

Analytics in Finance and Accountancy

A research project from ACCA and Chartered Accountants Australia and New Zealand



Think Ahead



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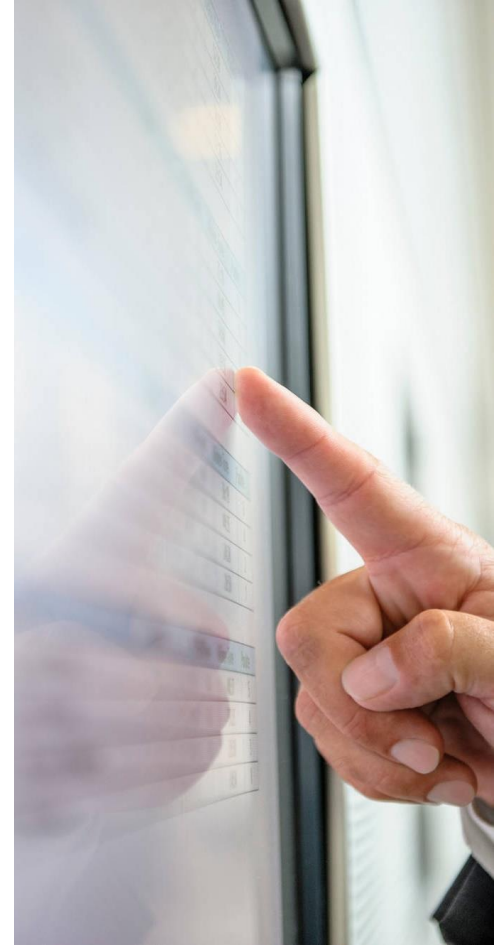
Co-author of the Analytics in Finance and Accountancy report and previously serving as the key data scientist for Chartered Accountants Australian and New Zealand. He has provided key insights relating to big data and prevailing procurement analytics practices, reviewing the NSW Government Expenditure Data Cube (AUD40bn) , general ledger structure, taxonomy schematic and future roadmap.

Suresh is one of Australia's foremost experts in Big Data and Machine Learning, applying his knowledge in diverse fields from financial services to social media marketing. He is currently focusing his interests towards applying Natural Language Processing and Artificial Intelligence in improving decision making amongst professionals including accountancy, finance and marketing through new analytical tools. This includes the award-winning deception indicator using junk words and a sustainability report writer (under development).

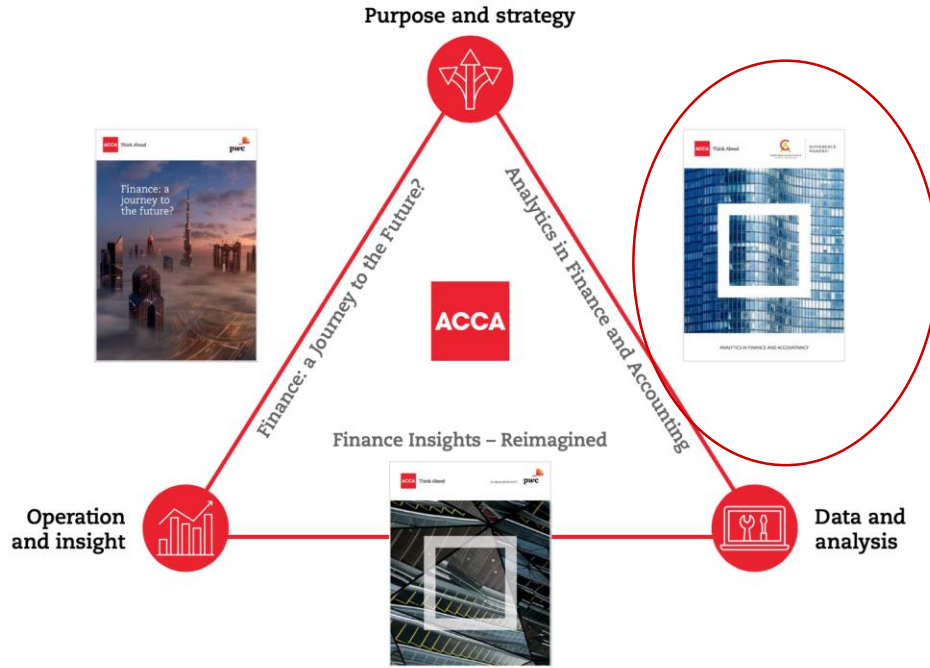
He graduated in physics from London University and received an MBA and PhD from the University of Technology, Sydney, where he also has provided thought leadership in the development of the Master of Data Science and Innovation program. Mentoring young data science professionals, helping others leverage data and establishing data practices for early-stage companies. He frequently writes on key data issues impacting professionals and the Internet of Things as well as continually develops courses in machine learning.

