

Data Privacy for data in transit and The Semantic Web

Mike Davies



Where it all comes together:

Data privacy at rest vs in transit

- + Personal data at rest
 - Stored within a company's network

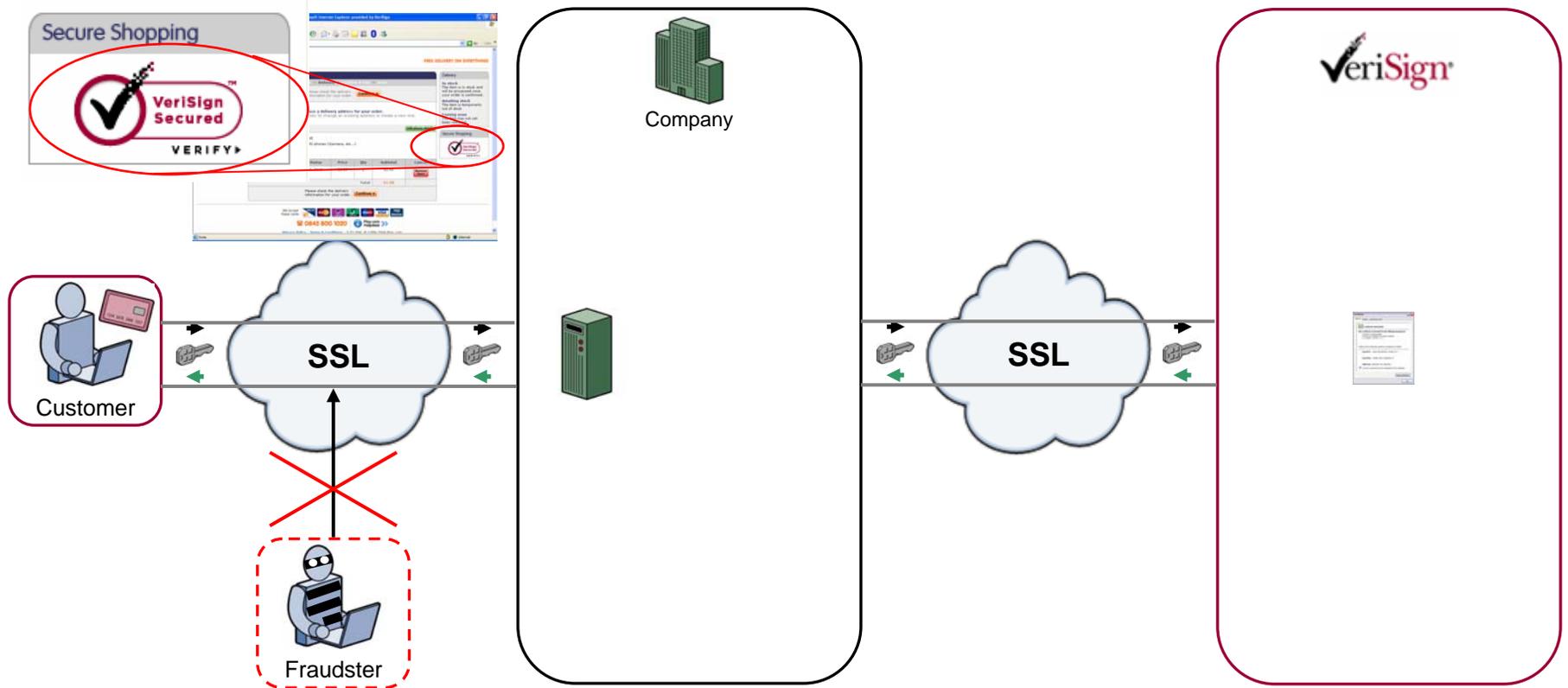
- + Personal data in transit
 - Moved either within a public or private network

