Cybercrime Law (and the Problems of Police Enforcement)

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CYBERCRIME FORENSICS
The Aim of the new SG is:

“Promoting Cybercrime Forensics and the use of Cybercrime Forensics; of relevance to computing professionals, lawyers, law enforcement officers, academics and those interested in the use of Cybercrime Forensics and the need to address cybercrime for the benefit of those groups and of the wider public. “
3rd Annual International Conference on Cybercrime Forensics Education and Training - CFET 2009
First Announcement and Call for Papers
1st and 2nd September 2009.
Deadline for papers 1st May 2009.

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Structure of UK Law
Structure of Criminal and Civil Courts

**CRIMINAL COURTS**
- Magistrates Court
- Crown Court
- Court of Appeal
- House of Lords
- European Court of Justice

**CIVIL COURTS**
- County Court
- High Court
- Court of Appeal
- House of Lords
- European Court of Justice

Test – guilty
Beyond reasonable doubt

Test – guilty
On the balance of possibilities
Old Wine in New Bottles
Why do we need to create new law?

• In 1975 in Chicago a man was successfully prosecuted for putting a fake card into an ATM to steal money.

• He was prosecuted for breaking and entering the bank.

• The act of introducing the card into the slot was taken to be breaking into the bank.
History of UK Cybercrime Law
1972 Intel 8008 Chip
8 bit version of the 4004
1977 Apple 2
Steve Jobs and Steve Wozniak
1977 Commodore PET
1979-81 Sinclair ZX-80
1981 IBM PC

12th of August, IBM showed its IBM 5150 PC (personal computer) that is based on the 4.77 MHz 8 bit 8088 CPU of Intel 64KB RAM, 40KB ROM, one 5.25-inch floppy drive (160KB capacity)
"640K ought to be enough for anybody."

Bill Gates, 1981
1981 Vic-20 First Million-Seller
1981

European Convention on Data Protection

» Computers are a threat to privacy
» Need for international free-flow of information
  at the same time protecting the rights of the individual
1982 Sinclair ZX Spectrum
Repealed by the **Data Protection Act 1998**
The Spice Girl
Married to the Footballer?
“Data disc report in 3 weeks” BBC Online 29th November 2007
– on the loss of discs containing details of 25 million people
on the Child Benefit Register database

“Thousands at Risk after Data Loss” BBC Online 3rd November 2007
- Details of 15,000 Standard Life customers lost by HM Revenue & Customs

“Revenue Looses 6,500 Peoples Data” BBC Online 18th December 2007
- Details of 6,500 Countrywide Assured customers lost by HM Revenue & Customs
How protected by the Data Protection Act are you?

Jeremy Clarkson
Printed his bank account details in his newspaper column to show these losses posed no problem...

...Retracting a month later when someone had set up a standing order for £500 on his bank account!
How many breaches of the Data Protection Act occur every second on Web 2.0 sites?
Hacking 1975-1990

- Due to the increased incidence of “hacking” in the 1980’s concerns grew that existing law could not cope with new situations thrown-up by the use of computers
R vs Gold

• April 1988
• Gold and a friend were journalists who obtained a British Telecom Prestel engineer's password.
R vs Gold

... Leaving messages on the mail box of HRH The Duke of Edinburgh!
R vs Gold

• They could not be charged with 'obtaining services by deception' (part of the Theft Act 1978 which states a person who by any deception dishonestly obtains services from another shall be guilty of an offence) because they had deceived a computer rather than a person into thinking they were the engineer; “another” could not be assigned to a computer.
R vs Gold

House of Lords decision
taken to suggest hacking is not a crime
• Only thing stolen is small amounts of electricity
• Not considered viable to prosecute
The **Unauthorised access** to data or a program held on a computer

Unauthorised access **with intent to commit a further serious offence**

Intentional unauthorised modification **to impair operation**

**Making, supplying or obtaining articles for use** in computer misuse offences – *Police & Justice Bill 2006*
R vs Bedworth

