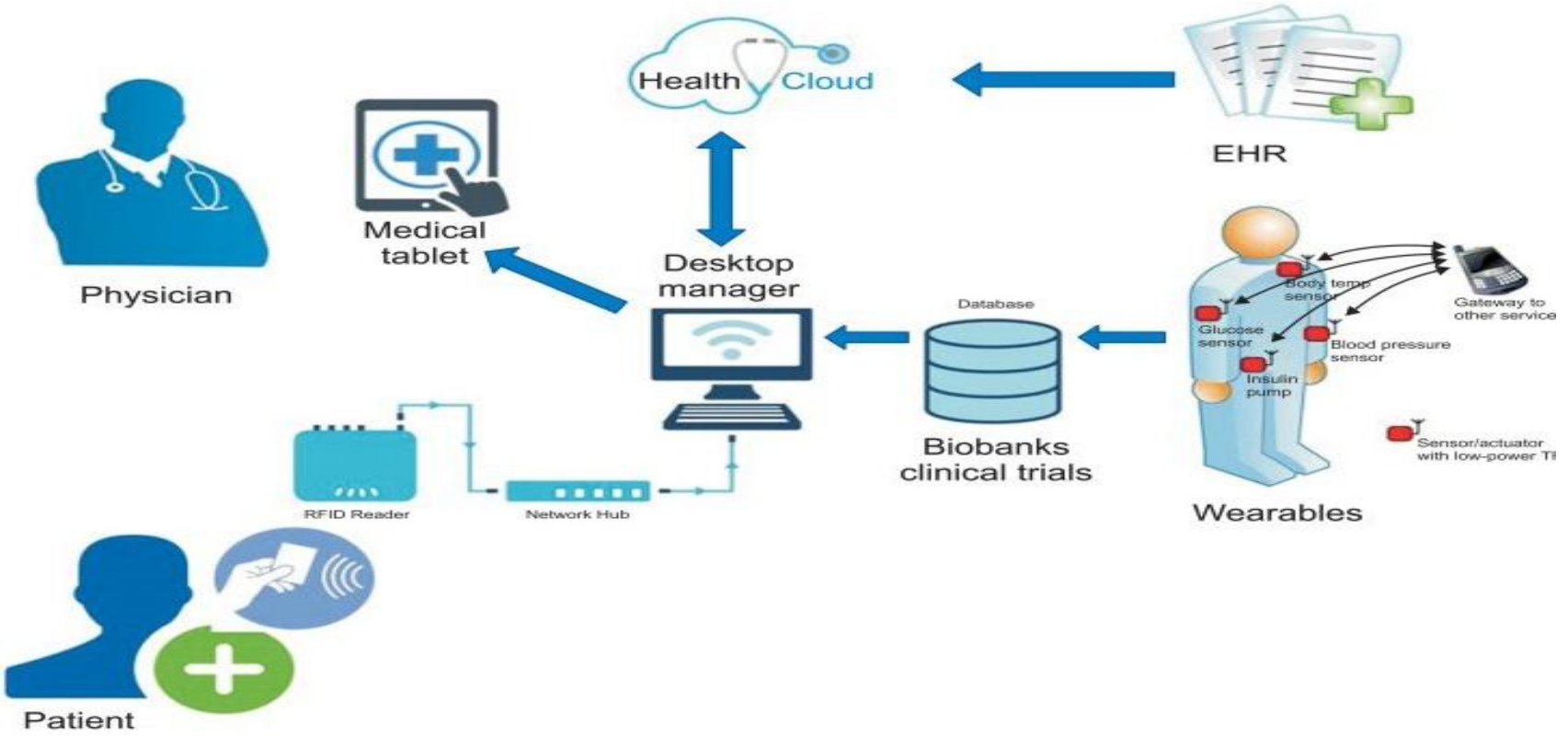


4. Health and Health Care

2) The Internet of Medical Things (IoMT):

Various devices and mobile apps have come to play a critical role in tracking and preventing chronic illnesses for many patients and their doctors.