- + Industry and regulations has focused on the former
 - Rather than the latter

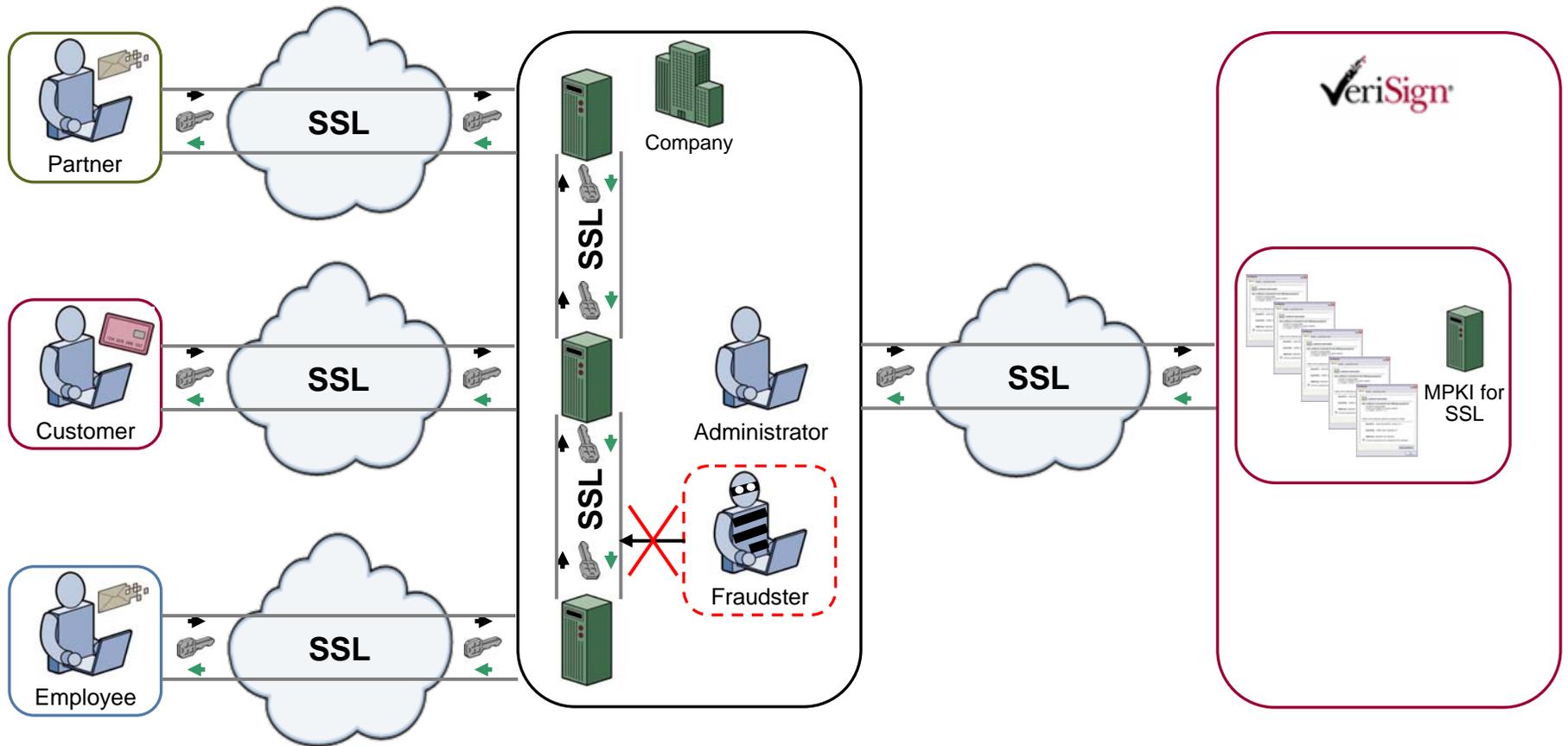
The Semantic Web

- + The Semantic web will make it easier to get data on any subject from the internet
- + Data privacy will be impacted as the fog of information becomes clearer
- + Fraudsters will use these tools to steal identities by looking at multiple sources ("Phoraging")
- + Where security needs to be applied to protect privacy

