Data-Driven Success in the Public Sector

7 Key Habits and Real-World Examples

Qlik

Who succeeds with data in the public sector – and why?

Both in work and in our personal lives, data impacts nearly everything we do. And it continues to grow at astounding rates. This creates exciting opportunities for the public sector – opportunities to improve your services and financial performance while better fulfilling your mission.

The important question, of course, is how? Data is notoriously complex, and government organizations have their share of technical challenges. Siloed data, a barrage of sources to integrate, and security and privacy concerns, just to name a few.

Fortunately, modern technology can handle those issues. The truth is, when it comes to generating value from data, the differentiator often comes down to culture. The most successful organizations have made data accessible, understandable, and usable throughout departments, roles, and initiatives. In other words, they've built a data-driven culture.

That means adhering to seven key habits for collaborating around data. In this eBook, we'll introduce those habits, and we'll share the success stories of seven public-sector organizations already using them to make informed decisions every day.

> "Data and analytics could create value worth between $9.5 trillion and $15.4 trillion a year if embedded at scale — and $1.2 trillion of that in the public and social sectors. But there is a long way to go."
>
> **THE MCKINSEY GLOBAL INSTITUTE**[1]

Data first. Rule of thumb second.

Here's an alarming statistic: In 67% of organizations, staff say that they would follow their gut feeling over data if the data contradicted their feeling.[2] Yet today, 87% of executives expect all team members to be able to explain how data has informed their decisions.[2]

How do we reconcile these two numbers? By putting data first. That's what data-driven cultures do. Insights from data are given priority, and rule of thumb – institutional tradition – comes second.

It's worth noting: Because institutional tradition tends to be based on experience, it can work, and often quite well. But when it doesn't, it can be disastrous, especially in high-stakes public arenas like police work and healthcare. If the situation is new, or changing quickly, or if it's beyond the experience of the person making the decision, experience-based rules of thumb fail.

That's why it's so important to create data and analytics systems and processes that are consistent, reliable, and appealing. When these systems earn the trust of the people who use them, adoption is much more successful, and it's much more likely for an entire organization to adopt a data-driven approach.

Australian Government
Department of Health and Aged Care

For communicating about COVID, Australia puts data first.

When COVID-19 hit, Australian's Department of Health and Aged Care (DHAC) set out to provide efficient information channels to the public. To do that, they needed a centralized data approach that would create a consistent source of truth for pandemic-related statistics. The solution had to be external-facing, easily adaptable, and able to support the National Incident Room with curated data on a daily basis.

Qlik® offered an end-to-end solution, allowing DHAC to bring together many disparate data sets quickly and produce a wide range of reporting formats in a governed way. Qlik solutions now underpin COVID-19 public announcements, pandemic incident management, and COVID-19 updates on the DHAC website as well as impact and vulnerability assessments. Qlik is used for both data visualization and ETL of data supplied by the National Incident Room. And Qlik's reporting capabilities enable the department to present the data in customized and rapidly updatable reports.

> "
> **There were other business intelligence tools within the department we could have used, but none of them offered the end-to-end solution that Qlik was able to. It's one thing to deliver a static report and completely another to have a rapidly updatable report with a consistent look and feel from a reliable source of truth."**

MICHAEL AGNEW
Data and Analytics Branch, Health Research and Economics Division, Department of Health and Aged Care

THE OUTCOME
A prototype Qlik Analytics Platform® was created on AWS in fewer than three weeks and went live on the department website in seven weeks. DHAC's public COVID stats website – which provides a central, consistent, reliable source of truth – gets half a million hits a day and up to 5000 hits a second.

It's not about big data.
It's about combinations of data.

At this point, big data is just data. What's more relevant today? Highly distributed, fragmented, and varied data – called "wide data." Wide data is an approach that enables the analysis of a variety of small and large, structured and unstructured data sources. By taking in a broader array of data sources, it provides for a richer, more complete situational awareness.

The need to handle different types of data has driven an explosion of databases: from 162 in 2013 to 343 in 2019 – and even more in 2021 – evenly split between commercial and open-source.[3] And Gartner predicts that by 2025, most data and analytics use cases will require connecting to distributed data sources, leading enterprises to double their investments in metadata management.[4]

Cross-corroborating data uncovers opportunities, too. A hospital, for example, can cross-reference weather and ER data to understand how weather impacts the types of presentations they see – and prepare for specific seasons or events. A police department can do the same with crime, understanding the types of incidents linked to weather and staffing accordingly. For example, they may learn that during rain or snow, indoor malls see a rise in petty crime, so they can assign more officers to patrol there.

