

A BETTER WAY
from data to dividend

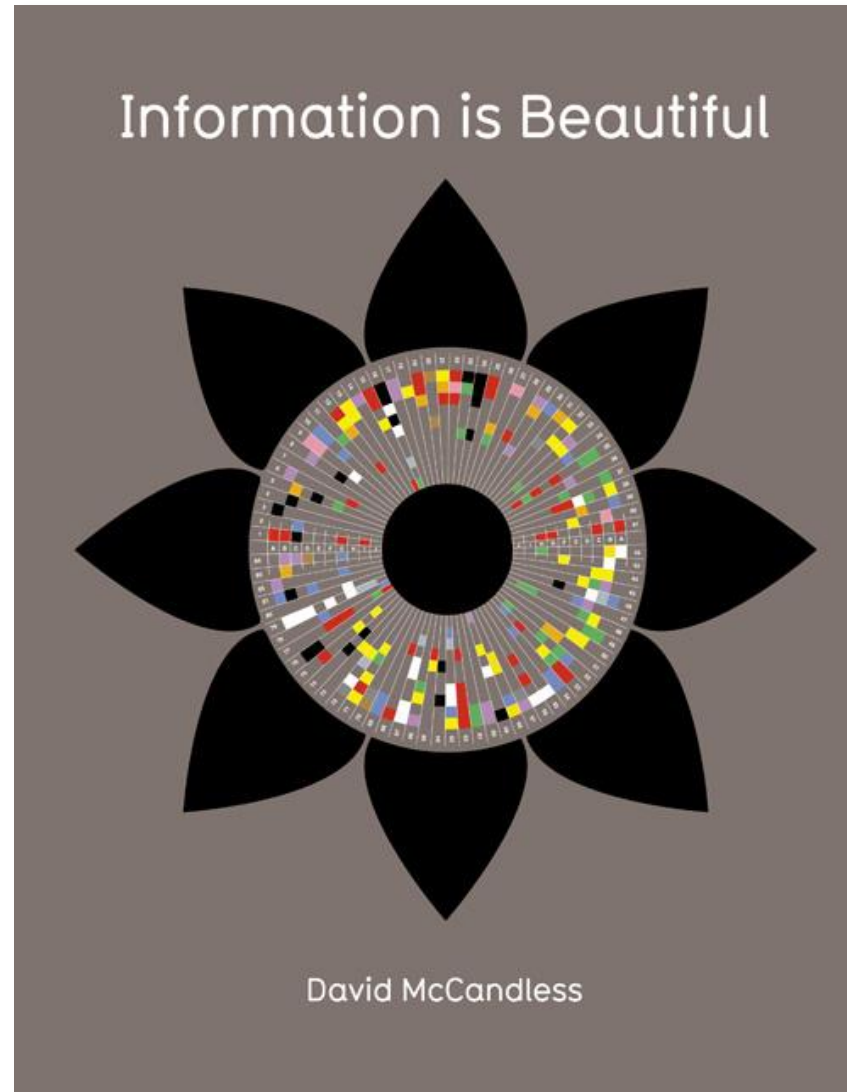


Data Analytics and Big Data

Young Actuaries Program - Wider Fields and Broader Horizons

November 2012

Information is beautiful – David McCandless



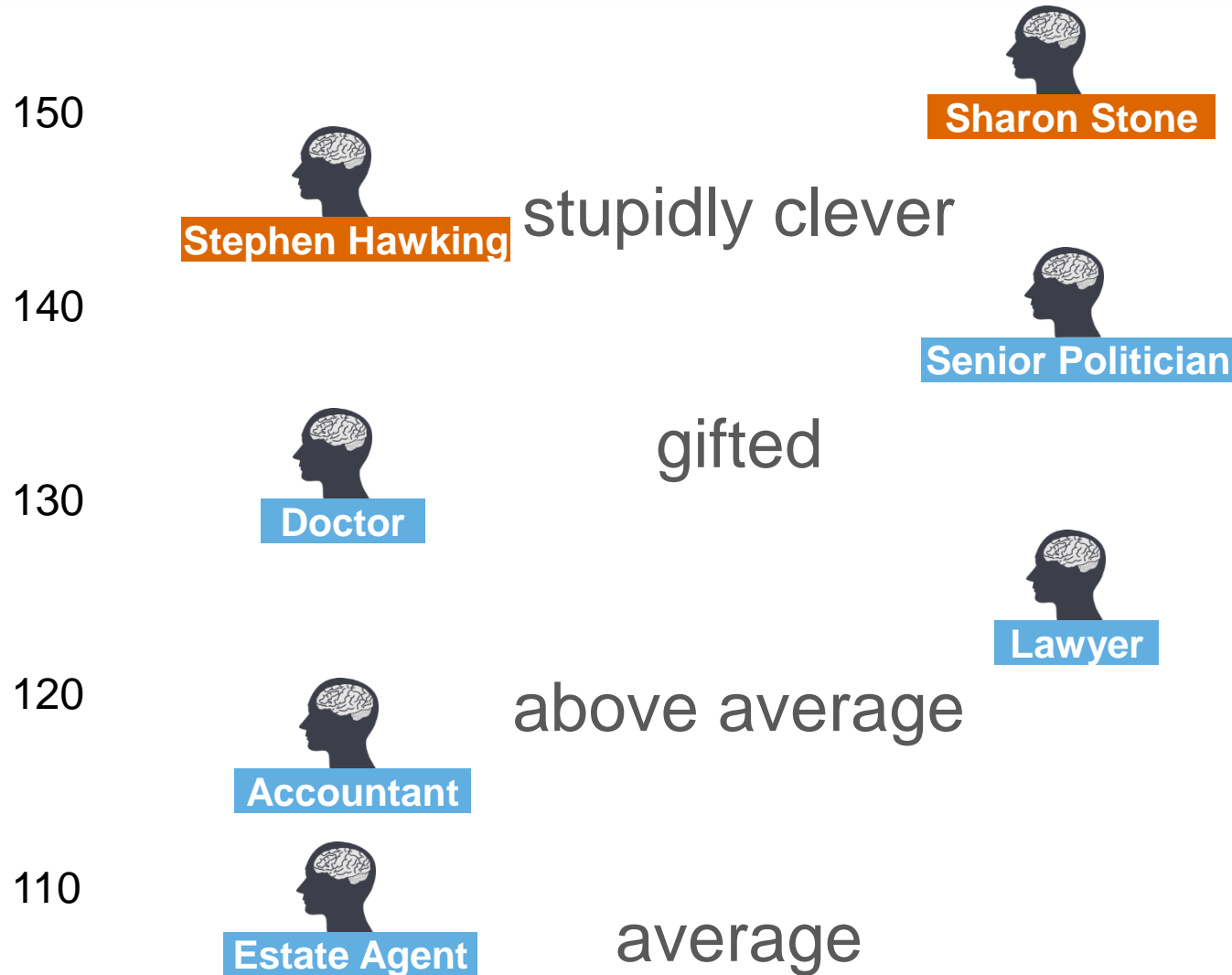
Advantage for lefties



Source: Information is Beautiful – David McCandless

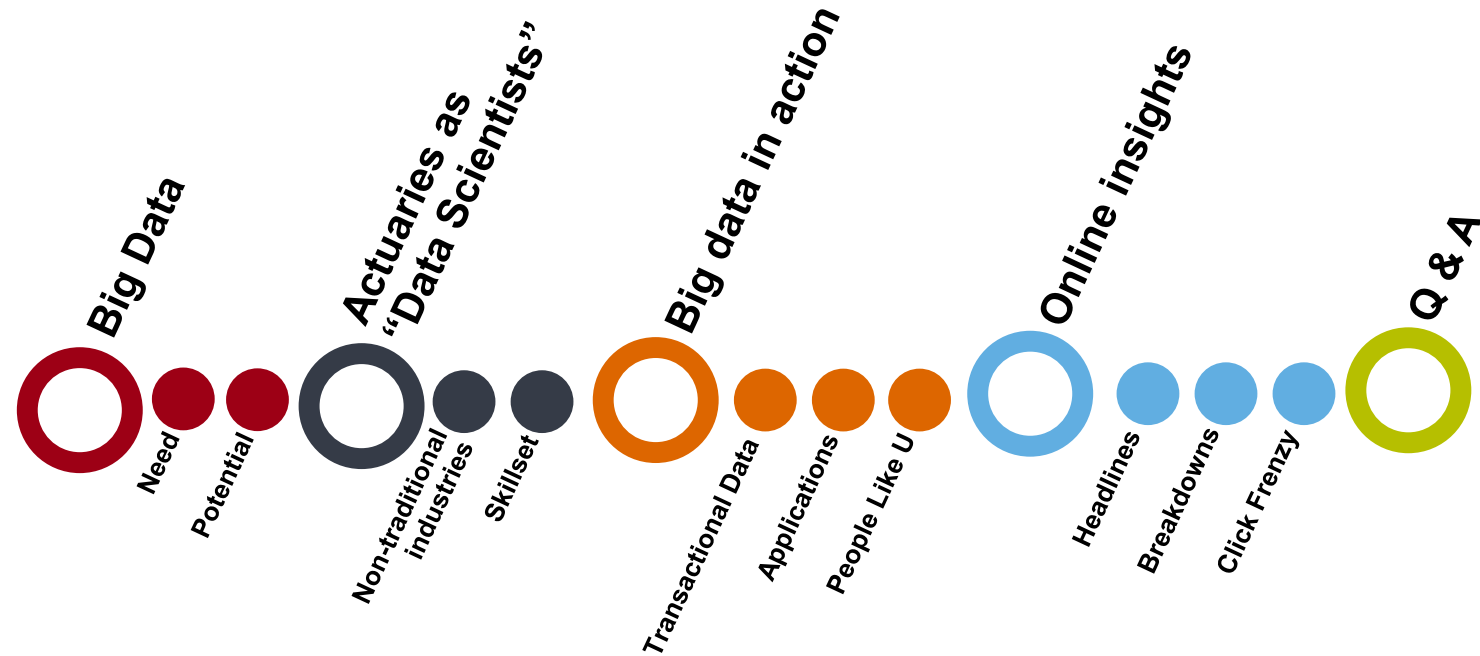
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Career IQs

