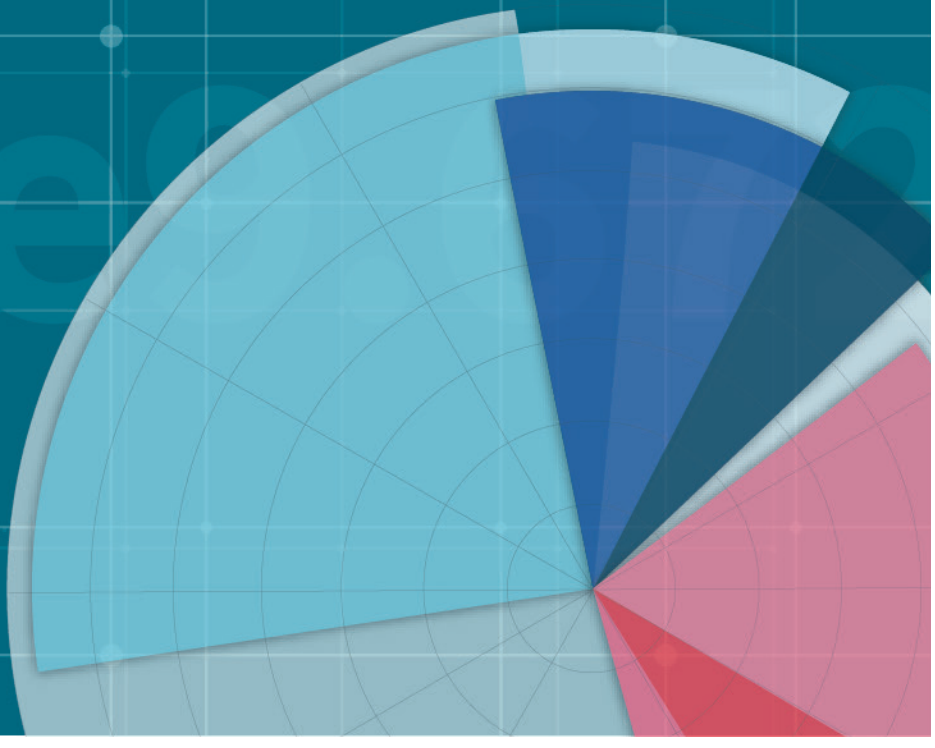
Qlik LEAD WITH DATA™

Data Literacy Project

The Human Impact of Data Literacy

A leader's guide to democratizing data, boosting productivity and empowering the workforce

REPORT |**2020**

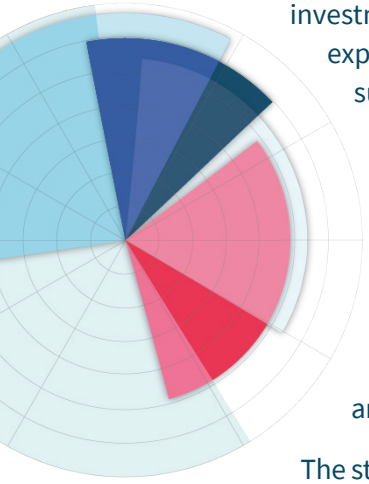


INTRODUCTION

Data is a gold mine that can help the Intelligent Enterprise drive growth. Yet, while organizations continue to collect, store and analyze data, its real potential remains largely untapped. In fact, research from Forrester found that between 60 and 73 percent of all enterprise data is never analyzed.[1]

That said, it would be wrong to ignore the significant investment that many firms have made in state-of-the-art solutions to uncover and unlock new opportunities from their data. From local police forces to the world's largest banks, organizations are using data to prevent fraud, create better customer experiences and even save lives. But we are still just scratching at the surface of data's full potential.

Businesses increasingly recognize that augmenting the capabilities of the whole workforce—rather than one small team of data specialists—can significantly increase the business opportunity of data. So, while investment in training and solutions has largely focused on smaller groups of employees with data expertise, individuals across all business functions are increasingly expected to become self-sufficient with data and make data-driven decisions.



However, with technology having developed far more quickly than the typical employee's ability to harness its insights, some employees report feeling overwhelmed by these changing working practices, which consequently affects their performance.

To delve deeper into the matter, Qlik and Accenture commissioned a global research study on behalf of the Data Literacy Project, surveying 9,000 employees from a sample of industries and job roles—from the C-suite to entry-level—in nine countries across North America, Europe and Asia-Pacific.