SSL – SSL Certificates used externally

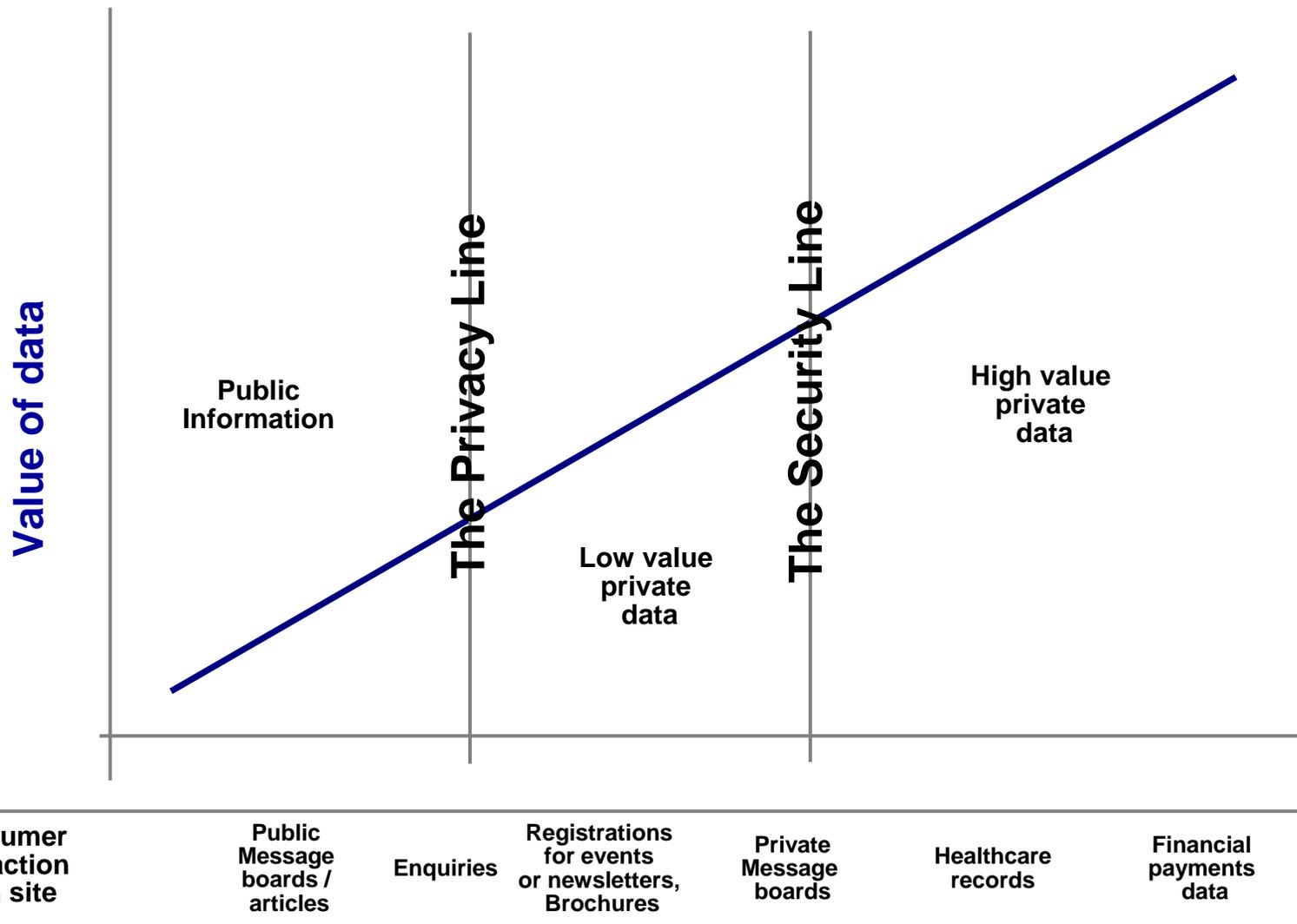


SSL – SSL Certificates used Internally



How much value to a fraudster is there in data?

*



So who says where the security line should be?

- + Privacy line position is very clear
 - Name and Address (email or physical) is personal data

- + Position of Security line depends on following
 - 1) Regional or country Data protection laws
 - i.e. UK data protection act of 1998
 - 2) Best practice in standards
 - i.e. BS 7799, ISO 27001
 - 3) Potential or perceived threat
 - Currently “Potential threat vs value of data vs cost of solution”
 - Should be “Potential brand or equity damage vs cost of solution”

1) Regional or country based Data Protection laws

- + Current laws in Europe all based on EU Privacy Directive
 - and then interpreted by the member states

