

Managing Data and its Implications

Lecture Title: Why has data become important?



Lecturer: Angelito Sciberras

Date: 19 February 2025

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Last Lecture

- What constitutes data
- Qualitative vs Quantitative data
- Different types of data
- Data is measurements
- Storage
- What is big data
- 7Vs of big data
- How companies use big data and data
- Different data and tools used by different departments within a company



Question 01

Which one is not true? Data is

A) Facts

B) Amount

C) Opinion

D) Descriptive Information



Question 02

Qualitative data is...

- A) Information represented by numbers
- B) Subjective observations which cannot be quantified
- C) Data for statistical purposes
- D) Raw facts and numbers



Question 03

Which best defines binary...

- A) A numbering system based on powers of 10
- B) Data organised in a hierarchical structure
- C) A format representing multimedia content
- D) A system of communication using only two symbols



Question 04

Which of the following is NOT data

A) Text

B) Software

C) Audio

D) Images



Question 05

Which of the following is not a characteristic used to measure audio data?

A) Pressure

B) Frequency

C) Amplitude

D) Duration



Question 06

Which unit of measurement typically marks the starting point for Big Data?

- A) Gigabytes (GB)
- B) Terabytes (TB)
- C) Petabytes (PB)
- D) Exabytes (EB)



Question 07

Which of the following is not typically considered one of the "Vs" of Big Data?

- A) Volume
- B) Variety
- C) Veracity
- D) Vision



Question 08

Which of the following storage devices is typically characterised by its fast access speeds and high performance?

A) Hard Disk Drive (HDD)

B) Solid State Drive (SSD)

C) Optical Disc

D) Magnetic Tape



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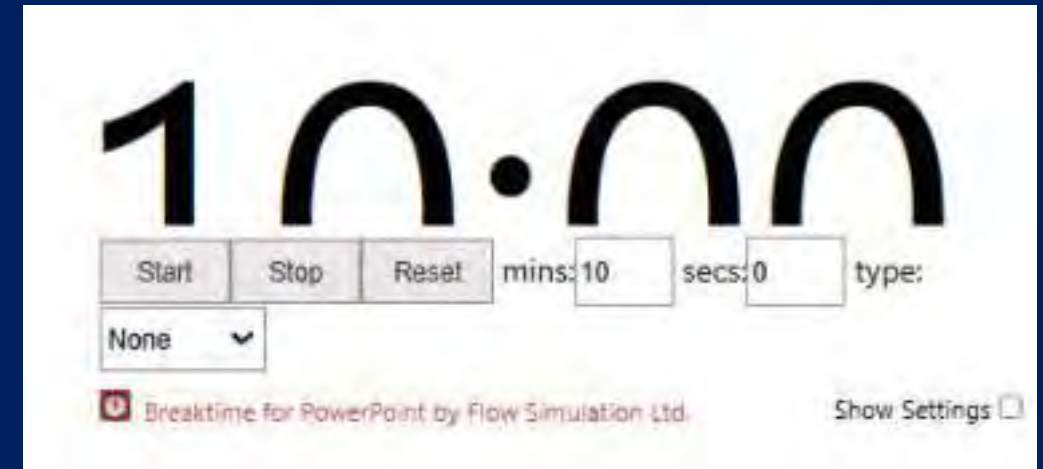
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*“The world’s most
valuable resource
is no longer oil,
but data”*

- The Economist, May 2017



What is profiling?



Profiling

“the practice of categorising people and predicting their behaviour according to particular characteristics such as race or age”

- Collins Dictionary



Profiling

Profiling customers into specific segments will enable

- the targeting of each group with offers according to **their needs**
- ensures that each customer gets the **relevant marketing messages** at the right time
- you can boost your sales by creating **customised products and services** for each group.



Profiling

- Demographic
- Geographic
- Psychographic
- Behavioural



Profiling



Profiling



Profiling - Methods

- Questionnaire
- Survey
- Interviews
- Activity Data



Pregnancy and Power of Data



Why the hell are you sending these maternity coupons to my daughter?

Profiling



You use a voice-activated virtual assistant device to search for information about hiking trails in a specific region. Later in the day, while listening to music on a streaming service, you notice that the suggested playlists include outdoor adventure-themed music and ads for hiking gear.

