The Way Forward – Making the Business Case

How will Big Data benefit the ABS?

Could it benefit developing countries as well?

Will Big Data help in getting timelier and more indicators for the Post-2015 development agenda?

My personal views on the way forward.

How will Big Data benefit ABS?

Still an open question as we have yet to develop the business case for certain types of Big Data… But promising for

- Satellite Imagery Data

- Mobile phone data

- Longitudinal Linked Employer-Employee Database

- Harness own operational data

Could it benefit developing countries as well? Conditional yes

- Data acquisition
  - Country specific
  - Modernisation Committee work on Guideline
  - International Agencies leaning on global data custodians
- Methodology
  - Should be portable
  - 57 projects grouped into clusters to share research efforts/results
- IT
  - Country specific
- Cultural change
  - Country specific
  - Look for opportunity to change
  - Must not undermine the trust of the NSO
    - Trust comes by walking and leaves on a horse back – Dutch saying

Will Big Data help in getting timelier and more indicators for the Post-2015 development agenda?

- Specification of the indicators

- Dr Susan Teltscher's talk gave promising possibilities

The way forward – personal views

- Develop a Big Data Strategy for the NSO

- Start small

- Find the right business problem

- Find business champions

- Set realistic expectations

- Develop/Adapt the right methodology

- Pilot testing

- Develop a business case – cost benefit analysis

ABS Big Data Strategy

ABS Capability

- Authority for data acquisition
- Authorised Integrator of sensitive data
- Ability to integrate with Census and Survey data
- Trust in the ABS and our reputation for Integrity, Impartiality and Quality

Our Objective:

Effective application of big data to reduce costs, improve timeliness, quality, and expand the range of our statistics.

- Identify statistical needs that should be the focus of early efforts to apply big data
- Identify "high potential" data sources
- Seek funding and support for the application of big data
- Undertake pilot applications to better understand the barriers, enablers and value proposition

Needs

- Population movements
- Environment
- Prices

Sources

- Satellite
- Telecom
- Financial Sector
- Retail Prices
- Utilities

Research Partners

- Big Data Research Partnerships
- ARC Partner Investigator
- APS Big Data Working Group & Analytics COE
- UNECE Big Data Working Group

Key Enabler:
Active partnership and collaboration with those who can help us apply big data

- Government Agencies
- Academics and Researchers
- Private custodians of big data
- Working Groups and Centres of Excellence
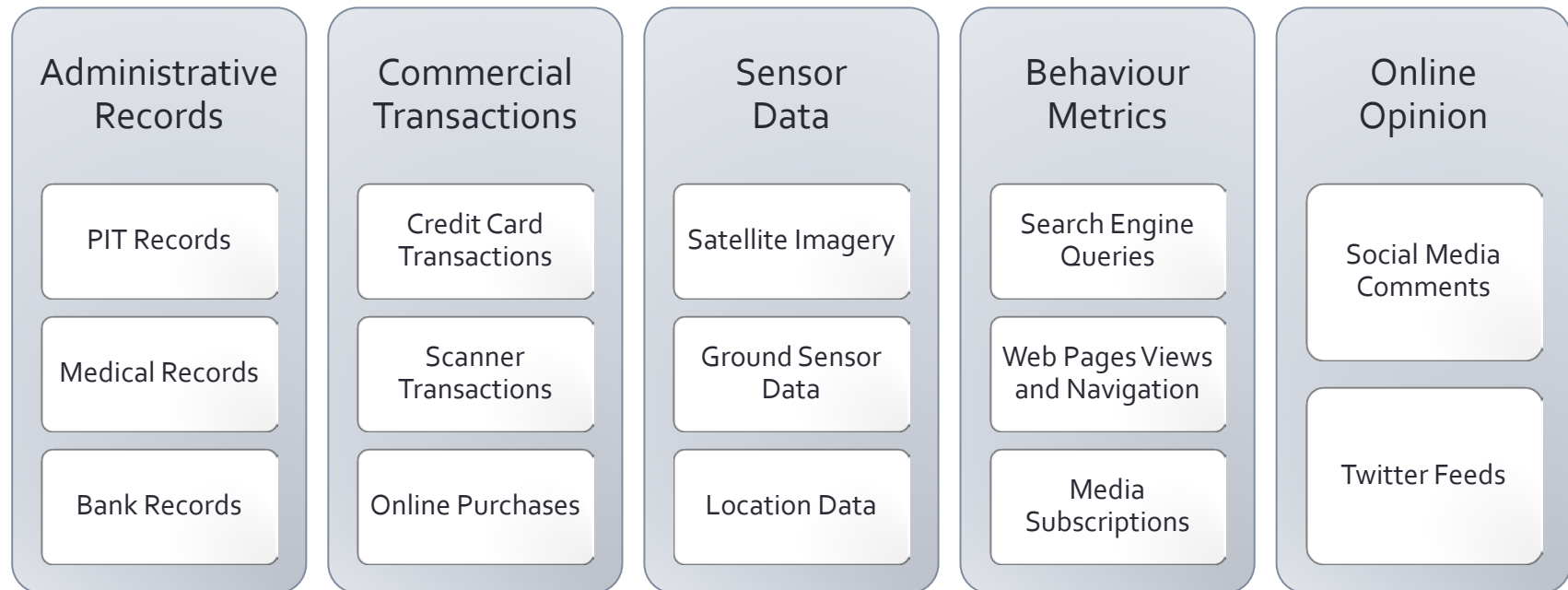
Key Enabler:
Enhanced ABS capability to use big data