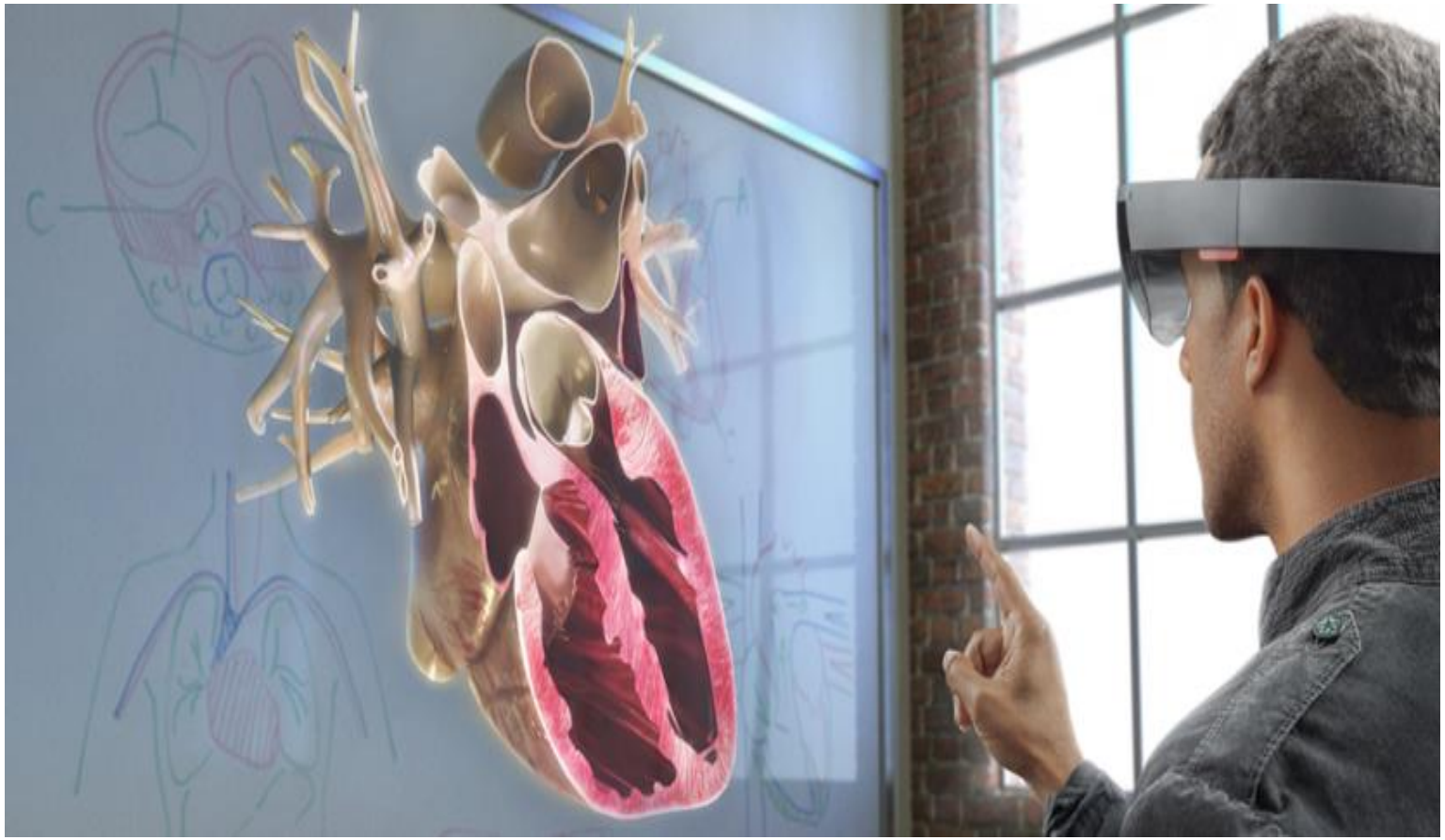
4. Health and Health Care



4. Health and Health Care

3) VR and AR in healthcare: A merging of digital and physical spaces. New AR innovations can help enhance doctors and surgeons ability to diagnose, treat, and perform surgery on their patients.

