



Irish Future Internet Forum
TOWARDS A TRUSTWORTHY FUTURE INTERNET

INFORMATION
INTEGRITY
SOLUTIONS

Malcolm Crompton

Socioeconomics of Privacy
and the Future Internet

Kilkenny
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There's money in them thar clouds

BUT ...

- what happens to information about you and me?
- where is our data?
- who is the boss?
- who wins?

Cloud Computing



Proprietary identities
EMAIL ADDRESS
Behavioural Biometrics
OpenID
passwords
TwitterID
Physical Biometrics
Information Cards
Digital certificates
GoogleID
Directory Accounts

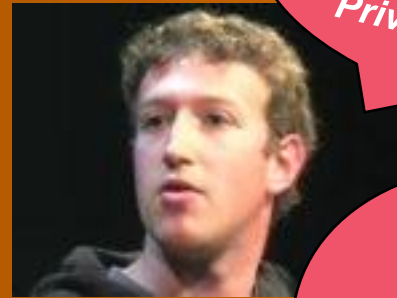
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“Privacy” – Outdated? Incompatible? A problem?

Google's Eric Schmidt:
“If you have something that
you don't want anyone to
know, maybe you shouldn't be
doing it in the first place”



Facebook's Mark
Zuckerberg:
“The Age of
Privacy is Over”



Sun Microsystems'
Scott McNealy:
“You have zero
privacy anyway..
get over it.”



Louis Freech former
Director FBI:
“the American people
must be willing to
give up a degree of
personal privacy in
exchange for safety
and security”

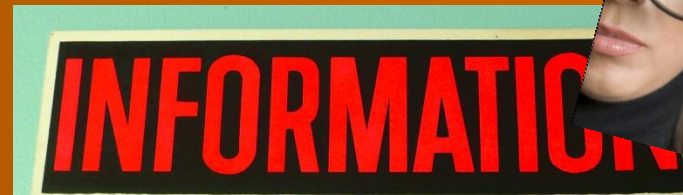




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In fact, is internet privacy dead & buried?

- The internet has outgrown privacy
- No economic drivers for internet privacy
- Much of the internet is “free”
 - No such thing as a free lunch
 - Must give access to ourselves in more & more detail
- AND MOSTLY WE LIKE IT!



Online shoppers unknowingly sell their souls

By placing an order via this Web site on the first day of the fourth month of the year 2010 Anno Domini, you agree to grant Us a non transferable option to claim, for now and for ever more, your immortal soul.

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But if that's a problem, let's hit back!

- Privacy law reform all around the world
 - Australia, NZ, India, Latin America, USA and EU
- More Data Protection/Privacy chiefs
- More choices (Notice and Consent)
- BUT:
 - *“ample evidence the “Notice and Consent” model of data protection regulation, which places a great burden on individuals to read and understand privacy notices, is not especially effective in practice, as shown by the overwhelming empirical evidence that individuals do not read – let alone respond to – Privacy Notices, especially if they are lengthy”*



www.huntonfiles.com/files/webupload/CIPL_European_Commission_Commentary_Jan2011.pdf

Tempting.

First, some facts ...



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Law making helps, but ...

