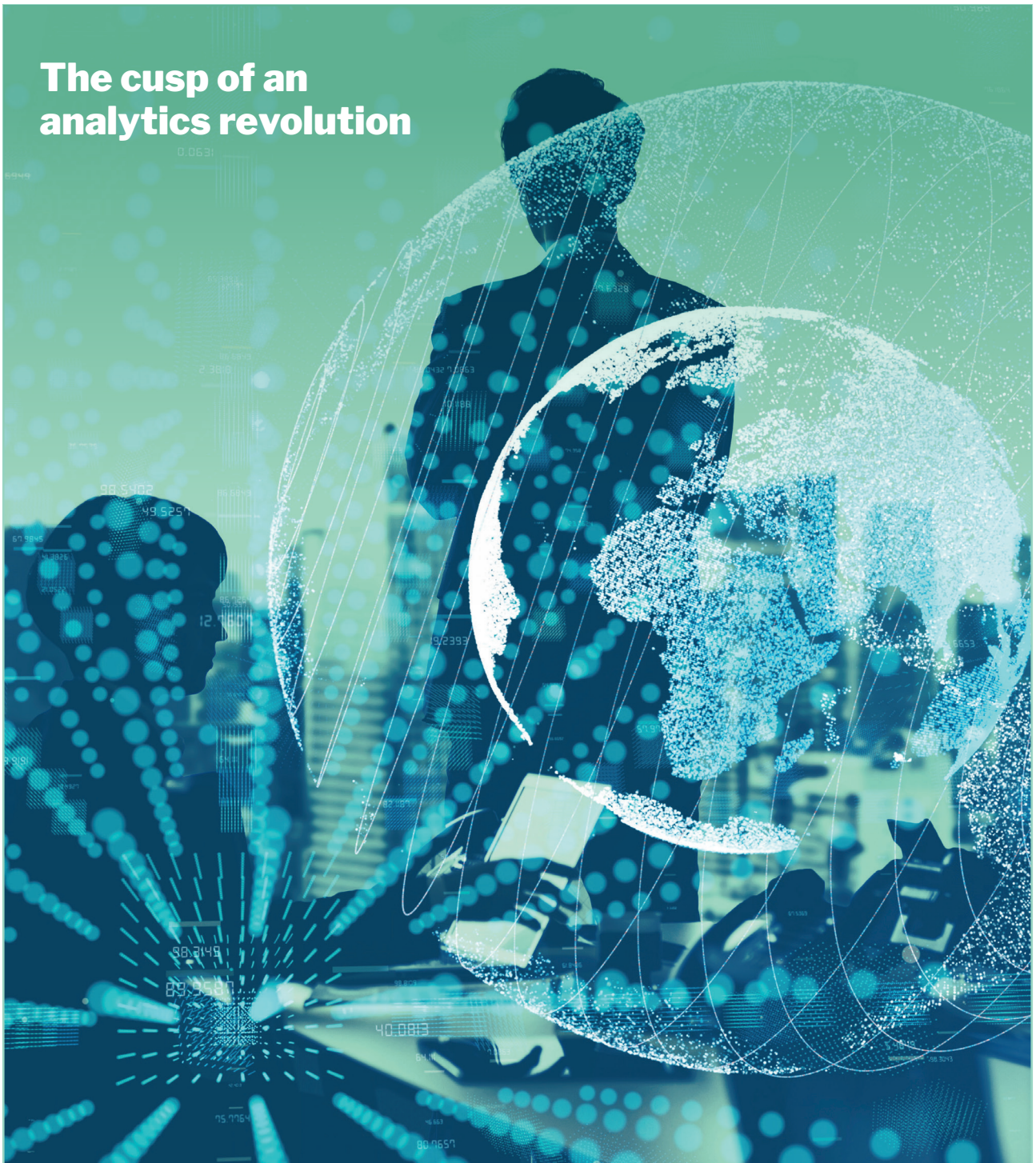# The future of Analytics Departments

The cusp of an analytics revolution

The analytics industry is approaching an inflection point. We will soon see an analytics revolution come as a result of automation, artificial intelligence and machine learning. Automation and AI will not only make current tasks easier, it will also shift the emphasis of effort from data preparation to interpreting results - where businesses see the most value. It could open the doors to less time spent hands-on in the back end and more time fine tuning the insights. So organisations and their Business Intelligence (BI) and analytics teams need to prepare for the future. Data teams will have to restructure to adapt.

Over the past few decades there has been significant improvements in the software provided by analytics vendors. But the irony is that for the end user – the business consumer – nothing much has changed. This has left the business in a similar situation to what they were in decades ago.

They still have unanswered questions and are no more knowledgeable about their critical business drivers. Something dramatic has to change. Incremental improvements are not getting the business to where they want or need to be. Automation and AI is the step change needed to unlocking analytics true potential.