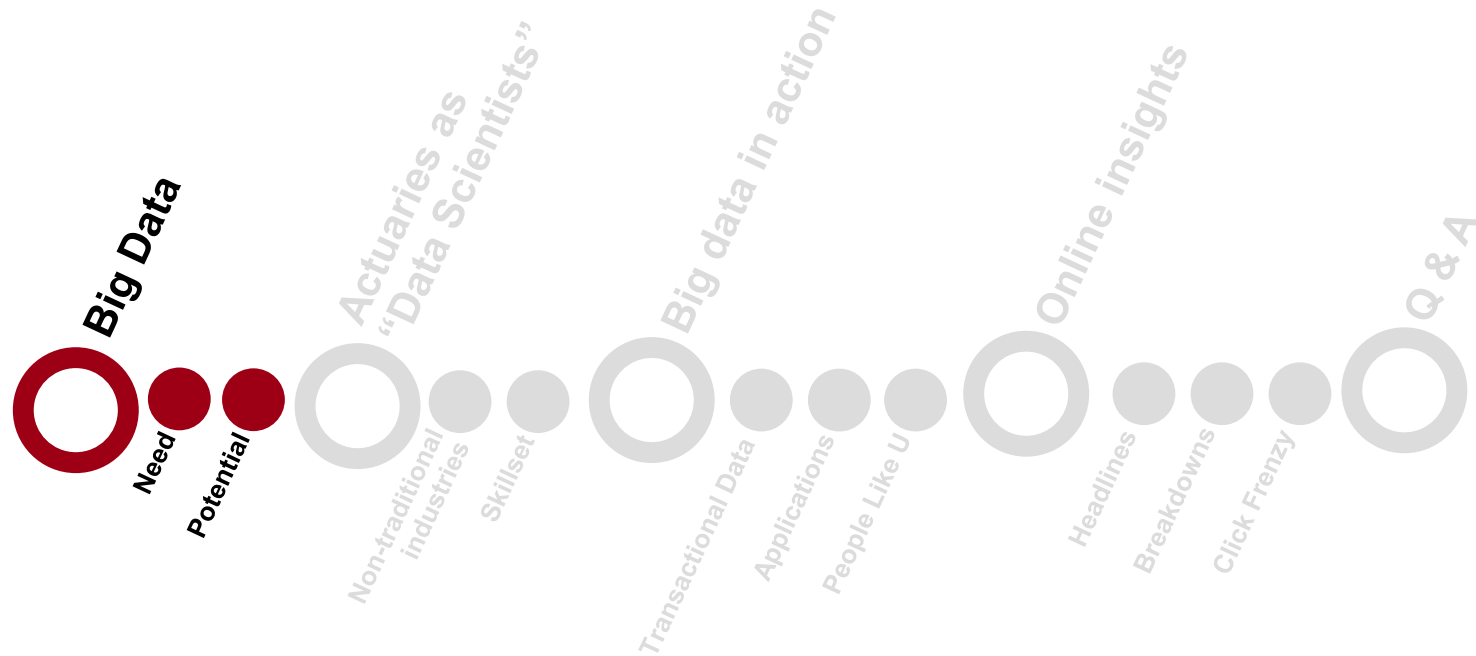


Source: Information is Beautiful – David McCandless

Data Analytics and Big Data



Data Analytics and Big Data



BIG DATA

**\$900b of latent value
in USA**

The use of Big Data will drive new wave of growth

**There is more media
content created each day
in 2011 than in all of the
years from the dawn of
time until 2008.**

Eric Schmidt
CEO, Google



A photograph of Rupert Murdoch, an elderly man with glasses, wearing a dark suit, light blue shirt, and patterned tie. He is seated in a black leather office chair, gesturing with his hands while speaking. The background is dark. A semi-transparent dark blue rectangular box is overlaid on the lower half of the image, containing white text.

**We probably haven't heard the
name of what will be the world's
largest company in 2020.**

Rupert Murdoch

Big Data has 3 Keys

1. VOLUME

2. VARIETY

3. VELOCITY

Finding the right way to extract value from big data will be an industry in itself

Expansion of demand - 190,000 people with deep analytical skills are needed in the USA alone

A further 1.5 million analysts are needed to interpret and action the results

US government announced a \$200m 'Big Data R&D initiative' to make better sense of the mountains of data being created and collected

Big data will revolutionise all aspects of society

FierceBigData

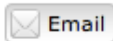
MAYOR BLOOMBERG, POLICE COMMISSIONER KELLY AND MICROSOFT UNVEIL NEW, STATE-OF-THE-ART LAW ENFORCEMENT TECHNOLOGY

SHARE

FOR IMMEDIATE RELEASE

PR- 291-12

August 8, 2012



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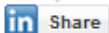
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MAYOR BLOOMBERG, POLICE COMMISSIONER KELLY AND MICROSOFT UNVEIL NEW, STATE-OF-THE-ART LAW ENFORCEMENT TECHNOLOGY THAT AGGREGATES AND ANALYZES EXISTING PUBLIC SAFETY DATA IN REAL TIME TO PROVIDE A COMPREHENSIVE VIEW OF POTENTIAL THREATS AND CRIMINAL ACTIVITY



Tweet

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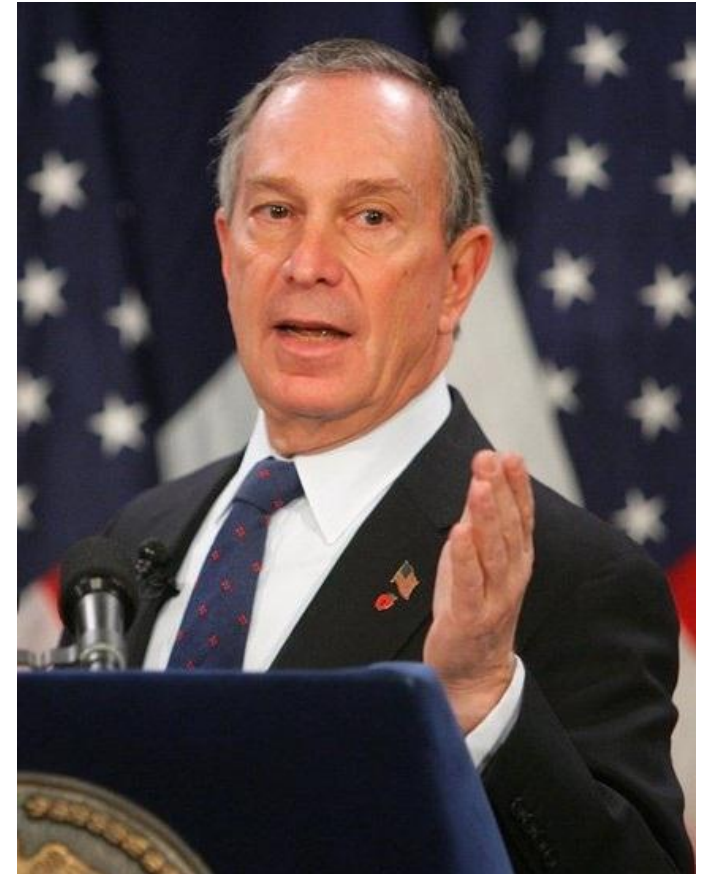


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System Designed Jointly by NYPD Officers and Microsoft, Pools Existing Streams of Data from Live Camera Feeds, 911 Calls, Mapped Crime Patterns and More to Help Officers Prevent Crimes and Respond Faster