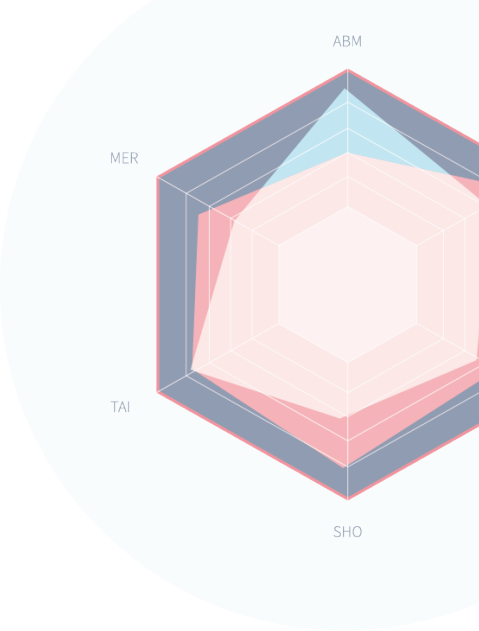
The study found that businesses at the tipping point of their journey to become data-driven are investing heavily in data-ready skills to help enhance the performance of individuals and their organizations.

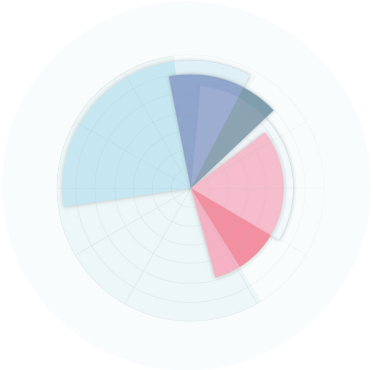
The Human Impact of Data Literacy Report aims to educate leaders across organizations about the importance of building a data-driven culture, highlighting that investment in training and upskilling is vital and can significantly increase overall productivity.

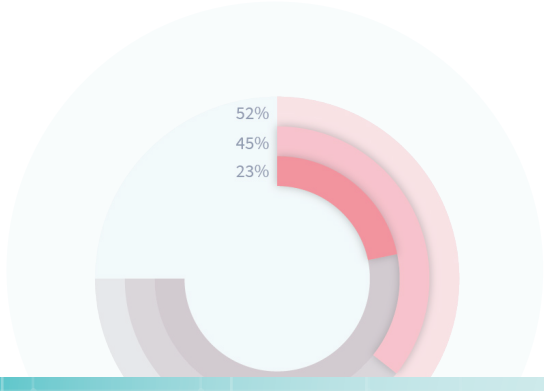
Read on for practical advice from leading voices that enterprise leaders can execute now to reap the benefits tomorrow.

1. Closing the Data-Value Gap | How to become data-driven and pivot to the new, Accenture, 2019

CONTENTS







SECTION 1

DATA DEMOCRATIZATION: THE ENTERPRISE OPPORTUNITY

Regardless of industry, the most powerful asset that businesses hold has changed. Data now underpins success in mining both physical assets and digital business opportunities—improving accuracy, increasing efficiency and augmenting the ability of the workforce to deliver greater value.

Those that lead with data reap its advantages: Qlik's Data Literacy Index found that data-driven organizations benefited from increased corporate performance, resulting in a higher total enterprise value of 3-5 percent, equating to US$500 million when applied to the organizations included in the study.[2]

Yet, while the gospel of the data-driven business has long been professed, the journey that many organizations need to take to translate their data into long-term business success is lengthy and presents many hurdles. Accenture's Closing the Data Value Gap report found that the majority of firms still don't realize the full potential of their data.[3]

Only 32 percent of business executives surveyed said that they're able to create measurable value from data, while just 27 percent said their data and analytics projects produce actionable insights.

This underscores the immense challenge that firms face, with just 6 percent of the companies in Accenture's Data-driven Index assessed as "mature."

As insight-led business becomes increasingly synonymous with commercial success, this report will help organizations identify the challenges in realizing this opportunity, and more importantly, how these can be overcome.

ACTUALIZING DATA DEMOCRATIZATION

Lorin Witt, a professor at The Wharton Business School and author of Qlik's Data Literacy Index, found that the business opportunity for data is underpinned by three key elements: improved data access, stronger data skills and a culture that empowers data-driven decision making across the entire organization.

