

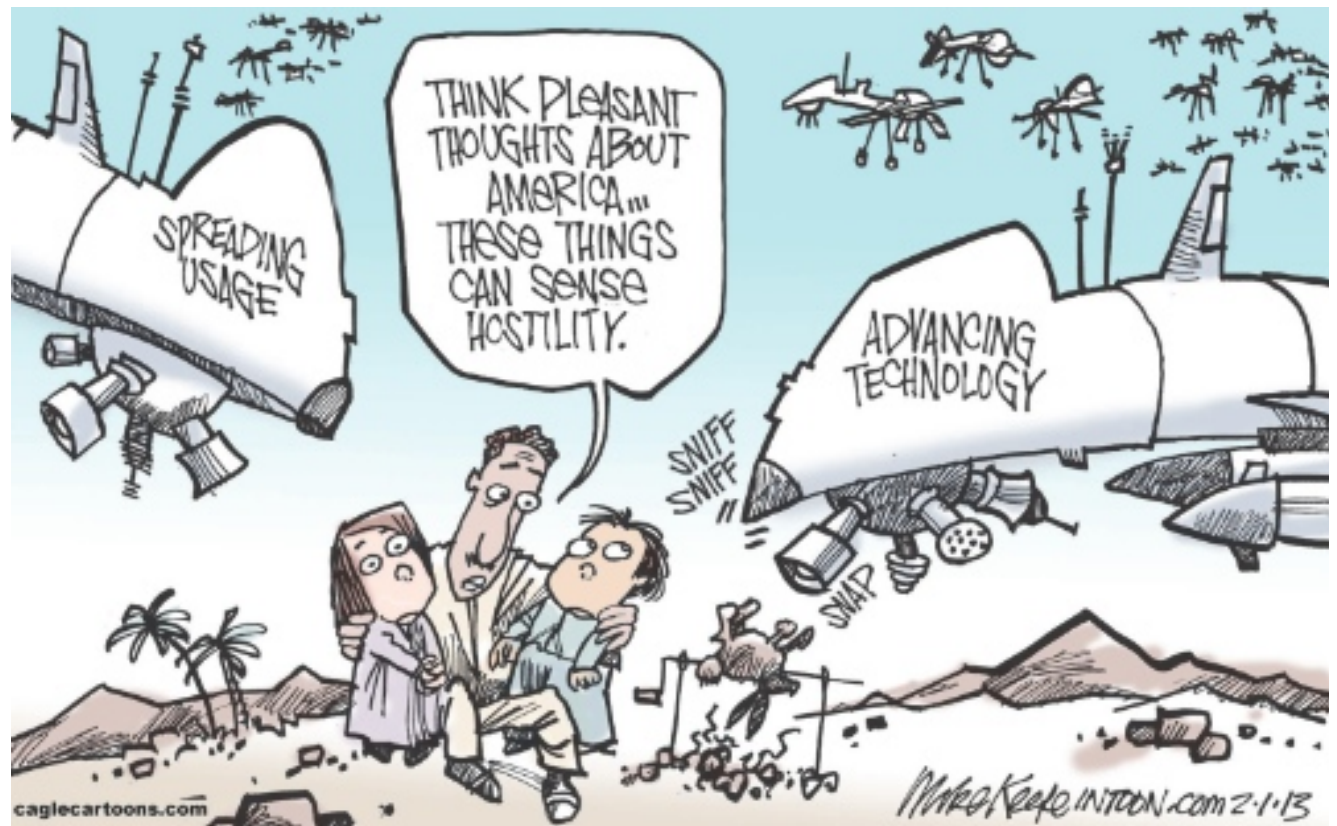
No man is an island...