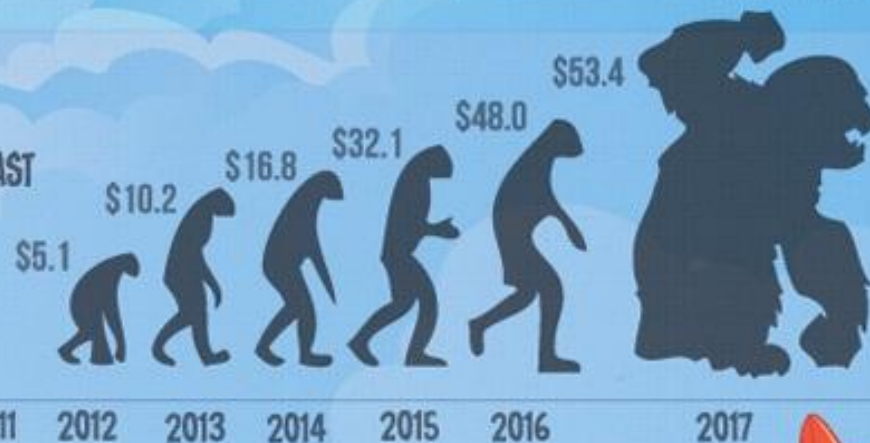
TAMING BIG DATA

BIG DATA INCLUDES DATA SETS WHOSE SIZE AND TYPE MAKE THEM IMPRACTICAL TO PROCESS AND ANALYZE WITH TRADITIONAL DATABASE TECHNOLOGIES



PRESENTED BY: Wikibon

BIG DATA MARKET FORECAST
\$ US BILLIONS



GLOBAL MENTIONS OF "BIG DATA"
GOOGLE TRENDS

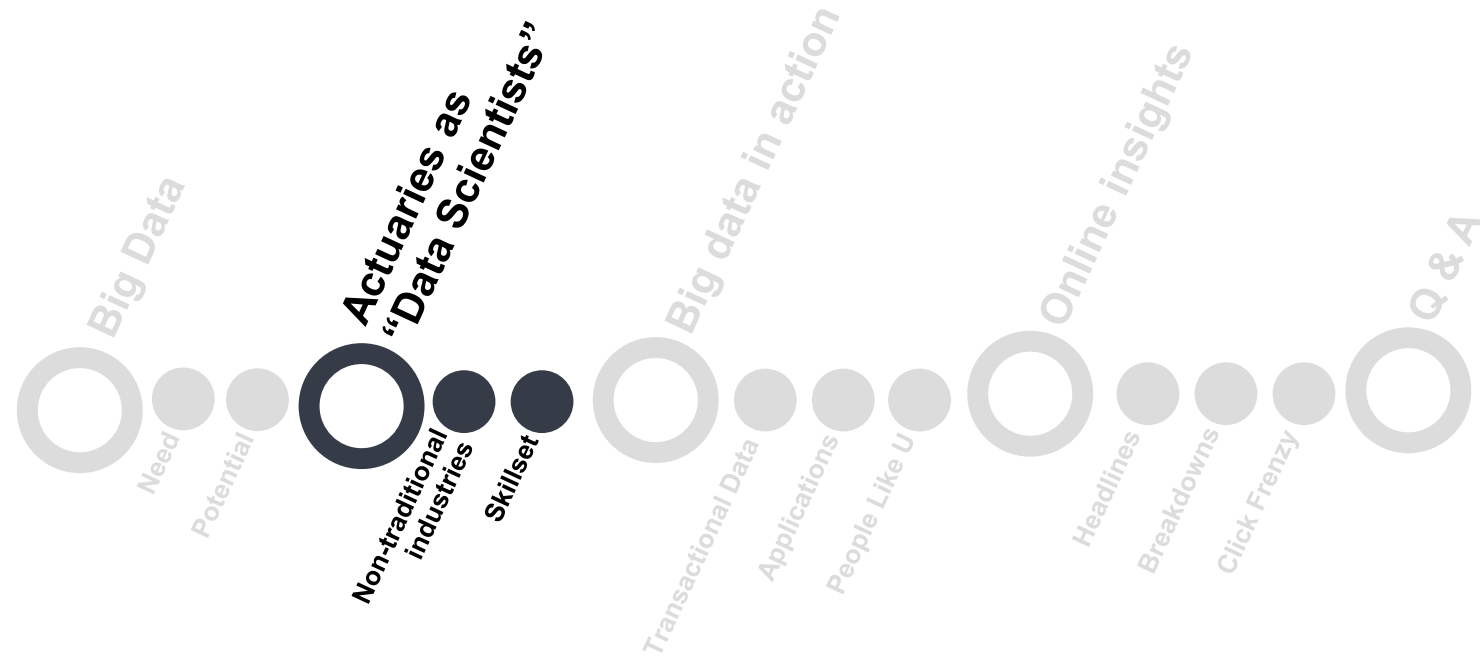


1211.34% INCREASE
OVER BASELINE AVERAGE

"IT'S NO LONGER HARD TO FIND THE ANSWER TO A GIVEN QUESTION; THE HARD PART IS FINDING THE RIGHT QUESTION AND AS QUESTIONS EVOLVE, WE GAIN BETTER INSIGHT INTO OUR ECOSYSTEM AND OUR BUSINESS." - KEVIN WEIL



Data Analytics and Big Data

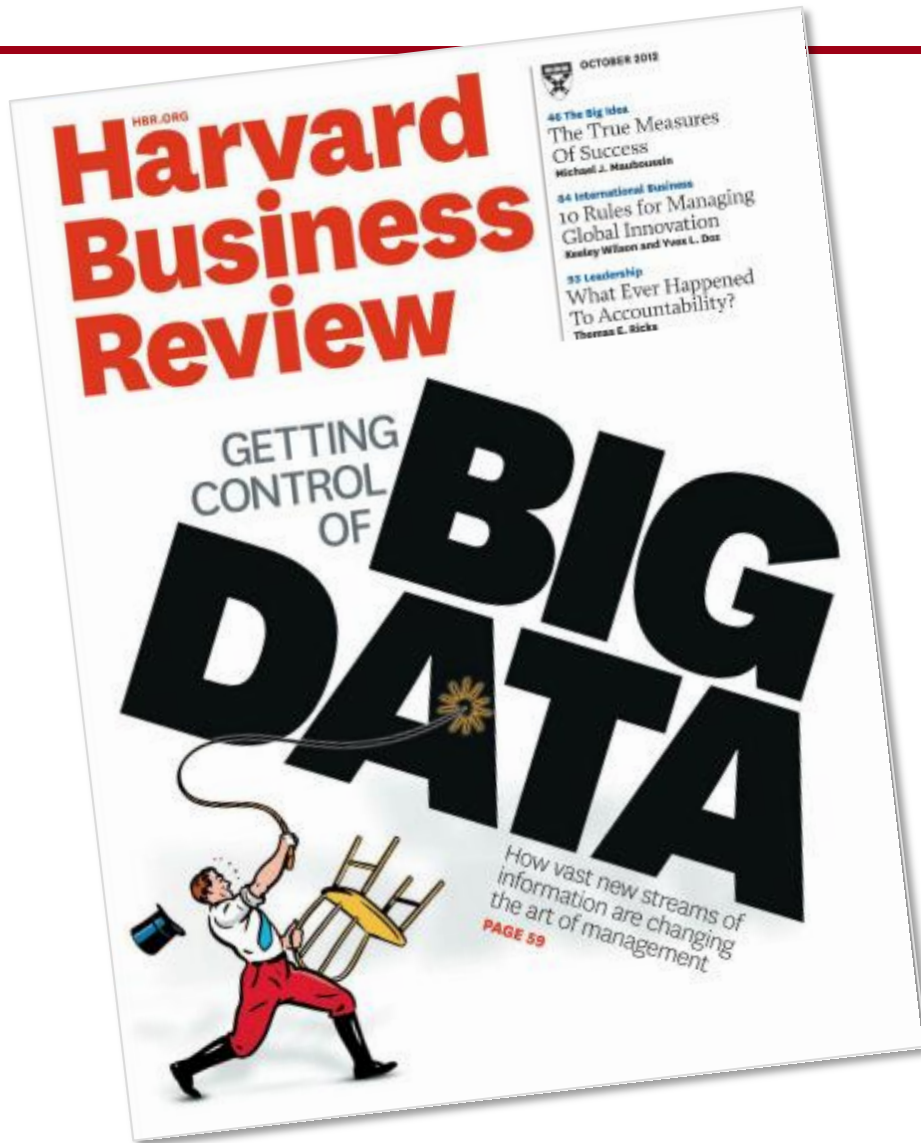


Who is Quantum?