The democratized approach to data is at odds with what has, to date, been the dominant enterprise approach to data, in which ownership of data and its analysis has been in the hands of a few specialists. The group—typically comprising just a few data scientists—traditionally has a strong understanding of and extensive experience in business processes and data. It is tasked with delivering greater business value by improving existing operating models and developing new ones.

2. The Data Literacy Index, published in October 2018, was a study conducted by Wharton School Professor Lorin Witt and HIS Markit on behalf of Qlik
3. Closing the Data Value Gap, published in August 2019, was a study conducted by Accenture

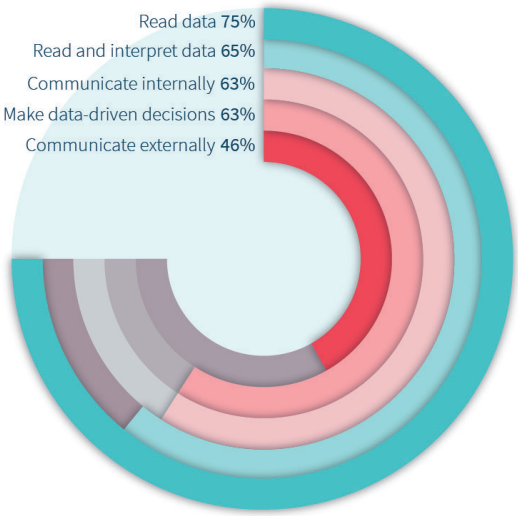
> Most firms are sitting on a gold mine of talent. They need to be able to build teams that can realize the true value of data, by investing at the right level, in the right areas and in the right tools. Do this, and they will be able to unleash their workforce's potential to make data-driven decisions a reality, rather than a novelty.
>
> ***Kevin Hanegan, Chief Learning Officer, Qlik***

Our research found that this approach is rapidly changing as leaders wake up to the opportunity of democratizing data. Nearly all employees are now expected to be able to use data in their roles.

The majority of workers we surveyed report that they read and interpret data as part of their roles, and that they communicate with data internally and externally and make data-driven decisions at least once a week.

To enable more employees to take advantage of data in their work, enterprises are increasingly investing in tools, such as data analytics and business intelligence software, to help employees glean tangible value from the organization's data. Sixty-seven percent of the global workforce have access to business intelligence tools, while 75 percent have access to data analytics software.

HOW EMPLOYEES USE DATA



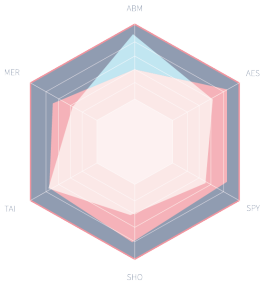
However, a legacy of the traditional approach to data usage persists in many organizations: a small group of specialists benefitting from most of the investment in data tools and training, along with ubiquitous access to data.

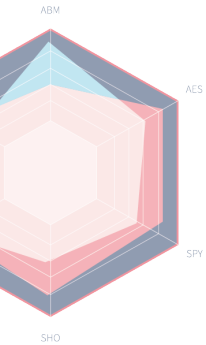
As a result, many employees don't have the skills that would help them comfortably and confidently work with data. In fact, just 21 percent of the global workforce are fully confident in their data literacy skills — i.e. their ability to read, understand, question and work with data.

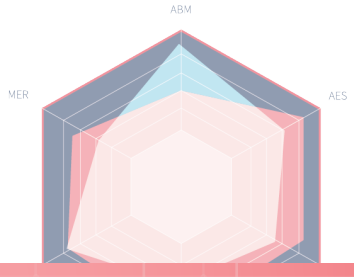
PRIORITIZING SELF-SUFFICIENCY OVER SELF-SERVICE: FROM EDUCATION TO THE WORLD OF WORK

Organizations need to recognize that the exponential growth in data usage has accelerated far beyond the skills and confidence of the employees required to use it. Only 25% of employees felt fully prepared to use data effectively when entering their current role.