• Paul Bedworth together with two friends was prosecuted under the CMA 1990 for hacking
• He pleaded he was addicted to hacking so was not able to form the necessary intent to commit an offence
• “Addiction” as a defence is not legal but the jury acquitted him (his friends both got 6 months)
• Possibly just a wrong decision by a jury
• Might suggest “intent” might be removed from the CMA?
Careless or incompetent people in any company might be prosecuted
Freelance Typesetter

- Client had not paid a £2000 fee
- Altered the clients computer preventing them accessing it until fee paid
- Judge found them guilty under section 3 of the CMA 1990
- Fined £1650 and conditionally discharged for 2 years
- Judge stated not a particularly serious crime although the client claimed losses in excess of £35,000
• Nurse admitted unauthorised access to a hospital’s computer system
• She admitted altering a patient’s prescription to a lethal dose.
• Sentenced to 12 months imprisonment
How protected against hacking are you?

Gary McKinnon
Currently facing extradition to the USA
For hacking into over 50 NASA and US DoD websites
Beijing Olympics 2008

- During the Beijing Olympics, Atos Origin, the worldwide IT services company who have supplied IT services to a number of Olympic Games, filtered 12 million security alerts per day
- 138 per second
Beijing Olympics 2008

• Professor Rongsheng Xu
• Network Security Group
• Institute of High Energy Physics
• Chinese Academy of Sciences
• Presentation at CFET 2008 International Conference on Cybercrime Canterbury Christ Church University on the defences employed to defend the websites
London 2012?
Communications Management Association (CMA) conference in London regarding Usain Bolt's 100 metre-winning performance in Beijing:

"Think of how you'd feel if the network manager came up to you afterwards and had to explain why the network had gone down during those 10 seconds."  
Stuart Hill BT

http://www.computing.co.uk/computing/analysis/2237423/bt-marks-2012-olympics
Denial of Service Attacks

Botnets of millions of machines pinging websites
How protected against botnets are you?

BBC Click
Demonstrating setting up a Botnet of 22,000 computers (breaching section 3 of the Computer Misuse Act 1990?)
How protected against computer fraud are you?
Ticketing Fraud

• Biggest area of financial fraud associated with the Olympics
• Customers misdirected to fake websites
• $1.5 billion dollars worth of fraud as some black market tickets for prime events (e.g. Opening Ceremony at Beijing selling for $26,000)
WINNING NOTIFICATION

London 2012 Chairman Sebastian Coe told the International Olympic Committee that London would offer a unique opportunity for the Olympic Movement to connect with the youth of the world. In this light, we happily announce to you the draw (01) of the LONDON 2012 OLYMPICS LOTTERY PROMO online Sweepstakes International program held on 22nd of December, 2005. This lottery promo is sponsored by common wealth nations and corporate bodies to promote the games come 2012.

Your e-mail address attached to ticket number: 56475600545 188 with Serial number 5368/02 drew the lucky numbers: 18, 25, 29, 31, 43 (bonus ball 24), which subsequently won you the lottery in the 3rd category.

You have therefore been approved to claim a total sum of £57, 305 (fifty seven thousand, three hundred and five pounds sterlings) in cash credited to file LOP/TT/9023110308/03. It is yet to be unclaimed and you are getting the final NOTIFICATION as regards this.

All participants for the online version were selected randomly from World Wide Web sites through computer draw system and extracted from over 100,000 unions, associations, and corporate bodies that are listed online. This promotion takes place monthly.

Our agent will immediately commence the process to facilitate the release of your funds as soon as you contact her. For security reasons, you are advised to keep your winning information confidential till your claim is processed and your money remitted to you in whatever manner you deem fit to claim your prize. This is part of our precautionary measure to avoid double claiming and unwarranted abuse of this program. Please be warned.