4. Health and Health Care

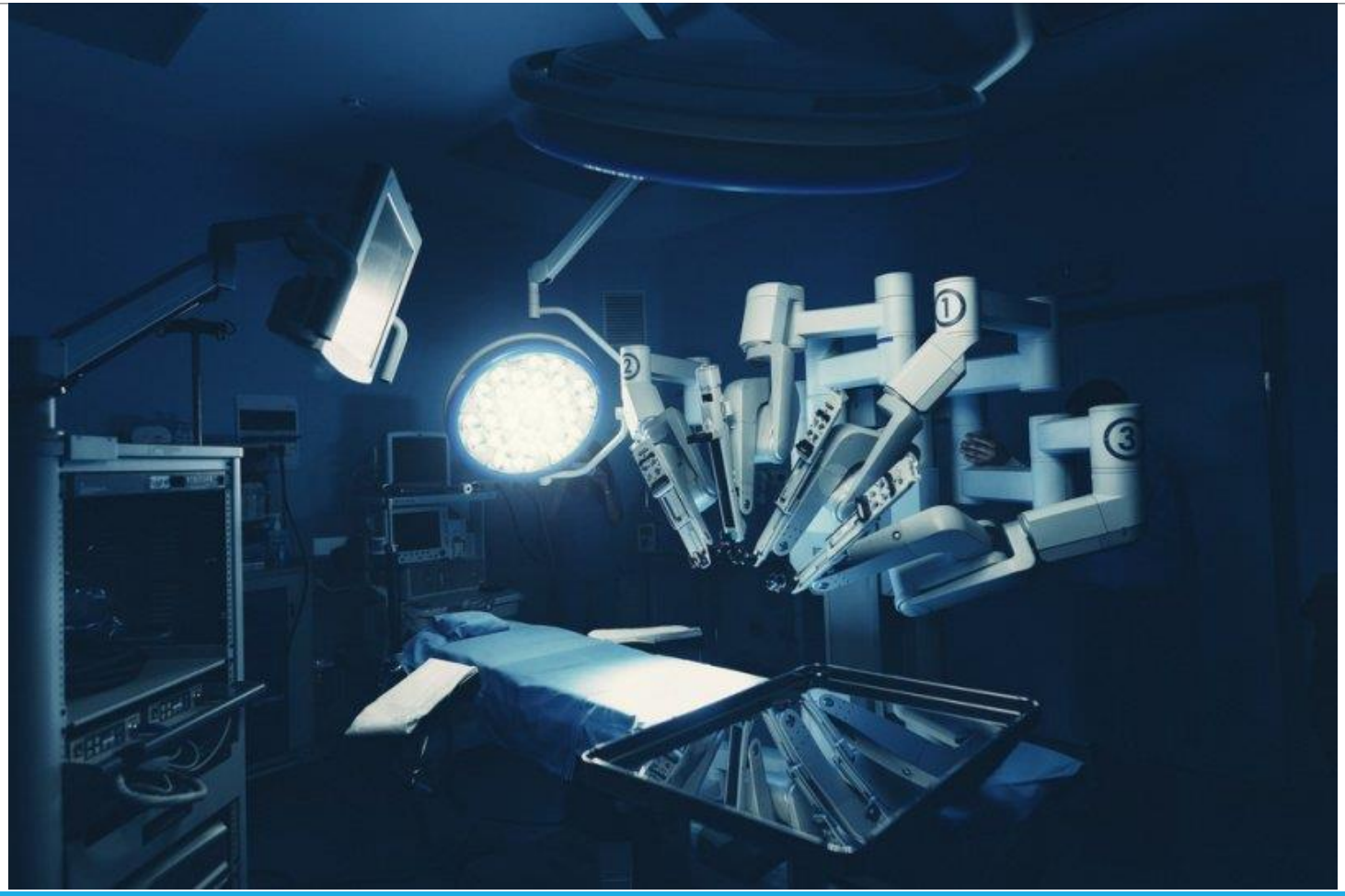


4. Health and Health Care

4) Artificial Intelligence (AI) in healthcare

AI has countless applications in healthcare. Whether it's being used to discover links between genetic codes, to power surgical robots or even to maximize hospital efficiency, AI has been a boon to the healthcare industry.

