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The Data is Within B*reach*

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What are security breaches, I hear you say…?

"… Any incident that results in unauthorised access of data, applications or computer networks, or where data has gone outside of it's intended perimeter…"

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Say what…?

External Breaches

External - Data has been intentionally viewed or stolen from outside of its authorised or intended zone.

Who cause external breaches?

- **Hackers** – Individuals or groups that break codes and passwords to gain unauthorised access to systems and data
- **State sponsored actors** – Trying to gain access to details such as email addresses and phone numbers

An Example – TalkTalk

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- First known about October 2015, potentially discovered earlier
- Partner company Carphone Warehouse also hacked in August 2015

How was the data stolen?

- Exposing flaws in the Company's website through poor design

The consequences…

- Six arrests, all under the age of 21
- Cost of £60 Million, loss of 101,000 Customers

The Register

More TalkTalking…

And for the 157,000 Customers who had their details stolen…

- Personal details, Bank and Credit details in the hands of unknown criminals who will use the details for gain
- Customers contacted by conmen claiming to be from TalkTalk trying to gain control of a computer to install malicious software

Flashpoint

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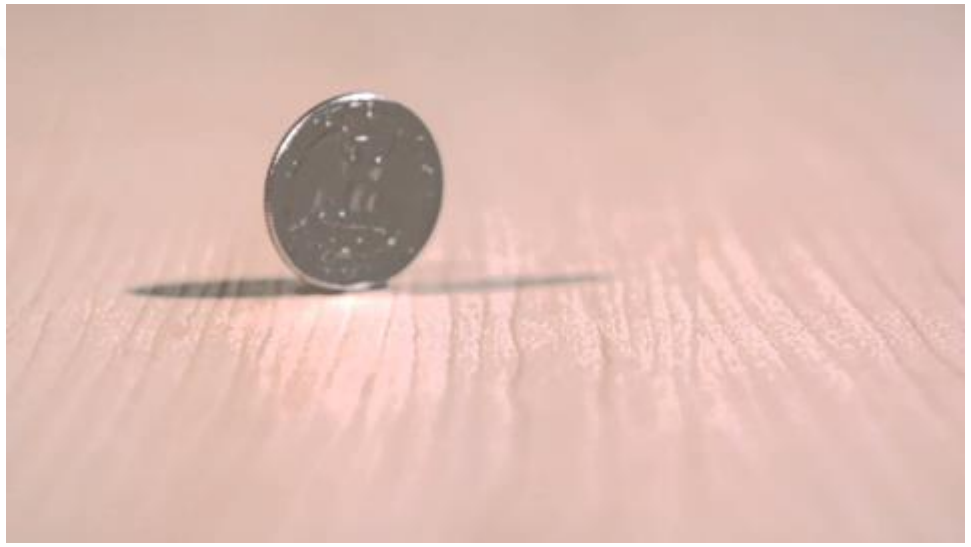
Most breaches we hear about on the news are external attacks from Hackers

However…



There is a flip side to breaches…

Internal Breaches

Any form of data that has been accessed without proper authorisation, either maliciously or by accident

HM Government Statistics

- **88%** of businesses had a breach within a 12 month period
  - **90%** of large organisations
  - **74%** of SMEs
- Staff related breaches
  - **75%** of large organisations, up from 58%
  - **31%** of SMEs, up from 22%
- **50%** of breaches were accidental breaches
- **50%** were malicious breaches

HM Government – 2015 Information Security Breaches Survey

Costs Of A Breach

£1.46m - £3.14m is the average cost to a large organisation

£75k - £311k is the average cost to a small business

HM Government – 2015 Information Security Breaches Survey

True costs however can not be calculated

- Company reputation
- Loss of customers
- Cost of data loss
- Business focus changes

The intangibles

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Can an SME allow for any of these to happen?

The damage has a greater effect

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Why do Malicious breaches occur?

MONEY – JOB DISSATISFACTION

- Moving to a competitor, taking client details with them
- Intellectual Property : Products or technical documents
- Financially Compromised : Blackmail
- Economic concerns

Why do Malicious breaches occur?

PRINCIPLES

- Beliefs that an Organisation is doing something wrong
- Edward Snowden – National Security Agency exposure to Phone and Internet spying
- Wiki-Leaks – Julian Assange. Exposing data of breaches publicly