- + In UK became “Data Protection Act of 1998”
 - Over 8 years old

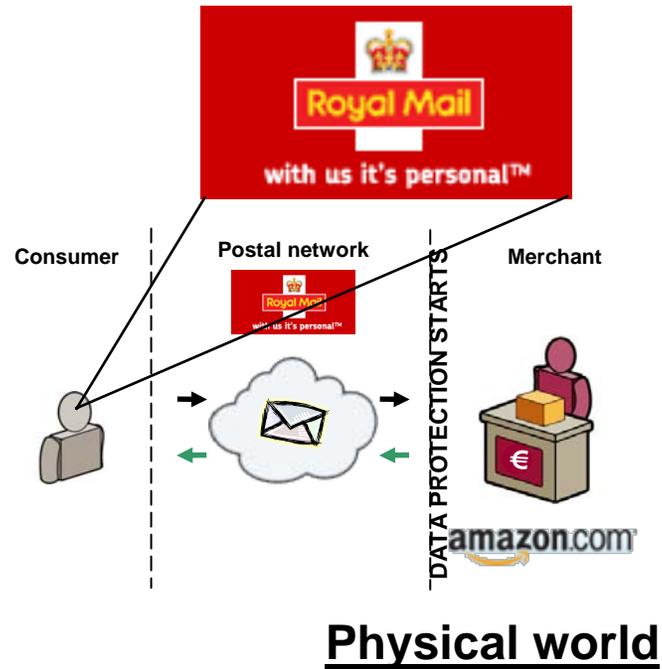
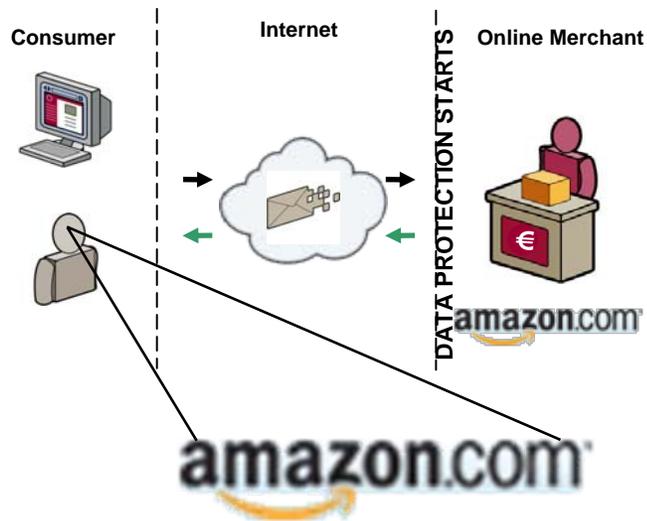
- + The “dummies guide to DP law” says...
 - “Personal Data should be protected to an appropriate level of security dependant on the potential for and implications of misuse”

- + In 1998 “the Security Line” was drawn
 - the internet has changed a little since then!

1) EU Law based on "Physical world" (Postal Model)

*

Online world



1) Regional or country based Data Protection laws

- + Decisions were made on the “postal model”
 - but one major difference

- + Consumer “feels” like they are “in the store”
 - Not reliant on a trusted third party to deliver (i.e. Royal Mail)
 - Even use the term “domain”

- + At best creates a “duty of care” for Site Owner
 - To ensure that customers are safe

- + At least implies that the Site Owner should be worried
 - Brand and equity issues if there is a compromise

2) Best Practice in standards

- + British Standards BS7799
 - Dictates best practice for online security
- + Standards only, no legal requirement
 - However very influential in EMEA

2) Best Practice in standards

- + EU Safe Harbour Standard
 - EU initiative to ensure security when personal data leaves EU
- + “Packets” of data could travel outside of EU
 - On their route over the internet within EU
- + EU Safe Harbour states
 - “Organizations **creating**, maintaining, using or disseminating personal information must take **reasonable precautions** to protect it from loss, **misuse** and unauthorized access, disclosure, alteration and destruction”
- + This could ALONE give us enough reason to say that best practice states that you should encrypt ANY personal data

3) Potential or perceived threat

- + **Perceived threat to low value personal data is changing**
 - Cost of processing power very different to 1998
 - Potential to build illegal “database” of personal data real
 - Use geo location software to correlate information?

- + **“Packet sniffing”**
 - Originally used for credit card data
 - Searches all data going into a site for known characteristics
 - No reason why it can’t be used for other data sets

- + **Looking for real life examples but could be used for**
 - Corporate espionage Spammers
 - Fraud Press
 - Blackmail Burglary

3) Potential or perceived threat - Privacy Policy

Thomson.co.uk - Great Value Holidays from the UK's no.1 Tour Operator - Microsoft Internet Explorer provided by VeriSign

http://www.thomson.co.uk - Thomson.co.uk - Great Value Holidays from the UK's no.1 Tour Operato - Microsoft ...

(3) If you would like a list of our group companies or brands, please send us your request.

Our registered address is at TUI UK Limited, Wigmore House, Wigmore Place, Wigmore Lane, Luton LU2 9TN. Please address your correspondence to the Group Company Secretary.