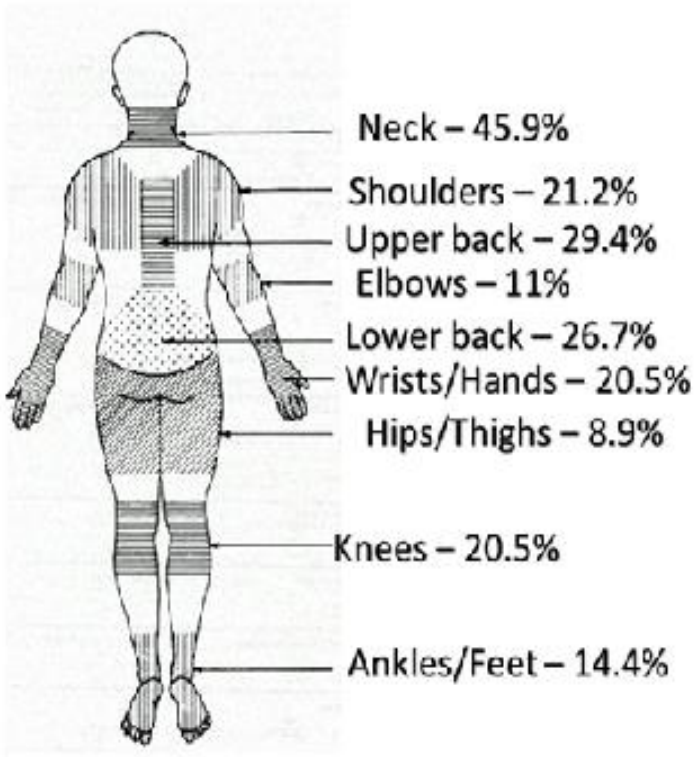
4. Health and Health Care

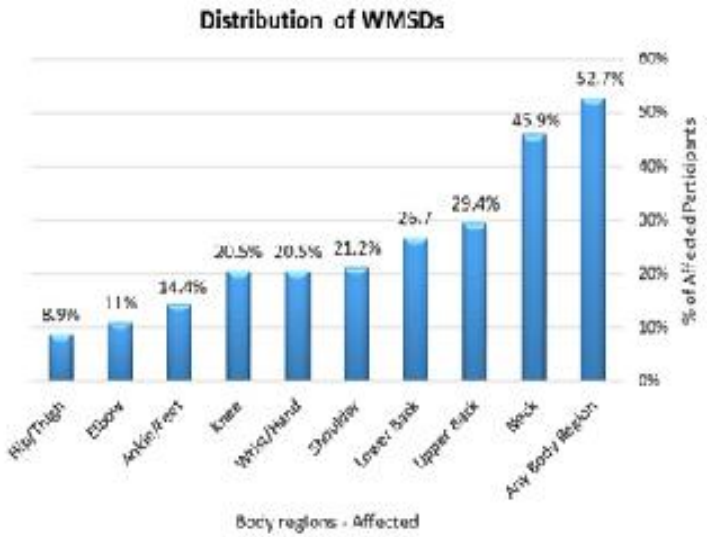


4. Health and Health Care

- Working with computers for long periods of time can cause:
  - Stress
  - Eyestrain
  - Wrist injuries
  - Neck and back problems
- Employers can be sued if they do not take steps to protect employees

4. Health and Health Care





5. Education

In the field of education, trainers and teachers can use computers to perform various tasks such as deliver training through audio-visual learning aids, Better presentation of information maintain student records to track performance, search for information on different topics, and create assignments.

