

Plan

Social issues

Data and Information

How the Internet works

What computers can't do

Natural Language

Multimedia

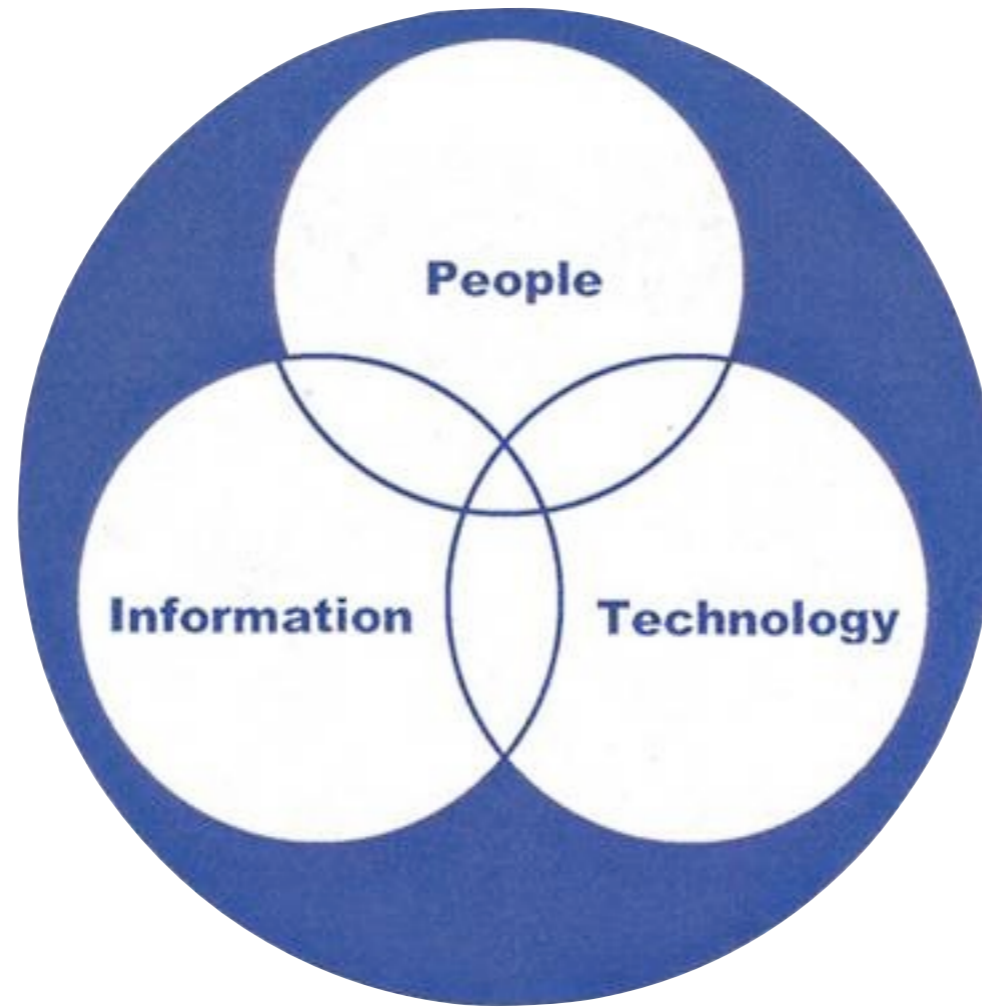
Search

Privacy and security



informatics in society

2011-09-20



informatics literacy

Michael Fourman
Johanna Moore

Miles Osborne



DVD
~ 4.5GB

Tubular Bells
100 copies ~ 4GB



How much data can we store?
– an example ...

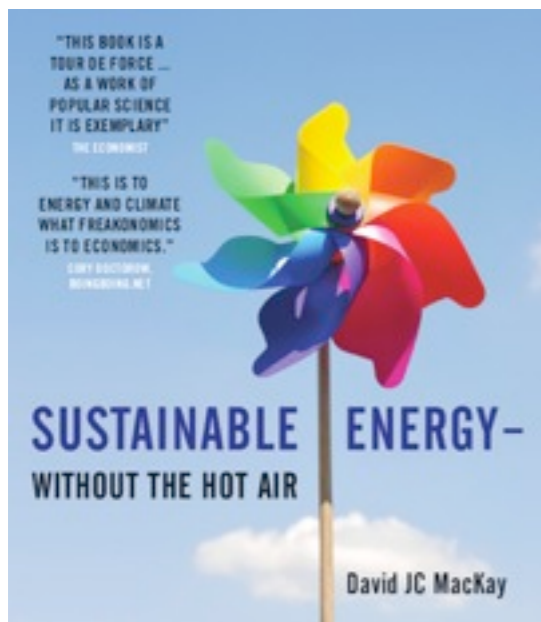
2^{40} bits

2^{40} seconds
~ 32,000 years



world population
~ $2^{33} = 8G_p$

full colour pdf
384pp ~ 10MB



0110011011110110
0100111011001101
1011101011011001
0010101100110111
0110011011110110
0100111011001101
1011101011011001
0010101100110111