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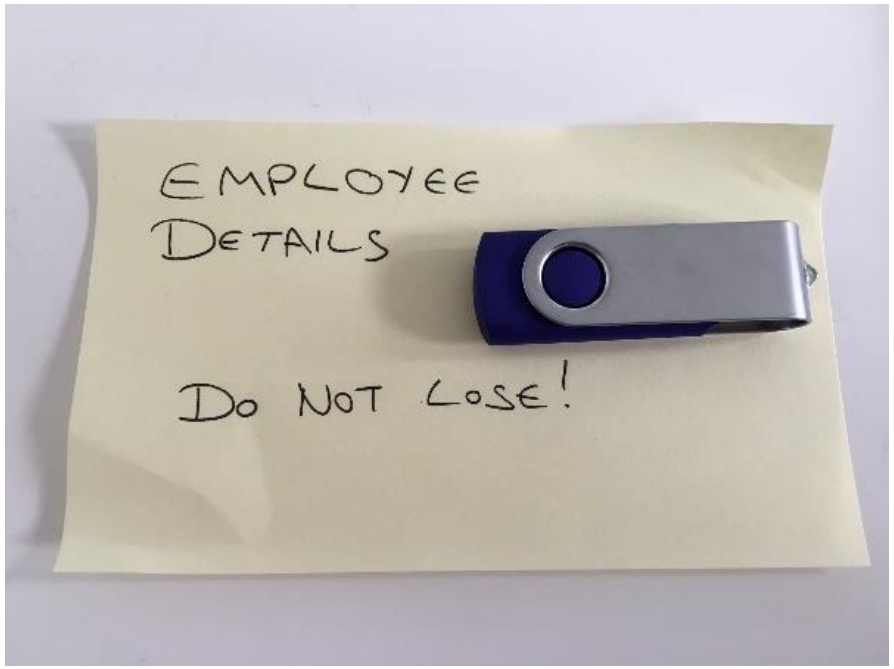
Have **YOU** ever caused an accidental breach?



Causes Of Accidental Breaches

Easiest ways to invoke an accidental breach

- Sending sensitive data to the wrong person by E-Mail
- Adapting documents that hold revision data
- Leaving data in a place outside of the Organisation
- Opening documents that contain hidden malicious software
- Introducing malware from external media
- File sharing applications to store data

An Accidental Breach

ISLINGTON COUNTY COUNCIL 2015

- Parking Charges accidently made freely available on Website
- Data included Medical information, Scanned Cheques Islington Gazette

Twice the price!

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- In 2007 McLaren gained technical details of Ferrari's F1 car
  - Chief Technical Engineers exchanged documents regarding Ferrari's car and future developments
- Malicious Breach – Competitive Gain = ££££
- Accidental – Governing body leaked confidential details in PDF
  - Confidential information was blanked out. Copying text revealed details
  - Details of salaries, as well as Ferrari's technical IP. Highly secretive info exposed

HOW can we reduce the risk of a breach?

Education for Everyone

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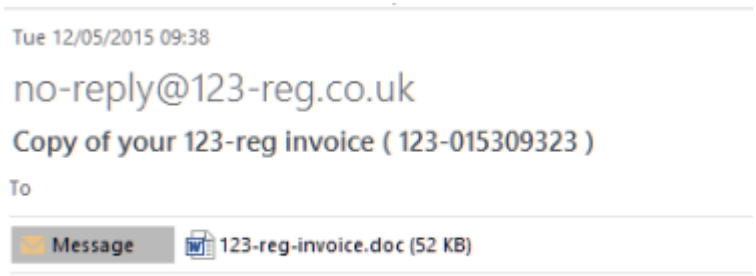
- Implement password policies
  - Regularly change passwords, ensure complexity, advise on what to and not to use
- Help employees to recognise malicious E-mails
  - Attachments such as invoice.doc, content, or if it's a spoof sender



Manage User Privileges

- One of the major causes of Data Breach
- User Accounts
  - Enhanced privileges on Computer – Administrator / Standard User
  - Prevent installation of Applications
- Applications
  - Who has access to what Data? Employee's access data due to curiosity
  - User Accounts within Applications such as Sage products

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Application Blocking

- Prevent an application from opening
  - Removal
  - Disabling

Cloud Storage

- Ensure Security Measures
  - Use complex passwords
  - User account management
  - Location of data storage
  - Full control of data
  - Provider “Zero Knowledge”

E-Mails

- Monitoring recipients
  - Prevent Malicious breaches by blocking external mail being sent to common Public addresses such as Hotmail, Gmail and iCloud.
- Use E-Mail Content Monitoring services
  - Keyword filtering
  - Scanning of attachment types such as csv or images
- Prevent use of Employee's personal E-Mail accounts
  - Allowing access can bypass Company scanning of content
  - Block access to all E-Mail Websites such as Hotmail, Gmail and iCloud

Mobile Devices

- Smartphones have overtaken laptops as primary used devices
  - By 2017, half of the World's enterprises will have no longer supply computing devices to Employees Gartner
  - 78% of Companies say that devices connected to networks have doubled in last two years eWeek
- Mobile Malicious Software **TRIPLED** in 2015 Kaspersky Lab
- Control of devices and the Business data
  - Where is my device?
- Protection from anywhere
  - Standard for computers to have forms of protection, same applies for mobile devices
  - Use policies and tools to control mobile devices remotely, erasing data from lost devices

Curiosity Killed The Company

- USB Sticks, External Hard Drives, CDs commonly used to insecurely hold data

- People are Curious
  - If someone finds a USB device, the likelihood is that they will want to see the content. It could contain sensitive data, or malicious software

- Prevention
  - Disable Autoplay / Autorun to prevent malicious software from being run automatically if a device is plugged in

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Final Thoughts

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NO system is 100% secure from a breach, and there is no “one size fits all”

Breaches happen every day, as there is a constant shift in technology

Vulnerabilities and exploits are discovered every day, fixing can take longer

Humans will always try to find a work around whether that is from within an organisation or an outside attack

But…

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By implementing some simple steps, the risk of data breaches can be reduced. It's also important to continually review the risks

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Thank You!