

Re-thinking Identity & Privacy

It's all about Control

Australian ID & Access Management Summit
12 March 2008, Sydney

Stephen Wilson
Lockstep Technologies Pty Ltd



Identity Crisis!

The New York Times
nytimes.com

November 22, 2007

Data Leak in Britain Affects 25 Million

By [ERIC PFANNER](#)

LONDON, Nov. 21 — The British government struggled Wednesday to explain its loss of computer disks containing detailed personal information on 25 million Britons, including an unknown number of bank account identifiers, in what analysts described as potentially the most significant privacy breach of the digital era.


BBC NEWS

Discs 'worth £1.5bn' to criminals

Two missing computer discs containing the personal details of 25 million people could be worth up to £1.5bn to criminals, say the Lib Dems.

Acting leader Vincent Cable told MPs an "enormous amount" was still at stake, after discs containing the entire child benefit database got lost in transit.

Our IDs are under attack!



Can I start with your account number please?

Sure, 123456

Thanks for that.

Now ...
 What's your full name?
 Your date of birth?
 Your billing address?
 Additional card holder?
 Mother's maiden name?
 Your credit limit?
 You last used your card?
 What's the CCV number?

Cost of data breach at TJX soars to \$256m The Boston Globe

Suits, computer fix add to expenses

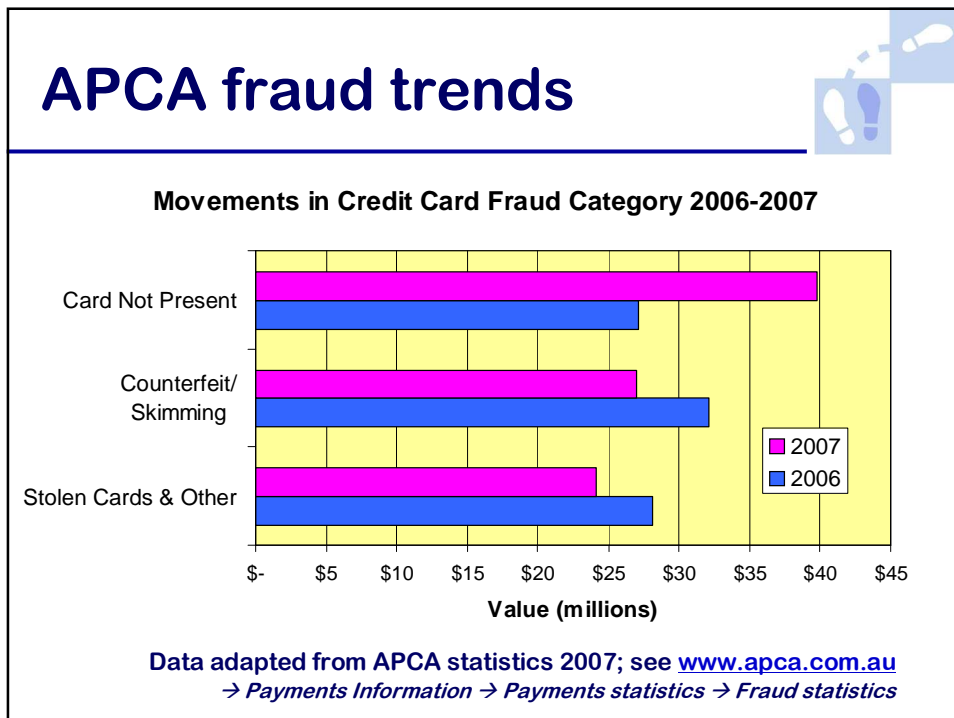
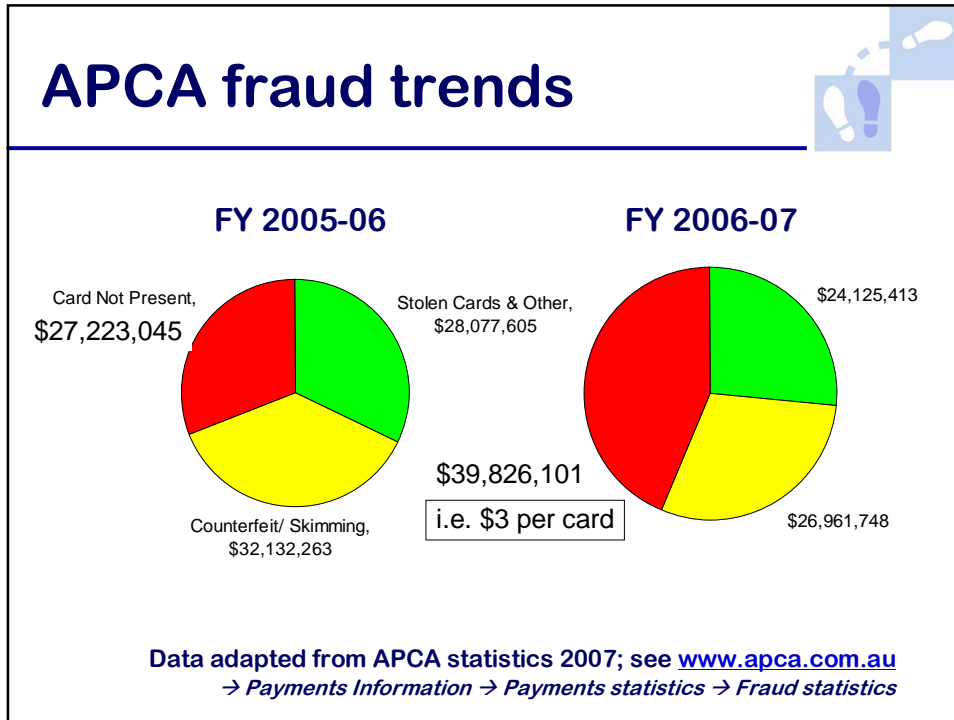
By Ross Kerber, Globe Staff | August 15, 2007