5. Education

E-Learning Advantages:

1) You are able to link the various resources in several varying formats.

3) Everyone, who are part time students or are working full time, can take advantage of web-based learning.

4) Web-based learning promotes active and independent learning.

5) As you have access to the net 24x7, you can train yourself anytime and from anywhere also.

6) Through discussion boards and chats, you are able to interact with everyone online and also clear your doubts if any.

7) The video instructions that are provided for audio and video learning can be rewound and seen and heard again and again if you do not happen to understand the topic first time around.

5. Education

Disadvantages of E-Learning

1) E-Learning can cause social Isolation

2) Lack of communicational skill development in online students

3) Cheating prevention during online assessments is complicated

4) Online learning is inaccessible to lack of resources population.

5) Online instructors tend to focus on theory rather than practice

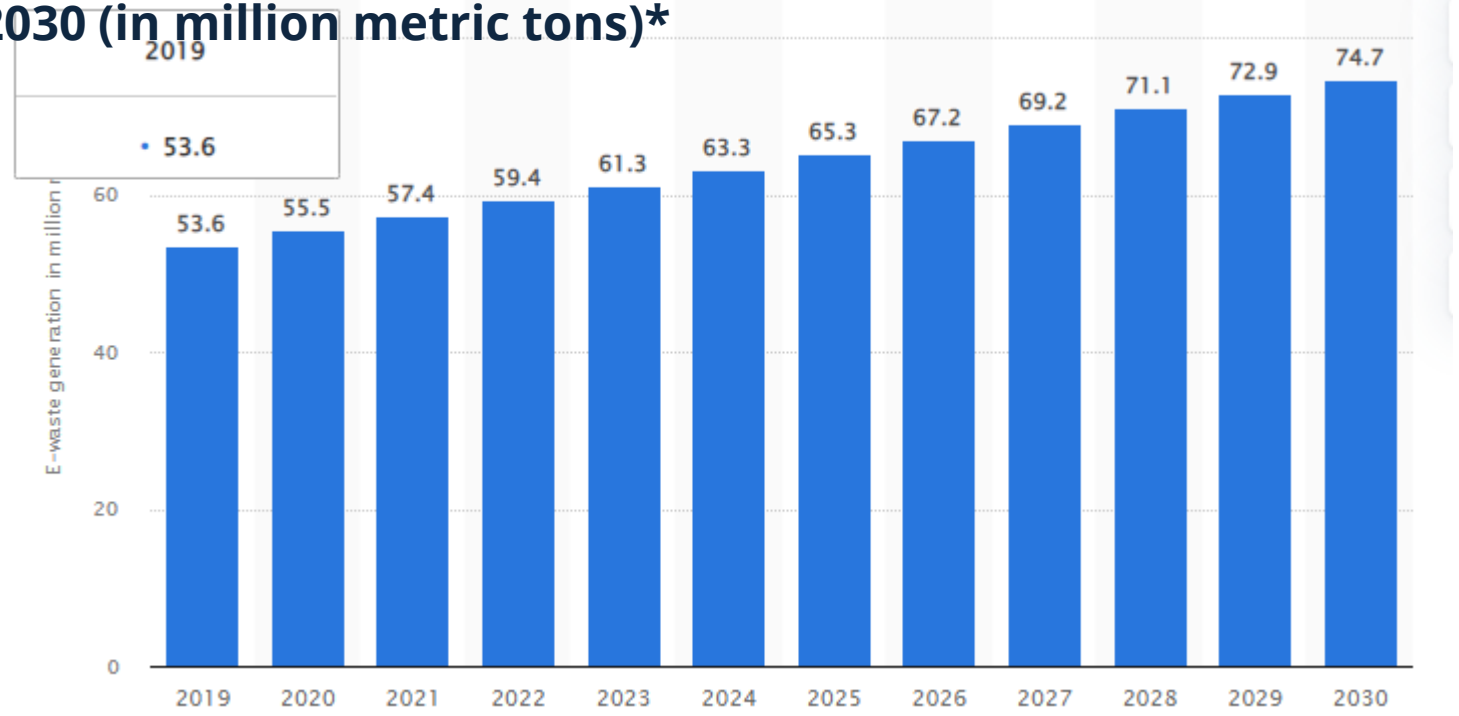
6. Green Computing

Green computing is the practice of using computing resources efficiently.