$2^7 = 128$

bits per person



Sunday, 4 December 11

roughly 32 million seconds per year – say 2^{25}
 so 2^{40} seconds is roughly 2^{15} years (actually 34842.1652 years)
 – or we could store 32,000 bits (1000 numbers?) every second for one year
 12,800 copies of the book – 5 books per week for a lifetime
 3,200 copies of the LP – 8 hours per day for more than a year
 30 copies of the DVD
 128 bits per person – enough to encode both parents and best friend
 position 360 degrees 9 bits + 180 degrees 8 bits

2^3 $2 \times 2 \times 2$	8
2^{10} $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$	1,024 kilo
2^{20} $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$ \times $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$	1,048,576 mega
2^{30} $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$ \times $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$ \times $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$	1,073,741,824 giga

1984 – a long time ago

- cctv
- digital footprint



browser history

search history

location history

- online photos



Did the CIA Do Enough to Protect Bin Laden's Hunter?



Sunday, 4 December 11



DigiNotar



- a Dutch certificate authority
- *trusted third party*
- *assign certificates to government bodies*
- issued hundreds of fraudulent certificates in July 2011 for Google, Yahoo!, Mozilla, WordPress and The Tor Project *inter alia*



Wikileaks

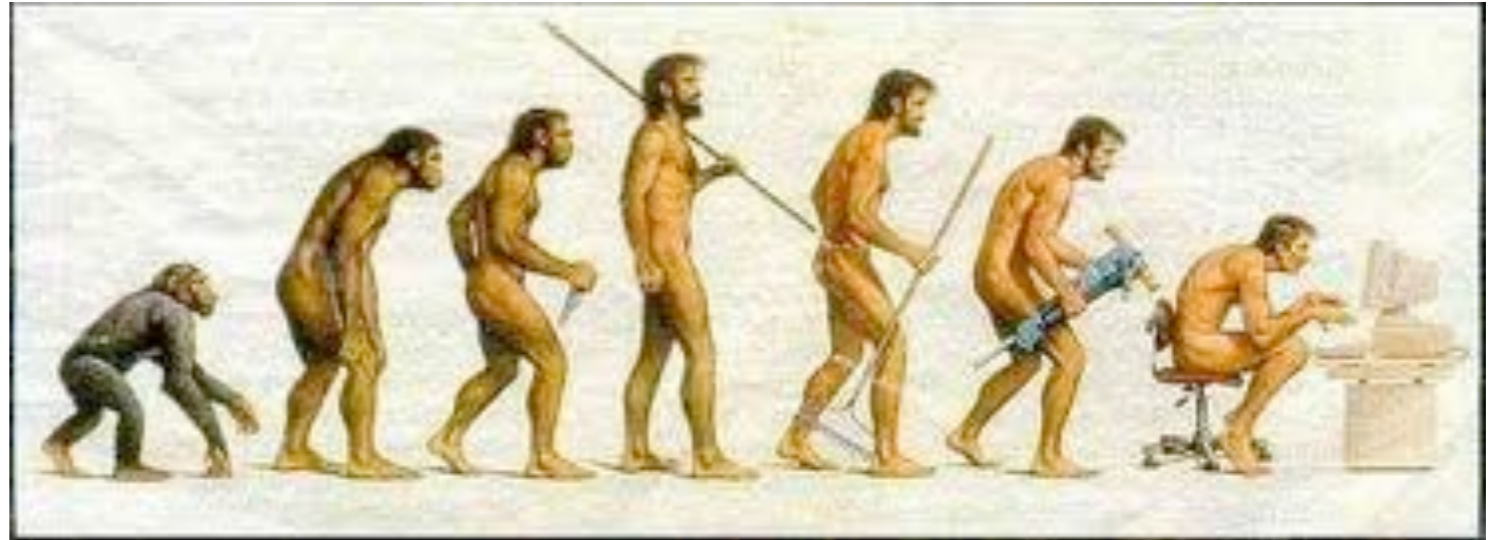
A Collection Of **Diplomatic** History Since 1966 To The Present Day #

- Julian Assange gave the Guardian an encrypted file and a password.
- The encrypted file was widely mirrored.
- David Leigh published the password.
- Domscheit-Berg told *Freitag* both were available.
- The unredacted cables became public.





First assignment



- An essay:
- *The Internet : for better or for worse*
- Include a list of sources
- 1,000 -1,200 words



upcoming

- 21/22 Lab Introduction
- 26 Monday Guest lecture 17:00-18:00 G.07
- Wednesday 5 October 16:00-17:00
 - Special Lecture (no extra charge :-)