One industry that has made a similar journey is Formula One racing.

The core of a Formula One racing team was once the mechanics who got their hands greasy tuning the engine and manually optimizing vehicle performance. That was time consuming, laborious, and prone to error. Today, everything is different. Instead of greasy mechanics, we have highly skilled analysts sitting behind computer screens deciding what adjustments to make based on thousands of data points fed to them in real time. It's a level of information that the mechanics of yesteryear would never have been able to comprehend or even process.

Yes, today you will still find a mechanic or two, but the shift has been enormous - from human expertise alone to machine generated insights coupled with human decision. We are about to see that same shift occur in analytics.

The current state of affairs – fraught with challenges

If we were to look back at the last 20 years and take away all the hype, we would recognise that not much has fundamentally changed. Sure, dashboards are prettier and data discovery is decidedly easier and faster, but it's still a manual user experience. The fundamental experience for both the creator and the consumer of analytic content has largely remained the same.
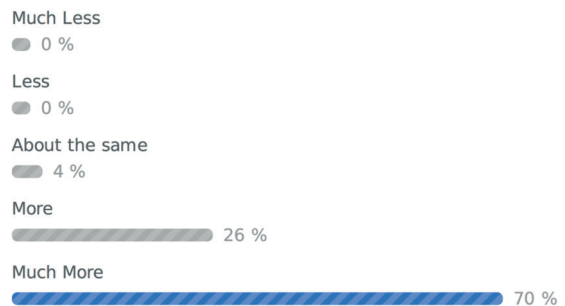
The core challenges of data quality, data preparation, and the delivery of timely and relevant content still dog the analytic departments of today. This is despite the fact that hardware prices have plummeted, allowing for much greater computational power to be applied to analytic problems, and the fact that the software has become much easier to use.

So even with these huge improvements, why do the consumers of analytics still feel frustrated today? It is because the improvements we have seen have fundamentally kept pace with a corresponding rise in data complexity. Even as the tools have improved, the huge increase in the volume of data, the variety of data sources, and their complexity have meant that business users still don't have the timely insights needed to run their businesses effectively.
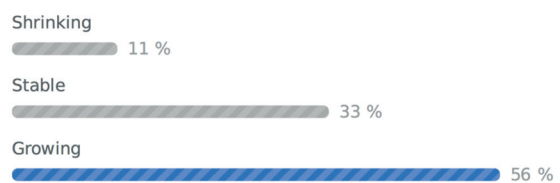
But this is not the only challenge that analytic leaders face. Today, there is extensive awareness of the value that analytics can bring to organisations. An interesting dilemma of the improved visibility of analytics is that business leaders now demand far more from their analytic teams than ever before. Analytic and BI teams are being challenged to deliver more programs that deliver greater insights to the business continuously. Sadly, BI budgets are not keeping up with the demands of the business. Fundamentally, across all industries and sectors, analytic teams are being asked to do more with less. Only a lucky few have growing budgets.

So how do we break this pattern of incremental improvements in the delivery of technology versus the data complexity that we have? We need a paradigm shift, and that shift is automation. It's bringing AI to BI. We need to automate the analytical processes, not just augment them.
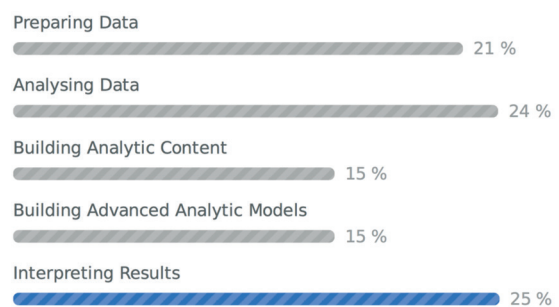
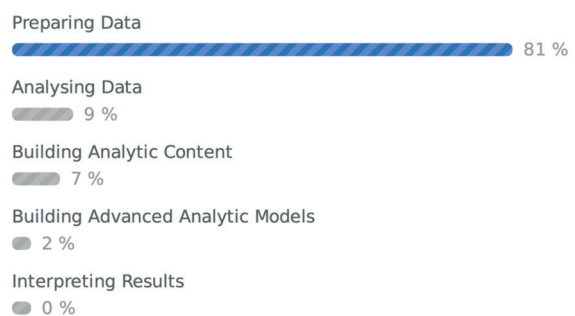## Is your BI and Analytics Team being asked to do more for the Business?

Much Less
0 %

Less
0 %

About the same
4 %

More
26 %

Much More
70 %

The budget for BI Projects/Team is

Shrinking
11 %

Stable
33 %

Growing
56 %

Where is the most value being created by your BI/Analytic Team?