INCREASE IN THE NUMBER OF DATABASE OFFERINGS

2013	2016	2019	2021
162	285	343	357
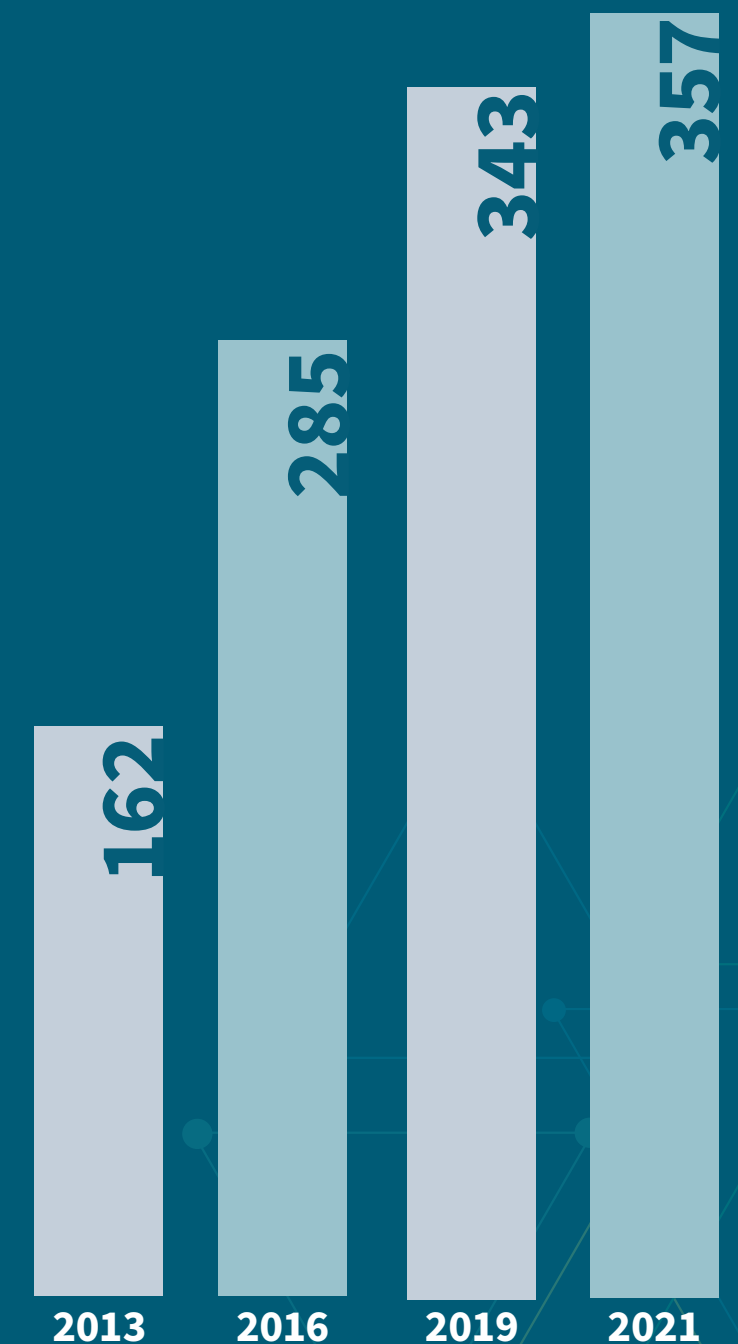
Source: DB-Engines, Knowledge Base of Relational and NoSQL Database Management Systems

The U.S. Department of Defense brings a universe of data together.

The U.S. Department of Defense (DOD) has the largest operating budget in the world – but until recently, no unified view of their data. What it did have was massive flows of information from thousands of external systems comprising everything from finance, budgeting, and contracts to personnel, logistics, and readiness. With leaders under increasing pressure to make fast, accurate decisions, they needed a way to quickly pull reliable data from across the enterprise to support decision-making.

To combine more than 3000 business systems into a central platform, DOD launched Advana, a central hub for advanced analytics powered by Qlik. With common data models, natural-language discovery tools, and self-service analytics, Advana makes order out of chaos – organizing data to make it discoverable, understandable, and useful for data-driven decisions. Advana brings together 160 source systems, serves 17,000 users, tracks more than 17 billion transactions, and covers 60+ use cases across finance, HR, supply, procurement, weapons systems, policy, and more.

> **THE OUTCOME**
> In an increasingly complex enterprise environment, Qlik has enabled the agency to analyze the entire DOD universe of transactions. Advanced analytic capabilities and ready access to data are helping drive faster, smarter decision-making. And finally, the system has reconciled $110 billion of budget at 45% of the projected cost in half the estimated time.