What's happening?

A digital timer interface with large black digits showing '10.00'. Below the digits are buttons for 'Start', 'Stop', and 'Reset'. To the right of these buttons are input fields for 'mins: 10' and 'secs: 0', followed by a 'type:' label. Below the 'mins' and 'secs' fields is a dropdown menu currently set to 'None'. At the bottom left, there is a small red icon and the text 'Breaktime for PowerPoint by Flow Simulation Ltd.'. At the bottom right, there is a 'Show Settings' label with a checkbox.

Start Stop Reset mins: 10 secs: 0 type:

None ▼

Breaktime for PowerPoint by Flow Simulation Ltd.

Show Settings ☐



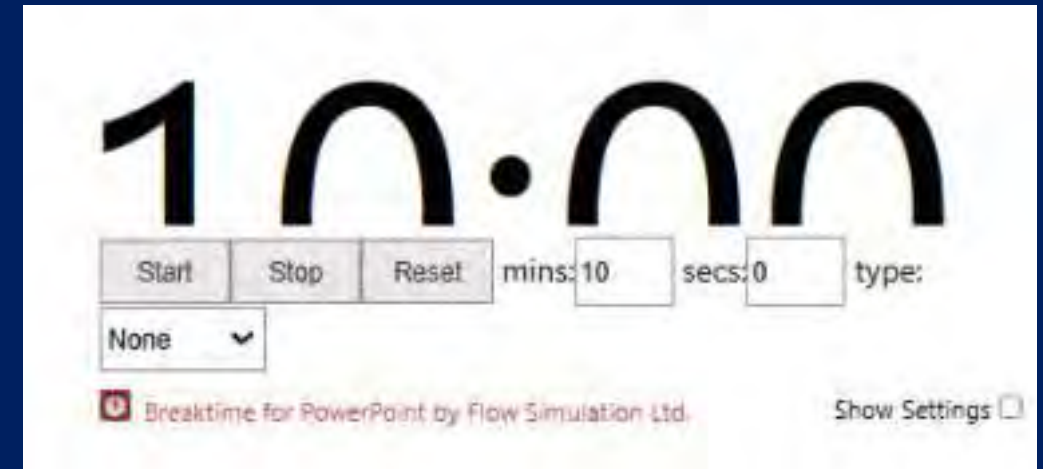
NETFLIX

amazon
prime video



HBOmax

Describe Netflix?