**Quantum is Australia's leading
data-driven strategy consultancy**

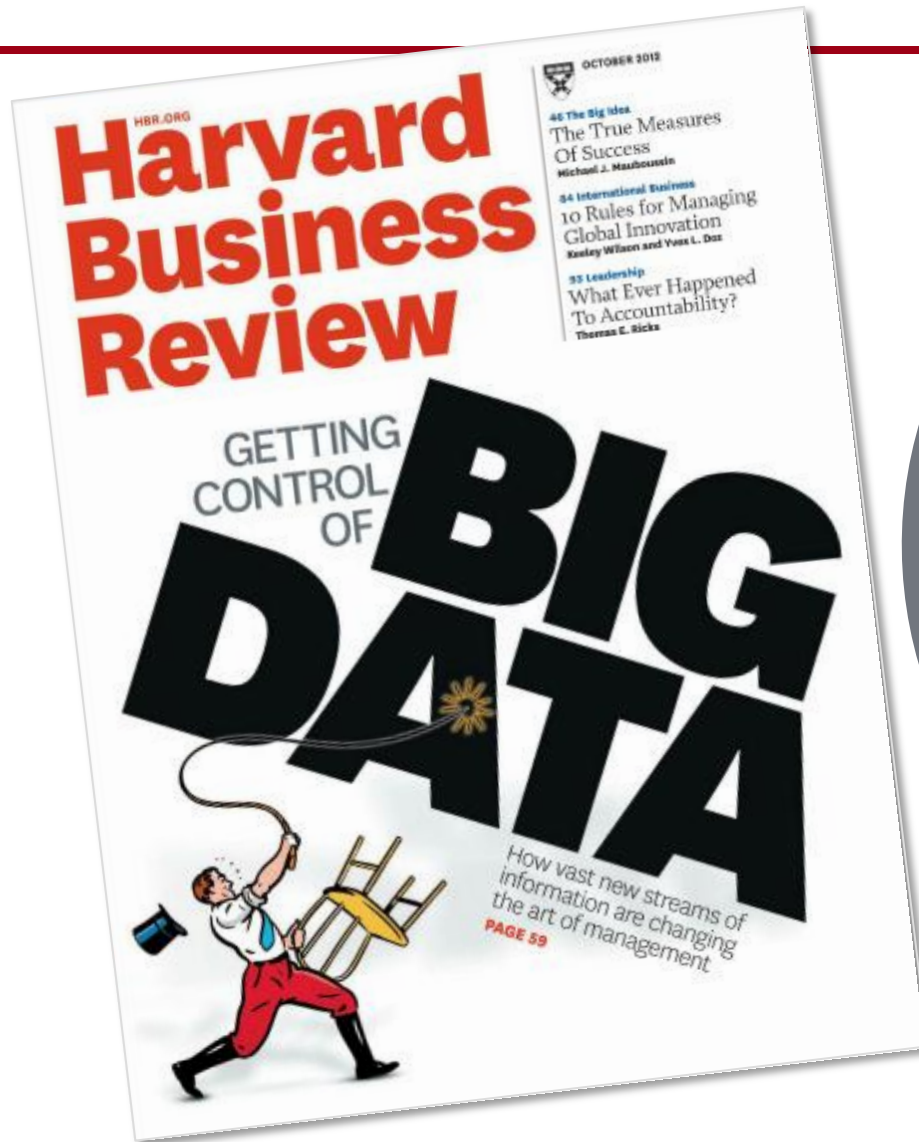
**As actuaries we help businesses build value by using data to drive
innovation, customer engagement and business performance**

Harvard business review profiles the “Data Scientist”



“The Sexiest
Job of the
21st Century”

“Data Scientist”: The Sexiest Job of the 21st Century



“ What abilities make a data scientist successful? **Think of him or her as a hybrid of a data hacker, analyst, communicator and trusted advisor.** The combination is extremely powerful – and rare ”

“Data Scientist”: The Sexiest Job of the 21st Century

Harvard Business Review identifies data scientists as those who:

make discoveries while swimming in data – indeed, it’s their preferred method of navigating the world around them

can join together rich data sources, clean the data, and confidently work with incomplete data

are creative in displaying information visually and in making the patterns they find clear and compelling

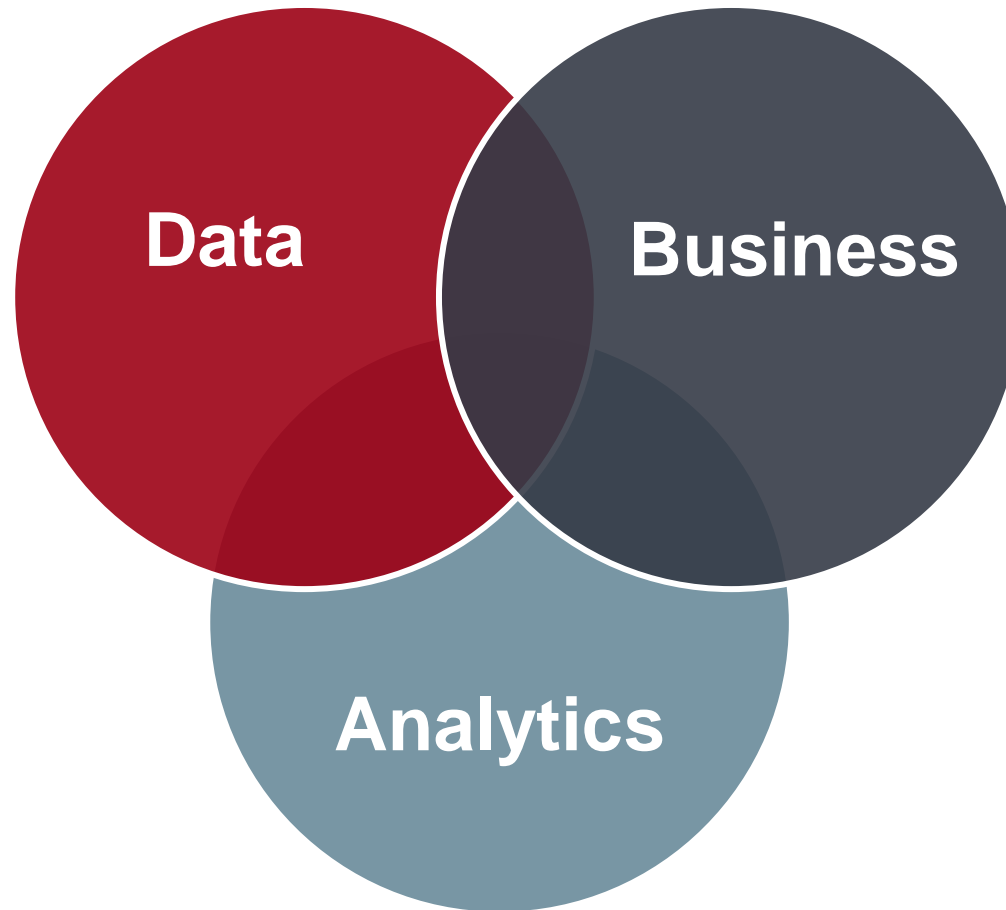
are able to bring structure to large quantities of formless data and make analysis possible



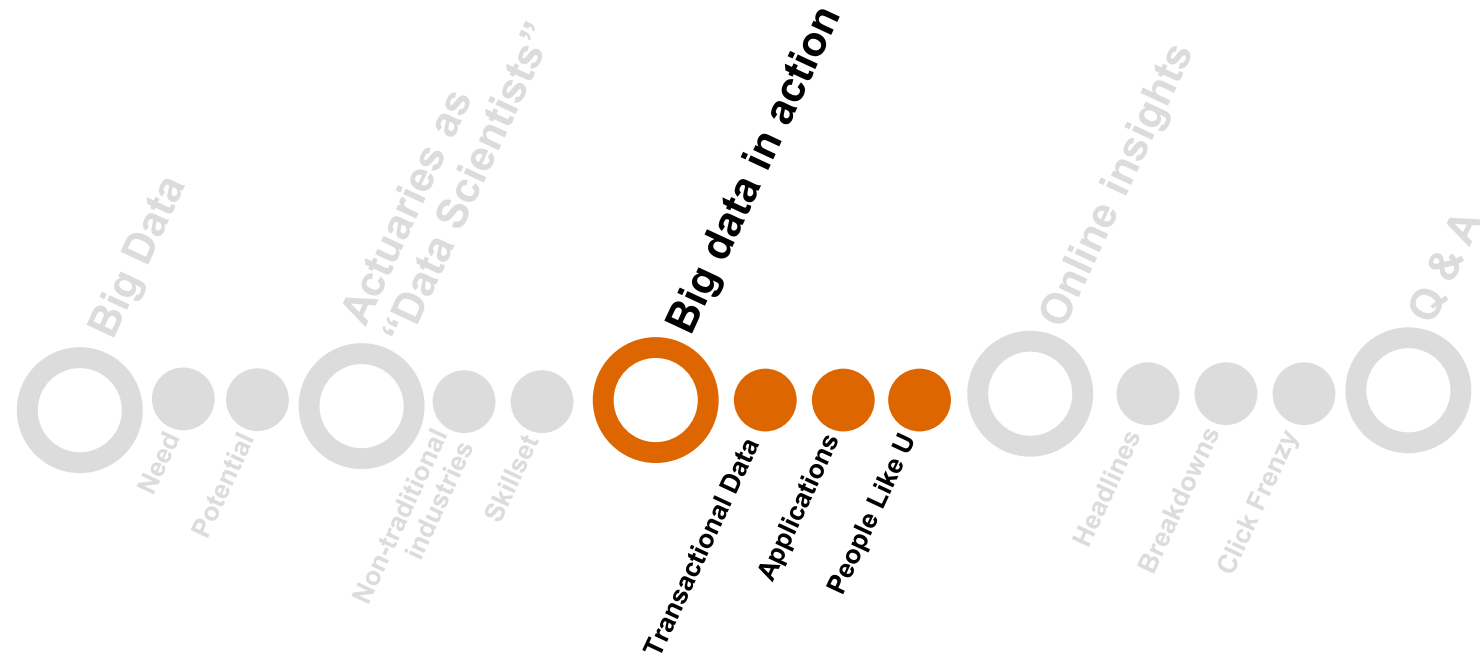
advise executives and product managers on the implications of the data for products, processes and decisions

have an intense **curiosity to go beneath the surface of a problem**, find the questions at heart, and distill them into a very clear set of hypotheses that can be tested