"As we move into an increasingly data-focused world, data superiority will be a factor in both military advantages and in creating new strategic and tactical opportunities. As the DOD states in its Data Strategy, 'Survival on the modern battlefield will depend upon leveraging and making connections among data from diverse sources, using analytic tools for superior situational awareness, and coordinating information for disaggregated-precision effects.'"

JAMES DAWES
Lead, Data Science as a Service, DOD

HABIT #3

Doubt and questions are encouraged.

In a data-driven culture, people aren't afraid to ask questions or challenge the status quo. And transparency is key to that. Two major causes of variation and omission are ignorance and reticence. That is, something hasn't been challenged either because that's the way it's always been done or because challenging isn't encouraged.

Technology can be a barrier, too. Traditional BI products and most modern data visualization products take the same approach: Users issue queries against pre-structured data. That limits exploration significantly. And it often results in long execution times, because each question results in another query or report.

There are other options. Qlik, for example, offers an associative model, where all data from all sources is unified, with the relationships among them automatically managed across all tables and sources. With the associative model, you don't have to be a business analyst to get the answers you need. Users of all skill levels can explore information using simple searches and selections, without boundaries or restrictions. As a result, data-driven questioning can be continuous and pervasive throughout an organization.

KEY QUESTIONS DATA-DRIVEN ORGANIZATIONS ASK

✓ Do we trust our data? If no, why not?

✓ Are we asking the right questions of our data?

✓ Are executives and managers making decisions based on "gut feel"?

✓ Do we have a culture where employees are comfortable challenging executives with data?

✓ Does our BI tool enable open-ended questioning and free-form exploration, or are we limited to issuing queries against data that has already been structured?

The Brazilian Ministry of Economy makes procurement transparent.

In 2016, Brazil was in a deep recession with a shrinking economy. And corruption was thriving for one reason in particular – a lack of transparency, and the resulting inability to ask the right questions of the data. In fact, approximately 90% of the federal public agencies lacked access to the government's price database. Shortly after 3+ million protestors demanded the removal of President Rousseff, the Brazilian Senate voted to oust her.

With new leadership came new opportunities, and transparency was a top priority. Qlik worked with the Ministry of Economy to build a price panel – a portal where all transactions from both products and services were open: http://paineldeprecos.planejamento.gov.br. In public dashboards, officials and citizens can explore data related to the government's budget, procurement prices, funds transferring, travel, and more – asking questions like: Who is responsible for each budget share? How is the budget being executed? And what has the government purchased, at what cost?

> "We developed the portal in record time. Now, in addition to ensuring total transparency to citizens, the price dashboard . . . allows us to buy faster and at a lower price."
>
> **DANIEL ROGERIO**
> General-Coordinator of Government Procurement Systems, Ministry of Economy

THE OUTCOME
This represents a major change in operations. Prices are no longer set by vendors but by the government, based on data. Bogus transactions continue to be uncovered, but now they're exposed and investigated.

HABIT #4

Governance – for data freedom.

Organizations with a data-driven culture recognize that governing analytics isn't just the regulation of data access. It's a social contract in which the people using the data have rights as well as responsibilities.

What are those rights and responsibilities? Users need a clear understanding of that. It's a good practice to draft and discuss a simple analytic "bill of rights" that sets out what people can expect to get and what they're expected to give.

On the organization side: Keep people informed of data's origins, timeliness, and how it can be used correctly. Additionally, define and build reusable data assets that can be shared across teams, encouraging collaboration and consistent analysis. On the user side: Encourage teams to share assets and results, and discourage data hoarding.

The right approach to governance in your analytics platform will bridge the gap between IT and the business – providing agility for the user, with trust and scale for IT. IT should have the ability to manage both the data and the access. Staff should have the freedom they need to analyze trustworthy data. You'll also want to provide different self-service capabilities to different user groups.

WHAT DOES SELF-SERVICE MEAN?

✓ For analysts, self-service means extending – building, modifying, and distributing new apps using pre-defined variables and charts.

✓ For knowledge workers, self-service means personalizing – modifying existing apps using pre-defined variables and charts.