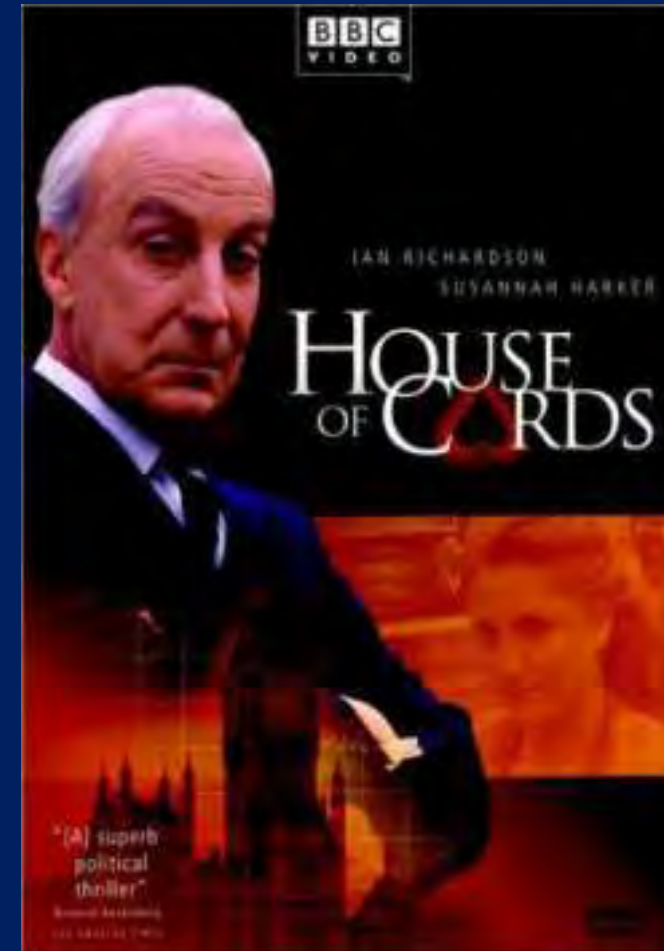


About

Netflix has been a **data-driven** company since its inception. Our analytic work arms decision-makers around the company with useful metrics, insights, predictions, and analytic tools so that everyone can be stellar in their function. Partnering closely with business teams in product, content, studio, marketing, and business operations, we perform context-rich analysis to provide insight into every aspect of our business, our partners, and of course our members' experience with Netflix.



VS





Digital Footprint

the trail of data that is left behind when someone uses digital services and devices



Digital Footprint

Services:

- search history
- social media activity
- online purchases
- location data etc.



Digital Footprint

Devices

- smartphones
- fitness trackers
- smart home devices
 - TV
 - Refrigerator
 - AC
 - Google Home/Alexa
 - Hue Lights



Digital Footprint






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10:00

Start Stop Reset mins: 10 secs: 0 type: None ▾

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Digital Footprint



Why does social media need you to be online as much as possible?

Digital Footprint

It wants to get to know you



Digital Footprint



Cambridge
Analytica

1

In 2014 a Facebook quiz invited users to find out their personality type

2

The app collected the data of those taking the quiz, but also recorded the public data of their friends

3

About 305,000 people installed the app, but it gathered information on up to 87 million people, according to Facebook

4

It is claimed at least some of the data was sold to Cambridge Analytica (CA) which used it to psychologically profile voters in the US