Preparing Data
21 %

Analysing Data
24 %

Building Analytic Content
15 %

Building Advanced Analytic Models
15 %

Interpreting Results
25 %

Where is the most effort spent by your BI/Analytic Team?

Preparing Data
81 %

Analysing Data
9 %

Building Analytic Content
7 %

Building Advanced Analytic Models
2 %

Interpreting Results
0 %

BI and analytics teams today

Analytic and BI teams today deliver huge value to the business. But the complexities of the data and the increasing demands on their output are straining resources. Very soon, AI and automation will fundamentally change where team members need to place their effort and focus, freeing up time and energy to focus less on the mechanical work and more on delivering value to the business. This will require a restructure in analytics teams.

If we need to change team structure to accommodate the change in the analytics industry, we need a handle on how teams operate today. A deconstruction of most analytics teams would look a little bit like this:

- **Team leader** - understands analytics and the needs of the organisation and sets the goals and objectives accordingly

- **Data engineers** - responsible for getting the data prepared for analysis

- **Business analyst** - understands the analytic needs of the business

- **Reporting analyst** - constructs the dashboards and reports that get delivered to the business

- **Data scientist** - works on models to get a deeper analytic understanding of the business

What do all these people have in common? They are fundamentally involved with, and are responsible for, the construction of analytic content.

But is this where value is created? At the Sydney CDAO 2018 event, Yellowfin asked analytics leaders where they believed the most business value was created by their teams. Interestingly, the highest area of value creation identified was the interpretation of results, just ahead of data preparation and data analysis.
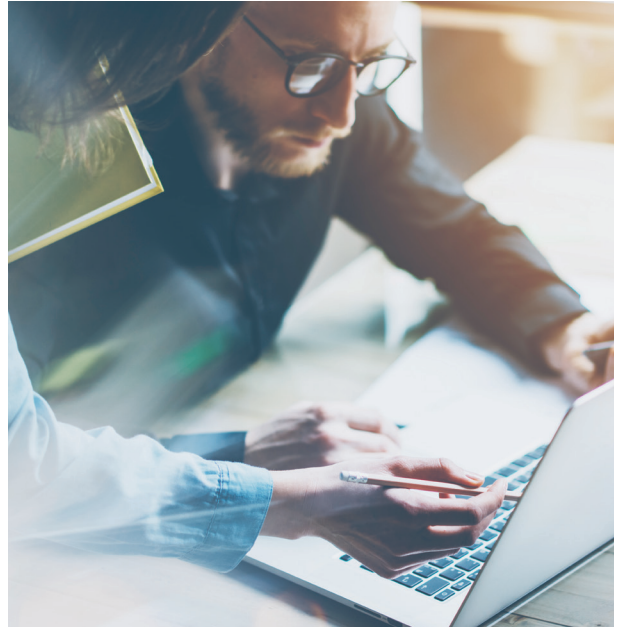
If you were to stand in the shoes of a business user, data preparation and analysis wouldn't be the processes you would immediately identify as delivering direct business value. Interpreting the results and providing insights, on the other hand, will directly influence the user's understanding of the organisation's performance.

Despite this being acknowledged as the most value-add activity, when the same analytics leaders were asked where they spend most of their time and effort, none of them said they spent any time interpreting results. This is a huge indictment on the industry and of the technology that requires huge amounts of input into preparing and analysing data. The challenge that analytic teams face today is the ability to deliver interpretation and value to the business instead of being bogged down in mechanical activities. And this is where the opportunities of automation lie.

Yes, humans do add value to the data but machines are much faster at finding patterns and detecting anomalies than humans will ever be. Machines can work through millions of possible combinations to find the needle in the haystack in a fraction of the time it takes to do manual data discovery on a complex business query. To get the greatest value, we need humans and machines to work together to deliver the faster, better results that the business demands. This is where the new chapter of automated analytics will shine.

What does the future analytics team look like?

If the mechanical work is automated, analytics teams are going to look very different in a few years' time to what they do today. The focus will no longer be on data preparation, but on interpreting results - the very thing that, because it's at the end of the line of time-consuming processes, does not get done.

Just like the Formula One mechanics of today are highly efficient, data-driven, and predictive, data analytics teams will soon need to be the same. Formula One uses telemetry to optimise their performance and everything is automated.

Yes, the mechanic with a spanner is still part of the team, but they represent a very small component of the overall team. Today, the Formula One Team Boss runs the business. They are assisted by a Commercial Director who is responsible for budgets and sponsors bringing money in to run the team. The Technical Director is responsible for running the technology side of the business, and they are assisted by the Chief Aerodynamicist who optimises what they have now.