- Develop the skills of our staff
- Establish the infrastructure needed to exploit big data
- Develop appropriate methods and techniques

Australian Bureau of

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Start Small and find the right business problem
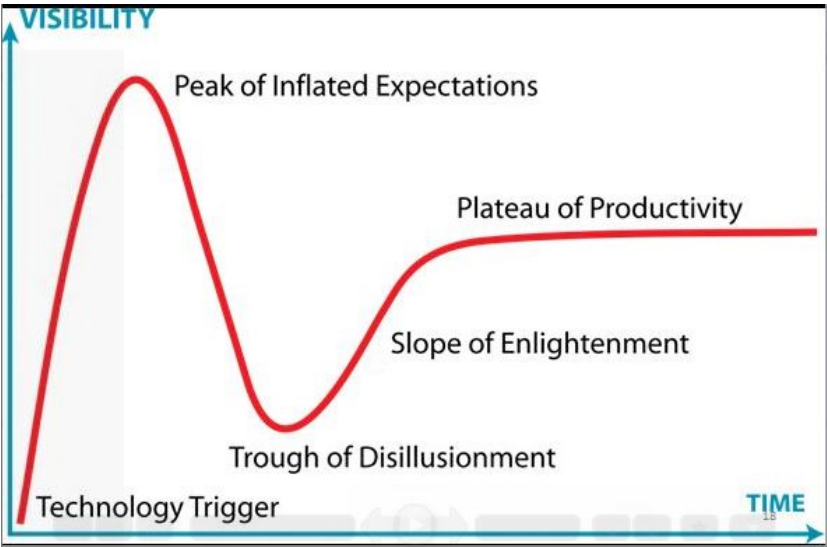## - Big Data = Big Sources, but

Not entirely foreign to official statisticians eg Administrative records,

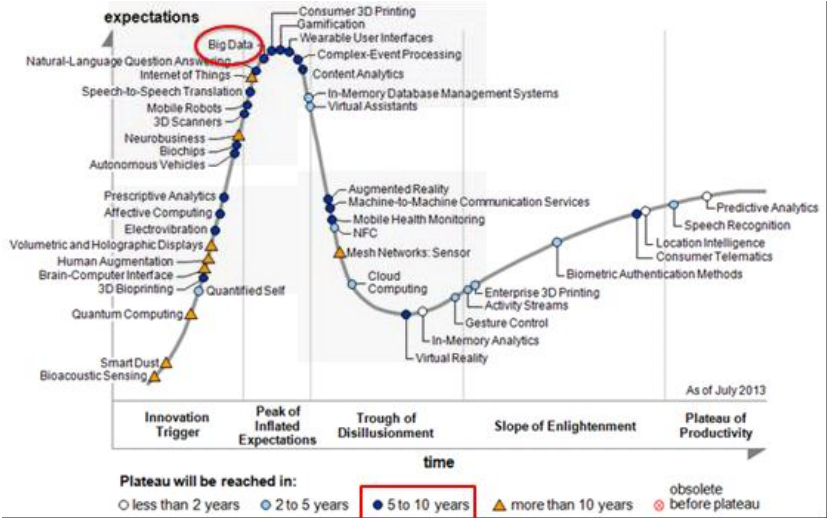Find an area in which existing methods fail – this is where people are prepared to accept change

Administrative Records	Commercial Transactions	Sensor Data	Behaviour Metrics	Online Opinion
PIT Records	Credit Card Transactions	Satellite Imagery	Search Engine Queries	Social Media Comments
Medical Records	Scanner Transactions	Ground Sensor Data	Web Pages Views and Navigation	Twitter Feeds
Bank Records	Online Purchases	Location Data	Media Subscriptions	

Big Data = Big Hype? Importance to set right expectations

Gartner Hype Curve

Big Data on the Hype Curve

Avoid Big Traps

Two broad types of errors in sampled data sets

- Sampling error
  - Dependent on size

- Non sampling error
  - Coverage bias - Big Data population is not the population
  - Self selection bias – squeaky wheels
  - Representation bias – multiple representation
  - Measurement error
  - Increasing the sample size does NOT reduce non-sampling errors

Develop/adapt the right methodology
  - Ground truth and modelling
  - Demonstrate results through pilot testing

The End
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