Areas for Conversation

- Analytics in finance and accountancy report positioning/ Role of analytics in business
- Forward from report
- Methodology for analytics projects
- Big data – non financial information and other sources
- Is there an opportunity for analytics in finance?
- SME analytics
- Case study: Master Data
- Why do finance teams use analytics?
- Types of analytics and what do finance teams use?
- What is preventing finance teams utilising analytics?
- What technologies do finance team use?
- Developing the business case for analytics in finance?
- Five areas of focus for developing analytics
- Skills for analytics in finance and accountancy
- Organisation models supporting analytics
- Artificial Intelligence and Machine Learning
- Five areas of focus for developing analytics



ACCA finance function reports



Foreword

The technological revolution of which we are a part has vastly increased the amount of data and information that is available to us. From that data we can generate insights and support effective decision making. Finance and accountancy professionals need to be at the forefront of this analytics revolution. The COVID-19 pandemic has heightened the need for organisations to be agile and responsive, developing plans to cope with a range of scenarios and opportunities as they continue to evolve. The agile and the nimble have exploited their data assets and developed responses that can be implemented readily and used to support business survival.

Yet the findings of this report are that many accountancy and finance professionals are still using rearward-looking analytics: reporting on past performance and telling their stakeholders what has happened. There has never been a greater need to invest in forward-looking analytics that help decision makers explore the potential range of options for the future and match this to the monitoring of current actions. If accountancy and finance professionals, fail to develop our skills in the appropriate directions, to provide our stakeholders with forward-looking insights, they run the risk of being marginalised.

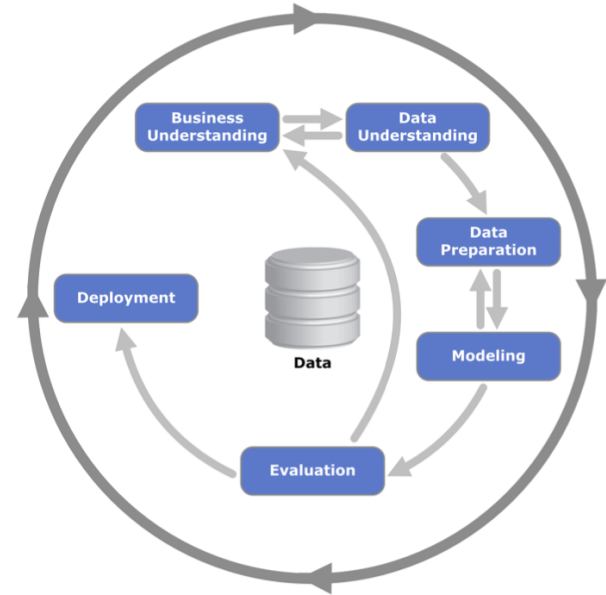
Both ACCA and Chartered Accountants ANZ continue to evolve their qualifications and continuing education programmes to ensure that members and future members can develop the relevant skills. In this report we offer insight as to the skills needed and reflect upon the need for accountants to understand the problem and articulate the analysis, as much as their need for skills relevant to data and applications use.

Helen Brand, Chief Executive,
ACCA

Ainslie van Onselen, Chief
Executive Officer, Chartered
Accountants Australia and New
Zealand

CRISP-DM framework

- ✓ How do we get started on analytics projects?
- ✓ How do we organise an analytics project?
- ✓ What do we need to do to ensure that the analytics project being undertaken is ethical?
- ✓ How do we know we have achieved the successful completion of an advanced analytics project?



CRISP-DM Process Diagram

Business sources of big data – non-financial information

BUSINESS PROCESS	NFI – SOURCES OF BIG DATA WITHIN ORGANISATIONS
Property, plant and equipment	Online databases complementing historic value
Marketing	Social media, email, Google search, website analytics and even health data from wristband devices and smartphones
Accounts receivable	Full textual description (unstructured data) of goods or services
Purchases and sales	Radio frequency identification (RFID), GPS and Bluetooth beacon
Cash	Mobile payment, electronic credit and Apple Pay or Android via near-field communications (NFC)
Customer service	Email, social media, call centre records (CCR)
Supply chain	RFID, GPS, video (logistics centre) and temperature
Inventory	RFID, GPS and video (stocking warehouse)

Other business sources of big data – non-financial information

Orley Ashenfelter, an economist,
wine quality = 12.145 / 0.00117 x Winter
Rainfall + 0.0614 average growing
season temp – 0.00386 harvest rainfall
(Marland 2014).

This equation helped predict the 'wines
of the century' for 1989 and 1990.