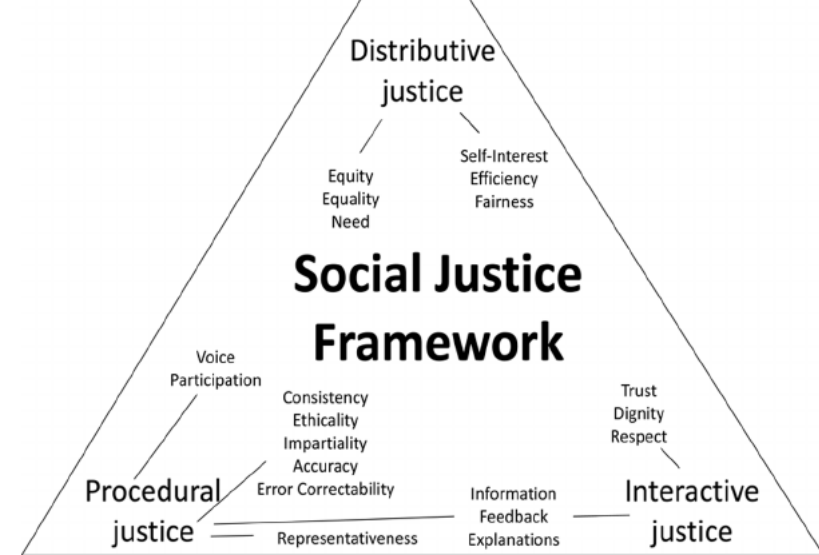
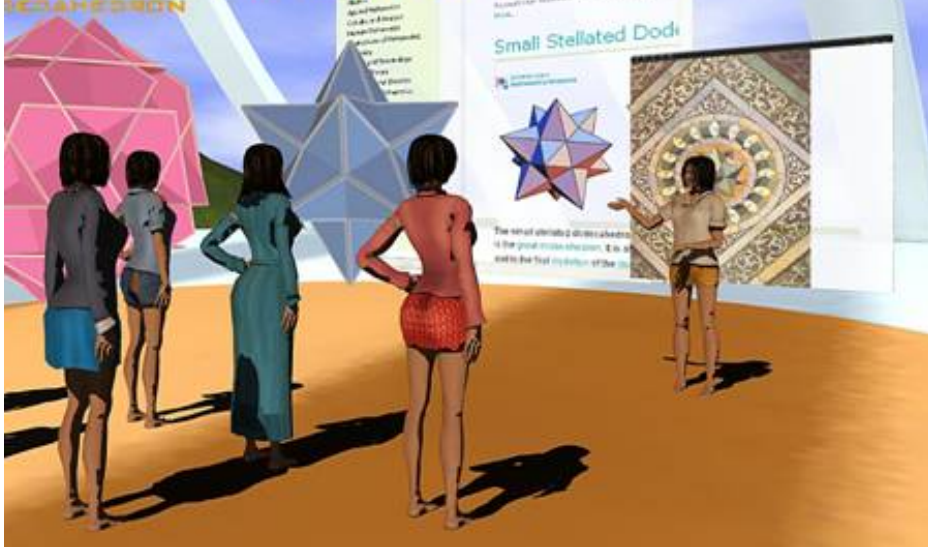
Professional Issues

ethical, legal, economic, organisational and social issues that affect the practice of informatics



even the smartest technology is an executed program unconcerned with ethics, morals, and political debate





- The social, economic, moral, and legal frameworks that shape the software ecosystem.
- Architectures, operating systems, programming languages, applications, companies and individuals rise and fall.
- Society guarantees some rights, and imposes many responsibilities and obligations.
- Non-technical forces will play a role in shaping what you can achieve.
- To understand some of these forces may be helpful.

Government and Law

1 LAW AND GOVERNMENT

1.1 WHAT IS THE LAW?

1.2 CRIMINAL LAW AND CIVIL LAW

1.3 WHERE DOES THE LAW COME FROM? 1.4 THE LEGISLATIVE PROCESS

1.5 THE LEGISLATIVE PROCESS IN OTHER COUNTRIES

1.6 THE LAW ACROSS BORDERS





Computing Profession

2 THE COMPUTING PROFESSION

2.1 THE CONCEPT OF A PROFESSION

2.2 ROYAL CHARTERS

2.3 PROFESSIONAL CONDUCT

2.4 EDUCATION

2.5 THE ADVANCEMENT OF KNOWLEDGE 2.6 CONTINUING PROFESSIONAL DEVELOPMENT 2.7 REPRESENTING THE PROFESSION

2.8 MEMBERSHIP GRADES

2.9 RESERVATION OF TITLE AND FUNCTION

Companies and Organisations

3 WHAT IS AN ORGANISATION? 3.1 THE ROLE OF ORGANISATIONS 3.2 COMMERCIAL ORGANISATIONS 3.3 LIMITED COMPANIES 3.4 SETTING UP A COMPANY 3.5 THE CONSTITUTION OF A LIMITED COMPANY 3.6 DIRECTORS 3.7 TAKEOVERS, MERGERS AND OUTSOURCING 3.8 NON-COMMERCIAL BODIES

4 STRUCTURE AND MANAGEMENT OF ORGANISATIONS 4.1 ORGANISATIONAL MODELS 4.2 STRUCTURING PRINCIPLES 4.3 DEPTH OF STRUCTURE 4.4 CENTRALISATION 4.5 SETTING UP A STRUCTURE IN PRACTICE 4.6 JOB DESIGN