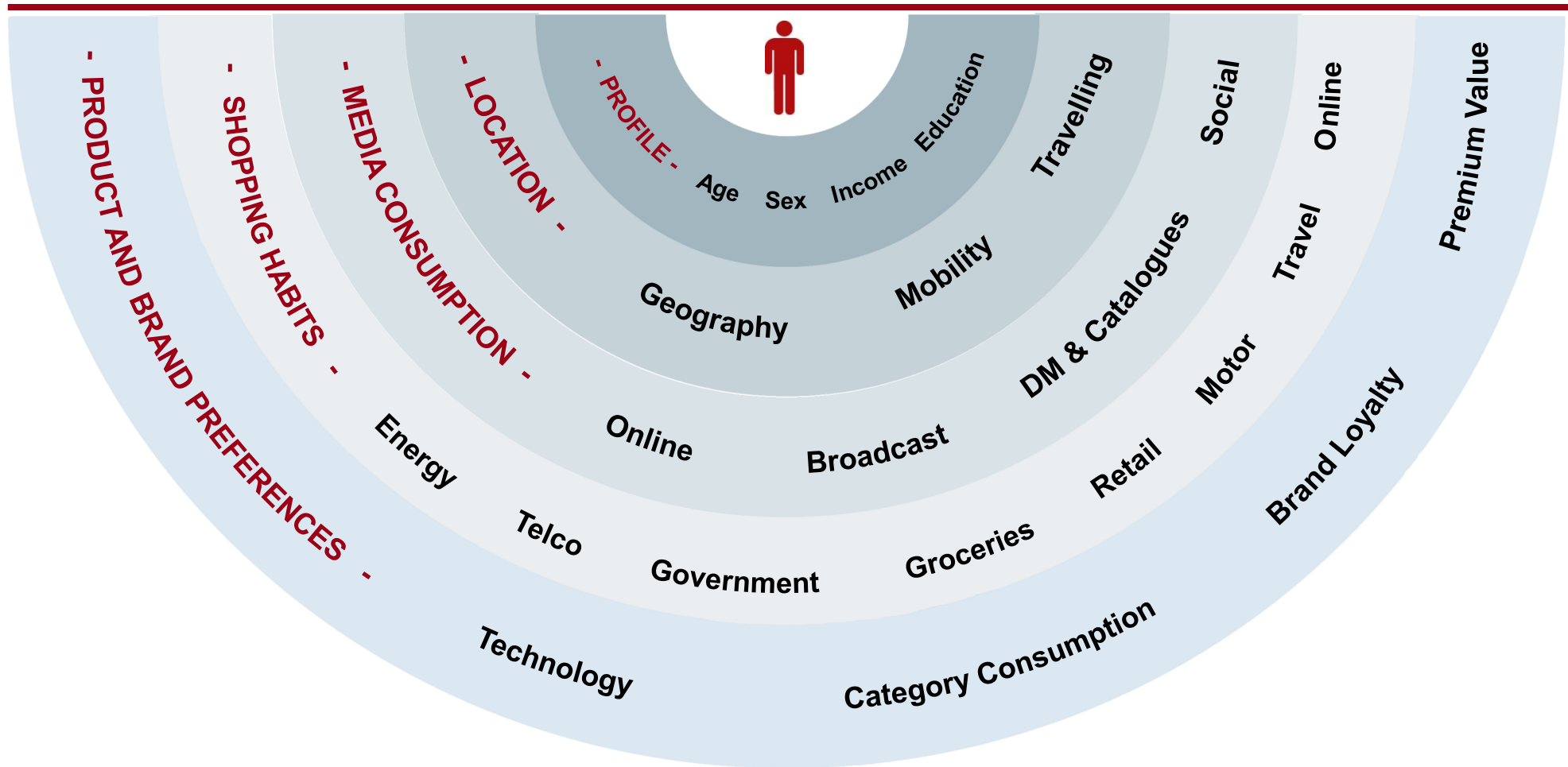
The Actuarial “Data Scientist” Skill Set



Data Analytics and Big Data



Big data – Creating a holistic customer view



Actuaries produce the NAB Online Retail Sales Index



... and the NAB Charitable Giving Index

more give, less take



Business Research and Insights

Home / Economic commentary / Charitable Giving Index – July 2012

23 October 2012

Charitable Giving Index – July 2012

Economic commentary, Featured

By Robert De Iure

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The first NAB Charitable Giving Index shows that charitable giving is growing, despite a softening domestic economy, flat employment growth and persistent consumer cautiousness.

NAB and data analytics firm Quantum reviewed donations made by credit card, BPAY and EFTPOS to develop the index and gain a picture on giving across the nation.

Key findings:

- During the first seven months of 2012, the NAB Charitable Giving Index increased by 4.7% y/y, exceeding inflation and up slightly from 4.6% y/y in the same period of 2011.
- Giving to Other charities (16.1%) experienced the fastest growth in January-July 2012, followed by Medical Research & Services (13.9%), Cancer (8.3%) and Health & Disability (8%). Humanitarian Services (-2%) charities were the only category to record lower donations.
- Humanitarian Services accounted for the lion's share of giving in the year to July with 32% of total donations. Animals & Environment and Cancer had the smallest share at 7% and 8% respectively.
- Average annual donation size per donor increased 0.7% to \$292 in the year to July 2012. Humanitarian services have the largest average donation size (\$354), much higher than Medical Research & Services (\$207) the second biggest recipient. Average giving was lowest for Cancer (\$115) and Health & Disability (\$119).

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NEWS

Tweet Recommend

Charity begins right at home in Lakes Entrance and Middle Park

ELISA DOHERTY Herald Sun October 24, 2012 12:04PM



Hanna Venable doubled once a month to the Salvation Army. PICTURE: TIM CARROLL Source: Herald Sun

POLES apart in everything from lifestyle to bank balances, Lakes Entrance and Middle Park are home to Australia's biggest hearts.

The rural fishing town and its swanky bayside sister have come up trumps in an index of our most charitable towns and suburbs.

Residents of Lakes Entrance give up a larger proportion of their income (0.34 per cent) to charity than those living in any other area in the country, according to NAB's inaugural Charitable Giving Index.

And their well-heeled counterparts in Middle Park shell out the most money, donating an average of \$334 a year each.

The average taxable income in Middle Park is

VICTORIA'S MOST CHARITABLE POSTCODES

Average spend per person, Aug 2011-July 2012

1 Middle Park	\$333.97
2 Canterbury	\$201.25
3 Toorak	\$188.77
4 Fitzroy North	\$175.64
5 Kew	\$170.05
6 Hawthorn East	\$160.46
7 Lakes Entrance	\$157.38

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 QUANTUM

Actuarial models combined with Market Blueprint® big data creates “People Like U”

Demonstration: UBank’s ‘People Like U’ allows Australians to profile their spend behaviour in various categories against similar people...

The image displays three screenshots of the PeopleLikeU app interface, which is designed to help users profile their spend behavior against similar people.

Left Screenshot: GROCERIES

People Like You Spend \$779 Per Month | **People Like You Make 109 Purchases Per Year**

POPULAR:	PREFERRED:	EMERGING:
1. Woolworths Average Spend Per Visit \$95	1. Forestway Fresh Average Spend Per Visit \$107	1. Deli Fresco Average Spend Per Visit \$31
2. Coles Average Spend Per Visit \$81	2. Antico's Average Spend Per Visit \$61	
3. Harris Farm Average Spend Per Visit \$61		

Brand Info: Popular Brands are the favourites - where people like you tend to be more fond of than most - even if you don't shop there all the time. Preferred Brands are those that people like you tend to be more fond of than most - even if you don't shop there all the time. And Emerging Brands are those that people like you are enjoying more and more - so they must be doing something right!

UBank | About this site | Frequently asked questions

Right Screenshot: FOOD & DRINK

People Like You Spend \$1370 Per Month

DISCOVER | **COMPARE**

Dining Out
3 Hot Spots
1. Season Thai Restaurant 2. Papa's Pizza & Pasta 3. Ribs and Rump

Fast Food
3 Hot Spots
1. Blue Gum Hotel 2. Opera Bar 3. Hornsby R S L Club

Pub & Clubs
3 Hot Spots
1. Hope Estate 2. BC Liquor 3. Best Cellars

Liquor
On The Rise

WANT TO CHECK OUT ANOTHER LOCATION?