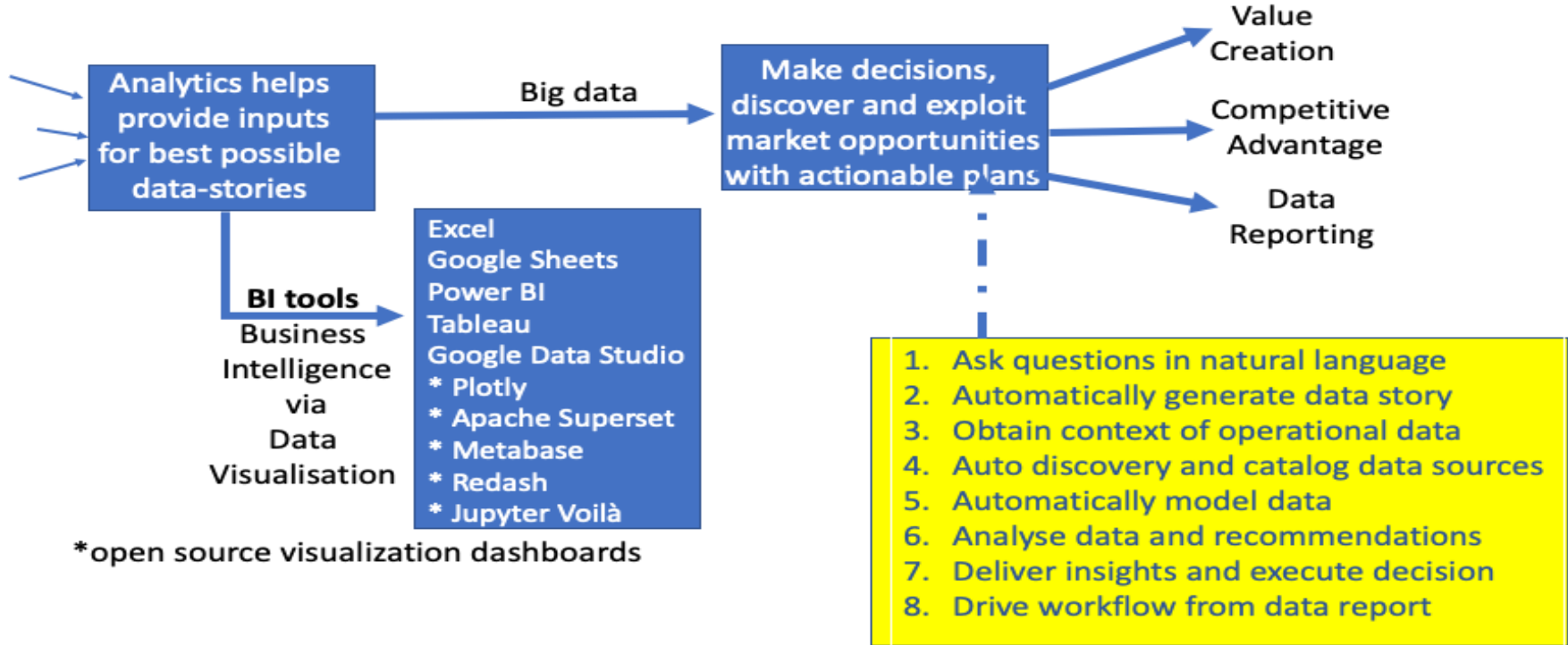
Predicting the price of an Australian
Grange Hermitage uses similar
techniques. See
<http://www.liquidasset.com/>



The ANZ Truckometer is a set of two economic indicators
derived using traffic volume data from around the country.
Traffic flows are a real time and real-world proxy for economic
activity - particularly for the New Zealand economy, where a
large proportion of freight is moved by road. It represents an
extremely timely barometer of economic momentum. The
ANZ Heavy Traffic Index shows a strong contemporaneous
relationship to GDP, while the ANZ Light Traffic Index has a
six-month lead on activity as measured by GDP.