TJX Cos. said its costs from the largest computer data breach in corporate history, in which thieves stole more than 45 million customer credit and debit card numbers, have ballooned to \$256 million.

APCA fraud stats

Category	FY2006		FY2007		Change
	No.	Value	No.	Value	
Lost / Stolen	57,983	\$ 14,499,673	58,212	\$ 16,005,820	10 %
Never Received	11,746	\$ 4,666,884	9,318	\$ 2,992,577	-36 %
Fraudulent Application	11,216	\$ 7,769,907	7,365	\$ 3,569,599	-54 %
Counterfeit / Skimming	55,422	\$ 32,132,263	44,651	\$ 26,961,748	-16 %
Card Not Present	97,279	\$ 27,223,045	150,787	\$ 39,826,101	46 %
Other	2,625	\$ 1,318,864	8,889	\$ 1,557,417	18 %
Total	236,271	\$ 87,432,913	279,222	\$ 90,913,262	4 %

Reference: www.apca.com.au
 → Payments Information → Payments statistics → Fraud statistics



Privacy – a tricky topic



University of Pennsylvania
Law Review
FOUNDED 1852

Formerly
American Law Register

VOL. 154 JANUARY 2006 No. 3

ARTICLES

A TAXONOMY OF PRIVACY

DANIEL J. SOLOVE[†]

Privacy is a concept in disarray. Nobody can articulate what it means. As one commentator has observed, privacy suffers from "an embarrassment of meanings." Privacy is far too vague a concept to guide adjudication and

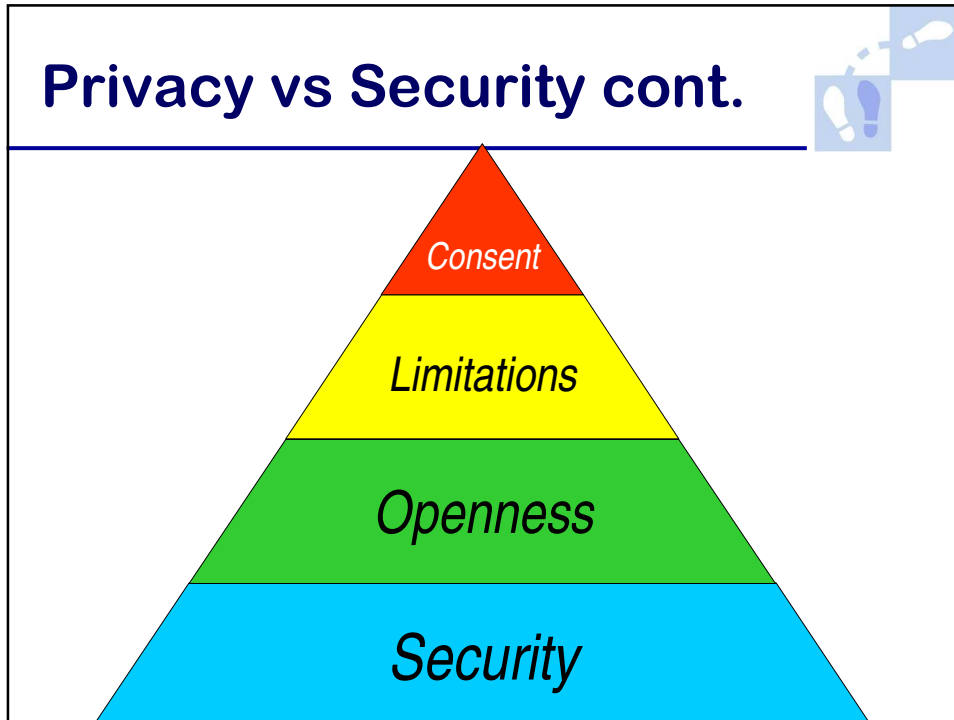
[†] Associate Professor, George Washington University Law School, J.D. Yale. A project such as this—one that attempts a taxonomy of the sprawling and complex concept of privacy—cannot be created by one individual alone. I owe an enormous debt of gratitude to many people who provided helpful comments on the manuscript or parts thereof at various stages in its development: Anita Allen, Howard Erichson, Jim Freeman, Robert Gellman, Rachel Godsil, Stan Keras, Orrin Kerr, Raymond Ku, Clay Lipp, Jon Michaels, Lucy Mitchell, Robert Post, Neil Richards, Michael Rysinger, Peter Sand, Heidi Schooner, Paul Schwartz, Lior Strahilevitz, Charles Sullivan, Michael Sullivan, Peter Swire, Robert Tuttle, Sarah Wal-

