The Big Data Dilemma – Data Ethics & Diversity
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Big Data Dilemma, Ethics and Diversity

• The Data Landscape
• The Dilemma
• The Players
• The Insurance Context
• The Governance landscape
• Is it Enough?
The Big Data Landscape
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.
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
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.
The Dilemma
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

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.
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.
The Players
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
The Insurance Context
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
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”?
The Governance Landscape
What’s happening?

- Think tanks
- Data Ethics policies
- Regulators
- UK Government
- Other governments/EU
Is it Enough?
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

- 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
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