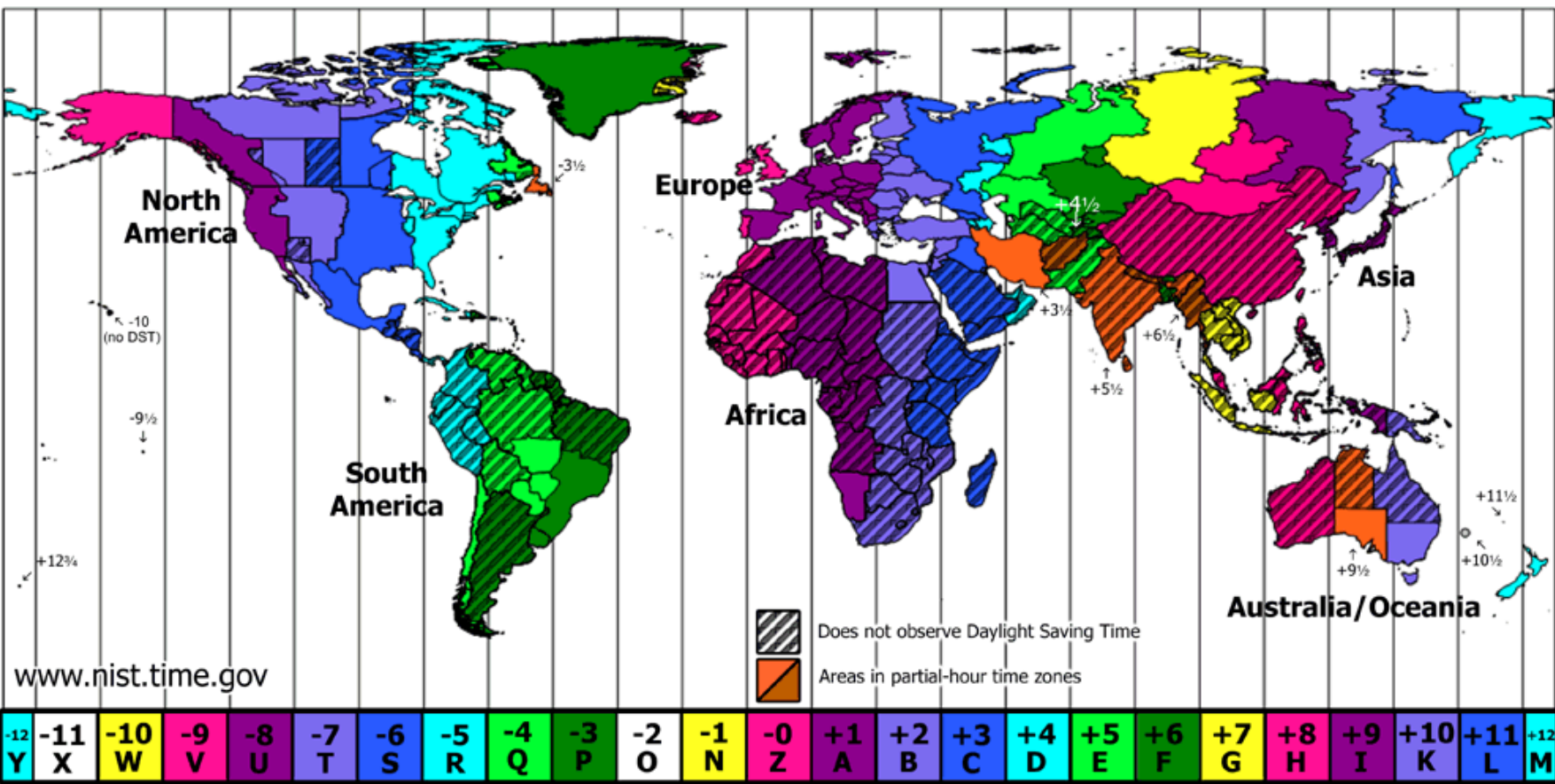
- Can't encompass all situations
- Tends to be reactive
- Requires enforcement !
- Must address multi-jurisdiction activity
- Must suit our ever-changing world

information + technology + world = challenge





Privacy: how can it keep up with the times?





**Asia-Pacific
Economic Cooperation**



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And where's it all happening ? APEC & India !

- 2009 GDP US\$31 740 310 200 000 (54% of world GDP)
- 44% of world trade
- growth strategy includes: innovative growth to create an economic environment that promotes innovation, use of ICT products and services, and emerging economic sectors
http://publications.apec.org/publication-detail.php?pub_id=1123
- a goal for this year is to launch a new agenda to address issues such as innovation, data privacy and cyber-security
http://www.apec.org/en/Press/Features/2011/0428_nextgen_trade.aspx
- APEC Cross-border Privacy Enforcement Arrangement (CPEA)



India Outsourcing
Market



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Asia & the digital economy

- The Philippines call centres
 - 2011: \$12-13billion revenue
 - 2020: \$100billion revenue, 20% of global market share
- Asia-Pacific software revenue
 - 2009-2014: compound annual growth rate of 11.5% (c.f. Western Europe: CAGR of 2.7%)
- India share of global outsourcing market
 - 2010: 55% (c.f. 2009: 51%)