Finance Accounting and Investment

5 FINANCING A START-UP COMPANY

5.1 WHY CAPITAL IS NEEDED

5.2 THE BUSINESS PLAN

5.3 SOURCES OF FINANCE

5.4 GEARING

6 FINANCIAL ACCOUNTING 6.1 DISCLOSURE REQUIREMENTS 6.2 THE BALANCE SHEET 6.3 THE PROFIT AND LOSS ACCOUNT

6.4 THE CASH FLOW STATEMENT

6.5 THE OVERALL PICTURE

7 MANAGEMENT ACCOUNTING

7.1 PLANNING AND MANAGEMENT INFORMATION

7.2 BUDGETS AND OVERHEADS

7.3 COST OF LABOUR

7.4 ALLOCATION OF OVERHEADS

7.5 CASH FLOW FORECAST

8 INVESTMENT APPRAISAL

8.1 INVESTMENT PROPOSALS

8.2 THE TIME VALUE OF MONEY

8.3 APPLYING DCF TO A SIMPLE INVESTMENT PROJECT

8.4 ASSESSMENT OF A SOFTWARE PRODUCT PROPOSAL

8.5 PITFALLS OF DCF





Human Resources and Discrimination

9 HUMAN RESOURCES ISSUES

9.1 WHAT ARE HUMAN RESOURCES?

9.2 THE LEGAL CONTEXT

9.3 RECRUITMENT AND SELECTION

9.4 STAFF TRAINING AND DEVELOPMENT

9.5 REMUNERATION POLICIES AND JOB EVALUATION

9.6 APPRAISAL SCHEMES

9.7 REDUNDANCY, DISMISSAL AND GRIEVANCE PROCEDURES

9.8 CONTRACTS OF EMPLOYMENT

9.9 HUMAN RESOURCE PLANNING

10 ANTI-DISCRIMINATION LEGISLATION