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Data at Companies

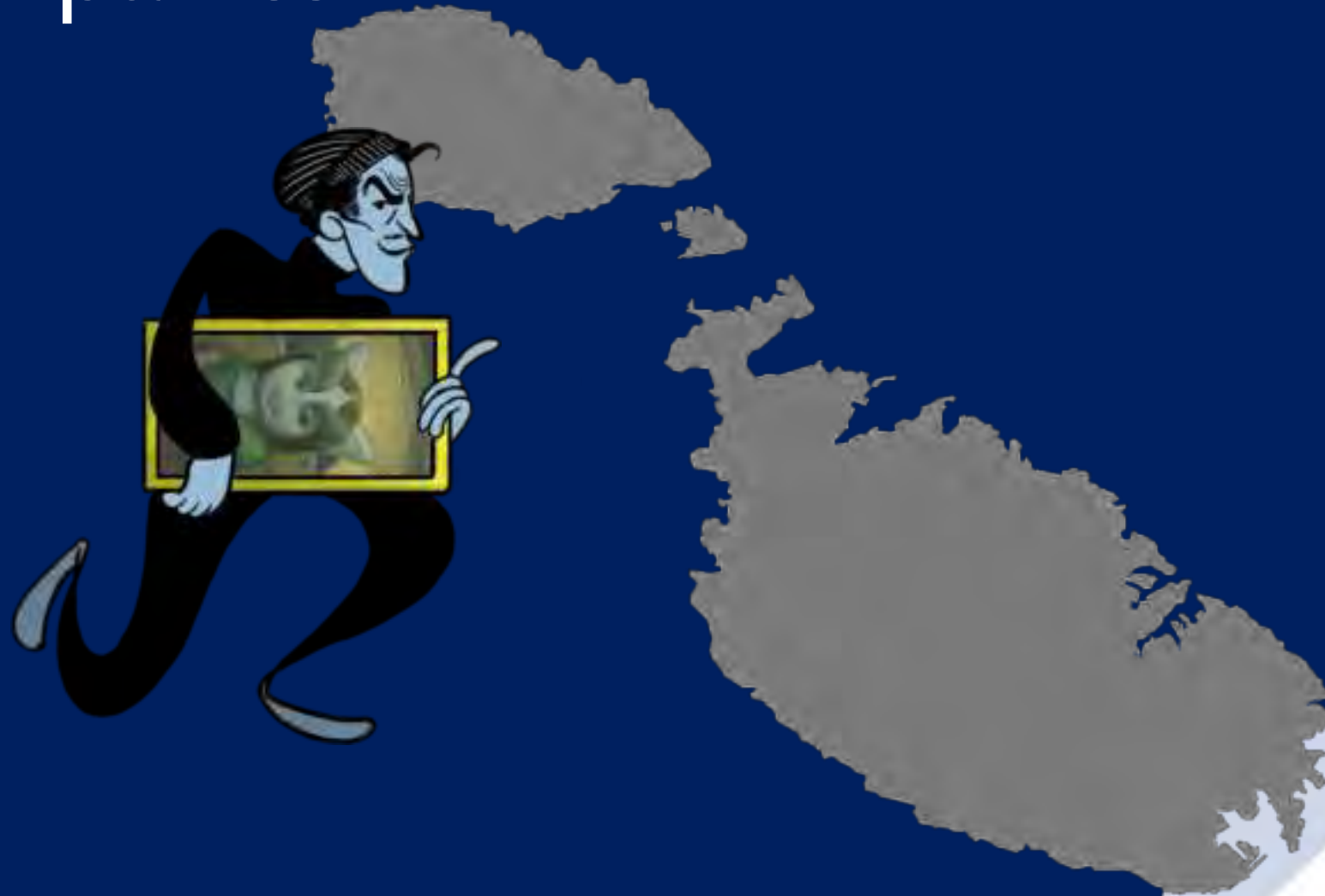
Risks



Data at Companies



Data at Companies



Data at Companies



Data at Companies







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Data at Companies

Phishing

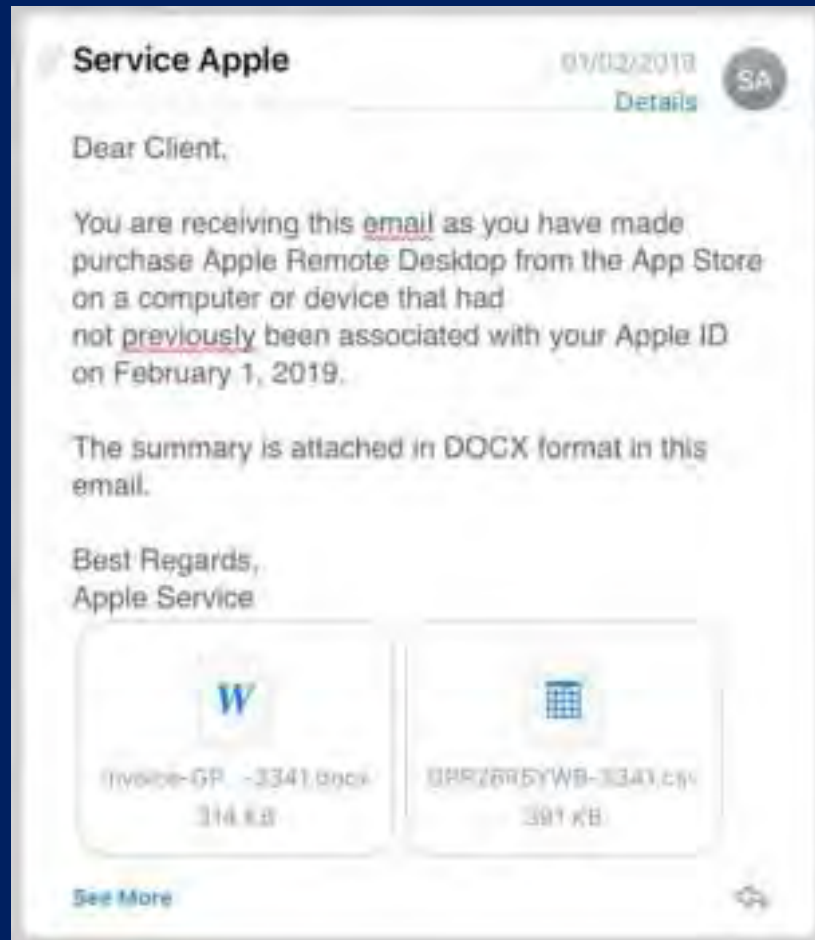


Spear-Phishing vs Phishing

- Embedding a link in an email that redirects your employee to an unsecure website that requests sensitive information
- Installing a Trojan via a malicious email attachment or ad which will allow the intruder to exploit loopholes and obtain sensitive information
- Spoofing the sender address in an email to appear as a reputable source and request sensitive information