Then there is the Chief of R&D who is continually looking at new technologies for this season and beyond. Interestingly, teams usually have two Chief Designers. One works on this season's car, the other on next season's. Finally, the Chief Engineer helps turn designs into reality.

Tomorrow's analytics teams will need a similar setup - running the team as a business. It will be necessary to access and bring in funding for the team to effectively deliver what the business is asking for. Optimising and automating the mechanics of the analytics requires people who continually improve processes and technologies. And if you want to stay ahead of the competition, you will also need dedicated resources for planning and building the team of the future.

So, here's what the future analytics team will look like:

- **Business Manager** - commercially savvy and responsible for securing the funds to build your team
- **Technical Director** - responsible for the implementation of the technology to be used within the team
- **Data delivery and Development** - those people managing and preparing your data pipeline and building analytical apps
- **R&D Lead** - they will continually survey the BI landscape looking for the latest and greatest technologies and how to apply them to your business
- **Head of Insights** - responsible for data analysis and interpretation and business insights communication

It is with this team setup that organisations will be able to effectively harness the huge opportunities that automated analytics will provide. It will also allow teams to identify the best combination of available technologies that will make those opportunities real.

The omissions

Now, you may have realised that a few key organisational design considerations have been omitted in this proposed team setup. Should the analytics team sit in the business or in technology? Should analytics be centralised or decentralised? These haven't been addressed because these are largely political arguments fought internally in organisations. Where you place the capability, whether it is in tech or business, centralised or decentralised, is largely irrelevant. It is the skill sets and the makeup of the team, their responsibilities, and their contribution to the strategic initiatives that are most important.
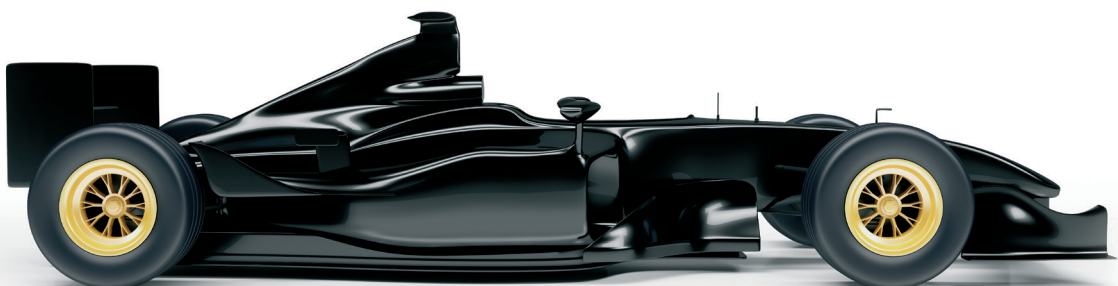
Opportunity awaits

So, in closing, there is a huge opportunity in analytics today - an opportunity to fundamentally change the shape of the organisations that we all work for. To grasp this opportunity is no simple task. It will require leaders to rethink the design and structure of their teams. But if you don't take those first few difficult steps, then the chances are that your team will be left behind and become irrelevant to the business.

Automation will soon replace the manual mechanical workload that is currently the bread and butter of analytics teams. This will free up analysts to deliver value to the business through interpreting results. But to reach that point will require team members with business acumen to secure the funding to invest in the right technology and personnel. That may require a change in team setup - hiring a business manager - before you gain the automation technology you need to get you to where you need to be. Businesses are often set up to make the most of what is currently available. But smart businesses will make structural changes to open up new opportunities.

From the CEO

This paper is based on a talk I gave at the Chief Data and Analytics Officer Sydney event 2018. I wanted to talk about the future of the analytics department because the space is changing so rapidly. Organisations, and specifically the people who run their analytics teams, need to prepare themselves for the future or suddenly be left behind.

Having initially started my career as a data analyst, then subsequently building a software business around analytics, I have a keen interest in the organisational design and business strategies that make analytic programs successful.

The opportunity to change the way analytics departments are structured exists today because we're on the cusp of a revolution in analytics. From where I'm standing, there's never been a more exciting time to be in analytics. This opportunity results from a combination of both the dramatic improvement in technology and the general understanding and acceptance of how analytics can deliver tremendous value to the business.

If you want to know more of my thoughts around organizational structure and business life in the BI sector, you can read my posts on the Yellowfin Think Tank page and follow me on LinkedIn.

Glen Rabie
CEO, Yellowfin

ellowfin

Yellowfin provides a Business Intelligence (BI) and analytics platform aimed at solving real enterprise analytics challenges and helping business people understand not only what happened, but why. Founded in 2003 in response to the complexity and costs associated with implementing and using traditional BI tools, Yellowfin is an intuitive, 100 percent web-based reporting and analytics platform. More than 25,000 organisations and more than three million end users across 75 countries use Yellowfin every day.

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