✓ For end users, self-service means exploring – filtering and searching within pre-defined apps.
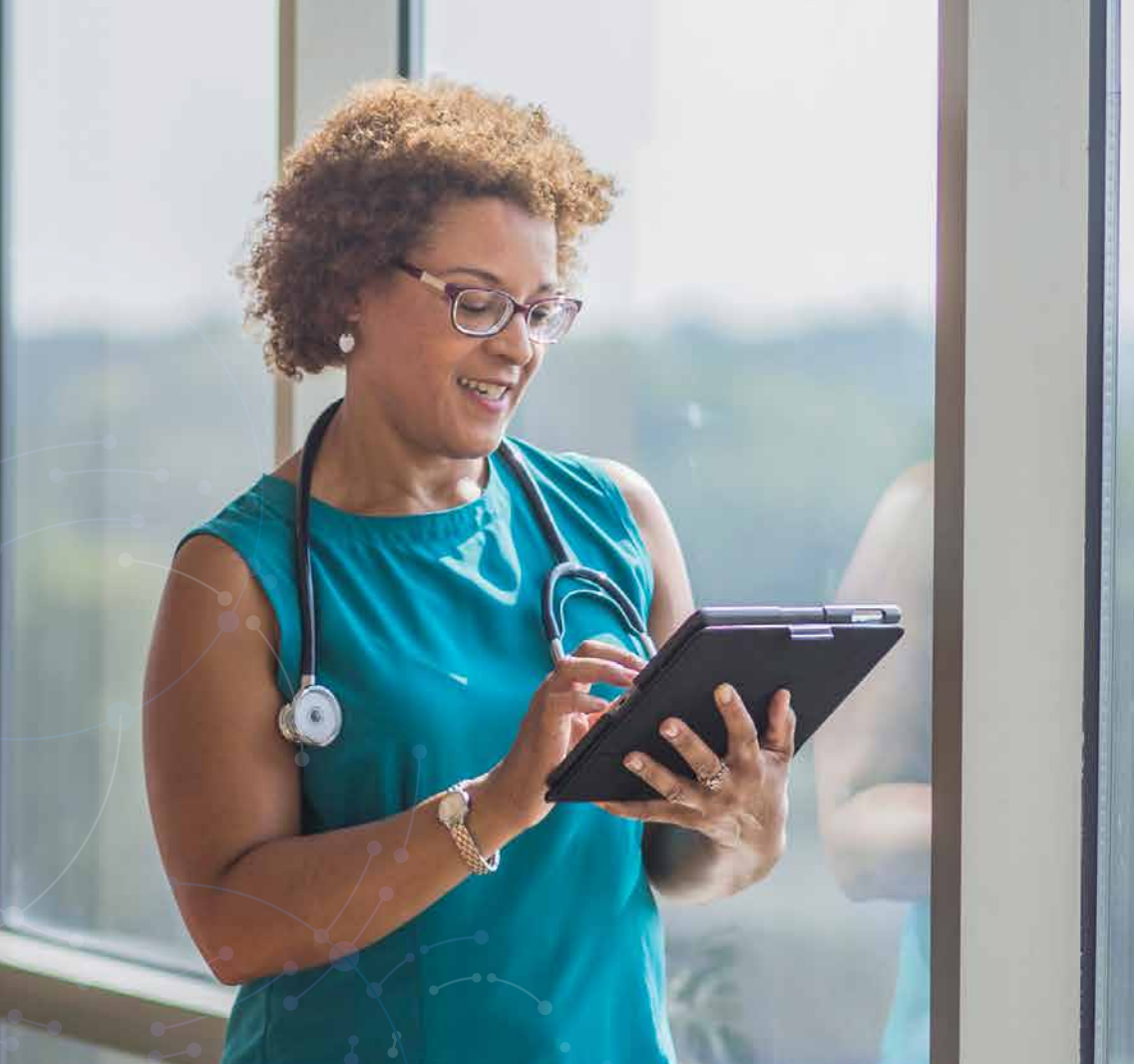
The New Zealand Ministry of Health opens data access while maintaining security.

New Zealand's Ministry of Health (MoH) was struggling with some common data challenges. First, disparate data extracts and ad-hoc report creation had led to the development of siloed reports and multiple versions of the truth. Second, existing tools were limited in analytical functions and visual capabilities. Third, restricted access was hindering users. And finally, the organization was seeking to empower everyone, including non-analysts, to explore data and gain insights.

Together with Qlik, the MoH changed the model of analytics delivery from gatekeeping to shopkeeping, increasing access and empowering different tiers of users while keeping data protected. Among other use cases, the organization is using data to surface population segments with unmet needs, so it can better target health services. And the MoH is now able to work more effectively with other government agencies in using data to help achieve social outcomes.