10.1 THE DEVELOPMENT OF ANTI-DISCRIMINATION LEGISLATION

10.2 WHAT IS DISCRIMINATION?

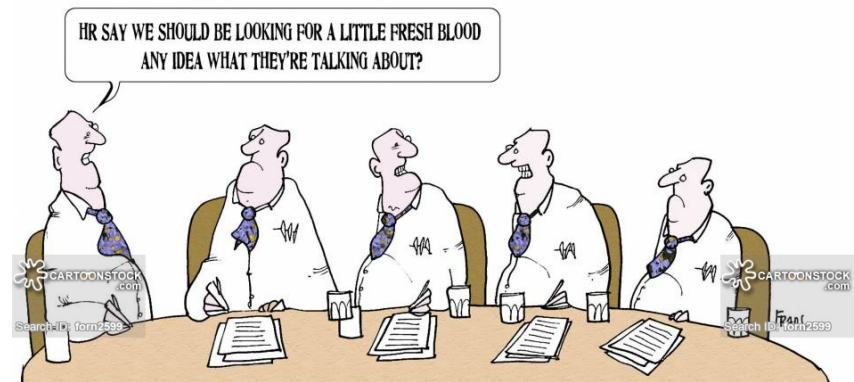
10.3 DISCRIMINATION ON GROUNDS OF SEX

10.4 DISCRIMINATION ON RACIAL GROUNDS

10.5 DISCRIMINATION ON GROUNDS OF DISABILITY

10.6 DISCRIMINATION ON GROUNDS OF AGE

10.7 AVOIDING DISCRIMINATION



IPR, Software Contracts, Data Protection, Privacy

11 INTELLECTUAL PROPERTY RIGHTS

11.1 INTELLECTUAL PROPERTY

11.2 COPYRIGHT

11.3 EXAMPLES OF COPYRIGHT CASES INVOLVING SOFTWARE

11.4 CONFIDENTIAL INFORMATION

11.5 PATENTS

11.6 TRADE MARKS

11.7 DOMAIN NAMES

12 SOFTWARE CONTRACTS AND LICENCES

12.1 WHAT IS A CONTRACT?

12.2 LICENCE AGREEMENTS

12.3 OUTSOURCING

12.4 CONTRACTS FOR BESPOKE SOFTWARE

12.5 CONTRACTS FOR CONSULTANCY AND CONTRACT HIRE

12.6 LIABILITY FOR DEFECTIVE SOFTWARE

12.7 HEALTH AND SAFETY

13 DATA PROTECTION, PRIVACY AND FREEDOM OF INFORMATION

13.1 BACKGROUND

13.2 DATA PROTECTION

13.3 PRIVACY

13.4 FREEDOM OF INFORMATION



The Internet, Defamation, Pornography, Spam

14 INTERNET ISSUES

14.1 THE EFFECTS OF THE INTERNET