NOT LIKE YOU?
CREATE A CUSTOM PROFILE TO COMPARE YOURSELF TO.

Fave Stores
1. Forestway Fresh 2. Deli Fresco 3. Antico's Northbridge

SHARE MODEL

Bottom Screenshot: TELL US A BIT ABOUT YOU...

WHICH GENDER ARE YOU?
Question 1 of 6

Gender | **Age** | **Income** | **Living Situation** | **Housing** | **Location**

Female | **Male**

There are 23,000,000 People Like U

SEE UNIQUENESS REPORT

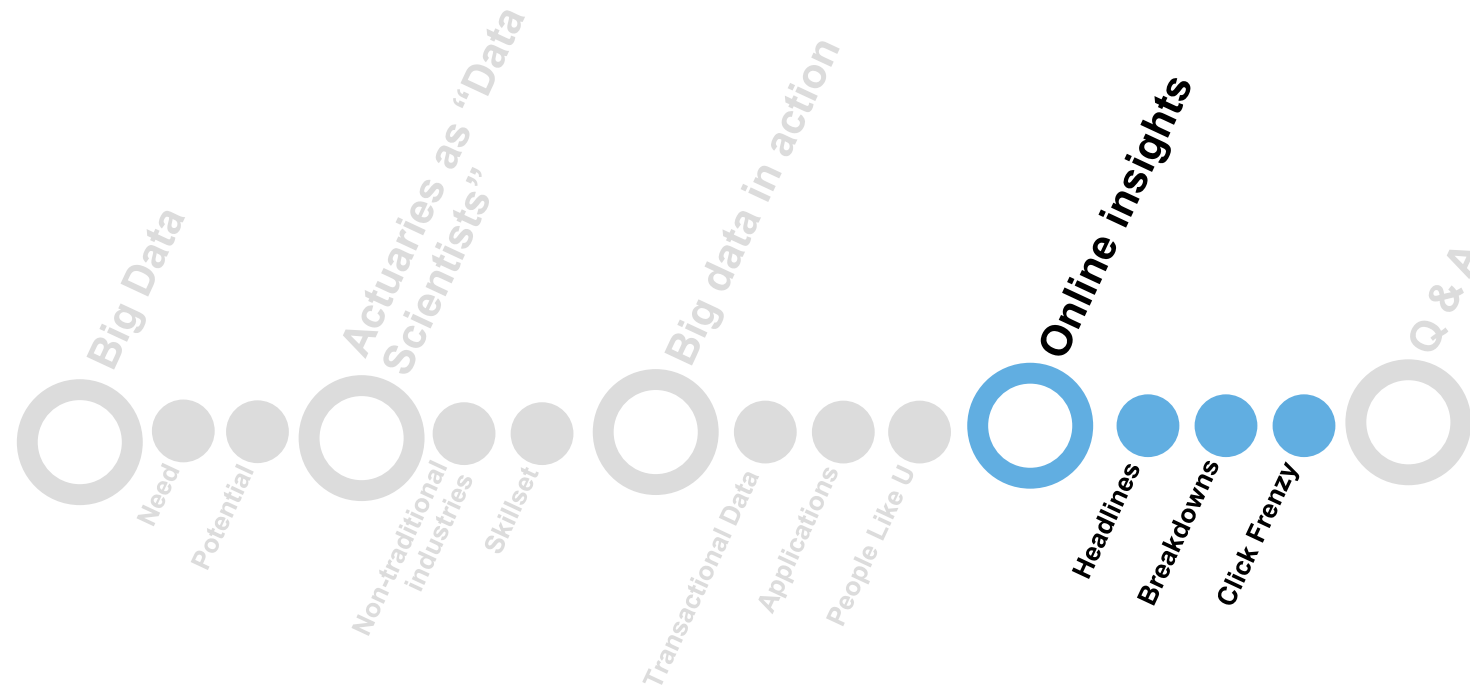
Categories
Food & Drink | Travel | Shopping | Home & Home | Day To Day | Entertainment

Planners
Real Estate | Holiday

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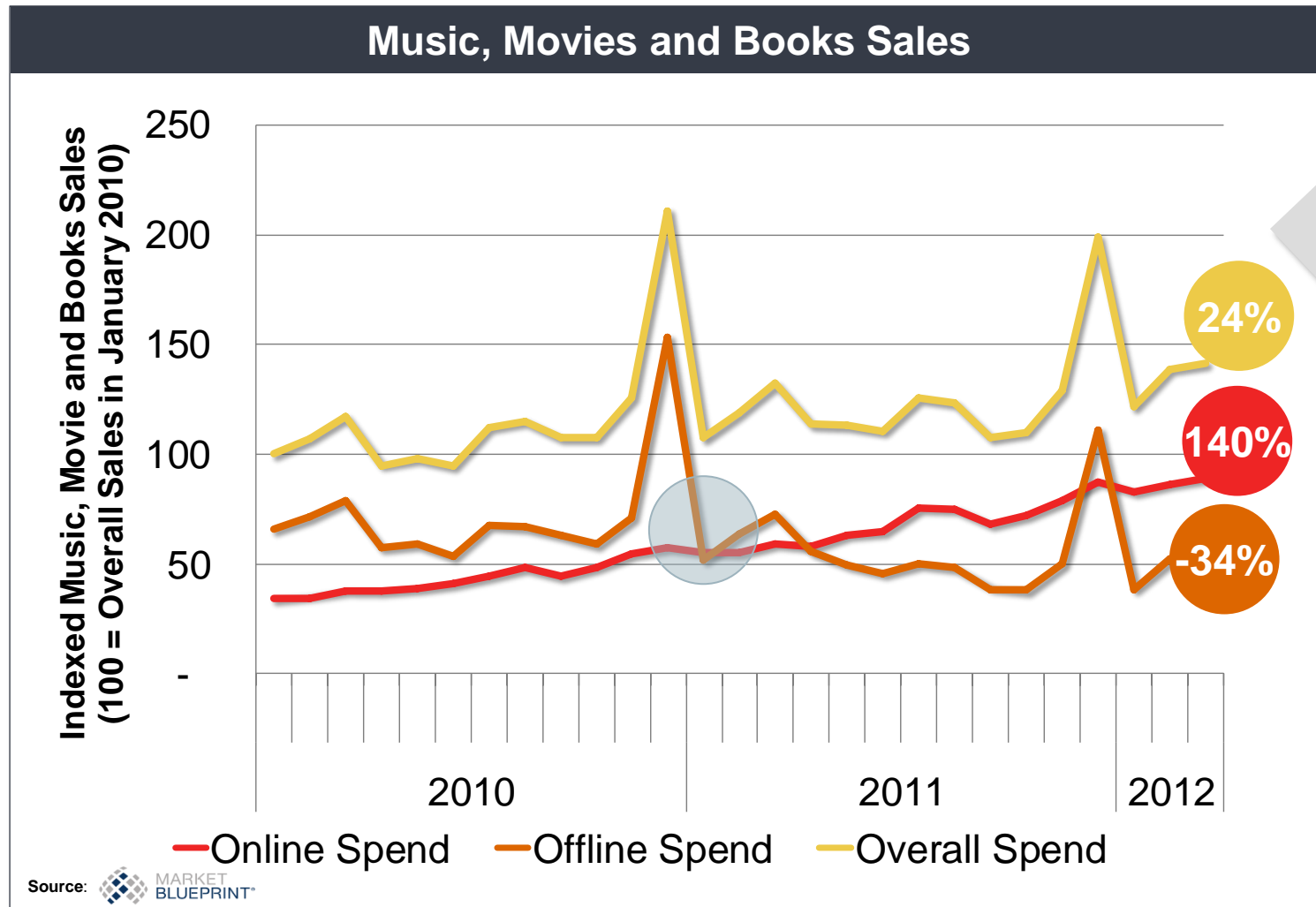
Data Analytics and Big Data



Australian retail : a 2 speed economy?