> **Qlik allows for data sets to be blended, bringing information out of silos and allowing for a richer view of data. Sharing the actionable insights that come out of analysis of health data will contribute to better decision-making and more equitable health outcomes for New Zealanders."**
>
> **ANN-MARIE CAVANAGH**
> Chief Technology and Digital Services
> Officer, NZ Ministry of Health

THE OUTCOME
The new approach has enabled health-sector users to see a national view that was previously unavailable – while maintaining governance, compliance, and privacy. Data silos have been reduced across the health system, and users at all levels have been empowered to explore data and gain insights.
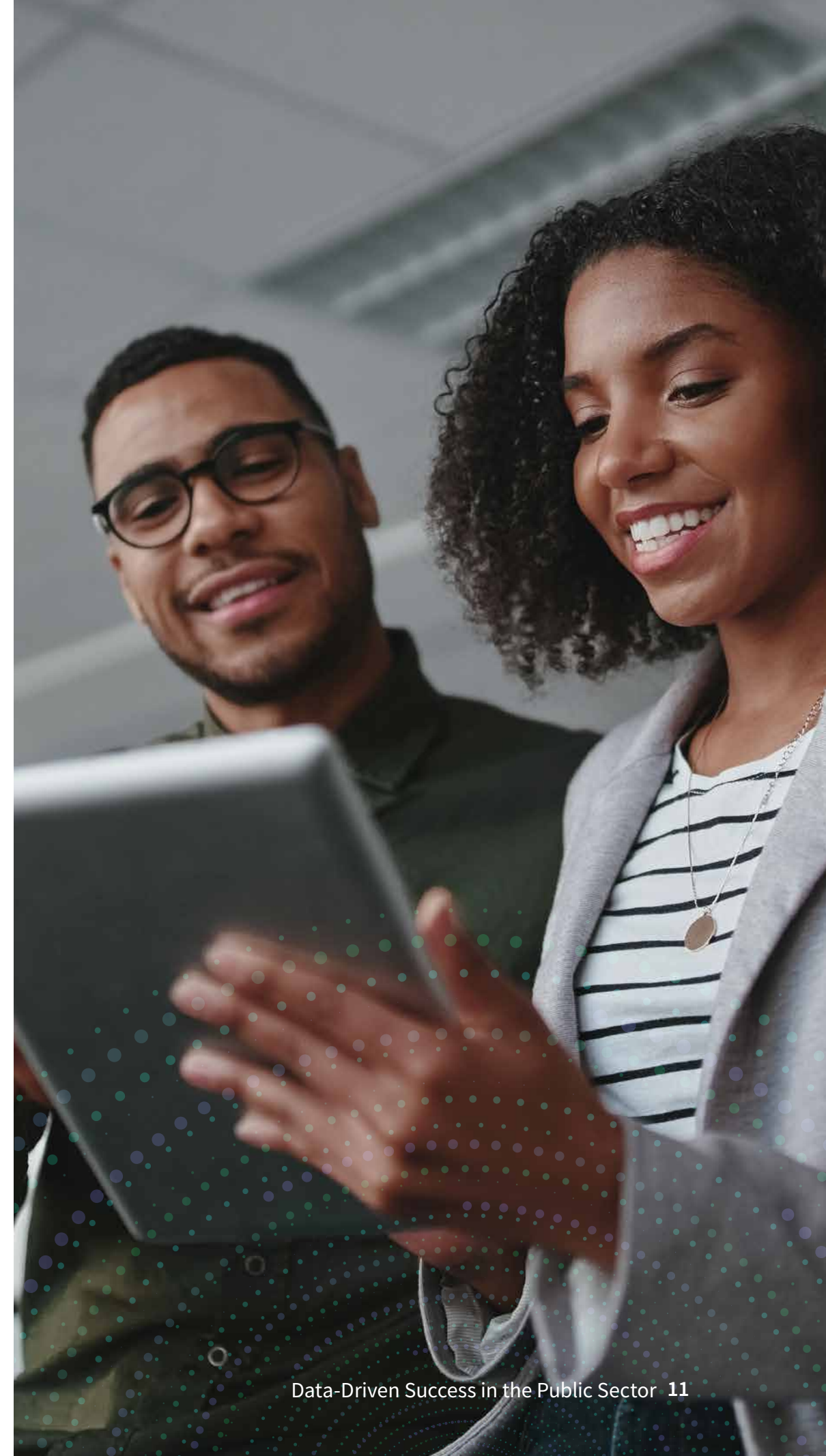
Embrace data literacy.

In a recent survey, only 12% of employees said that they were confident in their data literacy skills.[5] Obviously, that's a distressingly low level of data literacy.

Not everyone needs to be a data scientist, or even be able to build queries or visualizations. However, everyone in an organization does need to be data-literate enough to make data-driven decisions.

According to MIT, data literacy is the ability to read, work with, analyze, and argue with data.[6] And for corporate data literacy, we add the ability to communicate data throughout the organization. Essentially, corporate data literacy means that people use data and analytics properly and collaboratively, with the right level of interactivity and guidance based on their role and skill level. It's a skill set that empowers workers to ask the right questions of data and machines, build knowledge, make decisions, and communicate meaning with others.