Foreign Controls

Outside the European Economic Area (EEA), note that controls on data protection in such countries may not be as strong as the legal requirements in this country.

USE OF TOOLS/"COOKIES" AND LINKS TO OTHER WEBSITES

If our contact and dealing with you is via our website(s), we may use "cookies". A cookie is a small piece of data sent from our web server to your computer and stored in a text file on your hard drive. Cookies allow us to identify your computer but not you personally. You can set your web browser to refuse cookies. However, you may not be able to enjoy all the facilities or book via our website if you do so.

We collect information relating to customer trends and patterns and use cookies and software tools to measure site usage and related information. If you are making a purchase, we may also use cookies to keep track of the transaction from one web page to another.

Our website(s) may contain links to other sites not controlled by us. (1) These sites may send you cookies and collect data and personal information. We are not responsible for the actions, content or the privacy policies of those websites to which our website(s) may link. (2) These sites may not be members of ABTA and, if not, ABTA protection will not be available. It is your responsibility to check the status of these sites.

MONITORING

To ensure that we carry out your instructions accurately, to help improve our service and in the interest of security, we may monitor and/or record: (1) your telephone calls; (2) customer activities using CCTV recording equipment in and around our premises; and (3) customer transactions and activities on our website. All recordings are and shall remain our sole property.

SECURITY STATEMENT

We have taken all reasonable steps to have in place appropriate security measures to protect your information.

CHANGES TO THIS POLICY

Any changes to this Policy will be either posted on our website, brochure and/or made available on request. We will strive to ensure our practices comply with the most current available version of this Policy.

This Privacy Policy was last updated: September 2005

Ask us a Question / Contact us | Brochure code search | Shop finder | Register for offers

RSS | Help | Thomson Latest | About Thomson | Sitemap | Destinations

VeriSign Secured | ABTA | ATOL

The air holidays and flights shown on this web-site are ATOL Protected by the Civil Aviation Authority. Should you purchase a flight departing from Boumemouth, Coventry or Doncaster, such sale will not be covered by the ATOL protection, unless specifically referred to within the booking process. Our ATOL number is ATOL 2624. ATOL Protection extends primarily to customers who book and pay in the United Kingdom. Click on the ATOL logo if you want to know more.

© 2006 TUI UK | Terms & Conditions | Privacy & Cookies Policy

start | 2 Microsof... | Microsoft P... | Thomson.c... | http://www... | 15:20

3) Example Threat 1 – Burglary Database

To: enquiries@Honeymoonholidays.co.uk

From: mikedavies@heatmail.co.uk

Subject: Brochure request

Please help!!!!

We are looking for a holiday destination for the 1st October 2006 to 15th October 2006. Can you suggest anywhere?

We would also really like to see a brochure, or worse a .pdf we can print out here

If .pdf please email to:
mikedavies@heatmail.co.uk

If Physical copy please send to
111 Main Street, Chiswick, Lond

Alternatively if you have a representative you can get me on 0208 511 7856.

Thanks!

Mike Davies



holiday

1st October to 15th October 2006

111 Main Street, Chiswick, London, W4 1AA, UK

3) Example Threat 1 – Similar example in US

Georgia Sex Offenders.com
Georgia Sex Offenders Maps and Alerts

Select city: Baxley

[Sex Offender Alerts](#) - [About](#)

Offenders shown on the map:

- [Cordero, Robert](#)
6348 Golden Isles West, Baxley 31513
- [Dasher, Alexander Jr](#)
2756 Old Surrency Road, Baxley 31513
- [Garcia, Moses](#)
33 Oak View Drive, Baxley 31513
- [Lasseter, Guy Dexter](#)
9355 County Farm Road, Baxley 31513
- [Lord, Jimmy Ray](#)
196 Go Kart Rd, Baxley 31513
- [Roberson, Larry B](#)
528 Quail Hollow Road, Baxley 31513

Offenders below not shown on map:

- [Akins, Robert W](#)
8806 Blackshear Hwy, Baxley 31513
- [Carter, William Alton](#)
2684 Buck Williams Rd, Baxley 31513

Lord, Jimmy Ray
196 Go Kart Rd, Baxley 31513

Crime: Child Molestation

Link to [more info and a larger picture](#)

Map data ©2006 Tele Atlas - [Terms of Use](#)

3) Example threat 2 – Spammers

To: enquiries@Honeymoonholidays.co.uk
From: mikedavies@heatmail.co.uk
Subject: Brochure request

Please help!!!!