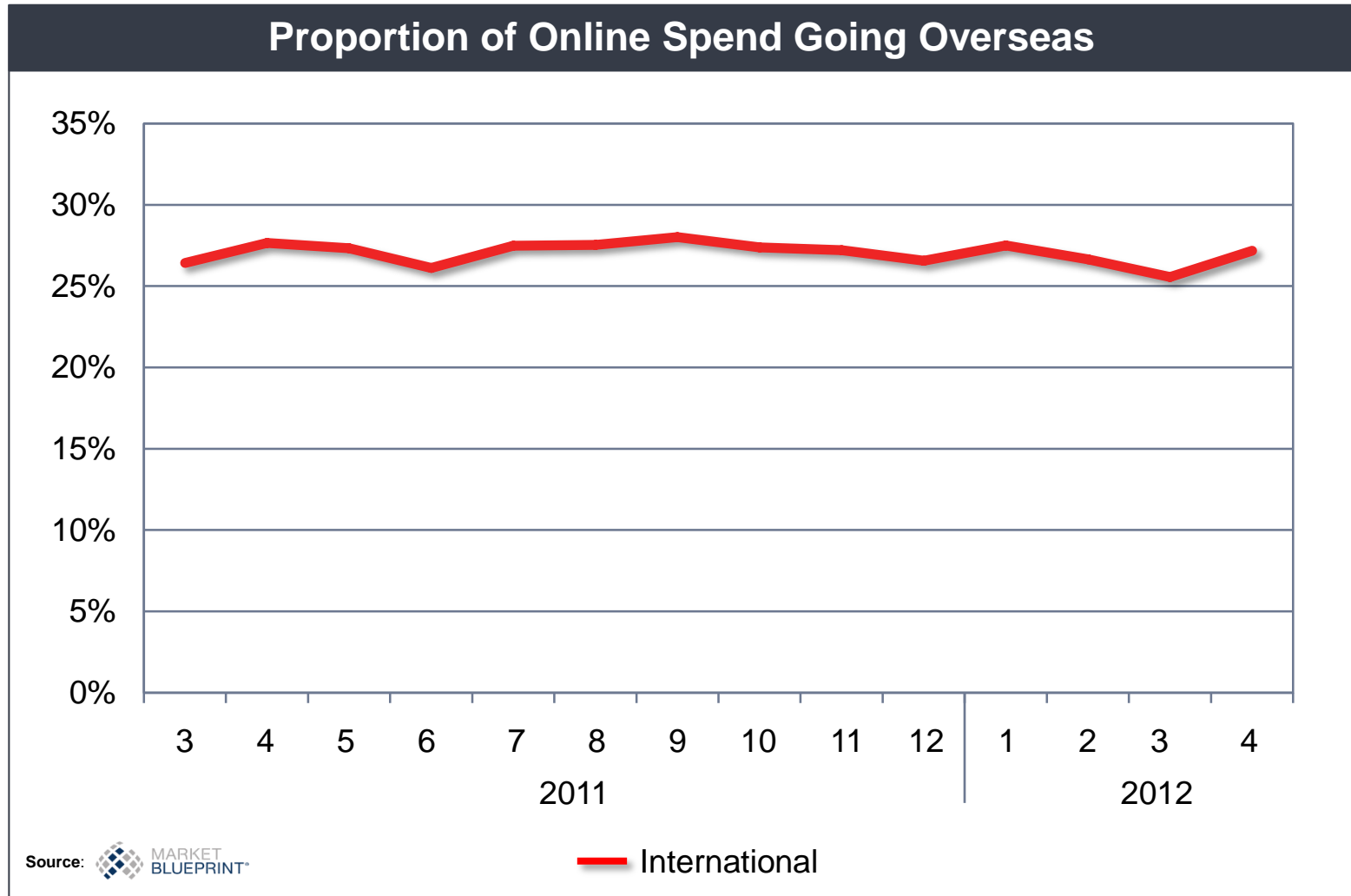


Online Music, Movies and Books sales have overtaken traditional offline sales



In less than a decade, online music, movies and books overtakes total bricks and mortar sales

Overseas online purchases – a substantial threat?



“Cyber Monday” – 10m US shoppers spend \$1.2bn in 24 hours



CLICK FRENZY

THE SALE THAT STOPS A NATION

RETAILERS GET INVOLVED

COUNTDOWN TO THE BIGGEST ONLINE SALE EVENT

35 3 17 52

DAYS HRS MINS SECS

Click Frenzy is Australia's first national online-only mega-sale!

Online shoppers, get ready. Retailers, get set. The countdown to the Frenzy has begun!

- 24 hours only, starting Tuesday November 20, 7pm sharp!
- Hundreds of retailers, hundreds of unbelievable deals in one place!
- Wherever you are when Click Frenzy starts, at the office, on the couch, in the pub or at the cafe, get online and get a deal!

> Find out more

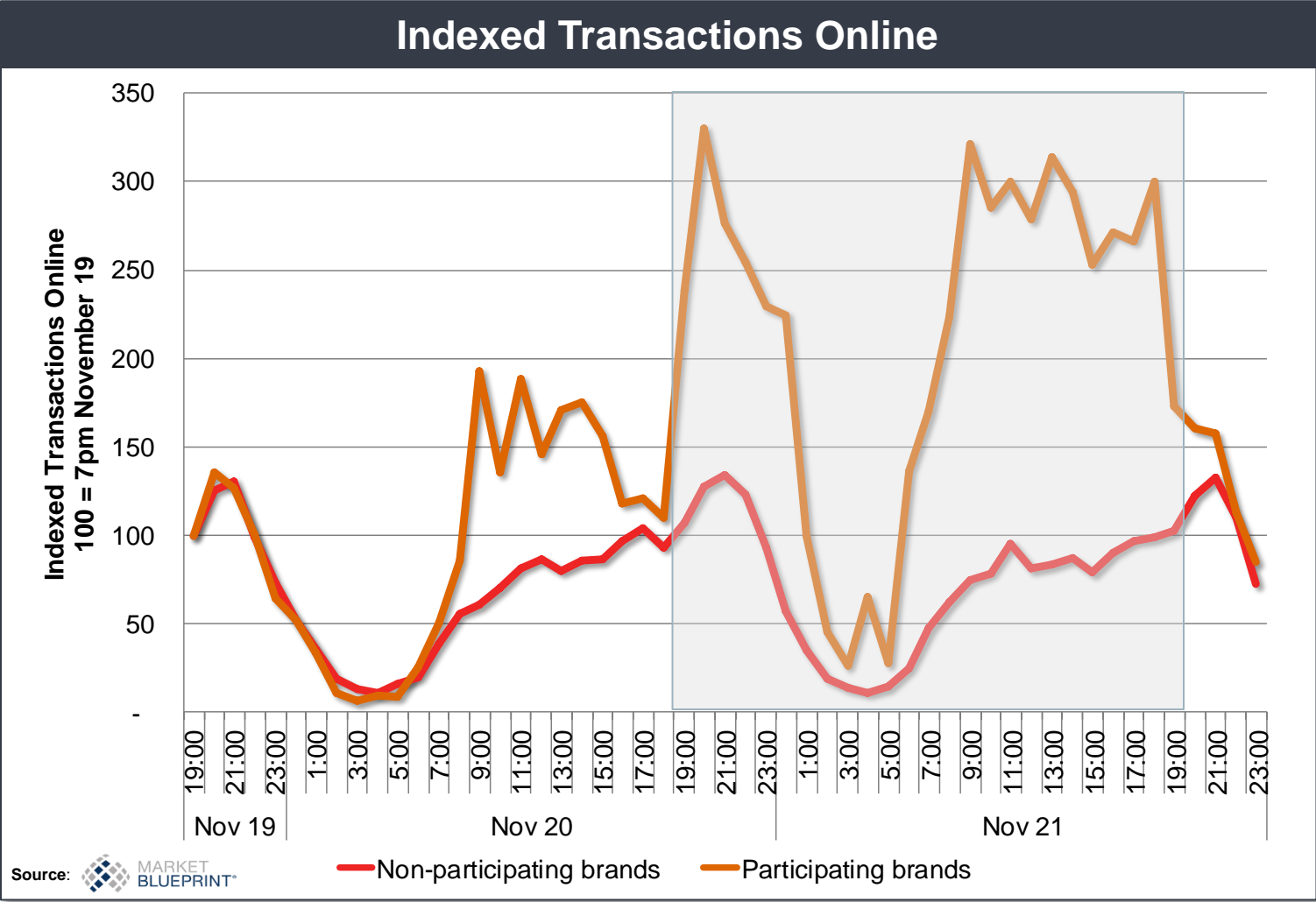
REGISTER HERE

Email Address

REGISTER

DONT MISS OUT

Despite publicised crashes, there was still a massive increase in sales volumes for participating brands during Click Frenzy



#ClickFail?