You won't get there simply by hiring data-literate people. You'll need to democratize data and extend data skills across every business unit. To that end: Make sure that your analytics tools are built to empower everyone, offering the right set of analytical capabilities and assistance for each user and their skill level.

DAU

Defense Acquisition University uses intuitive apps to promote data literacy.

Defense Acquisition University is a corporate university of the U.S. Department of Defense, offering acquisition, technology, and logistics training to military and federal civilian staff and federal contractors. It has an annual budget of approximately $220 million USD.

DAU partnered with Qlik to develop intuitive apps and information streams with role-appropriate access for the C-suite, faculty, staff, and students. From course metrics to graduation statistics and university overhead, all the data needed to address everything from congressional financial calls to workforce appraisals is available to just the right people at just the right moment. Additionally, DAU dedicated an entire stream in their analytics hub to data literacy, calling it "Fun Facts" to encourage more uptake. The 550-person internal workforce has varying Qlik access; everyone has access to the Fun Facts stream, including about a million students.

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The more Qlik is used, the more data-literate the staff. It is as simple as that."

MARK WHITESIDE
Director of Performance and Resource Management, DAU

> **THE OUTCOME**
> **One year after launch, DAU conducted a series of use-case exercises to assess data literacy. In a sample question, the audience responded correctly 97% of the time in an average of 3.08 clicks.**

Take analytics to the edge.

The more users who have access to analytics, the more data-driven an organization becomes. And you can empower more users by bringing analytics directly to them.

Embedded analytics enables you to place data, interactive visualizations, and dashboards within onsite applications, web and mobile apps, IoT devices, and equipment and machines. By making insights available wherever people are already working – within the apps and on the devices they use every day – you can remove silos, bottlenecks, and delays in answering questions.

In a recent BARC/Eckerson Group survey of users in 214 companies, 38% of respondents said that embedded analytics was a primary technical driver of increased use in their organization.[9] It makes sense: People are much more likely to use a tool if it's right in front of them. Even something as simple as clicking away from one app and into another is a barrier during a busy workday.

Additionally, you can embrace the "edge" of analytics by analyzing data from edge devices, like machines on the factory floor or dashboard and body cameras in a police force. And finally, you can explore the edge in yet another sense – by taking advantage of the latest advancements in technology. For example, with modern analytics, you can augment human discovery and intuition with real-time recommendations from AI and ML.
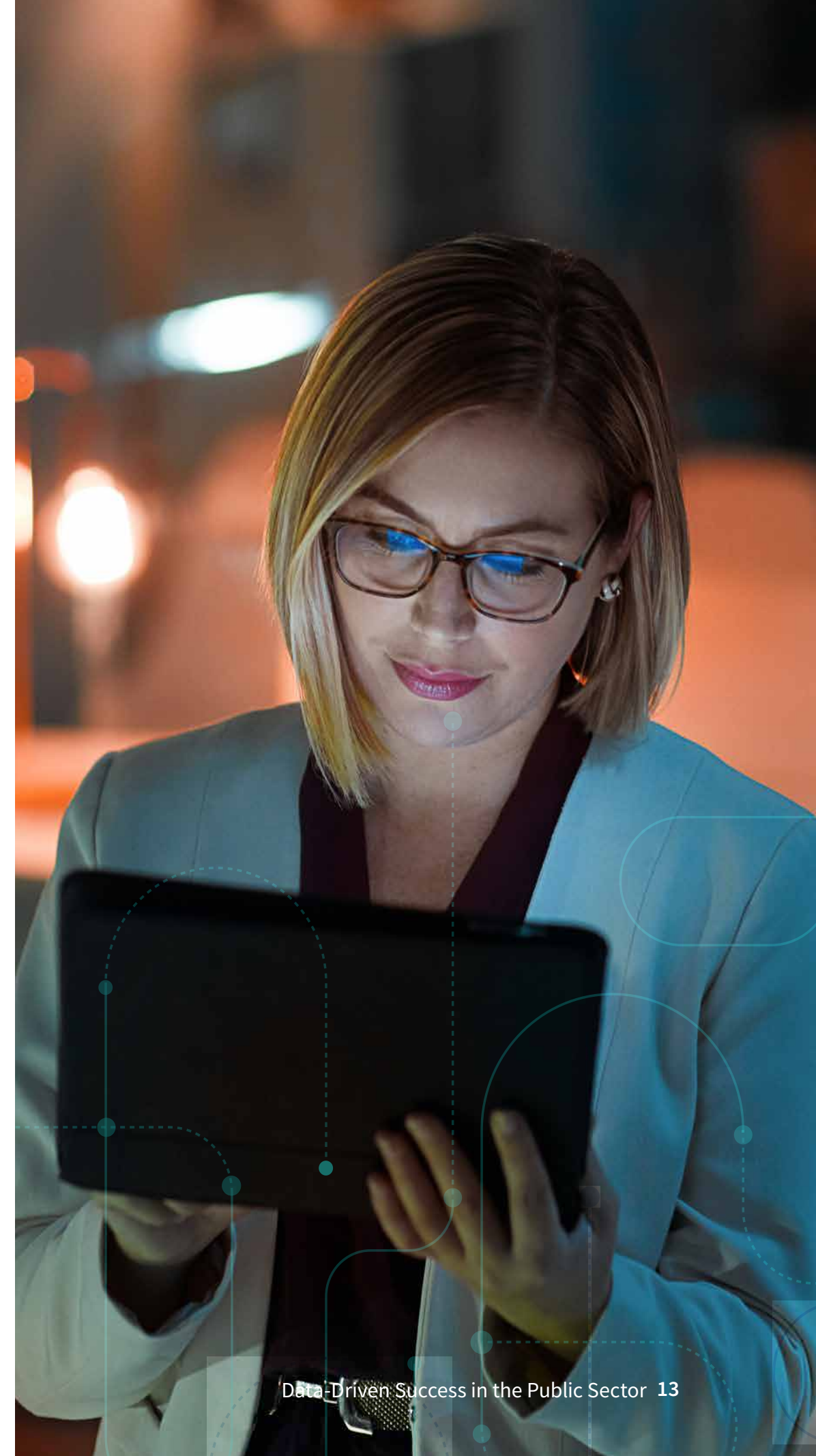
Avon and Somerset Police extends data to the entire force, on every device.