Finance data-stories generation from BI analysis

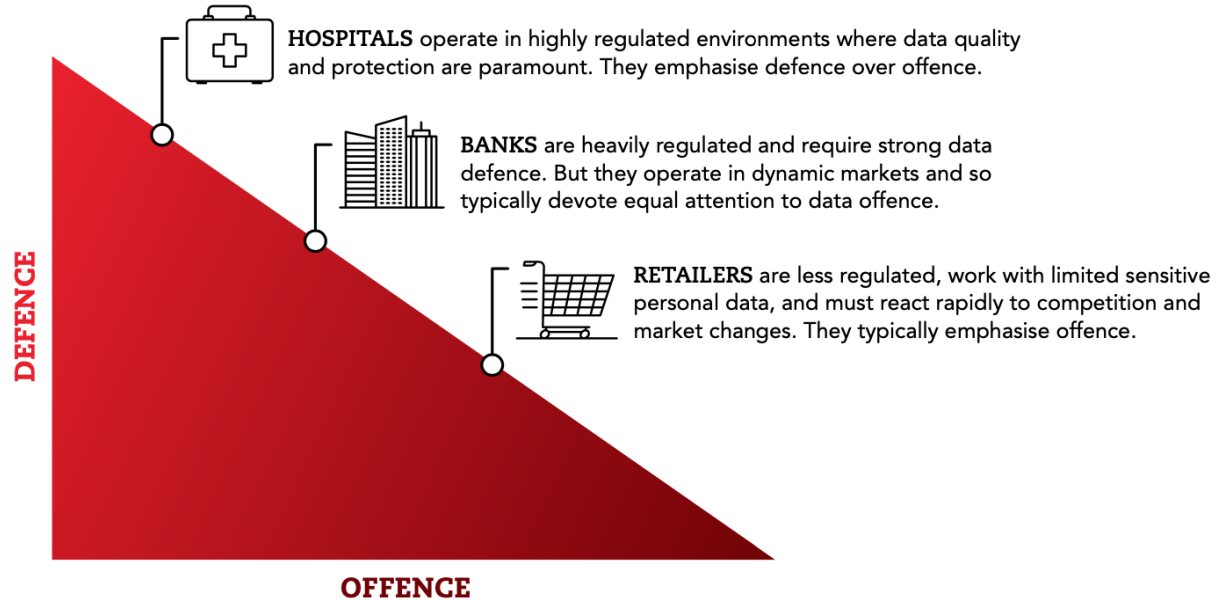


Updated April 2021 from published version

Data strategy

The Data-Strategy Spectrum

A company's industry, competitive and regulatory environment, and overall strategy will inform its data strategy.



Source: Leandro Dallemule & Thomas Davenport © May 2017 The Financial Brand

The four Vs of big data



Opportunities for analytics



SME Analytics

- 'Fathom' for financial reporting and analysis
- 'Spotlight' helps visualise accounting data and for powerful reporting and forecasting, and
- 'Futurli' makes predictions about a business after accessing all the accounting data available.
- 'DataDear' extraction of the transactions and data from the accounts into Excel
- 'Float' provides automated two-year forecast and scenarios built on the current cash position.

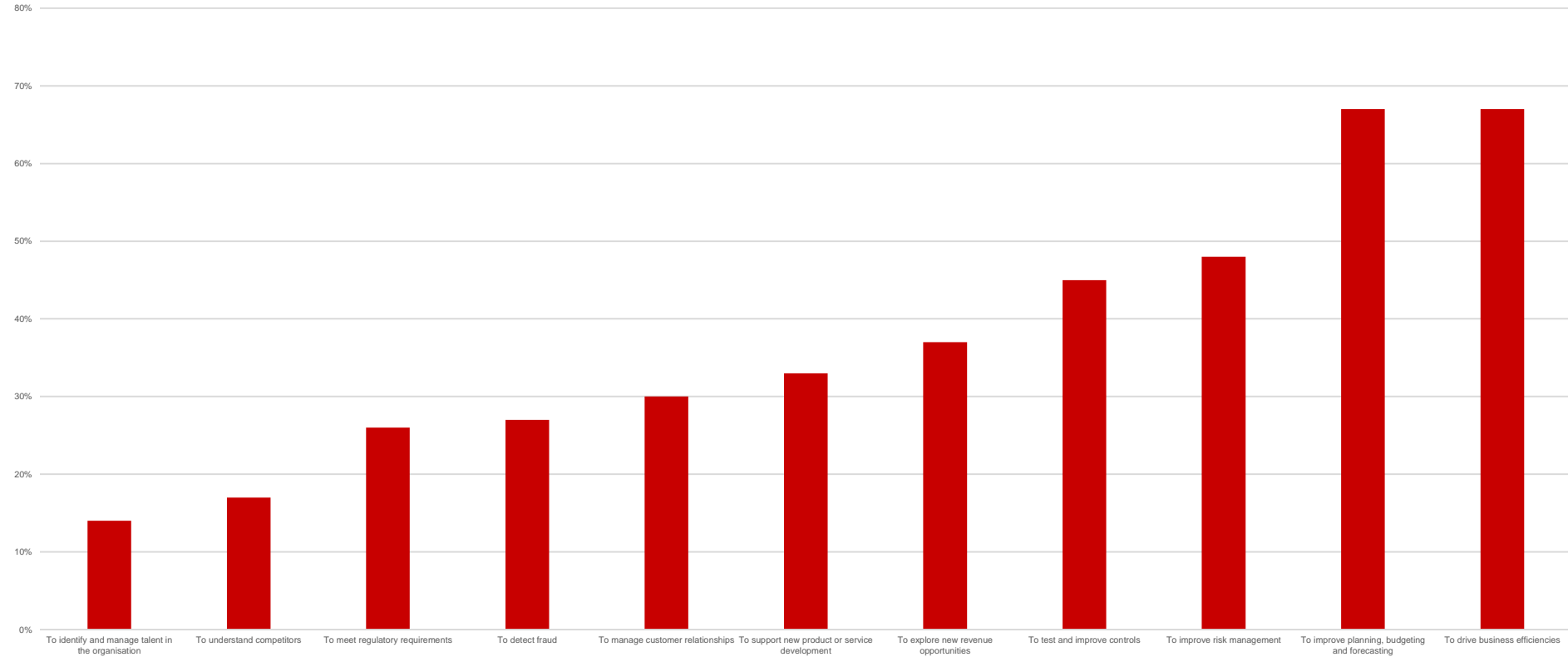
CASE STUDY: The challenges of master data