Future Internet

Privacy

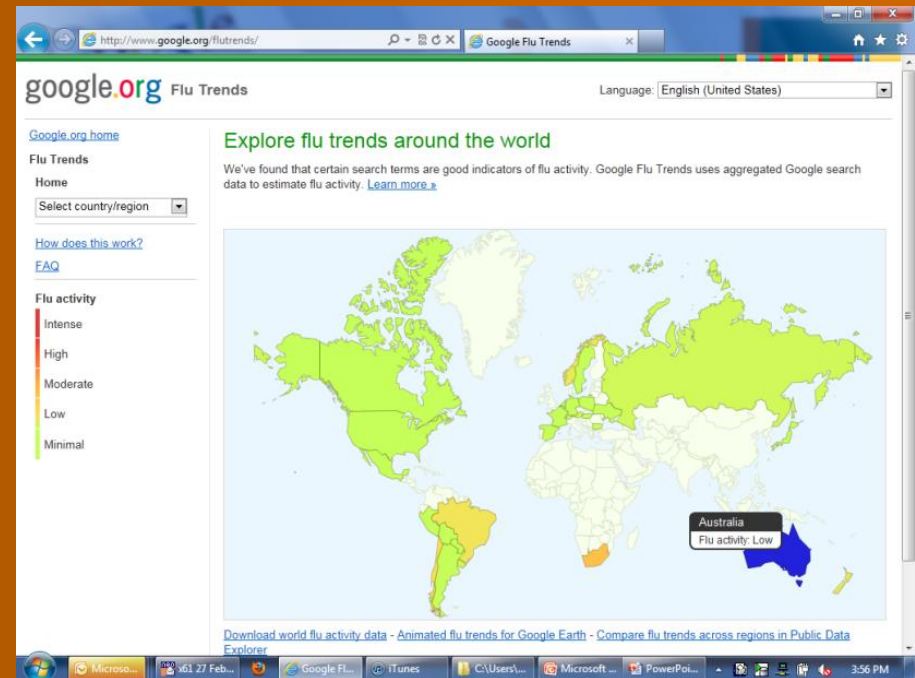
Socioeconomics



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Socioeconomics of internet privacy: the good

- Big Data
 - free, made-just-for-you services
 - Innovation
 - Google Flu Trends
- Connection with our own networks
 - User generated content
- Let the internet be free, and we all win
 - personalisation (search, geolocation, foursquare, google maps, etc)



foursquare



... and the not so good

- Costs of privacy breaches
 - USA: 533 686 527 records in 2 503 breaches made public since 2005
 - Sony breach: US\$20 per person = >US\$2 billion?
 - Honda Canada breach exposed data on 280,000 individuals: “It appears that even if you didn’t create an account on their web sites, if they mailed you about upcoming specials in 2009, your data were involved”
- Identity theft
 - UK: each year costs >£2.7billion, affects >1.8million people
- The Filter Bubble; Creepy; Lack of trust; ...

Can privacy and
socioeconomic
gain co-exist?

What's being
done?



Accountability and Privacy-By-Design Go together Like Innovation and Productivity

www.informationpolicycentre.com http://www.privacybydesign.ca/content/uploads/2010/03/PbD_Abrams_Nov09.pdf

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The emerging framework

- Tools we can build in to our work
 - Layered Defence
- How to build in the tools
 - Privacy by Design
- How to know the tools are being applied year in, year out
 - The Accountability Project





“Layered Defence”

▶ **Control** ▶ Trust ▶ **Risk** ▶ **Accountability**

Business
as usual

Law

Technology

Governance

Safety Net

~~Privacy?~~



The Future
Internet



Privacy by Design: The 7 Foundational Principles

- 1. Proactive not Reactive;
Preventative not Remedial*
- 2. Privacy as the Default*
- 3. Privacy Embedded into Design*
- 4. Full Functionality:
Positive-Sum, not Zero-Sum*
- 5. End-to-End Lifecycle Protection*
- 6. Visibility and Transparency*
- 7. Respect for User Privacy*



Privacy by Design

The 7 Foundational Principles

Ann Cavoukian, Ph.D.
Information & Privacy Commissioner
Ontario, Canada

Privacy by Design is a concept that I developed back in the 90's, to address the ever-growing and systemic effects of Information and Communication Technologies, and of large-scale networked data systems.

Privacy by Design asserts that the future of privacy cannot be assured solely by compliance with regulatory frameworks; rather, privacy assurance must ideally become an organization's default mode of operation.

Initially, deploying Privacy-Enhancing Technologies (PETs) was seen as the solution. Today, we understand that a more substantial approach is required – extending the use of PETs to taking a positive-sum, not a zero-sum, approach.

Privacy by Design now extends to a "Triology" of encompassing applications: 1) IT systems; 2) accountable business practices; and 3) physical design and infrastructure.

Principles of *Privacy by Design* may be applied to all types of personal information, but should be applied with special vigour to sensitive data such as medical information and financial data. The strength of privacy protection requirements tend to be commensurate with the sensitivity of the data.

The objectives of *Privacy by Design* – ensuring privacy and personal control over one's information and, for organizations, gaining a sustainable competitive advantage – may be accomplished by practicing the following principles:

1. Proactive not Reactive; Preventative not Remedial

The *Privacy by Design* (PbD) approach is characterized by proactive rather than reactive measures. It anticipates and prevents privacy invasive events *before* they happen. PbD does not wait for privacy risks to materialize, nor does it offer remedies for resolving privacy infractions once they have occurred – it aims to *prevent* them from occurring. In short, *Privacy by Design* comes before-the-fact, not after.

The Accountability Project

- “Accountability” first included in 1980 OECD Guideline on the Protection of Privacy & Transborder Flows of Personal Data
- Begun with Galway project
- Led by Centre for Information Policy Leadership (CIPL)
- Framework for safe, global data flows

Five essential elements of accountability:

- (1) Organisation commitment to accountability and adoption of internal policies consistent with external criteria;
- (2) Mechanisms to put privacy policies into effect, including tools, training and education;
- (3) Systems for internal, ongoing oversight and assurance reviews and external verification;
- (4) Transparency and mechanisms for individual participation; and
- (5) Means for remediation and external enforcement.