14.2 INTERNET SERVICE PROVIDERS

14.3 THE LAW ACROSS NATIONAL BOUNDARIES

14.4 DEFAMATION

14.5 PORNOGRAPHY

14.6 SPAM

14.7 ECOMMERCE REGULATIONS



Computer Misuse and Fraud

15 COMPUTER MISUSE

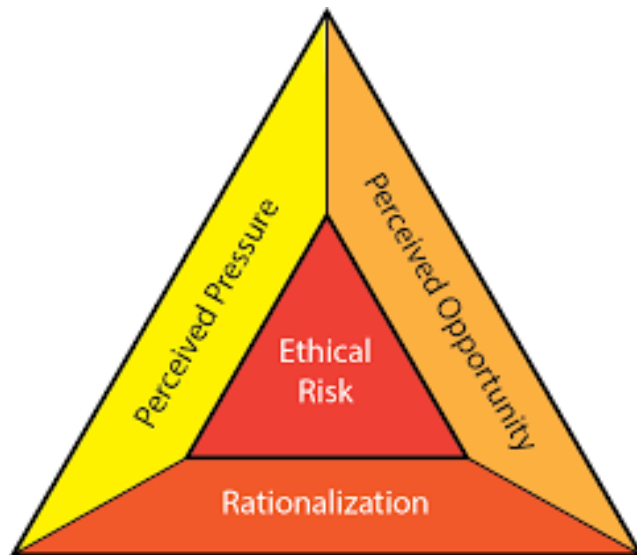
15.1 THE PROBLEM

15.2 THE COMPUTER MISUSE ACT 1990

15.3 AMENDMENTS TO THE ACT

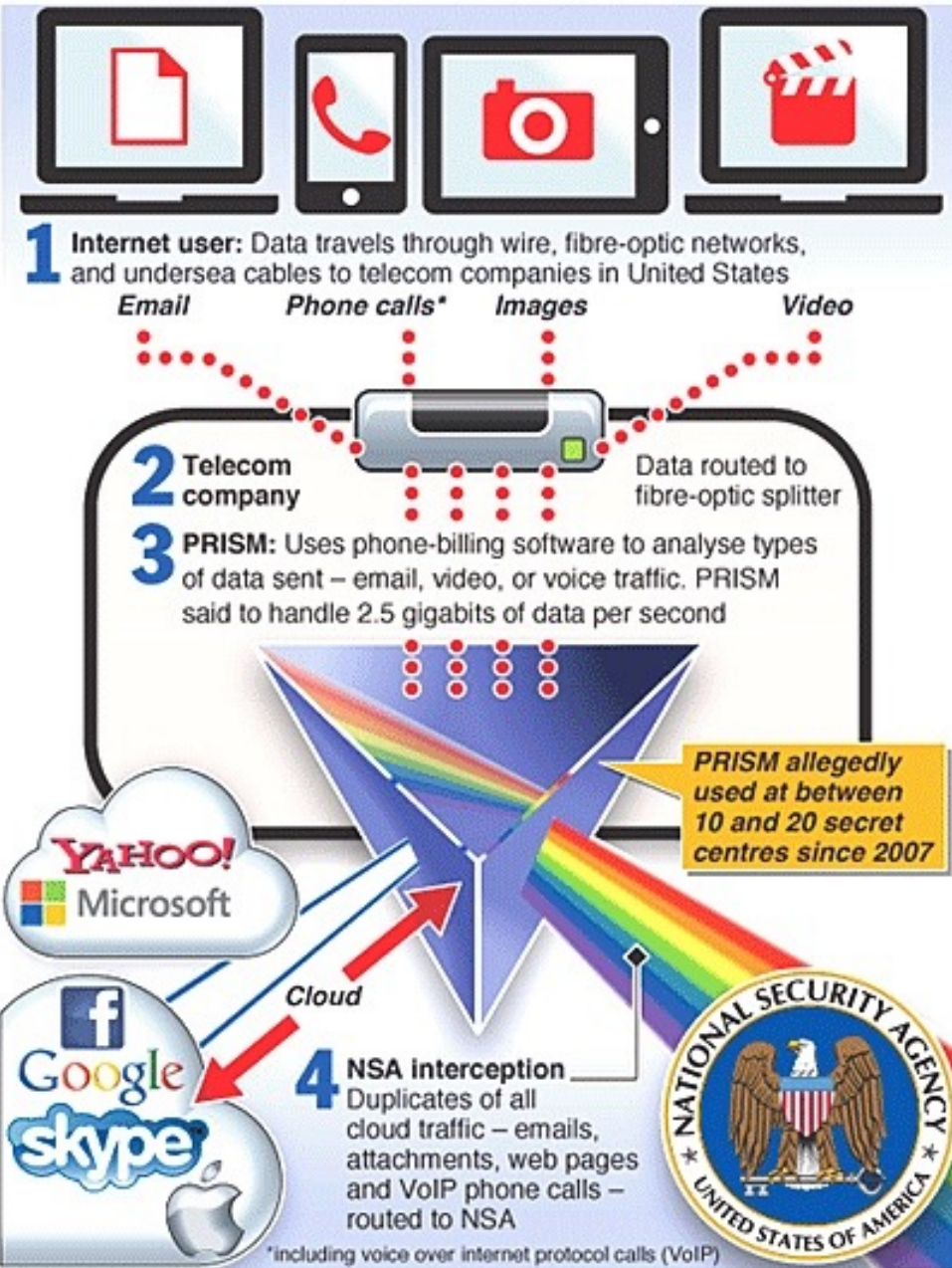
15.4 OPERATION OF THE ACT

15.5 COMPUTER FRAUD



Cloud use questioned over PRISM leaks

The rise of cloud computing – with millions of people storing data on servers in the United States – enabled vast amounts of personal data to be collected by the U.S. National Security Agency's PRISM programme



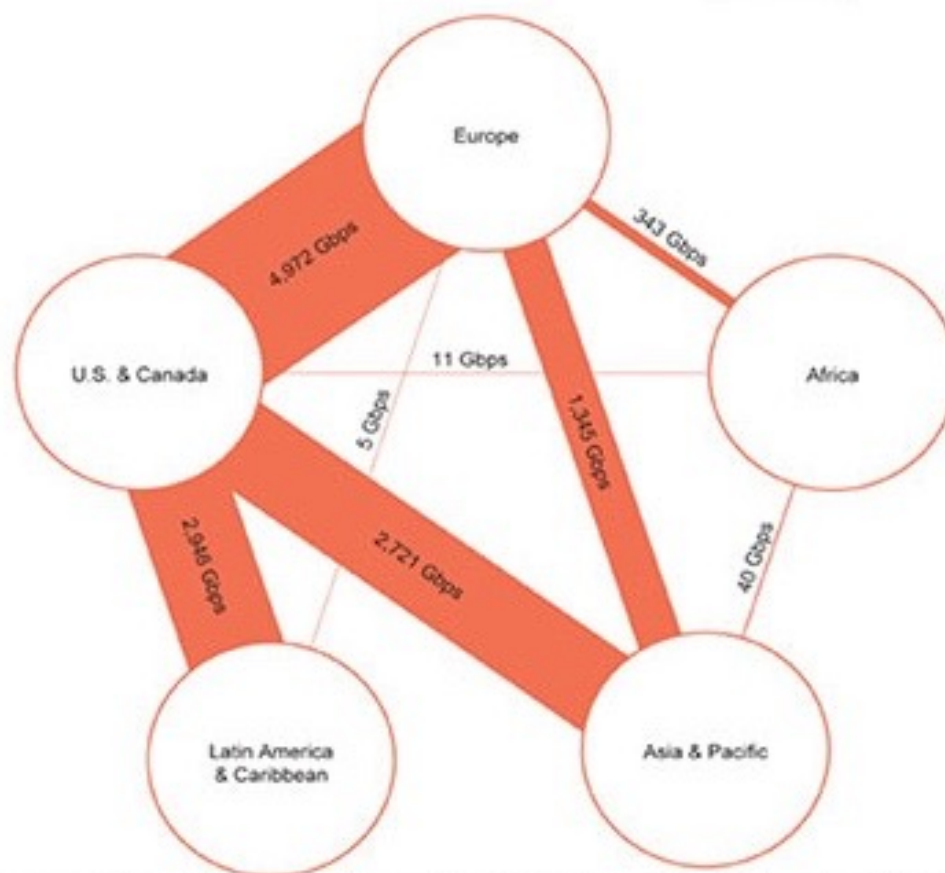


(TS//SI//NF) Introduction

U.S. as World's Telecommunications Backbone



- Much of the world's communications flow through the U.S.
- A target's phone call, e-mail or chat will take the **cheapest** path, **not the physically most direct** path – you can't always predict the path.
- Your target's communications could easily be flowing into and through the U.S.



International Internet Regional Bandwidth Capacity in 2011

Source: Telegeography Research



facebook



Hotmail

YAHOO!



YouTube

AOL mail



(TS//SI//NF) PRISM Collection Details



Current Providers

- Microsoft (Hotmail, etc.)
- Google
- Yahoo!
- Facebook
- PaTalk
- YouTube
- Skype
- AOL
- Apple

What Will You Receive in Collection
(Surveillance and Stored Comms)?

It varies by provider. In general:

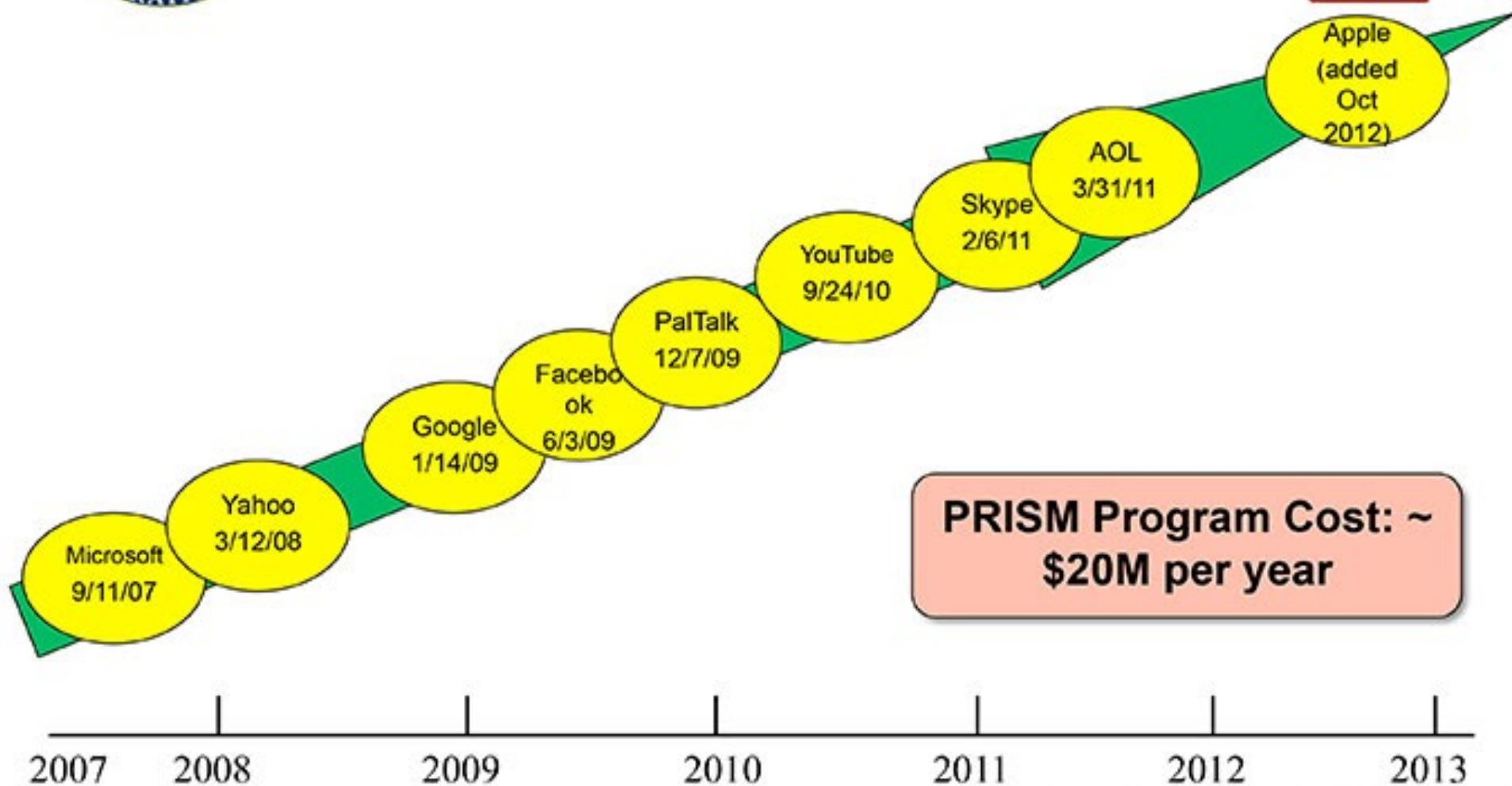
- E-mail
- Chat – video, voice
- Videos
- Photos
- Stored data
- VoIP
- File transfers
- Video Conferencing
- Notifications of target activity – logins, etc.
- Online Social Networking details
- **Special Requests**

Complete list and details on PRISM web page:

Go PRISMFAA



(TS//SI//NF) Dates When PRISM Collection Began For Each Provider



PRISM Program Cost: ~ \$20M per year



"ARGUING THAT YOU DON'T CARE ABOUT
THE RIGHT TO PRIVACY BECAUSE YOU
HAVE NOTHING TO HIDE IS NO
DIFFERENT THAN SAYING YOU DON'T
CARE ABOUT FREE SPEECH BECAUSE
YOU HAVE NOTHING TO SAY."

-Edward Snowden

Straw Poll

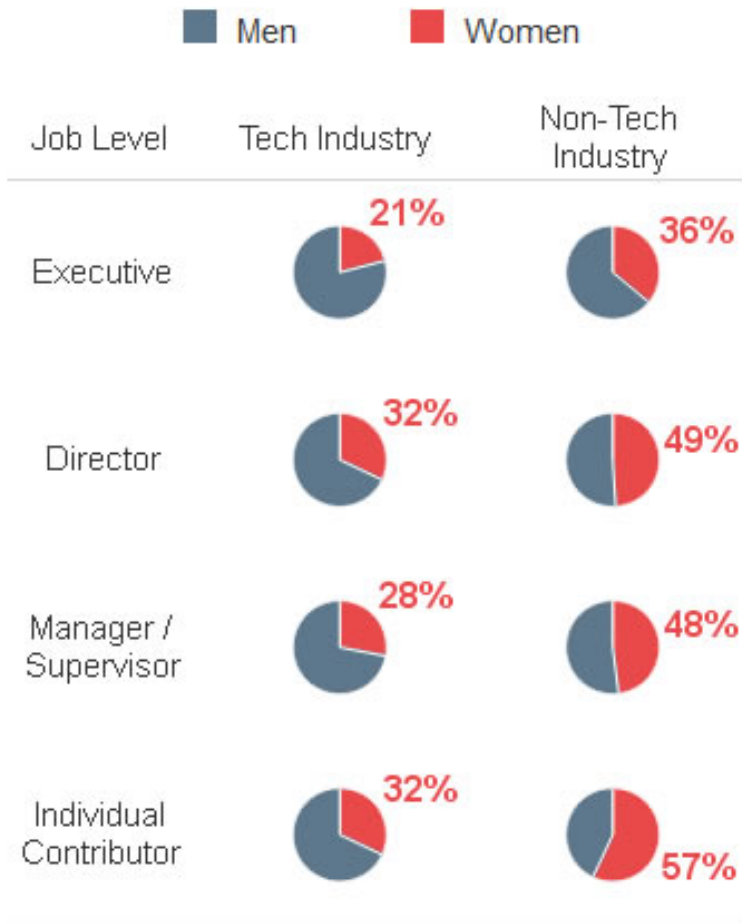
Government and Law		
Computing Profession		
Companies and Organisations		
Finance Accounting and Investment		
Human Resources and Discrimination		
IPR Software Contracts, Data Protection, Privacy		
The Internet Defamation, Pornography, and Spam		
Computer Misuse and Fraud		
Surveillance and Encryption		
The Digital Divide		

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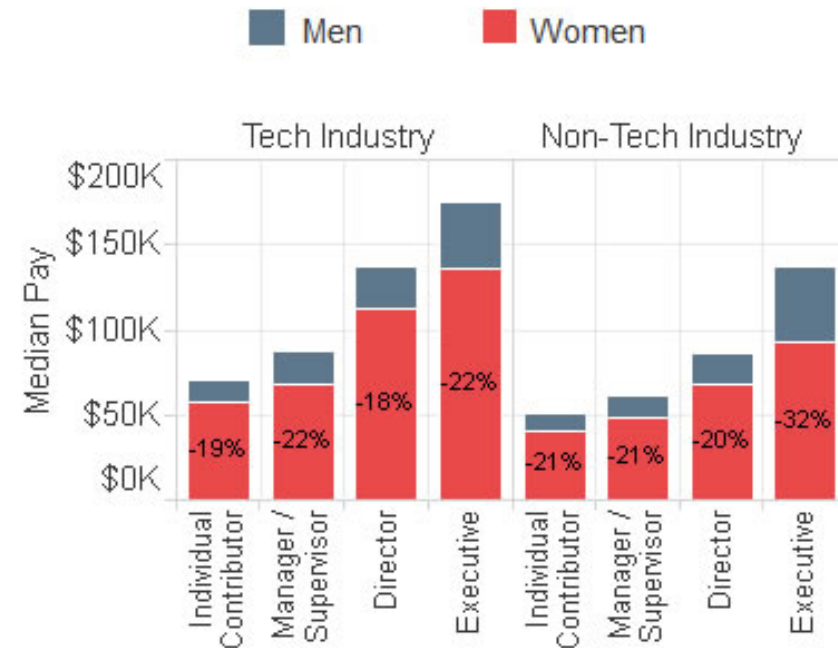
Tech & The Gender Pay Gap: IT's Complicated

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Tech Industry: Male-Dominated at All Levels



Tech Pays More, But the Gap is Still There

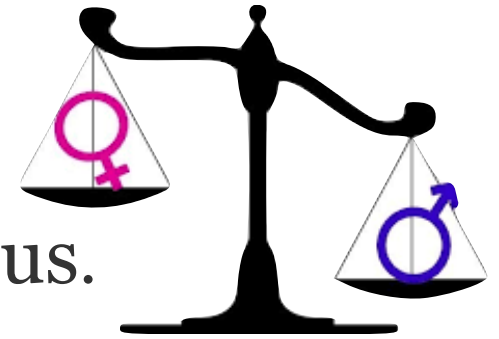


How do you want to compare salaries?

- Uncontrolled: All men and all women
- Controlled: Similar men and women in similar jobs

Many companies have begun to implement programs designed to attract more women.

People generally have good intentions, ... but we all have biases which are invisible to us.



Test yourself: <https://implicit.harvard.edu/implicit/>

Bias still either keeps women out of the running for promotions or makes women feel left out of the team dynamics.

We want to ensure that our graduates learn to change this.

This starts now.

Changing unconscious gender bias is a process that must be repeated and reinforced on a daily basis.

If you are experiencing gender bias, speak up.

Bring the situation to our attention.



in your interactions with each other



Don't be exclusive

Giving your attention and time to those who look like you in terms of age, gender, race or background reinforces unconscious bias.

Develop a core value system

This value system should focus on fair treatment and respect for others. A basic human right, but one that we can often forget or overlook in the heat and pressure of daily life.

Change your lens

Try using an unconscious bias lens when considering how you interact in teams.

We all are biased to some extent, but consciously becoming aware of it and taking action to address it will benefit us all.

Don't be that person excluding others in the group; recognize your unconscious actions and don't let them hold you or others back.

Making the unconscious conscious will help you make more objective decisions, facilitate inclusive interactions, and create opportunities. Begin unbiassing with education, accountability, measurement, and more.

Google has been on a multi-year journey to understand how decisions are made at work, how inclusive organizational cultures are built and sustained, and how individuals can take conscious control of their actions, behaviors, and cultural contributions. This journey has led Google to dive into the world of the unconscious mind.

Unconscious biases are the automatic, mental shortcuts used to process information and make decisions quickly. At any given moment individuals are flooded with millions of bits of information, but can **only consciously process about 40**. Cognitive filters and **heuristics** allow the mind to unconsciously prioritize, generalize, and dismiss large volumes of input. These shortcuts can be useful when making decisions with limited information, focus, or time, but can sometimes lead individuals astray and have unintended consequences in the workplace.

Unconscious bias can prevent individuals from making the most objective decisions. They can cause people to overlook great ideas, undermine individual potential, and create a less than ideal work experience for their colleagues. By understanding unconscious bias and overcoming it at critical moments, individuals can make better decisions - from finding the best talent (no matter what the background) to acknowledging a great idea (no matter who it came from) - and build a workforce and workplace that support and encourages diverse perspectives and contributions.

The **scientific evidence** demonstrating the negative effects of unconscious bias is well-documented, but there's still a lot to learn about how to mitigate it. Combatting unconscious biases is hard, because their influence on our decisions in a given moment doesn't feel wrong; it feels intuitively right. But in order to create a workplace that supports and encourages diverse perspectives, talents, and ideas, you need to give people the platform and tools to begin unbiassing, Google's term for mitigating unconscious bias and giving your first thoughts a second look. Google is early in the unbiassing journey, but making the unconscious conscious is critical to create a welcoming and inclusive workplace for everyone.

<https://rework.withgoogle.com/guides/unbiassing-raise-awareness/steps/introduction/>