One of the largest police forces in the UK, Avon and Somerset Police has a staff of about 6000, including 2800 officers. Like many public agencies, they were dealing with insufficient data tools. In particular, officers needed self-service offender-management solutions to increase their success rates and reduce harm in the area.

The team deployed Qlik across the entire force and all policing operations. They use command-center screens on desktops and apps on mobile devices so that every officer has the information when and where they need it. With data clearly mapped and made easier to analyze, the force can fight crime more effectively, including 1) dispatching police officers to the right area to meet demand, and 2) using historical staffing data to pre-emptively allocate officers to areas where crime levels are prominent. And now that the supervisor's app updates crime elements every 20 minutes, the team sergeant can task an action and check that it's been completed within the shift – as opposed to waiting for a daily refresh.

> ### THE OUTCOME
> The use of Qlik has increased crewing efficiencies, removing unnecessarily double-crewed vehicles. The triage of cases is allowing for the more effective use of resources. A significant increase in productivity has reduced officer "downtime." And the instant logging of jobs has resulted in more jobs dispatched earlier.

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Policing's greatest asset is its people, but its biggest opportunity is technology. Forces are making strides in this area, but the pace of progress needs to be faster. Avon and Somerset are leading the way."
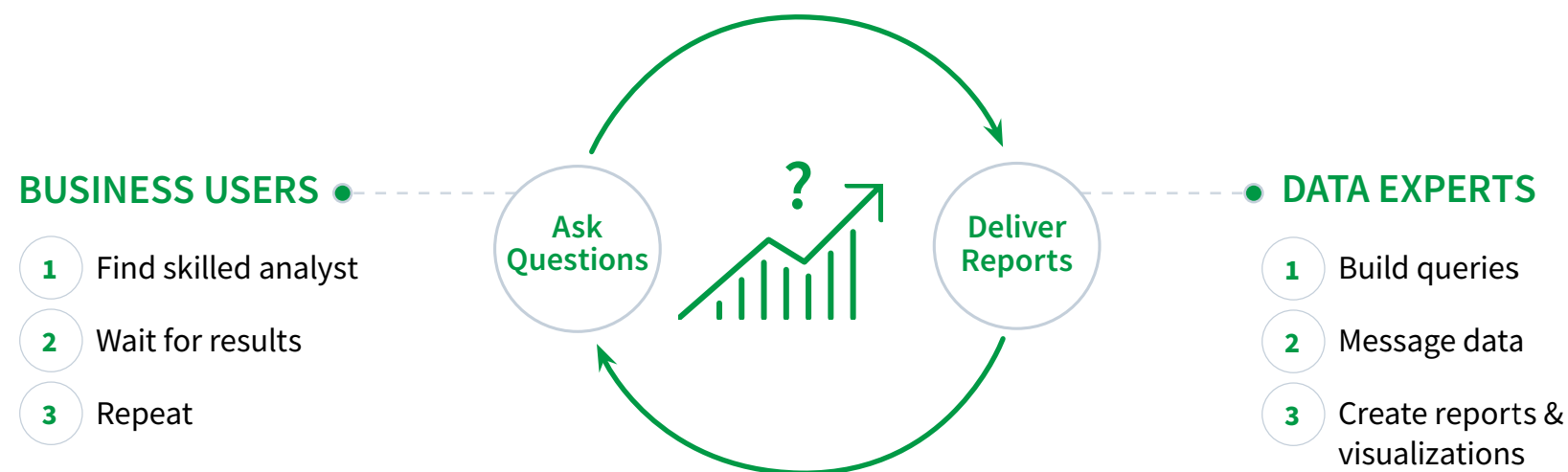
NICK HURD
UK Policing Minister

