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## The Big Data Dilemma – Data Ethics & Diversity

Chika Aghadiuno – Aviva plc

13 November 2018



### Big Data Dilemma, Ethics and Diversity

- The Data Landscape
- The Dilemma
- The Players
- The Insurance Context
- The Governance landscape
- Is it Enough?



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## The Big Data Landscape

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Regardless of source,

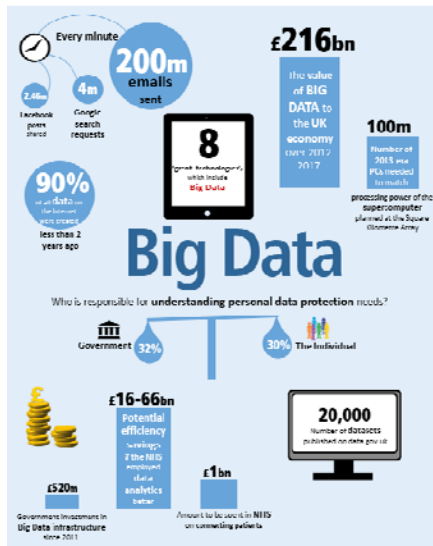
## BIG DATA

... is about gaining value and insights from extremely large, complex, fast moving or combined data, across a range of sectors in innovative and beneficial ways



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## Some Stats



- The value of Big Data to the UK economy from 2012-2015 is £216bn
- 90% of the data currently in the world was created in the last two years
- In 2014 there were 204 million emails every minute and Google reported 4 million search queries
- The total amount of global data is predicted to grow 40% year on year for the next decade
- It is predicted that the “digital universe” will reach 180 zettabytes (180 followed by 21 zeros) in 2025



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## Underutilisation of Data

- Properly exploited, big data should be transformative, increasing efficiency, unlocking new avenues in life-saving research and creating as yet unimagined opportunities for innovation
- But even existing datasets are nowhere near fully exploited.
- Despite data driven companies being 10% more productive than those that do not operationalise their data, most companies estimate they are analysing just 12% of their data.



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## The Dilemma

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### A Force for Good?

The use of data and AI has the potential to improve our lives in many different ways:-

- Healthcare
- Pharma
- Energy
- Transport
- Manufacturing
- Public services
- Financial services

However, an 'algocracy' may lead to adverse outcomes:-

- Sophisticated algorithms deployed in ways that influence or manipulate the decisions we make in unprecedented ways
- automated decision-making can be opaque and may lead to unfair outcomes or overly restrict the level of control over key decisions eg job applications, criminal justice system
- Reduced capacity for new entrants to compete and innovate, while a few large businesses having unprecedented power to influence behaviours and shape our society.



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## Data Ethics

- Describes the value judgements and approaches made when generating, analysing and disseminating data
- Incorporates reference to data protection and other relevant laws
- Appropriate use of technologies
- Requires a holistic approach including good practice in analytical techniques and information assurance

**Actively and demonstratively doing the right thing.**



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## The Players

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## The New Arms Race

- UK:
  - Big Data = UK success story
  - UK Exemplars: FinTech, Met Office, Healthcare/medical research
  - Digital Strategy
- US and China: Data superpowers
- Elsewhere: France, Germany, EU



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## The Insurance Context

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## Insurance Big Data

- Data has been fundamental to the insurance industry for decades
- Slow to respond to new data and technologies?
- Structured vs unstructured
- Use cases
- Threats and opportunities



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## Insurance Big Data Traps

- Data sources
  - Social media (mis)use
  - Genetic testing
  - Data ownership
  - Data privacy/security
- Hyper-personalisation of pricing
- Inadvertent/inappropriate profiling
  - Aggregate data
  - Biased data
- “Algocracy”?



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## The Governance Landscape

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### What's happening?

- Think tanks
- Data Ethics policies
- Regulators
- UK Government
- Other governments/EU



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## Is it enough?

- More focus on diversity
- Individual awareness
- Individual and collective accountability
- Organisation standards and policies
- National and international framework

## Diversity at the IFoA

- For more information on diversity at the IFoA or to get involved, contact [diversity@actuaries.org.uk](mailto:diversity@actuaries.org.uk)
- An IFoA Diversity survey will be issued to the IFoA 400 Club Member Feedback Group in mid-November
- All members of the IFoA are encouraged to share their views
- If you are not yet a member of the 400 Club, and you would like to be sent the survey:
  - Please contact Debbie Atkins, Head of Engagement
  - email: [debbie.atkins@actuaries.org.uk](mailto:debbie.atkins@actuaries.org.uk)



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# Questions

# Comments

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