To file for your claim, please contact our fiduciary agent:

Name: David Murphy

Official Email: london2012agent@yahoo.co.uk

Phone Number: +447024060229

Endeavor to email him your

1. Full names---------------------------------------------

2. Winning numbers-------------------------------------

3. Ticket number--------------------------------------

4. Amount won----------------------------------------

5. Email address---------------------------------------

6. Telephone and fax numbers--------------------------
How protected against identity theft are you?

Simon Bunce
Identity stolen and used to Access paedophile pornography...
... Lost his job and family in the year It took to clear his name
How protected against copyright piracy are you?
French illegal movie downloads almost equal box office sales

Written on August 8, 2008 — 11:02 am
Ernst-Jan Pfauth, editor in chief

The French are quite of fond of torrents, shows a study of the leading French anti-piracy association. Every day, 450,000 illegal downloads of recent films find their way to computers in France. This puts illegal pirate copies close to the level of legitimate box-office sales.

The study of the Association Against Audiovisual Piracy (ALPA) focuses on the 100 most sought-after foreign and French film downloads from November 2007 to June 2008. This made up for 90 percent of the total traffic. ALPA scrutinized Internet traffic originating from France to foreign networks permitting illegal peer-to-peer (P2P) downloading.

The director of ALPA Frederic Delacroix admitted he was surprised by the results: “We did not expect such numbers. We are facing a major phenomenon that can endanger the film industry and (other) audiovisual industries.”

To makes things worse, even the study was pirated. It wasn’t supposed to be published officially till September. How ironic is that?

Implementation of Law

COURTS
- Judges
- Barristers
- Lawyers

Crown Prosecution Service

POLICE
UK Police Forces

• There are 43 Regional Police Forces in England and Wales
  
  [http://www.police.uk/forces.htm](http://www.police.uk/forces.htm)

• There are also 8 non-geographic forces
  
  – British Transport Police
  – Central Motorway Policing Group
  – Civil Nuclear Constabulary (formerly UKAEA Constabulary)
  – Ministry of Defence Police
  – Port of Dover Police
  – Port of Liverpool Police
  – Serious Organised Crime Agency SOCA
  – Scottish Drug Enforcement Agency
State of Training

The European Information Society Group (EURIM) 2003

“We have around 140,000 police officers in the UK. Barely 1000 have been trained to handle digital evidence at the basic level and fewer than 250 of them are currently with Computer Crime Units or have higher-level forensic skills.”
Kent Constabulary

Sussex Constabulary

London Met.

UK Police Forces

High Tech Crime Training Unit

NPIA National Policing Improvement Agency
5 Problems

CYBERCRIME FORENSICS
Problem 1 – Volume of Work

Reported at National ACPO e-crime Conference June 2008 that some units have **backlogs of analysis** of between 1 and 2 years.
Problem 2 – Developing Technology

• Gordon Moore (Intel) 1965 – integrated circuit capacity will double every 18-24 months
• Computers get twice as fast with twice as much storage - for the same cost
• Doubling still happening 40 years later
• **Difficulty of analysing larger disks and more complex computer systems**
• How long does it take to image a terabyte disk drive? (let alone find a file in it)
Problem 3 – Not Invented Here Syndrome

• International e-crime crosses many borders and frontiers

• many different types of law enforcement structures and standards
Problem 4 – How do you measure e-crime?
Problem 5 – Acceptance of e-crime

- Investigated
  - SOCA (Serious Organised Crime Agency)
  - CEOP (Child Exploitation and Online Protection Centre)
  - PCeU (Police Central e-Crime Unit)

- Not Investigated
  - Regional Forces

- Cybercrime
  - Low-level computer crime
  - Serious crime, national/regional (e.g. paedophilia, pornography, blackmail, robbery, offences against the person)
  - Very serious crime International/national (e.g. money laundering, people trafficking, national security)
CYBERCRIME

LAW
Thank You