It is "the study and practice of Designing, Manufacturing, Using, and Disposing of computers, servers, and associated subsystems efficiently and effectively with minimal or no impact on the environment.

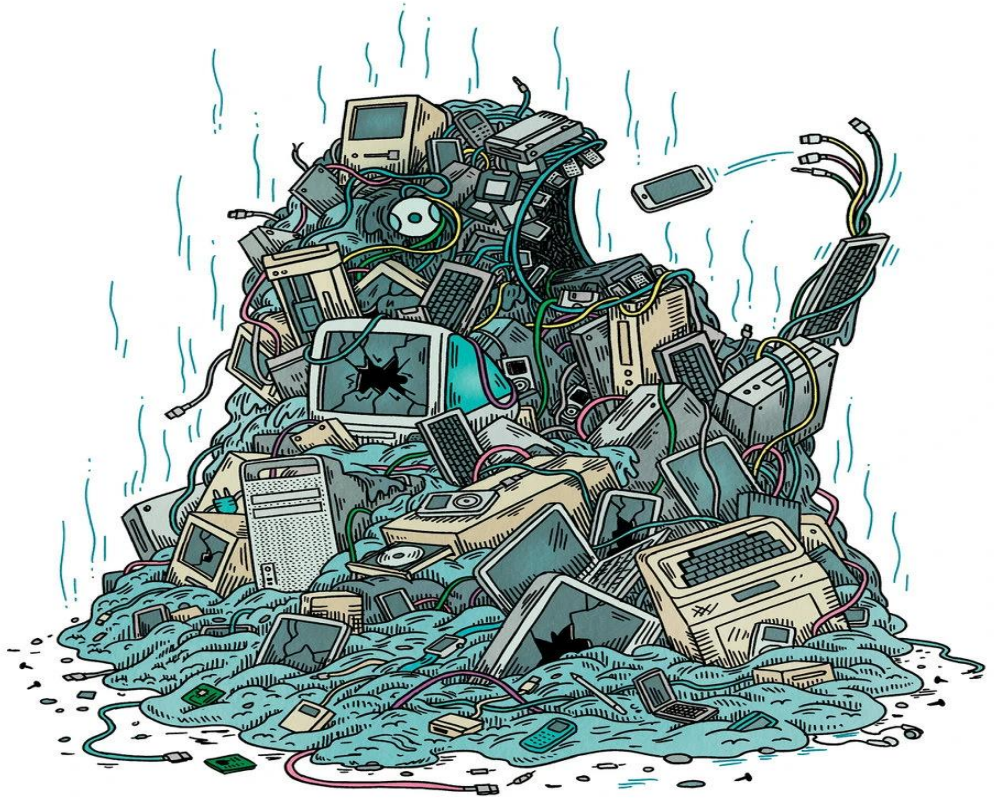
6. Green Computing

Projected electronic waste generation worldwide from 2019 to 2030 (in million metric tons)*



6. Green Computing

Most of it ends in the developing world.”



6. Green Computing

Exampled of green computing practices:

Computer energy is often wasteful

- For example: Leaving the computer on when not in use

Printing is often wasteful

- For example: Print out emails and meeting agendas

Pollution

- Due to manufacturing, packaging, disposal techniques

Toxicity

- Due to toxic chemicals involved in the manufacturing.

References

Ethics for the information age Sec. 2.1

Computer Ethics, *A Case-Based Approach CH. 1*

ETHICS IN INFORMATION TECHNOLOGY Ch. 1

Five ways to promote ethics in your organization

https://blog.candid.org/post/five-ways-to-promote-ethics-in-your-organization/

Computer Ethics:

https://www.sciencedirect.com/topics/computer-science/computer-ethics