> Self-service without self-sufficiency is a bit like going fishing and expecting the fish to jump out of the lake for you. You need the rods, the bait and the nets to be self-sufficient to catch the fish. That's what employers need to provide employees when it comes to reading and understanding data.
>
> ***Jordan Morrow, Global Head of Data Literacy, Qlik***

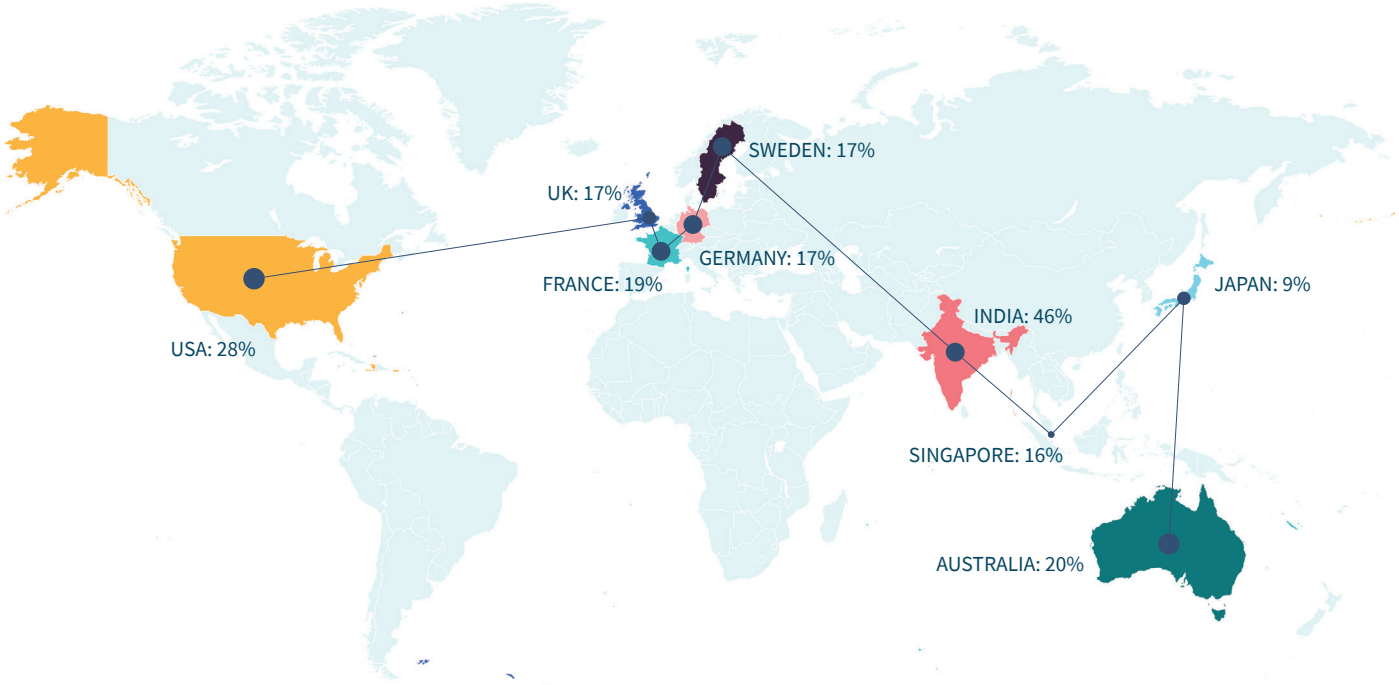




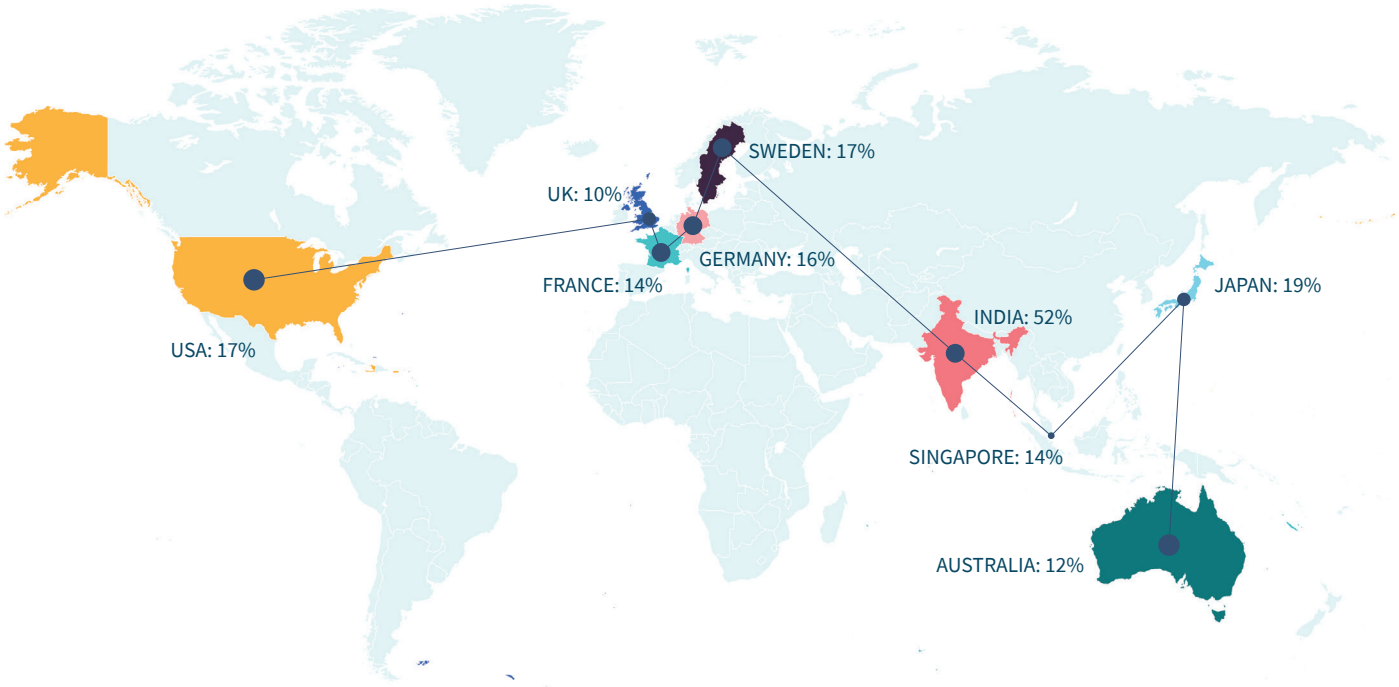


MAPPING THE GLOBAL STATE OF DATA LITERACY

A: THE LOCAL DATA-LITERATE WORKFORCE

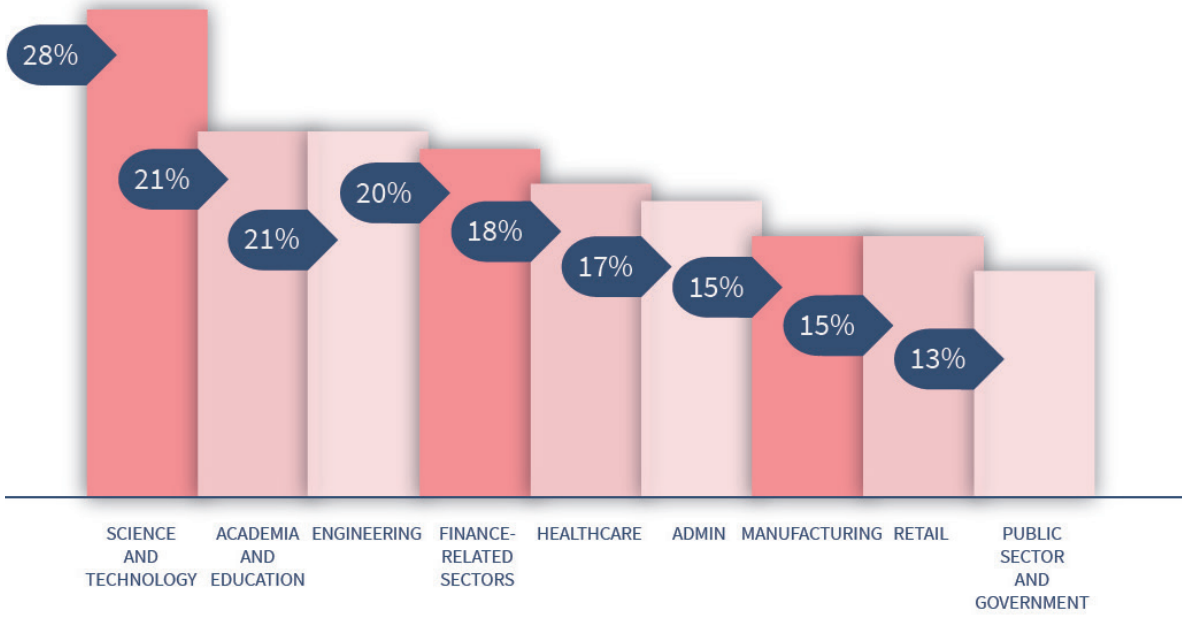


B: WORKERS WHO REPORT A SIGNIFICANT AMOUNT OF TIME WAS SPENT IN MAINSTREAM EDUCATION LEARNING HOW TO USE DATA IN THE WORKPLACE