“Privacy is a concept in disarray. Nobody can articulate what it means. As one commentator has observed, privacy suffers from ‘an embarrassment of meanings’”

Privacy vs Security



- Privacy is framed as a human right
- Supreme Court Justice Louis Brandeis:
“The makers of our Constitution conferred ... the right to be let alone – the most comprehensive of rights and the right most valued” (1928)
- Security is necessary but not sufficient for privacy



Privacy OR security?

Sadly, privacy has come to be seen as a compromise.
But there really shouldn't be any debate

<u><i>Those who cede privacy</i></u>	<u><i>Those who fight for it</i></u>
"Zero sum game"¹	The Laws of Identity
Laissez faire attitudes²	Credentica
"Nothing to hide"³	Lockstep <i>Stepwise</i>
Technology naivety⁴	Identity plurality

1. Ed Giorgio, Office of the Director of National Intelligence, New Yorker, 21 Jan 2008
2. "You have no privacy, get over it" Scott McNealy (though out of context)
3. See *'I've Got Nothing to Hide' and Other Misunderstandings of Privacy* Solove 2007
4. See OpenID phishing attack explained at www.identityblog.com/?p=659

Cloud cuckoo land



Privacy is not a technology issue

Lou Gerstner, Chairperson IBM, 2000

This sort of simplistic slogan doesn't help anyone. Like all safety issues, protecting privacy involves a complex mix of technology, policy, legislation and education. To treat privacy as an education issue alone is like teaching road safety to adolescents but not worrying about seatbelts and speed limits.

Identity



- “Identity 2.0”
- “User Centric” ID
- OpenID
- Laws of Identity
- Info Cards / i-Cards
- Higgins r-Cards

“Federated identity”



“Allows users to link identity information between accounts without centrally storing personal information”

“... users can be authenticated by one company or web site and be recognized ... in other locations without having to re-authenticate, or sign on with a separate username and password”

www.projectliberty.org

Issues with federation



- **False metaphor of the drivers licence at the video stores**
 - Boot strapping vs. live federation
- **How difficult is de-federation?**
 - What if schemes' rules are different?
- **Is it always useful to split identity and authorisation?**
 - Or do we have *rea*/multiple identities?

See also <http://www.lockstep.com.au/library/babysteps>
http://www.lockstep.com.au/file?node_id=5827

Safety In Numbers

MasterCard
CCN 4509 1234 5678 9012
Acme Bank

Issue Name
5412 3456 7890 1234
S MORRIS

Lockstep Technologies' *Stepwise* encapsulates personal IDs and keeps them safe inside a smart device like a smartcard. Each Stepwise capsule proves two vital things: (1) who issued or vouches for the ID, and (2) that the ID has been safeguarded in a secure device.

See www.lockstep.com.au/technologies/related_papers and www.lockstep.com.au/technologies/technology_notes

Safety In Numbers

MasterCard
CCN 4509 1234 5678 9012
Acme Bank

MasterCard
A/C No. 123456
Acme Bank

MasterCard
Shareholder ID ABC123
Company

Access Card
CRN 43590865784
Agency 1

Access Card
CRN 3456787345
Agency 2

Access Card
Allergy = Penicillin
Dr Smith

Access Card
Drug Trial ID = xyz
Acme Drug Inc

Privacy Scheme
Profile = (Us. @#%)*#%\$
OSN 1

Privacy Scheme
Profile = Superman
OSN 2

Issue Name
5412 3456 7890 1234
S MORRIS

Different devices can seamlessly hold and control multiple IDs.

Safety In Numbers



Stepwise assures Relying Parties that an identifier or personal data:

- has not been replayed
- was under the control of its owner
- has been safely held in a smart device.

Stepwise restores Cardholders' control:

- reveal personal data on a need to know basis
- prevent linking of IDs across transactions.

Stepwise could eliminate CNP fraud on the web.

Discussion



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LOCKSTEP