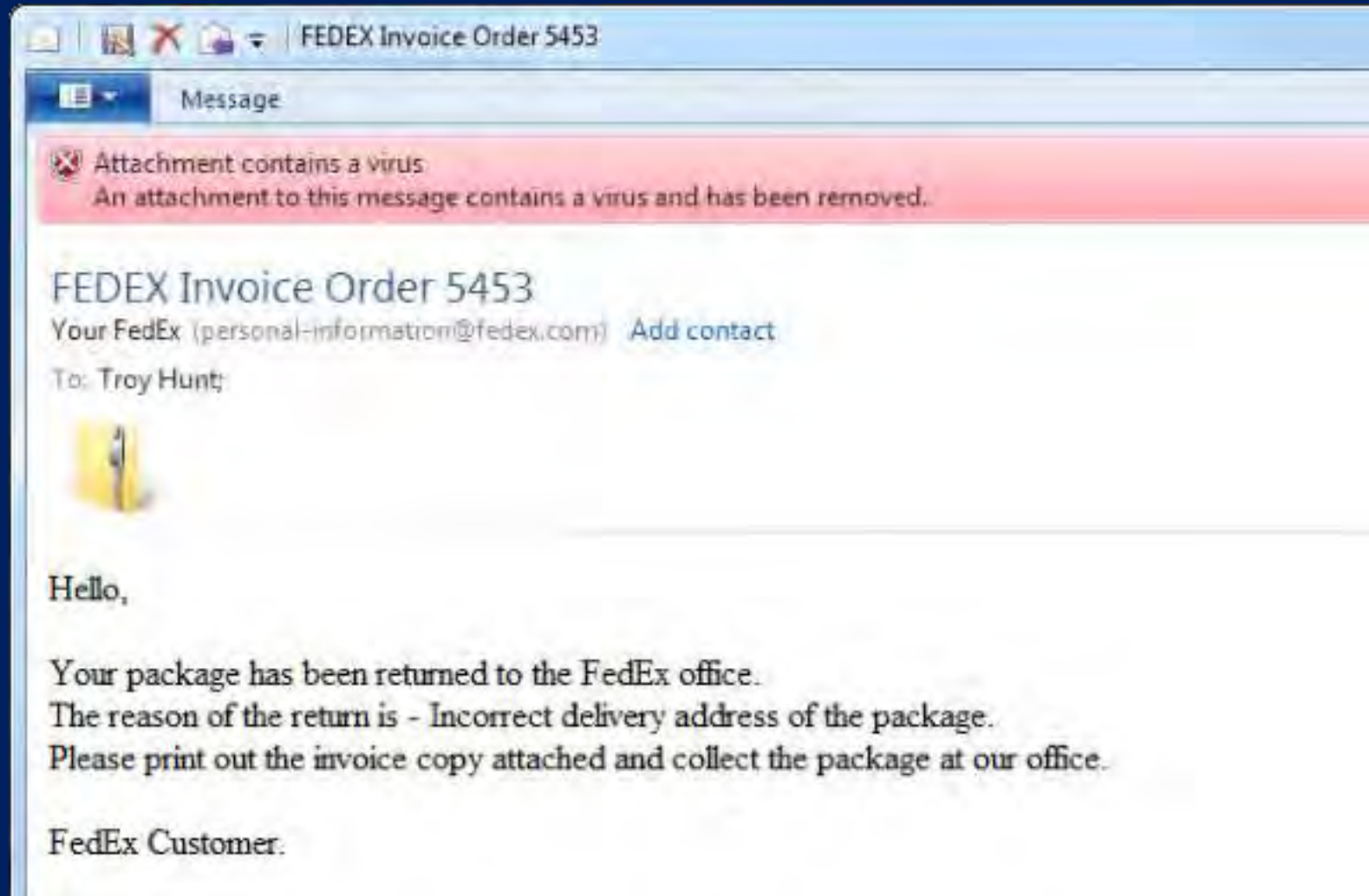
Spoofing



Embedding



Trojan



Spear-Phishing vs Phishing

Personal vs Bulk





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Phishing





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