We are looking for a holiday destination for 2006. Can you suggest anywhere between 06 to 15th October

We would also receive To : mikedavies@heatmail.co.uk
From : ViagraSales@spammer.com

If .pdf please email Subject: 1/2 price Viagra
mikedavies@heatmail.co.uk

If Physical copy please
111 Main Street, Chiswick

Alternatively if you have

Thanks!

Mike Davies



mikedavies@heatmail.co.uk

honeymoon

Mike

3) Example threat 3 – Government

The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying <http://www.newscientist.com/article/mg19025556.200?DCMP=NLC-nlettersref=mg19025556.200>. The page title is "Pentagon sets its sights on social networking websites - tech - 09 June 2006 - New Scientist - Microsoft Internet Explorer prov".

The New Scientist.com website header includes a search bar, navigation links (HOME, NEWS, EXPLORE BY SUBJECT, LAST WORD, SUBSCRIBE, SEARCH, ARCHIVE, RSS, JOBS), and a "Full Access" badge. The main article is titled "Pentagon sets its sights on social networking websites" by Paul Marks, dated 09 June 2006. The article text reads: "I AM continually shocked and appalled at the details people voluntarily post online about themselves." So says Jon Callas, chief security officer at PGP, a Silicon Valley-based maker of encryption software. He is far from alone in noticing that fast-growing social networking websites such as MySpace and Friendster are a snooper's dream. New Scientist has discovered that Pentagon's National Security Agency, which specialises in eavesdropping and code-breaking, is funding research into the mass harvesting of the information that people post about themselves on social networks. And it could harness advances in internet technology - specifically the forthcoming "semantic web" championed by the web standards organisation W3C - to combine data from social networking websites with details such as banking, retail and property records, allowing the NSA to build extensive, all-embracing surveillance profiles of individuals.

On the right side of the page, there is a "SUBSCRIBER LOGIN" section with fields for "username:" and "password:", a "Log in" button, and a list of links: "Forgotten your password?", "Subscriber? Register now!", "Subscribe now", "Institutional Subscribers", and "Athens login". Below this is a "Tools" section with buttons for "digg this", "reddit SUBMIT", "ADD MY YAHOO!", "NEWS VINE", and "DEL.ICIO.US". A "Related Articles" section lists "Software could add meaning to 'wiki' links" (07 June 2006) and "Interview: Six clicks of separation" (26 April 2006). A large blue graphic on the right contains the text "Click here to find out more".

The Windows taskbar at the bottom shows the Start button, several application icons, and the system tray with the time 15:13.

3) Example threat 4 – Entrepreneurs

Zillow - Real Estate Search Results - Microsoft Internet Explorer provided by VeriSign

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

Address <http://www.zillow.com/search/Search.htm?addrstrthood=2103creedenway&citystatezip=mountainview+california&mode=search> Go Links

Zillow.com Beta
Your Edge in Real Estate

Welcome! Please [Sign In](#). New to Zillow? Register [here](#).

Home Map & Search How to Use Zillow Financing My Zillow

Value Any Home Address OR Street OR Neighborhood City, State OR ZIP
2103 creeden way mountain view california GO Advanced Search

Showing [2103 Creeden Way, Mountain View, CA 94040](#)

Show all homes Show search results Show heat map

Zestimate™: \$1,045,890
2103 Creeden Way
Mountain View, CA 94040
(Approximate map location)
3BR / 2BA / 1,715 sq ft
" [See home details](#) "
" [See bird's eye map](#) "
" [View comparable homes](#) "

#	Address	Home Type	BR	BA	Zestimate™	Home (sq ft)	Lot (sq ft)	Year Built	Date Sold
1	2103 Creeden Way	Single	3	2	\$1,045,890	1,715	7,840	1952	05/03/1995

Done

start 2 Microsoft Office... Microsoft PowerPoi... Zillow - Real Estate ... 15:17

See homes for sale

On **ZIP REALTY**

LoanWeb
Find Today's Low Rates

Loan Type: Refinance

Start Here!

Get Multiple Loan Quotes in 60 Seconds!

Shop For A Loan

- Refinance Today
- Lower Your Payments
- Pav Off Your Debt

Some questions for the ICO

- + Do you feel that companies should protect consumer data in transit?

- + If so, do you think the Data Protection law gives you adequate powers to enforce protecting data in transit?

Data Privacy for data in transit and The Semantic Web

Mike Davies



Where it all comes together: