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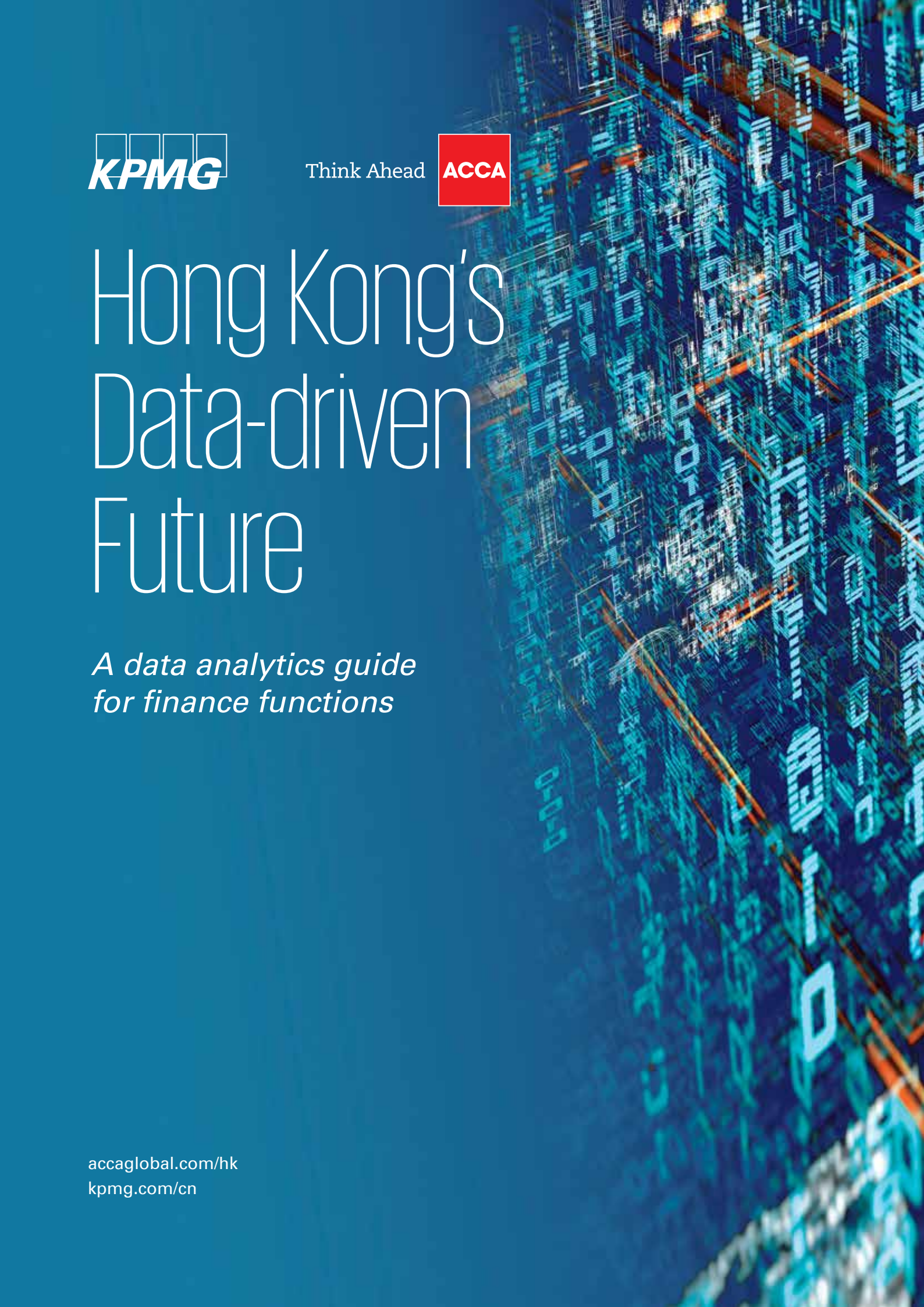
Think Ahead ACCA

Hong Kong's Data-driven Future

A data analytics guide for finance functions



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Contents

Joint foreword

Technology has significantly changed the traditional ways of working in the corporate world, disrupting all industries and functions, including finance.

Today, data is the lifeblood of business, and data analytics uses large quantities of raw information that organisations collect to generate insights contributing to better-quality executive decisions. Industry-leading organisations are all heavily driven by data insights. Especially in highly competitive markets, organisations that neglect to read data signals could disappear altogether.

As the traditional stewards of business performance, finance professionals have a crucial role to play within their organisations. They oversee much of the information that can drive data analytics and are well positioned to take an even greater leadership role in this area.

This study examines data analytics through the lens of finance functions. It shows why investments in data analytics are key to future business success.

At present, most finance functions in Hong Kong still prepare management reports manually, relying on spreadsheets to generate reports that typically focus on past performance. This approach has limitations: as markets evolve, predictive abilities become more important to identify and understand new trends and risks.

Accordingly, CEOs have changed their expectations of finance functions. They realise that their teams need readily available and highly reliable information to gain insights. Finance functions therefore need to adapt. CFOs in particular must make certain their teams are adequately trained and their operational infrastructure ready to embark on a journey of growth.

This report follows last year's thought leadership titled Hong Kong's Automated Future, which looked at how robotics process automation (RPA) can be used for manual and routine processes. This year we build on that guide by detailing the intersection of data analytics and automation, exploring how organisations can plan and adopt these technologies to achieve their business goals.

Among the many useful findings, one message runs through them all: now is the time for finance functions to take on a bigger role as their organisations embrace data.

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About the report

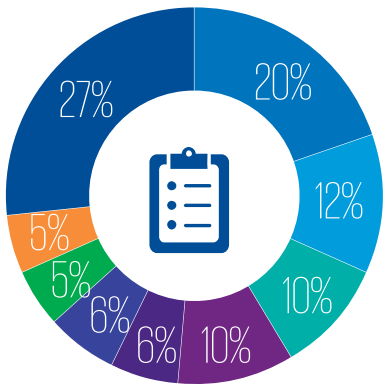
KPMG and the Association of Chartered Certified Accountants (ACCA) jointly conducted a survey in 2019 to understand the current state of data analytics adoption in Hong Kong and future plans for investments.

The survey received 217 responses, mostly from C-level professionals and middle management. They hailed from a range of industries, including banking and finance (20 percent); manufacturing (12 percent); professional audit and consulting (10 percent); retail (10 percent); information technology and telecommunications (6 percent); real estate (6 percent); and insurance (5 percent).*

Their firms comprised all sizes: 18 percent generating annual turnover above HKD 5 billion, 14 percent between HKD 1 and 5 billion, 34 percent between HKD 100 million and 1 billion and another 34 percent under HKD100 million.

To obtain deeper insights from industry authorities, KPMG China and the ACCA carried out interviews with senior leaders at Alipay Payment Services (HK) Limited, AXA Hong Kong, BOARD International, the Hong Kong University of Science and Technology, Microsoft Hong Kong, SUEZ Asia and UBS Wealth Management Hong Kong and Singapore. A roundtable event comprising CFOs in Hong Kong gleaned further observations from those finance professionals. The report also included input from business students from universities across Hong Kong who shared their views on data analytics.

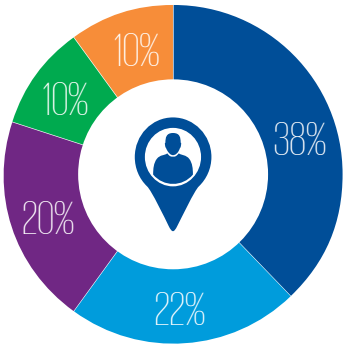
Industry breakdown



- Banking & finance
- Manufacturing
- Professional audit and consulting firms
- Retail
- IT or telecommunications
- Real estate rental or leasing
- Construction
- Insurance
- Others

Source: KPMG and ACCA joint survey

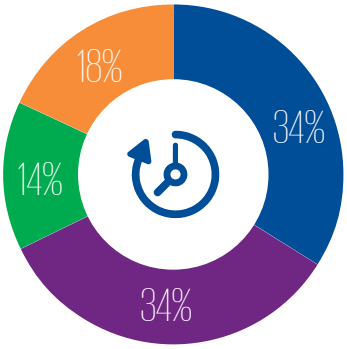
Job roles



- Middle management
- C-level executives
- Finance staff
- Accounting staff
- Others

Source: KPMG and ACCA joint survey

Company turnover



- HKD 0 to HKD 100 million
- HKD 100 million to HKD 1 billion
- HKD 1 billion to HKD 5 billion
- Over HKD 5 billion

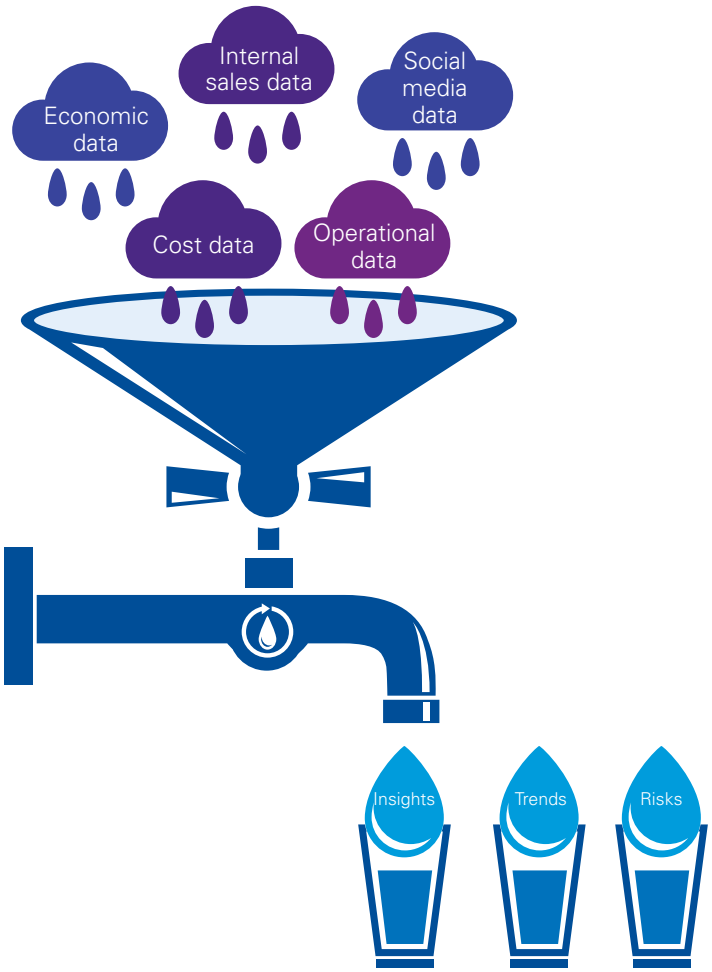
Source: KPMG and ACCA joint survey

**Survey data rounded to the nearest whole percentage, hence not all charts total 100 percent.*

Key concepts of data analytics

Modern technology has ushered in substantial growth in both the quantity and quality of data available in the world. Organisations are increasingly using data to discover useful insights to help boost profitability, such as identifying new competitive advantages, capturing new customer segments and streamlining existing operations.

Data analytics refers to the science of converting raw data into business insights to drive informed decisions. Put another way, data analytics helps arrange information into patterns and correlations, bringing to the surface trends and risks that might otherwise be lost in a sea of information.



Four stages of data analytics

KPMG has identified four stages of data analytics as progressively forward-looking, from taking a historical snapshot of information to basing a company's future plans on highly sophisticated use of technology.

Stage 1: Descriptive analytics looks into raw data and attempts to generate valuable insights from past performance. This type of analysis seeks to answer the question "what happened?" A simple report on sales during the past quarter is an example of descriptive analytics. While useful, it does not address the 'why' behind the data, which is where diagnostic analytics enters the picture.

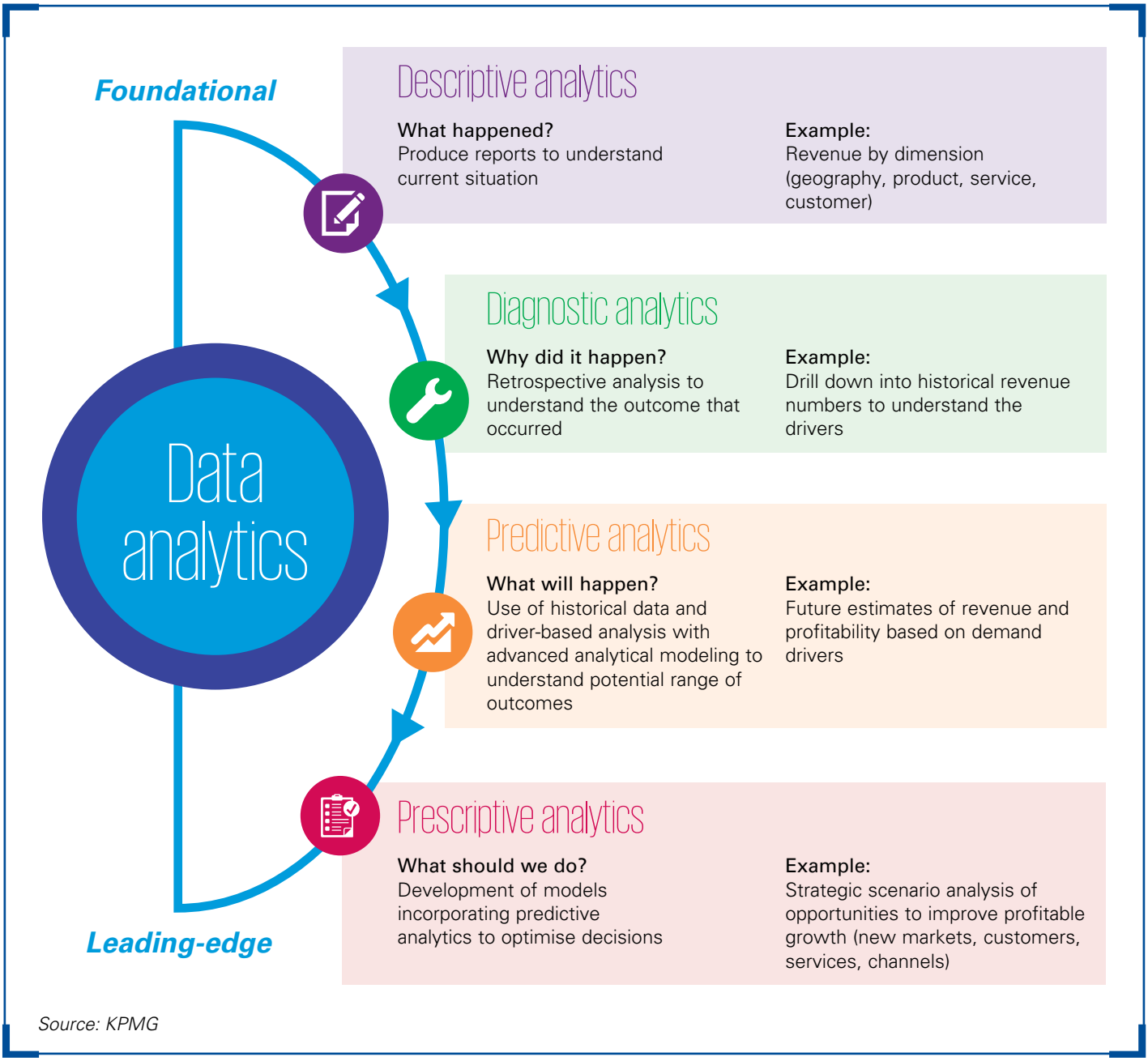
Stage 2: Diagnostic analytics relies on the use of a specific set of data and measures it against other data to find out why something happened. This is how interactive dashboards are usually used. Building on the previous example: a report on sales from the previous quarter could be an example of diagnostic analytics if it also tried to use the data to explain why sales dropped by, say, an unexpectedly large percentage.

In contrast, the next two stages attempt to anticipate outcomes based on data rather than merely document and analyse the past.

Stage 3: Predictive analytics uses the finding of descriptive and diagnostic analytics to predict future trends. Any well-developed data analytics exercise starts with information that can be extracted from internal and external sources. The data is then put through a forecast engine that can use statistical models and machine learning to make predictions. These predictions can help generate forecast reports and enable management to make better-informed decisions.

Stage 4: Prescriptive analytics builds on the promising trends discovered in the first three stages by giving recommendations for action. An example would be an AI engine interpreting data to suggest a company spend more in its budget for a particular location through a specific channel to maximise its growth rate.

These four stages of data analytics are key to helping organisations better understand what drives their business and customers – all with an eye to stimulating growth, boosting efficiency and managing risk.



Source: KPMG

Report highlights

Just 6% of finance functions have invested in advanced data analytics but 46% say they will invest in the next three years

51% of respondents are still relying on traditional spreadsheet technologies to analyse data. At least 32% of respondents still request ad hoc reports without using self-servicing dashboards

80% of survey respondents trust their financial data for decision-making, but from this group, more than 71% say they conduct sample checks

Only 19% of organisations have allocated dedicated annual budget for predictive and prescriptive data analytics initiatives

At least 44% of survey respondents say they need support to help enhance their awareness of data analytics and cultural change within the organisation

Top three drivers for adopting data analytics

38%
To improve efficiency/ reduce cost

20%
To better understand business drivers

16%
To develop new products, markets and channels

Adoption of data analytics

The study results show that many organisations have not invested fully in the potential of data analytics, instead focusing primarily on past performance. Surveyed finance professionals spent about two-thirds of their time (65 percent) on descriptive and diagnostic analytics, while giving only one-third of their time (35 percent) to predicting future trends. This is mainly because companies remain heavily reliant on manual processes and spreadsheet technologies when performing data analytics activities, according to 51 percent of respondents.

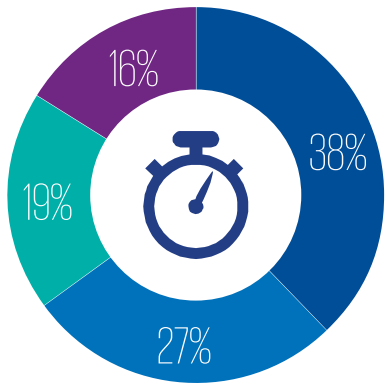
Finance professionals say Hong Kong companies have yet to prioritise efforts to invest in and develop greater data analytics capabilities. This is due to several factors, such as lack of awareness, resistance to change and distrust in the insights that data provide. A more detailed discussion of these hurdles is included later in this report.

However, these hurdles do not prevent companies from capturing the potential and benefits that data analytics bring. There is ample scope and intention across finance functions in Hong Kong for automation and more efficient use of data analytics.

An opportunity for leadership?

Companies in Hong Kong are becoming increasingly aware of the need to adopt more advanced technologies to fully tap into the potential of this data, according to Winnie Chu, Azure Business Group Lead at **Microsoft Hong Kong**. Yet many organisations in the city remain in the early stages of planning investments in advanced data analytics.

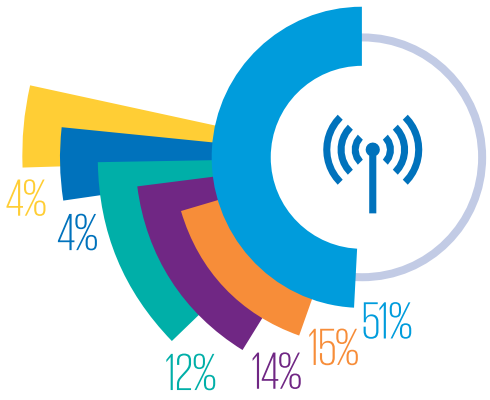
Proportion of time spent on different analytics activities



- Descriptive analytics
- Predictive analytics
- Diagnostic analytics
- Prescriptive analytics

Source: KPMG and ACCA joint survey

Limited use of new technologies



- Spreadsheet
- MI/reporting tool
- Advanced technologies
- Do not know
- Data warehouse
- Other

Source: KPMG and ACCA joint survey

Chu says there are three types of challenges: not knowing exactly where to start investing; an unawareness of what can be achieved through advanced data analytics; and unawareness of possible solutions available in the market. Still, success stories are underway.

Some firms like Microsoft Hong Kong have been using data for predictive analysis to forecast future sales as the amount of available data grows. Similarly, a multi-billion-dollar fast-food chain with operations in the city turns to data analytics to design personalised marketing plans and predict sales. What is needed is more people who have the technical training to make greater use of these capabilities.

The analytical advantage

The quest for professionals who possess both business and technology skills is not unique to Hong Kong. Gary Kam, Regional Director for **BOARD International**, a business intelligence and performance management software vendor, notes that organisations across Asia-Pacific have intensified their search for analytical tools to support digital transformation initiatives.

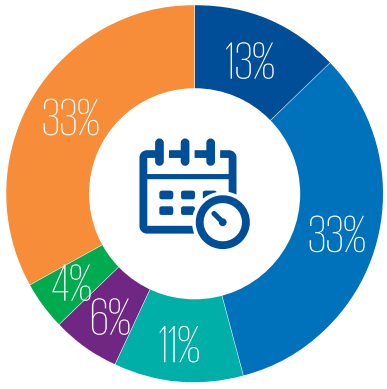
In Singapore, for instance, the demand for data analytics-savvy professionals is highly visible, Kam says. The government has played a significant role in encouraging the use of analytics to enhance productivity and efficiency. The presence of multinational corporations (MNCs) continues to drive demand, which spurs providers of analytics to set up businesses in Singapore to tap that demand. With higher-learning institutions also encouraged to support the market demand, an ecosystem is in place.

In Hong Kong, many MNCs are well established and continue to drive the adoption of analytics as best practices, Kam adds. Many state-owned enterprises from mainland China have substantial operations in Hong Kong, and their willingness to embrace new technologies amplifies that demand. Local businesses that trade and interact with these organisations are in turn influenced.

Finance professionals consulted for this report voice optimism that additional investment will come as management at organisations gain confidence in the capabilities of data analytics tools. In fact, 13 percent of respondents say their company will invest now, and another 33 percent say their firm will do so in the next two to three years.

As investment proliferates, so too could enthusiasm, kicking off a virtuous cycle that helps organisations across Hong Kong gain ground. Tony Shieh, Associate Professor of Business Education and Academic Director of the Master's in Accounting Programme at Hong Kong University of Science and Technology (HKUST), observes: "Hong Kong has the capability to catch up with technology but is lagging behind due to more robust financial regulations and people's hesitation to change."

When will your firm invest?



- Now
- In 2-3 years
- Over 5 years
- N/A - Already invested
- Never
- Do not know

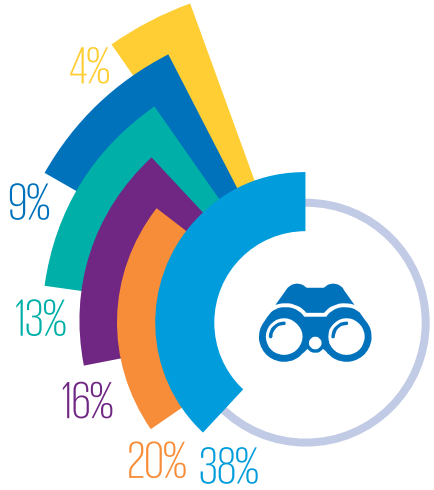
Source: KPMG and ACCA joint survey

How adoption is happening

While a majority of respondents say their companies have not yet invested in advanced data analytics technologies, a small fraction (6 percent) have done so because they see the potential of data analytics. A Hong Kong real estate agency, for example, uses advanced data analytics to more accurately and more speedily match properties to customers. Such organisations regard strong data analytics capabilities as essential to their success.

According to the survey, more than one in three surveyed finance professionals invest in data analytics to improve efficiency and reduce costs (38 percent). The next most-cited reason was the motivation of understanding business drivers, at 20 percent. Another 16 percent seek to use these capabilities to develop new products, markets and channels. Rounding out the top drivers, 13 percent want to better understand their customers, and 9 percent invest to drive innovation.

Key motivators



- To improve efficiency and reduce costs
- To better understand my business drivers
- To develop new products, markets and channels
- To better understand our customers
- To drive innovation
- N/A - I have not invested in either predictive or prescriptive data analytics

Source: KPMG and ACCA joint survey

Many of those that have invested in advanced data analytics have worked with professional firms and vendors. In interviews for this report, a few leading organisations shared some of the key factors that have contributed to their success.

The division of **SUEZ** in Asia, for instance, draws from SUEZ Group's highly automated operations in Europe, where data analytics implementation is widespread. Miquel Anglada Gali, CFO and Senior Vice President of SUEZ Asia, says this approach helps the company develop systems in Hong Kong, where most of the analytics are still done using spreadsheet technologies. SUEZ Asia has built a new reporting dashboard that allows the company to move beyond its traditional focus on past performance to better identify future trends.

UBS Wealth Management Hong Kong and **Singapore**, have been working in the last few years to strengthen the quality of their underlying data infrastructure and shore up their analytics capabilities, say Matthew Hankin, in the firm's Hong Kong office, and David Ong in Singapore. The two operations have also been implementing a new reporting dashboard to reduce reliance on spreadsheets.

"One important takeaway was that staff expectations are properly managed," Ong notes. "This is essential to manage requests efficiently and effectively amidst resource constraints and short implementation timeframes." UBS has had success in change management to adopt the new capabilities with greater ease. "We need to bring our end users along the way, moving forward to self-service software applications," he adds.

At **AXA Hong Kong**, an insurance company, the push to use more data analytics started from the top. Its group CEO advocated the use of AI to transform all areas of the business: marketing, operations, finance, etc. For AXA, business value is the key driver behind the adoption of better data analytics.

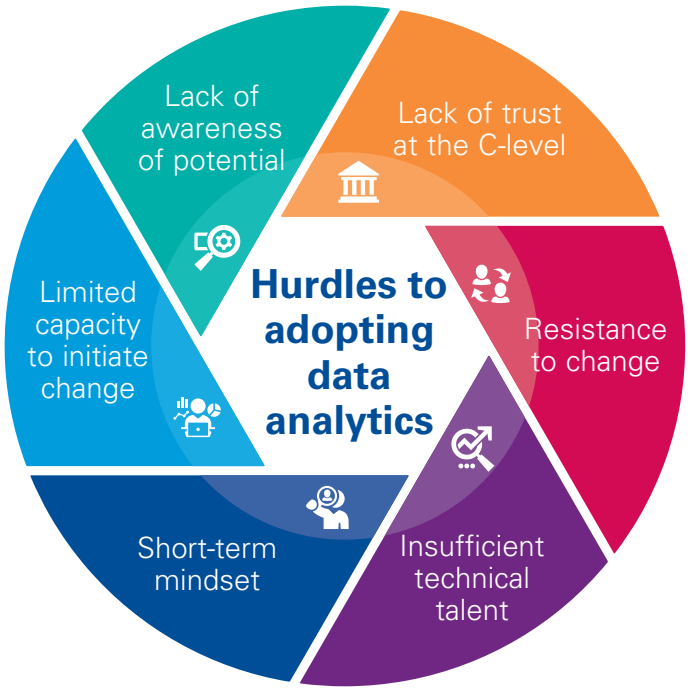
Ashok Krishnan, Chief Data Officer and Head of Customer Experience at AXA Hong Kong, says the company's finance function has been a keen user and provided good support to analytics, AI funding and management. He notes the plan now is to extend its use of data analytics to more business areas. "From a machine-learning viewpoint, it is not that difficult," Krishnan says of the process. The more important piece, he adds, is engaging different teams to use data and analytics effectively on a daily basis.

Alipay Payment Services (HK) Limited, the payments arm of e-commerce giant Alibaba Group Holding Limited, uses data and evidence to make key business decisions and reduce workloads for daily operations. The reliance on data, as opposed to personal experience or preferences, makes it possible to streamline workflows, explains the company's CEO, Jennifer Tan.

Looking ahead, more widespread adoption of new technology could help organisations experience the benefits firsthand in the form of greater efficiencies or by more easily identifying and addressing customer demands and needs. Organisations that embark on this journey will continue to stay ahead of the pack. Adoption is already happening. Widespread adoption is around the corner.

Hurdles and how to overcome them

Significant benefits are to be gained from investing in more effective and more comprehensive data analytics capabilities. While most organisations in Hong Kong plan to invest in these capabilities over the next few years, only a minority have already done so. Executives and finance professionals say multiple factors hold organisations back from moving more rapidly towards investing in advanced data analytics.



Lack of awareness of the potential

A lack of awareness of what advanced data analytics can do and what products are available is widely cited as a factor slowing down investments in the space[1]. This is one of the causes leading to two other hurdles described below: a lack of trust at the C-level and resistance to change in the wider organisation.

It is important to up-skill and enrich existing employees' knowledge of new technologies by arranging refresher training. These sessions should demonstrate the fundamentals of different technologies, their limitations and their application to daily operations. More strategically, organisations should also consider including technology as part of the employees' overall learning path.

Organisations should also introduce supportive initiatives such as subsidies to encourage employees learning outside of the office. For example, the ACCA provides regular training opportunities including both classroom training and e-learning modules as a part of its Continuing Professional Development in order to help accounting and finance professionals stay up-to-date with technological trends and related knowledge they need to advance their careers.

Through the Professional Insight research studies, the ACCA further identified the "digital quotient" or "awareness and application of existing and emerging digital technologies, capabilities, practices and strategies" as one of seven keys to success for professional accountants[2]. This year the ACCA added a data analytics unit to its Ethics and Professional Skills module to enhance its qualification. All these Continuing Professional Development programmes and Ethics and Professional Skills module aim to nurture finance professionals so they are equipped with valuable skills.

In addition, vendors such as BOARD International offer pre-packaged solutions comprising e-learning modules and free trials of new technologies for targeted groups within an organisation. Management should think about the different capabilities and products that the organisation could need in the future and plan ahead.

[1] According to participants at a CFO roundtable hosted by KPMG and ACCA.
[2] ACCA, "The Digital Quotient", 2016

Lack of trust at the C-level

Only high-quality data can produce high-quality insights. However, management at many companies are still uncertain about the insights provided by data analytics because of a lack of understanding of how the science works. Finance functions in particular often fear making decisions based on inaccurate information and poor data quality. Some also view past data as not being useful for keeping up with rapid changes in market trends and customer preferences. According to attendees at the CFO roundtable, many companies are trying to address concerns about information integrity by hiring data scientists and providing training to build up their analytics capabilities.

In fact, 20 percent of surveyed finance professionals are wary of the implied insight as they are not fully confident in their financial data. Another 57 percent say they trust their data but conduct sample checks to further ensure accuracy before using the information. And in response to a separate question asking why they do not trust their data or data analytics, 46 percent put their apprehension down to existing system infrastructure and limitations, while 20 percent point to inaccurate data input.

However, as additional data becomes available and the algorithms now in use get refined over time, the outputs from data analytics will inevitably become more reliable and trusted. This explains why a significant portion of survey finance professionals have planned to increase investments in data analytics in the next three years.

To keep up with the market and not lose competitive advantage, it is important for C-level management to start exploring the capabilities of data analytics, while simultaneously improving the underlying system and data infrastructure.

This is particularly true for larger and older organisations in Asia, where growth frequently follows from rapid acquisitions without a centralisation of processes and systems. In combination with manual processes and legacy systems, multiple sources of truth and misaligned data definitions ensue, and these lead to poor data quality. Given the scale and age of some organisations, initiating a full remediation can take significant time and effort.

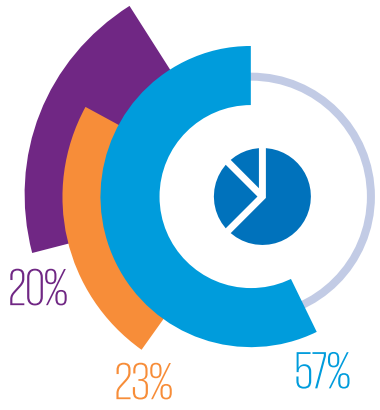
UBS Wealth Management Hong Kong and Singapore, for instance, have decided to first focus on enhancing their data infrastructure. They seek to ensure that future investments in advanced data analytics can be scalable. In the meantime, they actively explore technologies to keep up with the market.

The overarching goal of improving the infrastructure is to ensure that companies have better data inputs that yield more accurate data insights.

Resistance to change

Besides offering training, it is important for employees to keep an open mind towards new technologies. Indeed, 25 percent of surveyed finance professionals say "cultural change" is the most critical support needed to invest in

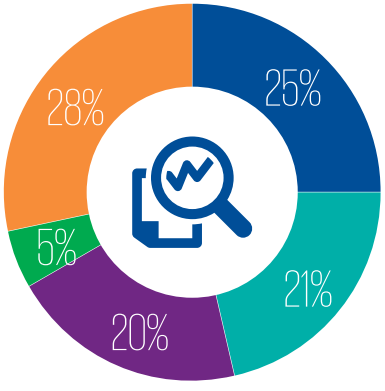
Confidence in accuracy of data



- I trust the financial data for decision-making but will conduct sample checks.
- I fully trust the financial data for further analysis and decision-making.
- I am not fully confident in the financial data and will be careful with the implied insight.

Source: KPMG and ACCA joint survey

Reasons for distrusting data

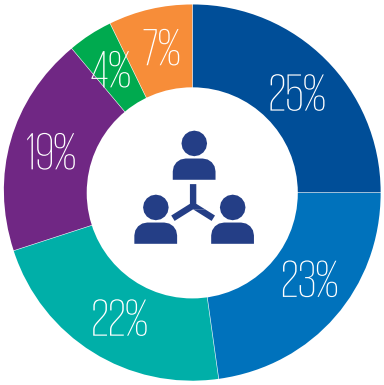


- Poor data quality due to system limitations
- No single source of truth
- Poor data quality due to inaccurate input
- Do not know where and how to use the data
- N/A - I am confident in the financial data

Source: KPMG and ACCA joint survey

forward-looking data analytics. And in response to a separate survey question, 14 percent cite resistance to change as a key hurdle to investing in data analytics.

Most critical support organisations need to invest



- Cultural change
- Automation tools
- Data analytics tools
- Awareness or advice
- Government support
- Others

Source: KPMG and ACCA joint survey

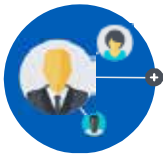
Due to a lack of awareness, many employees have a mistaken impression that new technologies are going to replace them completely. It is therefore vital that management set clear expectations and convey the point that new technologies enable people complete their tasks, such as deploying RPA to automate routine processes and using interactive dashboards to summarise data.

There is still a need for people to use their subject matter expertise and industry knowledge to complete end-to-end analysis, and think about how the results from these technologies add value to the business. For example, even if a data analytics tool identifies several opportunities that an organisation should capture, people are still required to formulate detailed strategies and plans on how best to consider the opportunities based on available resources.

Firms need to be prepared to change their organisational culture as they work to strengthen their data analytics capabilities. A strong group of "first believers" is key, according to Anglada Gali of SUEZ Asia. And a successful journey often starts with a clear and positive message from senior leadership.

The five-step change management approach below is proven to have helped organisations succeed in this area. In particular, organisations should actively involve employees when introducing new technologies and new ways of working, and make the adoption of technologies a habit over time.

Five steps for change management

MAKE IT CLEAR	MAKE IT KNOWN	MAKE IT REAL	MAKE IT HAPPEN	MAKE IT STICK
				
Align leaders around the strategic aims, ambition and scale of change	Communicate the change vision and case for change	Translate the change vision into reality for your employees	Move the organisation towards the end state and equip people to work in new ways	Ensure there is capability to sustain the change

Source: KPMG

Insufficient technical talent

Another stumbling block identified by finance professionals is the increasing need for the right talent with the right skill sets. This is a challenge across the region. "A combination of business and technical knowledge is essential for a data analytics team to succeed", says Ong of UBS Wealth Management Singapore "There may be data scientists available in the market, but not a lot with the right business acumen."

The creation of a technologically strong finance workforce is underway. For instance, the business school at HKUST is collaborating with KPMG China to develop courses for a new master's of accounting programme with a specialisation in data and analytics. Given positive feedback on the module and high demand for data analytics offerings, the university is considering allocating more seats for undergraduate students to enrol in the courses.

Interviews with university students from across Hong Kong revealed their awareness of the importance of data analytics. Some stated that studying data analytics helps boost insights about industry trends and where opportunities for business as well as careers might be growing. Others noted that a working knowledge of data analytics would give them a competitive advantage over their peers.

Organisations that cultivate ties to those studying data analytics could go a long way in addressing their challenges in finding people who have adequate technical knowhow.

Short-term mindset

Budget requests and investment decisions for technology initiatives must be accompanied by valid business cases. Many organisations have focused on short-term quantitative benefits of data analytics at the expense of weighing up long-term qualitative benefits. A short-term mindset represents another hurdle.

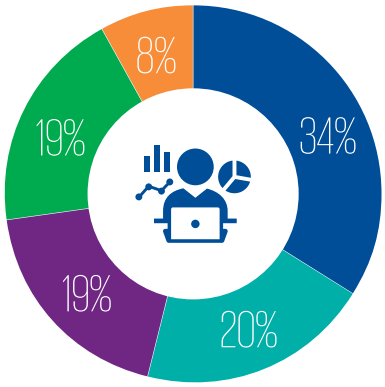
When combined with the other hurdles, this explains the current low levels of data analytics investment commitment among organisations. Only 19 percent of organisations have a dedicated annual budget for data analytics, according to the survey, and 20 percent have an overall budget for technology initiatives that includes data analytics. That said, about one-third (34 percent) say that although they lack a dedicated budget they are able to get their budget requests approved upon request.

However, unlike RPA, returns on investments in data-related initiatives often take an extended period of time: from recognising the potential of insights from data analytics, to making strategic decisions and implementing actions, to actually realising the benefits.

At AXA Hong Kong, Krishnan advocates the importance of "business value", which he describes as a key long-term benefit and focal point for the insurance company in adopting stronger data analytics capabilities. "We start by prioritising based on expected benefits," he explains. "In addition to quantitative benefits such as revenue generation or cost reduction, we look at qualitative benefits. For example, while self-service reporting might not bring significant quantitative benefits, it can make our staff's life easier, and, more importantly, help management make faster and better decisions."

Such a holistic view of the benefits of technologies, such as reducing certain work that might be regarded as burdensome or unappealing, could help win adherents to the cause of data analytics. And as more success stories emerge over time from finance functions' experience with these technologies, it will become notably easier for organisations to overcome this hurdle.

Budget for data analytics



- No budget allocated but approved when requested
- Dedicated annual budget set-aside
- Overall budget for technology-related initiatives
- Do not know
- No budget allocated and rejected when requested

Source: KPMG and ACCA joint survey

Limited capacity to initiate change

Assuming all the aforementioned hurdles are resolved, one important element remains for companies ready to invest in technologies: the right person with the capacity to initiate the change.

Any successful technology implementation internally or with external support calls for close coordination with business users to understand the detailed requirements as well as a dedicated project manager within the organisation. This takes time and effort along the implementation journey.

However, many finance functions are heavily occupied with their business-as-usual activities, such as manual and regular processes relating to financial and management reporting, A/P, A/R, bookkeeping and closing activities.

A straightforward solution is to use automation technologies like RPA to automate these manual tasks. "SUEZ Asia is currently facing this challenge and is actively considering the use of RPA to free up capacity to initiate further finance transformation," says Anglada Gali.

Another way to make headway is by revamping an organisation's Enterprise Performance Management (EPM) framework. Many organisations spend extensive time producing reports, deepening the reliance on spreadsheet technologies. Management in some organisations that regularly request ad hoc reports can see these becoming regular. According to the survey, some 32 percent of respondents note that existing reports are unable to meet their needs, necessitating ad hoc reports. Without a constant review of existing report inventory or use of emerging technology (e.g. RPA) and interactive dashboards, the workload is likely to increase.

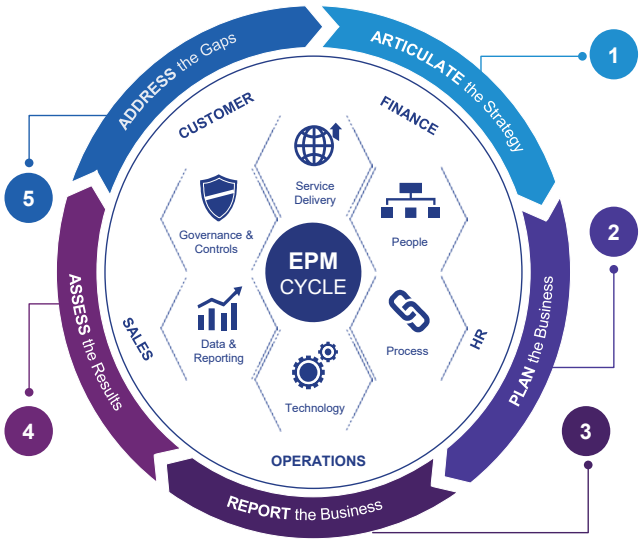
The goal of EPM is to help organisations better understand their existing operations and facilitate the conversion of data into useful and timely information. Setting up a robust EPM framework (planning, budgeting, forecasting and performance reporting) allows organisations to tie back the key performance indicators being measured to the business drivers and the strategy the organisation is trying to achieve. This reduces the number of unnecessary reports being produced and analysed, freeing up time for finance teams to initiate change.

Despite all the hurdles, companies are undeterred in investing in data analytics. Many organisations have decided to increase investments in the next few years, according to the survey. Greater understanding of technology, a change of mindset, and finance professionals being armed with a wider range of related skills together offer a path forward. This multifaceted approach could pave the way for more rapid adoption of technologies, which are widely available in the market. The next step is for an organisation to successfully navigate data analytics implementation.

Enterprise Performance Management framework

Adjust Plans, Strategies and Actions: Take corrective actions and adjust the plans and forecasts to continuously be looking forward

Compare Plan versus Actual: Report performance and provide analysis capability leveraging cloud and mobile solutions to quickly evaluate plan versus actual situation and take action



Focus executives' and management's attention on the **right measures and indicators** to execute strategies and optimise performance

Create an **Integrated Business and Financial Plan** and set targets reflective of the business strategies and objectives

Execute plan across all domains by cascading and communicating plans and targets to operations and individuals to align behaviour

Source: KPMG

Implementation

From understanding to action

Implementing stronger data analytics capabilities requires commitment from across an organisation, from management to front-line staff. To be effective, an investment programme in data analytics capabilities requires organisations to understand future trends in finance and the level of funding that will be required, both in terms of capital and time. It is also necessary to put the right talent in place and provide adequate training to facilitate change management. A clear strategy and building awareness are crucial to deal with these challenges that organisations face in their journey of transformation.

A phased approach to implementation can help organisations derive the most value from their investments in the shortest possible time. An effective approach towards implementation entails the following four steps: proof of concept, assessing data readiness, developing models and training.

Step 1: Proof of concept and business case

Securing funding for a data analytics project can be challenging because the benefits and values are typically difficult to both quantify and justify that an upfront investment must be made. One way to begin is with a business case that is proved by a proof of concept (PoC).

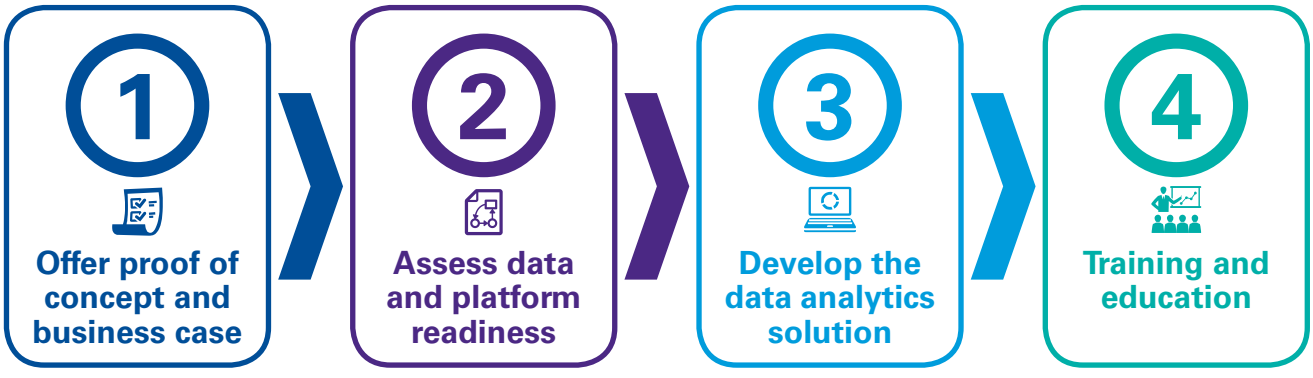
A PoC can help management visualise a tangible outcome of the data analytics solution and understand its benefit. At the same time it allows users to have hands-on experience with the solution, which helps reduce their resistance along the change journey. For example, an interactive dashboard could be built to show how it can replace some current manual spreadsheets for management or sales reports. From a predictive analytics perspective, a particular business unit or product could be chosen, then the organisation could build a sales forecast model to anticipate sales. This could be quickly tested with the next month's sales volume before committing it to full-scale implementation.

The outcome of a PoC is an important component of a business case, helping shape the next few years of business strategy. The quantitative and qualitative benefits for implementing data analytics in the business are more visible with a PoC.

Step 2: Assess data and platform readiness

The second step is to assess the current stage of an organisation's technology and infrastructure landscape, such as data and platform readiness. The key for a successful data analytics project lies in data quality and the existence of a single source of truth. Without reliable and appropriate data sources, a dashboard report or predictive output could be misleading or even incorrect. This is also the point when data

Four steps of implementing data analytics



Source: KPMG

are cleaned up and filtered using logic or algorithms before putting it in a format that can be easily read and understood. This is important to ensure time is spent to properly redress data problems and any gaps in the platform.

> *Data integrity is key. Without reliable and appropriate data sources, a dashboard report or predictive output could be misleading or even incorrect. It is important to ensure time is spent to properly redress data problems and any gaps in the platform.*
>
> **James O'Callaghan**
> Partner, Head of Technology Consulting, Hong Kong
> KPMG China

Step 3: Develop the data analytics solution

The third step is to develop the data analytics solution. Organisations should build an effective pipeline and workflow that allows data to move from original sources, with appropriate transformation logic applied, to forecast models and place them into data warehouses where they can be accessed in future by reporting tools such as self-service dashboards.

For dashboard reporting, several off-the-shelf tools are available and choosing one depends of course on budget, any existing alliance with a vendor, the team's technical skill set and whatever functionalities are required. Based on the business requirement gathered from the user, the dashboard can be tailored to visualise the information that is needed to consistently review, as well as allowing areas for self-service analytics.

For predictive analytics, depending on an organisation's targeted accuracy level and business nature, a range of statistical techniques, from simple regression to machine learning, can be employed and run on the historical data. The result could be more reliable if it is supplemented by external signals. Part of the historical data will be used to train the model while the rest will be used to test it. The model can continuously self-learn and fine-tune itself with new data points in future. There are tools in the market that help organisations perform predictive analytics lacking a high level of technical knowledge. On the other hand, free open-source programmes are available to build predictive models, but these entail more technical development. The usual suggestion for reviewing the predictive result is again a visualisation dashboard that can allow management to easily understand and use the predictive result.

Step 4: Training and education

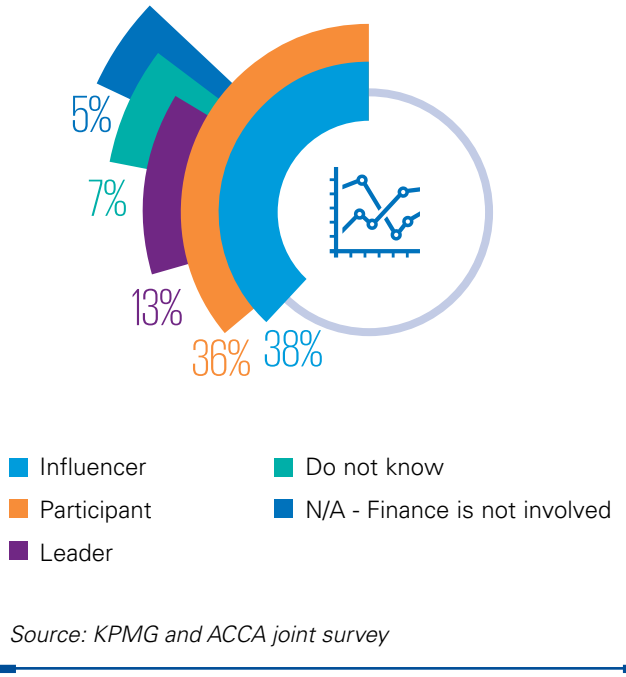
The final step is to facilitate communication among stakeholders by conducting training sessions for end users and workshops to understand any required change request. Mutual communication is essential to collect users' feedback and transfer skills and knowledge obtained throughout the implementation to end users. It is important for management to understand their end product and its value. This is also crucial for the end user, as the result will be embedded in their day-to-day operations so they should be comfortable with the change.

This four-step process empowers organisations to successfully implement stronger data analytics capabilities.

The role of finance

As many as 87 percent of finance professionals say the finance function has a role to play in adopting data analytics, the survey revealed. And 51 percent claimed that finance had either been the leader or co-leader of data analytics initiatives. The numbers indicate there is room for finance professionals and finance functions to take on a much more active leadership position.

Role of your finance function



Source: KPMG and ACCA joint survey

> *The finance function is evolving, requiring professionals to develop a mastery of new technologies to keep bringing value.*
>
> **Jane Cheng**
> Head of ACCA Hong Kong

Traditionally, the role of the finance function has been to prepare reports for management, but CEOs are now expecting CFOs to do more. Working in close proximity to the data, CFOs are expected to initiate change on how organisations use this information to generate business insights.

While CFOs are responsible for providing direction and leading implementation, working-level staff also play an important role to drive the requirements and development. This often involves the efforts of a working group with adequate representation from business, finance, IT and risk functions. Such coordination is vital to ensure that the organisation has a comprehensive view of the potential impact and disruption of new technologies.

For instance, at UBS Wealth Management Hong Kong, the reporting and analytics team drives the design and building of interactive dashboards, but the finance function is key to defining reporting requirements and recommending important drivers and KPIs. Playing a more active role in the process of adopting stronger data analytics capabilities is pivotal to making finance functions true partners in the running and development of organisations.

As organisations adopt stronger data analytics capabilities, the finance function needs to develop a mastery of the new technologies to continue bringing value to the organisation.

Facing the future

Business is moving at a much faster pace than at any point in the past. Products and services now tend to have shorter lifespans, and trends change quickly. To survive, organisations need to move more nimbly and this means being proactive rather than reactive. Forward-looking data analytics make it possible and easier for organisations to adapt to demand for specific products and services ahead of time, rather than after the fact.

A decision to make a significant investment in data analytics capabilities and putting in place the right implementation plan can launch an organisation on a journey towards greater efficiency, deeper understanding of customers and trends, and significant growth. Most organisations are fully aware of these benefits.

The number of companies with plans to "invest more in forward-looking data analytics" over the next five years is substantial. One-third of all surveyed finance professionals say their organisations plan to invest over the next two or three years. Given the value of the insights that forward-looking data analytics can generate, organisations that move forward faster are likely to reap the most benefits.

Regardless of the industry sector, finance functions are ideally suited to push forward the development of stronger data analytics capabilities. Responsible for driving the development of an effective strategy for investing in technology, finance functions across Hong Kong and elsewhere will be instrumental in helping organisations understand the possibilities of data analytics.

CEOs and boards are increasingly aware of the possibilities that data analytics generate. They expect faster and more accurate insights with which to make decisions at a pace that matches that of business changes. Organisations that invest in forward-looking data analytics stand to benefit from early-mover advantages and find themselves ideally positioned to thrive in this new environment. As we witness a tremendous increase in available business solutions, more organisations will embrace data to secure their future success.

> *Leading organisations clearly use data analytics to their advantage. It is critical that companies in Hong Kong continue their investment in analytics capability and technology, and embrace the power of data to be fit for future.*

Isabel Zisselsberger
Partner, Head of Financial Management, Customer and Operations, Hong Kong
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About KPMG China

KPMG China is based in 23 offices across 21 cities with around 12,000 partners and staff in Beijing, Changsha, Chengdu, Chongqing, Foshan, Fuzhou, Guangzhou, Haikou, Hangzhou, Nanjing, Qingdao, Shanghai, Shenyang, Shenzhen, Tianjin, Wuhan, Xiamen, Xi'an, Zhengzhou, Hong Kong SAR and Macau SAR. Working collaboratively across all these offices, KPMG China can deploy experienced professionals efficiently, wherever our client is located.

KPMG is a global network of professional services firms providing audit, tax and advisory services. We operate in 153 countries and territories and have 207,000 people working in member firms around the world. The independent member firms of the KPMG network are affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. Each KPMG firm is a legally distinct and separate entity and describes itself as such.

In 1992, KPMG became the first international accounting network to be granted a joint venture licence in mainland China. KPMG was also the first among the Big Four in mainland China to convert from a joint venture to a special general partnership, as of 1 August 2012. Additionally, the Hong Kong firm can trace its origins to 1945. This early commitment to this market, together with an unwavering focus on quality, has been the foundation for accumulated industry experience, and is reflected in KPMG's appointment for multi-disciplinary services (including audit, tax and advisory) by some of China's most prestigious companies.

Financial Management practice

The Financial Management practice supports organisations as they deal with the increased complexities and responsibilities related to the role of the CFO and finance functions. The practice helps organisations continually evolve their finance functions: shifting focus from transaction processing and historical reporting to that of a business partner responsible for driving growth and profitability.

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Data and Analytics practice

The Data and Analytics core competence comprises data strategy and governance, data architecture, data engineering and visualisation, and advanced analytics and AI. Providing service offerings as well as solutions and frameworks, the team helps clients use analytics to inform their most important decisions amid a global environment defined by constant disruption. KPMG China works with clients to unlock the value of their data through a combination of industry and process knowledge that leverages technology innovation. The end result helps increase revenue, reduce cost and manage risk.

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Think Ahead ACCA

About ACCA Hong Kong

ACCA (the Association of Chartered Certified Accountants) is the global body for professional accountants, offering business-relevant, first-choice qualifications to people of application, ability and ambition around the world who seek a rewarding career in accountancy, finance and management. ACCA now has 26,000 members and 133,000 students (including affiliates) in greater China, with 11 offices in Beijing, Changsha, Chengdu, Guangzhou, Qingdao, Shanghai, Shenzhen, Shenyang, Wuhan, Hong Kong SAR and Macau SAR.

Globally, ACCA supports its 219,000 members and 527,000 students (including affiliates) in 179 countries, helping them to develop successful careers in accounting and business, with the skills required by employers. ACCA works through a network of 110 offices and centres and 7,571 'approved employers' worldwide and 328 approved learning providers who provide high standards of learning and development.

Through its public interest remit, ACCA promotes appropriate regulation of accounting and conducts relevant research to ensure accountancy continues to grow in reputation and influence.

ACCA has introduced major innovations to its flagship qualification to ensure its members and future members continue to be the most valued, up-to-date and sought-after accountancy professionals globally.

Founded in 1904, ACCA has consistently held unique core values: opportunity, diversity, innovation, integrity and accountability.

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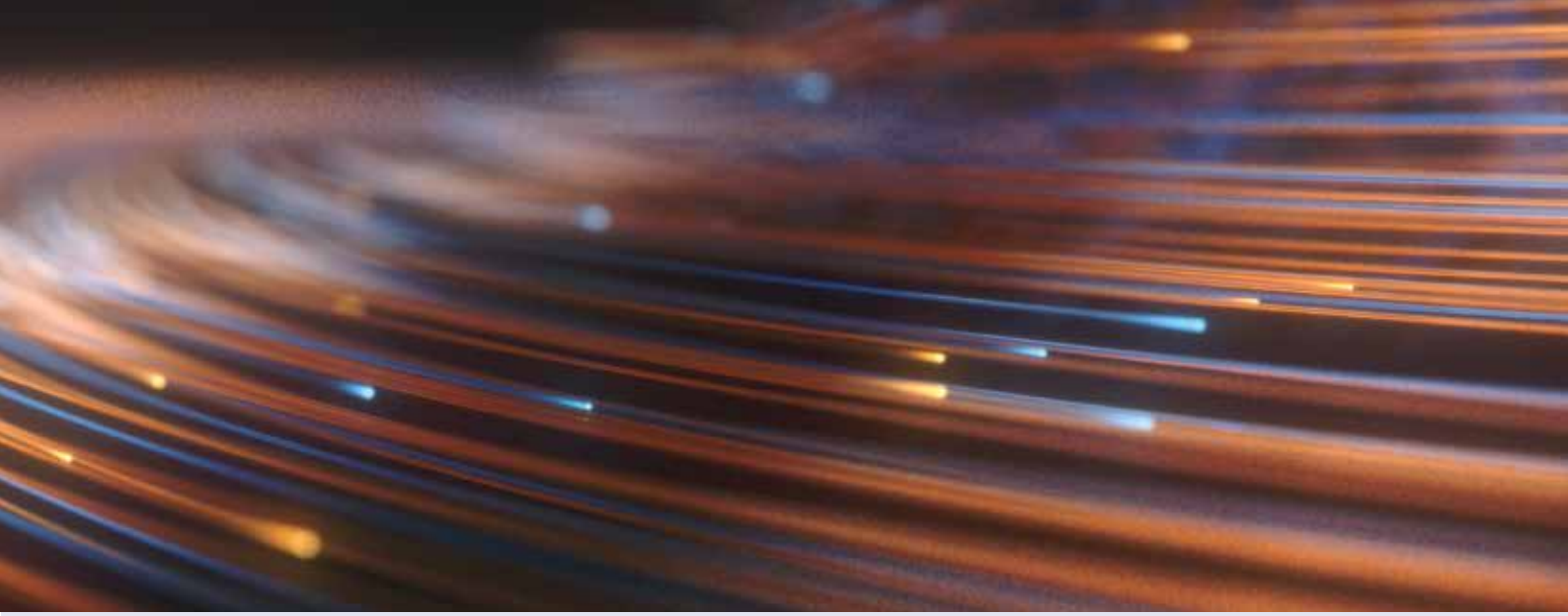

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