One of our challenges is having good data to work with. This is a problem of discipline and this is one of the issues in that we have with master data. For years we have been exerting pressure on the top management to make sure that this problem is resolved.

We have good infrastructure. We invest a lot of money. We train people. But when it comes to managing our master data this is one of our biggest issues. We know that we have a problem in for example with our sales and marketing departments. They are late with the master data maintenance in the system or they provide the wrong master data. They make mistakes and they outsource the process. So, it becomes even more of a mess. Yet it becomes a stereotype when you automatically say this is the problem, and you know we live with this. You need to explain that if we want to have good decision making this needs robust analytics and that requires good quality data otherwise your analyses become false.

Why do finance teams use analytics?

What do you think are the main reasons why your team is exploring or using data analytics:



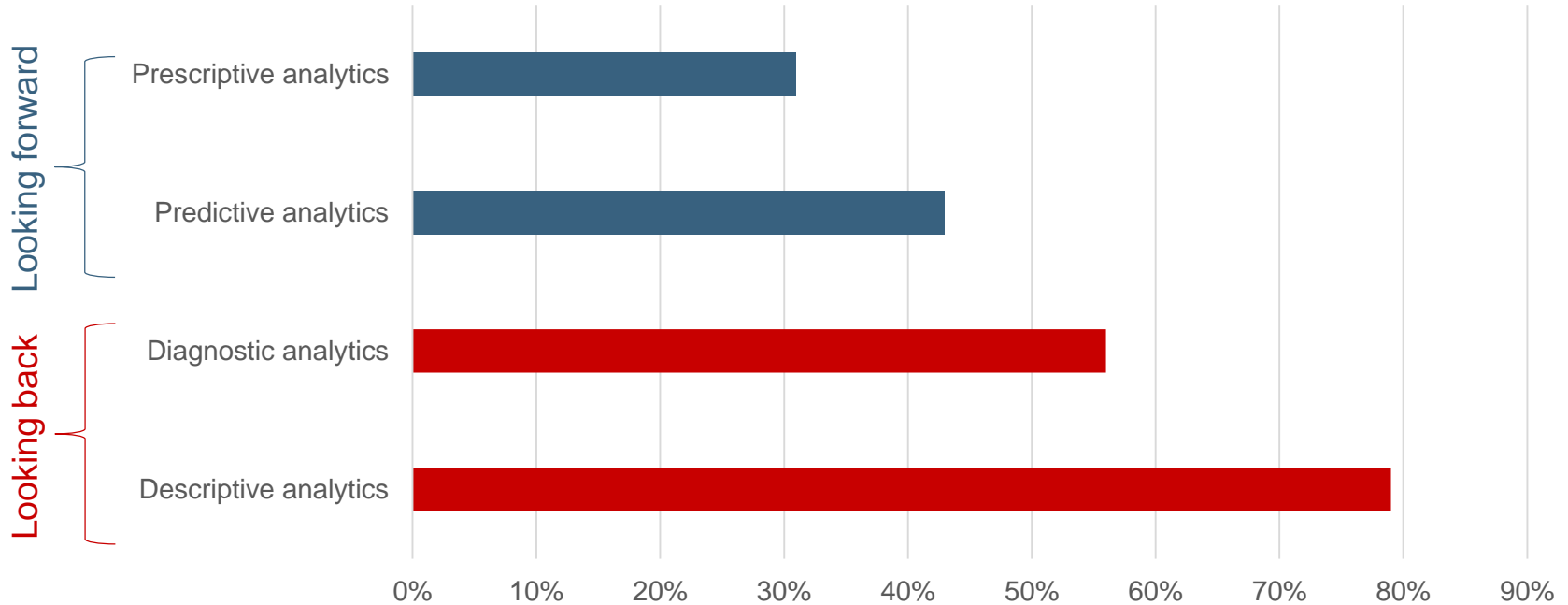
Four types of analytics



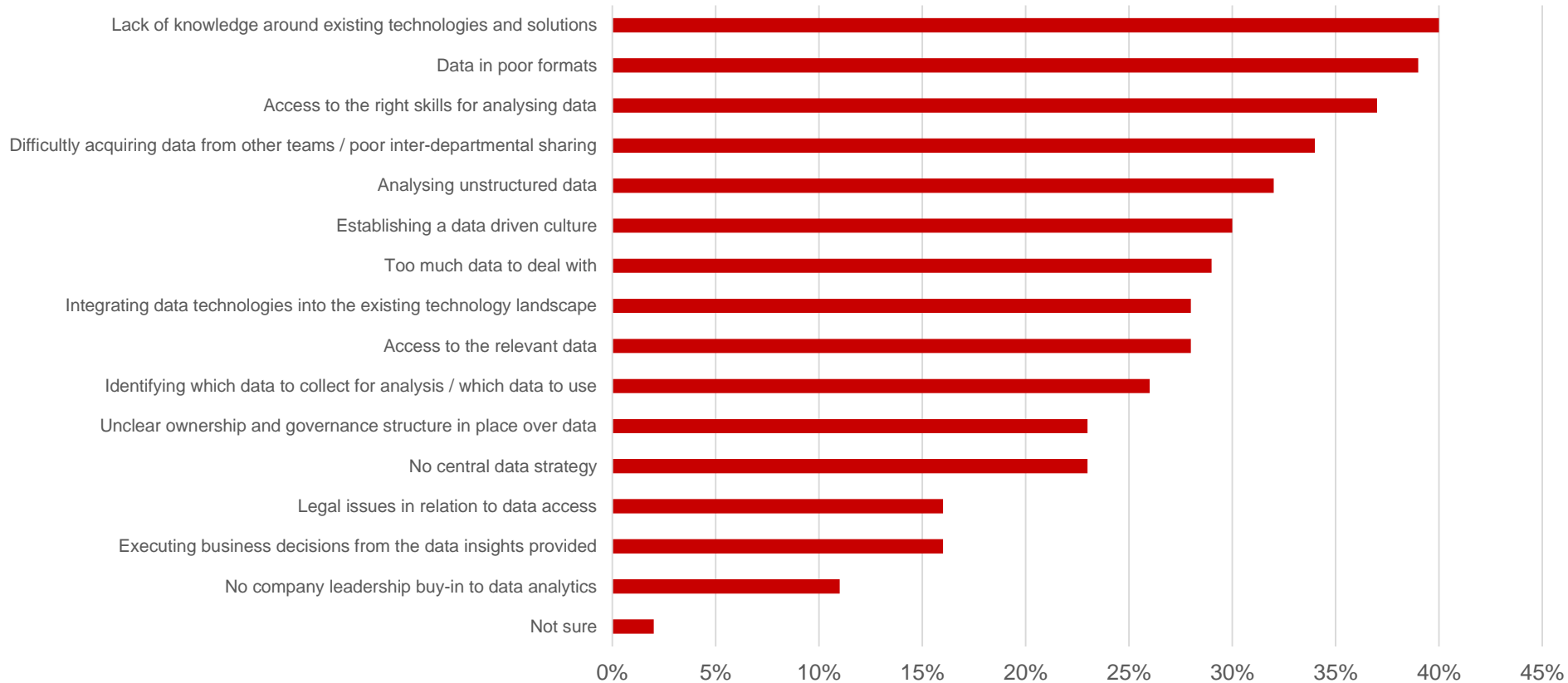
Let's define the four types of analytics. The first two of these essentially look at the historic perspective whilst the second two look forward.

- **Descriptive Analytics:** Describing or summarising the existing data using existing business intelligence tools to better understand what is going on or **what has happened**.
- **Diagnostic Analytics:** Focus on past performance to determine **what happened and why**. The result of the analysis is often an analytic dashboard.
- **Predictive Analytics:** Emphasizes on **predicting** the possible outcome using statistical models and machine learning techniques.
- **Prescriptive Analytics:** It is a type of predictive analytics that is used **to recommend** one or more course of action on analysing the data.