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The Accountability Project

- Galway, Ireland, 2009 – Phase I
 - Billy Hawkes, Data Protection Commissioner, Ireland
 - implementation of accountability – how organisations demonstrate accountability, & how regulators measure it
- Paris, France, 2010 – Phase II
 - objectives of accountability – common fundamentals to be demonstrated & measured
- Madrid, Spain, 2011 – Phase III
 - validation of accountability – effective, affordable validation tools for accountability-based governance

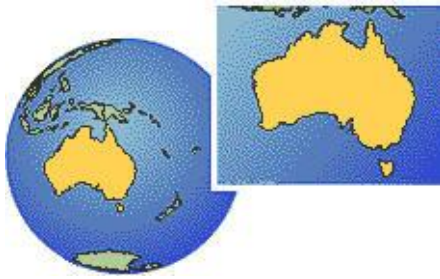
Case Study – ID management Australia

- The old way: Digital God
 - Brings you into digital existence
 - Takes you out of digital existence
 - Watches every move in between ...
- A better way – relevant Verified Claims
 - User centric; user controlled
eg Avoco CloudCard Selector
 - Rely on ID claims last
 - Pilot under way right now

- Current Issues and Solutions in Identity Management

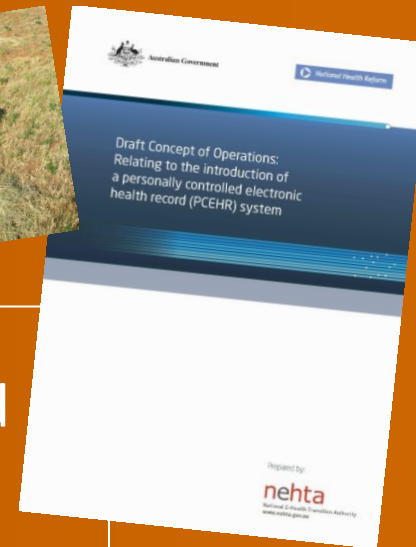
International Conference of Data Protection & Privacy
Commissioners, Jerusalem 2010





Case Study – eHealth Australia

- Personally Controlled Electronic Health Record (PCeHR)
 - AU\$467million project
 - Secure + Individual Health Identifier
 - stored in a network
 - accessed wherever I am



“The overall economic benefit from increased productivity and reduced adverse events that would be achieved with a national individual electronic health record in Australia has been estimated to be between \$6.7 billion and \$7.9 billion in 2008-09 dollars over 10 years.”

National Hospitals & Health Reform Commission 2008

Future Internet 2020



We can see glimpses

- More Cloud; More multi-jurisdictional; More complex supply chains
 - Global Access Partners – Cloud Computing Taskforce Report
- Individuals expect defaults more favourable to them
 - Under control vs under my control
 - Automation; agents; privacy by default
- Outcomes based privacy law
 - Built around Pbd & enforceable Accountability





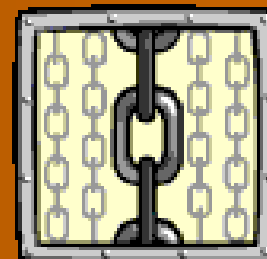
AND it's becoming a leader level issue

“The effective protection of personal data and individual privacy on the Internet is essential to earn users’ trust. It is a matter for all stakeholders: the users who need to be better aware of their responsibility when placing personal data on the Internet, the service providers who store and process this data, and governments and regulators who must ensure the effectiveness of this protection. We encourage the development of common approaches taking into account national legal frameworks, based on fundamental rights and that protect personal data, whilst allowing the legal transfer of data.”

Renewed commitment for freedom and democracy
G8 Declaration, G8 Summit of Deauville, 26-27 May 2011

Hence possible areas for research

- Demonstrable Supply Chain resilience
 - Fail over for the individual
 - Metrics for trust & privacy
 - Automated accountability
 - One stop shop resolution
- User centred cloud services
 - When does cloud processing come to your data
vs when does your data go to the cloud for processing
- User centred verified claims
 - Beyond 'ID' management
 - Automation; agents; privacy by default





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An opportunity for Ireland

- Ireland as a leader
 - buying (eg embed accountability in contracts)
 - selling (eg Privacy by Design in cloud computing products)
 - assuring (eg be a standards leader)
 - research



Ireland as a
superhighway
safehouse



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Malcolm Crompton

Managing Director

53 Balfour Street

Chippendale NSW 2008

Australia

+61 407 014 450

MCrompton@iispartners.com

www.iispartners.com