Frenzy brands generated sales 2.5 times more than their previous biggest day ever

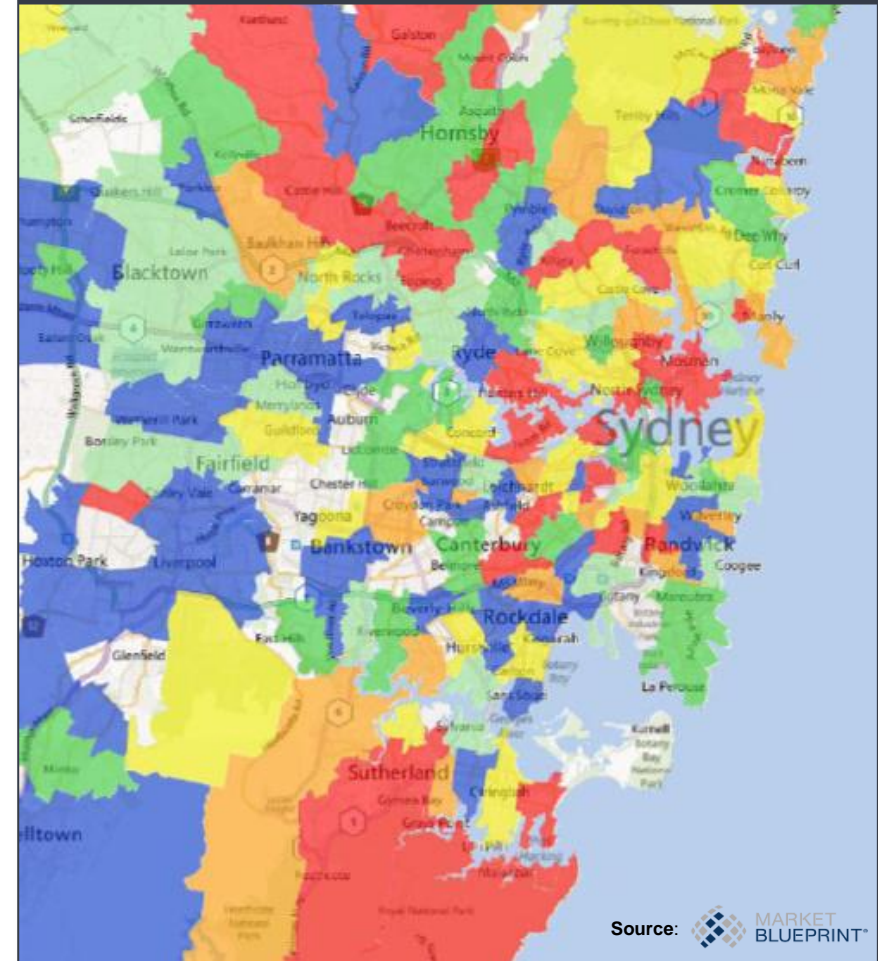
“Halo effect” – non-participating brands experienced a 30% uplift in their online sales

1 in 10 Click Frenzy shoppers shopped more than once, with nearly half of them shopping across multiple categories

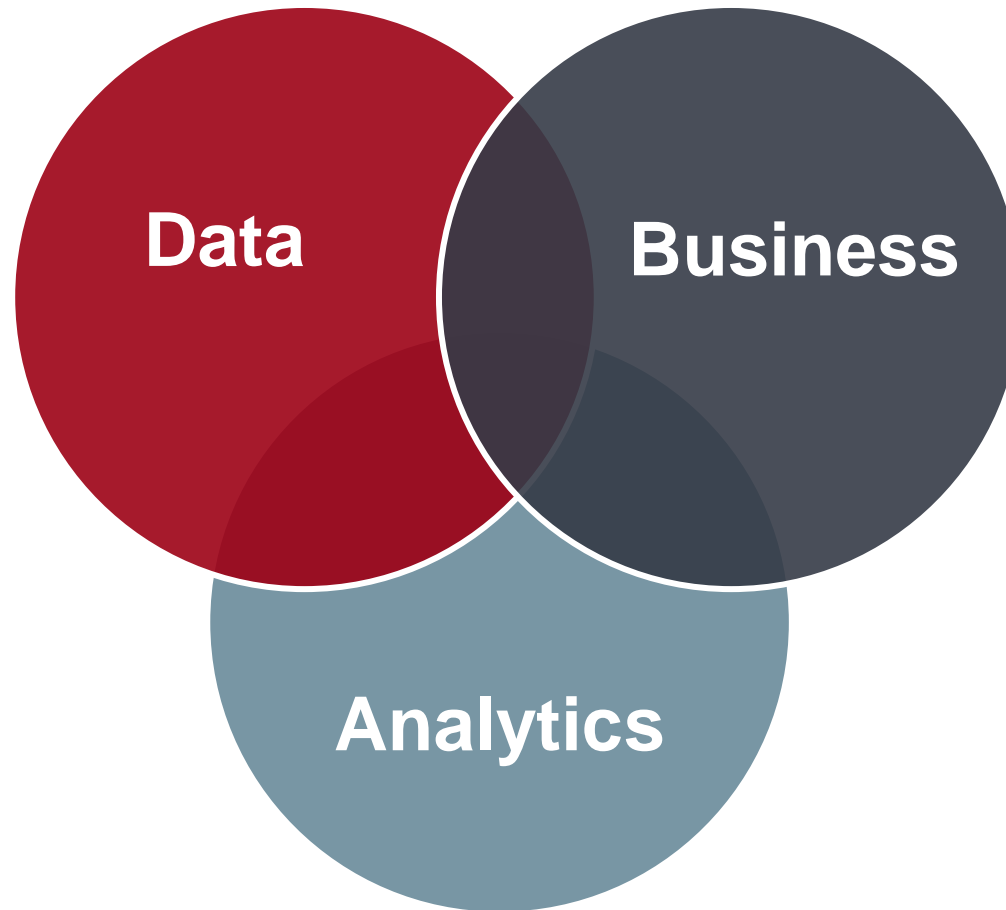
Almost half of the spend by Click Frenzy shoppers under 20 was on fashion

Over a quarter of the spend by Click Frenzy shoppers over 60 was on liquor

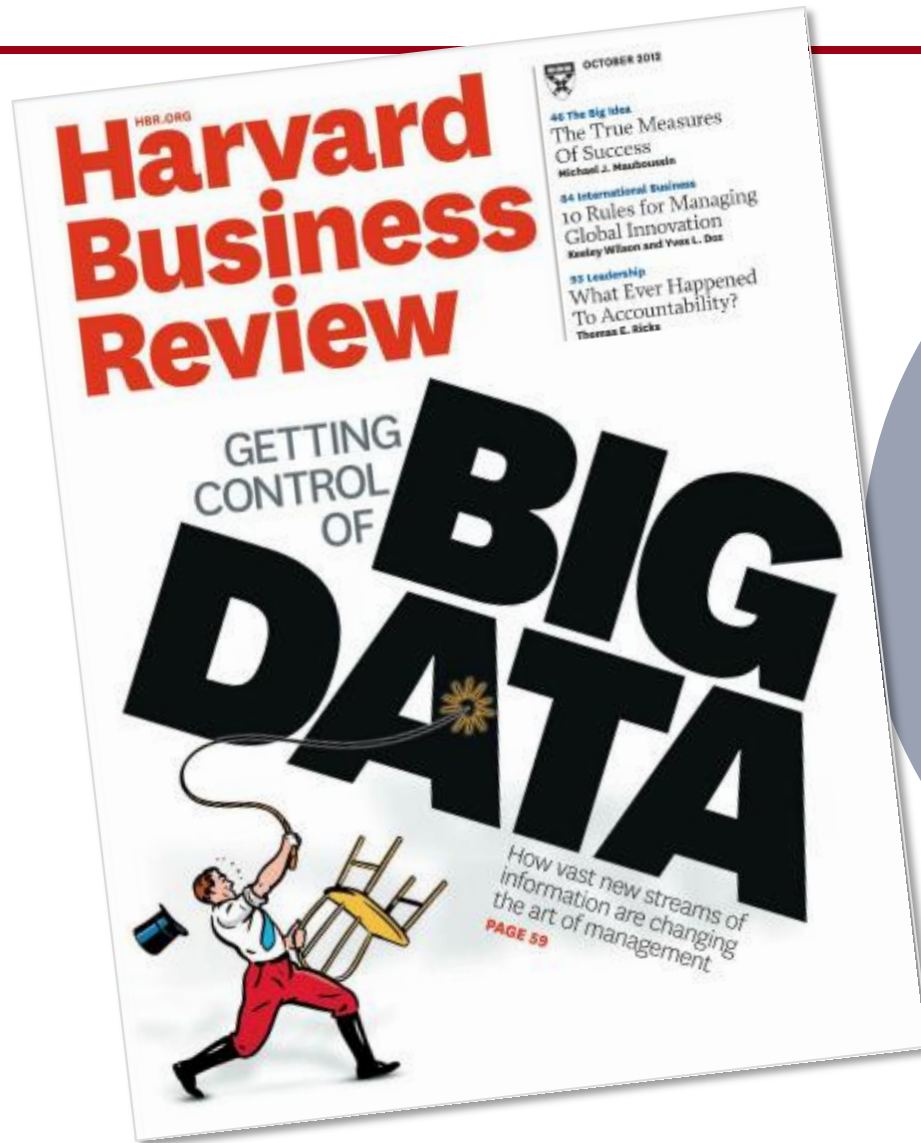
Spend Per Capita on Click Frenzy



The Actuarial “Data Scientist” Skill Set



“Data Scientist”: The Sexiest Job of the 21st Century



“ Big data shows no signs of slowing. If companies sit out this trend’s early days for lack of talent, they risk falling behind as competitors and channel partners gain nearly unassailable advantages. Think of big data as an epic wave gathering now, starting to crest. If you want to catch it, you need people who can surf ”

A BETTER WAY
from data to dividend



Thank you

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Data Analytics and Big Data