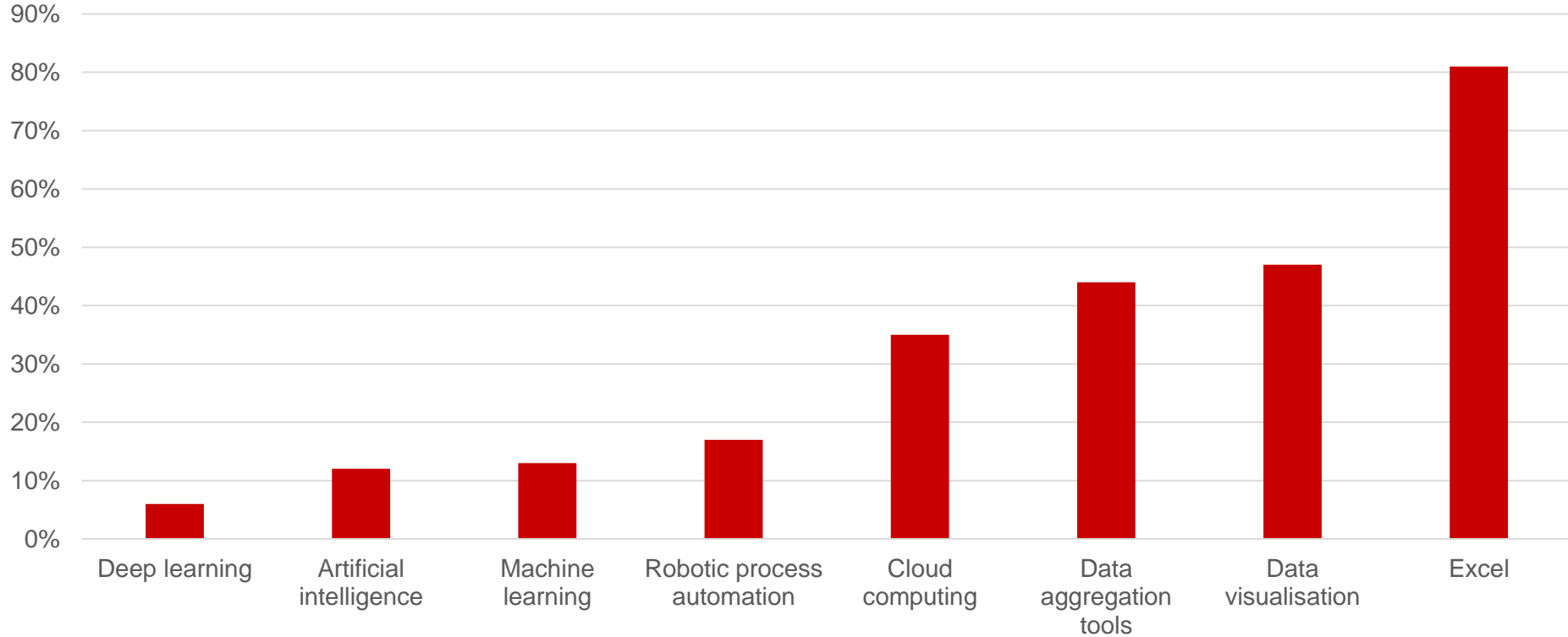
What types are being undertaken?



Challenges

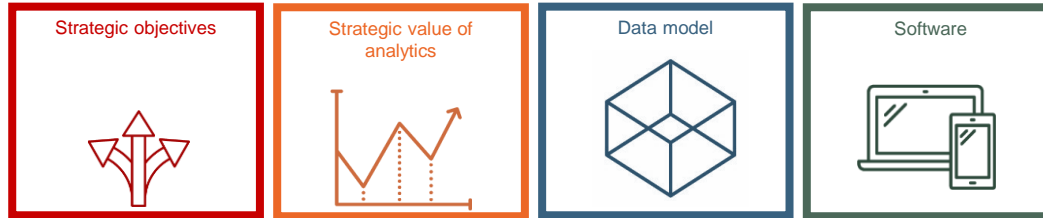


Technologies currently used



Developing the business case for analytics in finance

Components of the business case for analytics in finance



In developing the business case for analytics we need to consider four areas

1. The **strategic objectives** of the organisation and how the drivers of the 3Ps create objectives and strategies that we need to monitor.
2. How analytics can help address this and enhance **the decision making processes** through giving a clearer view of the factors that need to be considered.
3. This then has implications on the **data model** and the data that we need to collect. This data may be in a variety of forms, not just financial data but also operational and unstructured data.
4. Finally, we need to look at the **software and the technology platform**. This is the discussion beyond Excel into other data manipulation tools such as PowerBI, visual representation tools and the platform on which these sit; the use of cloud-based technologies, which are as accessible to the smaller businesses as they are to the larger ones.

Skills for analytics in finance and accountancy

Finance and
accountancy



Business
understanding



Data literacy



Data extraction



Application
knowledge



Problem
solving and
critical thinking



Visualisation



Storytelling



Skills for accountancy and finance professionals: Big data accounting course

A University Accounting course developed through a collaboration between University and Chartered Accountants ANZ.

Teaches students a new set of skills, enabling them to extract big data from annual reports and government sources, including the Australian Bureau of Statistics (ABS), Austrade, the Bureau of Metrology and the Australian Tax Office. Using a new generation of tools beyond the spreadsheet, including (but not limited to) Microsoft Power BI, Google Spreadsheet