HABIT #7

Empower your people.

Technology is an enabler for decision-making, but no technology will replace all the daily decision-making people do in an organization. And even with the best technology out there, projects will fail when people aren't engaged or there's no process.

People are the ones who ask the questions that can be explored in data. They're the ones who have curiosity that compels them to dig deeper, who look at things from different angles, and who play games of "what if" and ultimately interpret their findings.

Empowerment begins with removing the "ask, wait, answer" cycle – and replacing it with governed self-service.

BUSINESS USERS

1 Find skilled analyst
2 Wait for results
3 Repeat

DATA EXPERTS

1 Build queries
2 Message data
3 Create reports & visualizations

TIPS FOR DATA EMPOWERMENT

For data-driven decision-making:

✓ Create a leadership culture.

✓ Nurture a data-friendly and data-adept culture.

✓ Be curious, ask questions, and challenge the status quo.

For business-aligned intelligence:

✓ Evolve from reporting to discovery.

✓ Simplify, standardize, liberate, and encourage.

✓ Educate users about the good and the bad of data.

Australian Government
Department of Employment and Workplace Relations

Australia's DEWR empowers staff – and partners – with hands-on analytics.

Australia's Department of Employment and Workplace Relations (DEWR) offers jobactive, a program that connects job seekers with employers. The program is delivered by a network of 44 providers at 1700 locations, and tracking data across those locations (about eligibility, job status, and performance, among other things) was time-consuming and error-prone. Additionally, trust in the data was low.

Together with Qlik, DEWR developed a portal that embeds Qlik's visual analytics, allowing DEWR to gain insights into jobactive providers – and empowering both the agency and providers to monitor performance targets and deliverables.

THE OUTCOME
Qlik has made it possible for jobactive to analyze performance from all providers across all locations, to maintain the security and confidentiality of all information, to condense 44 underlying data sources down to one, to enable comparisons without compromising data integrity, and to boost confidence in the government's investment of $7.5 billion.

"The standardization of the reporting platform has paid dividends in improving the responsiveness of the IT group. Development of additional reports has been reduced from 12 months to two weeks. And with all providers using the same dashboard and data schema, any update is simultaneously available to all providers, sites, and users."

STEPHEN MOORE
CIO, Department of Employment and Workplace Relations

We make it easy for you to build a data-driven culture.

Data first. Wide data. A culture of questioning. Governance. Data literacy. Edge analytics. And user empowerment. All seven key habits of data-driven organizations are made possible – and successful – when you have the right technology. And some platforms, like Qlik, are built to enable them.

More than 3000 government customers around the world use Qlik to bring massive quantities of complex and disparate data together, to empower everyone across their organization to intuitively explore it, and to govern it at every step of the way. Whether you're a federal agency or a local department, you can leverage Qlik to become data-driven in every function and every role. As a result, you can deliver services more effectively, transparently, and efficiently – while reducing costs.

Considering costs? Look at the whole picture.

When you compare the costs of analytics platforms, we think you'll find Qlik surprisingly affordable – especially when you consider the total cost of ownership (TCO) and not just the initial price for the most basic service.

For example, with Power BI, pricing starts low but gets expensive quickly – and the costs keep rising. With Qlik, pricing is transparent from the start. And for the same number of users, you'll pay less and get more flexibility, capabilities, and functionality, year after year.

Let's talk about your work with data and sustainability.

Start Here

Qlik's vision is a data-literate world, where everyone can use data and analytics to improve decision-making and solve their most challenging problems. Qlik offers real-time data integration and analytics solutions, powered by Qlik Cloud®, to close the gaps between data, insights, and action. By transforming data into Active Intelligence™, businesses can drive better decisions, improve revenue and profitability, and optimize customer relationships. Qlik serves more than 38,000 active customers in over 100 countries.

Qlik Q

qlik.com

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