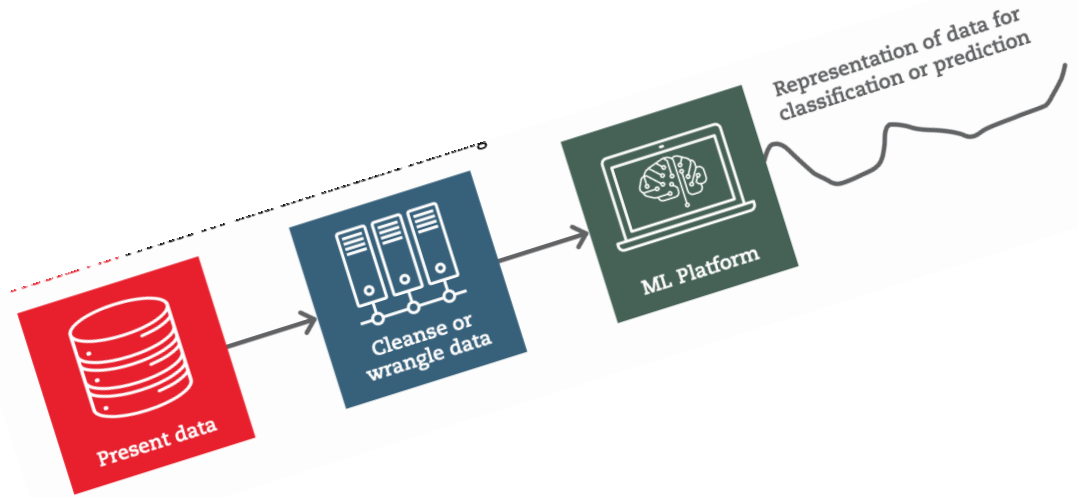
Being able to analyse non-financial large data sets is essential to developing big data accounting skills. Such data includes website data from Google Analytics and even video footage from a drone conducting an inventory of goods in one space. The data sets need not be big in the sense of having millions of rows of data – thousands of rows are adequate for teaching the concepts.

Students develop predictive data analytic skills through hands-on work, not only using tools and data to solve problems but also exploring large data sets to check first-hand for any useful discoveries among the data.

Organisational models supporting analytics

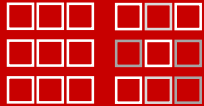
TYPE OF ORGANISATION SUPPORTING ANALYTICS	ANALYTICS RESOURCE MODEL
Decentralised	Analytics resources allocated only to projects within functions or business units with little or no coordination across the organisation.
Centralised	Strong management of resources from a central pool working on projects across the organisation. For SAP and Oracle, financial central resources handle analytics.
Centre of excellence	Includes lean teams for improvement and optimisation initiatives. Analysts coordinated from centre. Prevalent in large multinational companies.
Consulting	Analysts work together in a central group but act as internal consultants charging in-house clients for service. Specialists resources are external third parties. Sometimes includes transformation teams.
Hub and spoke	Central group of analysts with strategic deployment to initiatives across the organisation.
Functional	Analysts are in the functional areas where the most activity takes place. Business partners, champions and mentors are available in the functional areas. Information partners provide direct support to the home location on data issues. Finance team helps across the organisation and helps translate requirements. Supports analytic decision making. Chief data officer or head of analytics often reports into CFO.

Artificial Intelligence capabilities (invisible) available within Microsoft and Google Analytics Tools



Five areas of focus in developing analytics

Governance
and data
management



Big data



Hybridisation of
talent



Decision
making
enablement



Predictive and
prescriptive
analytics



About ACCA

ACCA is the Association of Chartered Certified Accountants. We're a thriving global community of 227,000 members and 544,000 and future members based in 176 countries, which upholds the highest professional and ethical values.

We believe that accountancy is a cornerstone profession of society that supports both public and private sectors. That's why we're committed to the development of a strong global accountancy profession and the many benefits that this brings to society and individuals.

Since 1904, being a force for public good has been embedded in our purpose. And because we're a not-for-profit organisation, we build a sustainable global profession by re-investing our surplus to deliver member value and develop the profession for the next generation.

Through our world leading ACCA Qualification, we offer everyone everywhere the opportunity to experience a rewarding career in accountancy, finance and management. And using our respected research, we lead the profession by answering today's questions and preparing us for tomorrow.

Find out more about us at www.accaglobal.com

About Chartered Accountants Australia and New Zealand

Chartered Accountants Australia and New Zealand (Chartered Accountants ANZ) is a professional body comprised of over 120,000 diverse, talented and financially astute members who utilise their skills every day to make a difference for businesses the world over.

Members are known for their professional integrity, principled judgment, financial discipline and a forward looking approach to business which contributes to the prosperity of our nations. We focus on the education and lifelong learning of our members, and engage in advocacy and thought leadership in areas of public interest that impact the economy and domestic and international markets.

We are a member of the International Federation of Accountants, and are connected globally through the 800,000-strong Global Accounting Alliance and Chartered Accountants Worldwide which brings together leading Institutes in Australia, England and Wales, Ireland, New Zealand, Scotland and South Africa to support and promote over 320,000 Chartered Accountants in more than 180 countries. We also have a strategic alliance with the Association of Chartered Certified Accountants.



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