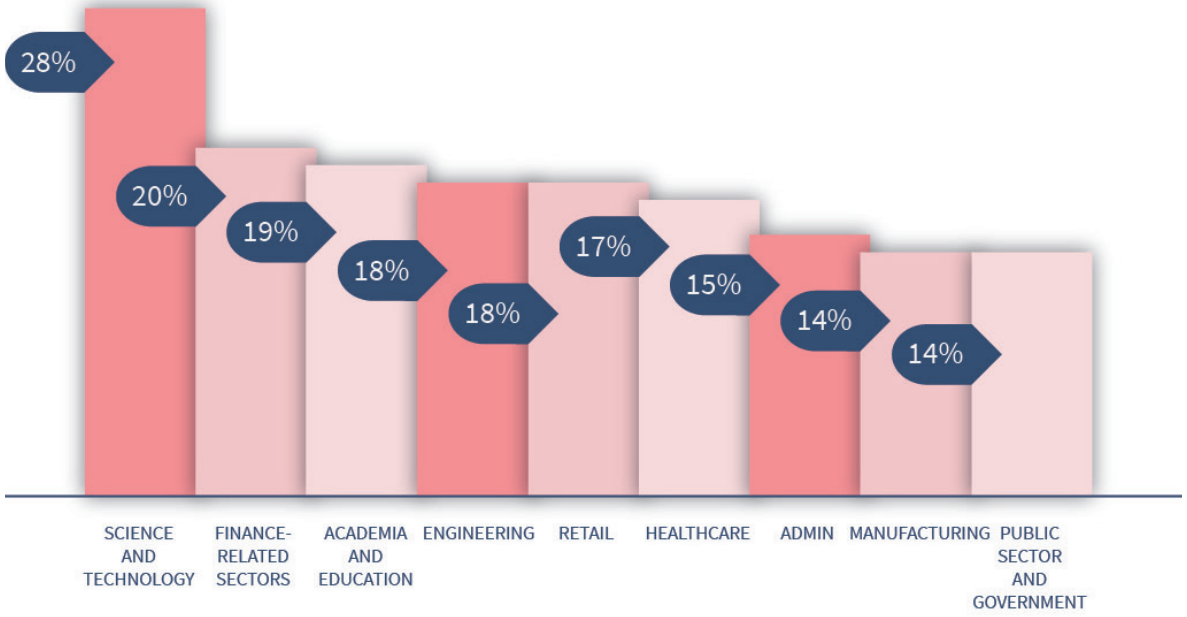


Q: WHO HAS ACCESS TO THE FOLLOWING FORMS OF DATA/TOOLS AND IS ABLE TO USE THEM PROFICIENTLY?

A: 1| EVERYONE HAS ACCESS TO DATA TOOLS (E.G. ANALYTICAL DASHBOARDS) THAT ARE DESIGNED SPECIFICALLY FOR EMPLOYEES' JOB ROLES



2| EVERYONE HAS ACCESS TO DATA TOOLS (E.G. ANALYTICAL DASHBOARDS) THAT ARE APPROPRIATE TO EMPLOYEES' SKILL LEVEL



SECTION 2

WHAT'S HOLDING BUSINESSES BACK FROM BECOMING FULLY DATA-DRIVEN?

The data opportunity in every business is massive. Not only does it support better outcomes for businesses, but—when empowered with the necessary training and appropriate tools—our respondents recognized its ability to help them make more informed decisions, become a better manager, gain the trust of their leadership, and more.

However, often data strategies have failed to recognize businesses' important role in enabling employees to become confident in working with data. Many organizations have simply put data in the hands of employees and expected them to make a success of it. This can affect some individuals' understanding of the potential of data to support their work, how comfortable they feel using it and, in turn, their appetite to use it.

1| DATA APPRECIATION ISN'T TRANSLATING INTO EMPLOYEE ADOPTION

Despite nearly all employees recognizing data in the workplace as an asset, few are using it to inform decision-making. Only 37 percent of employees trust their decisions more when those decisions are based on data, and almost half (48 percent) frequently defer to making decisions based on gut feeling over data-driven insight.

This is true for people at every stage in their career—and even more prevalent at senior levels. For instance, around two-thirds of C-suite executives, senior managers and directors would go with their gut feeling over data-driven insight, compared with just 41 percent of junior managers and those below the last layer of management. While experience and trusting one's gut instinct is important in business, the findings show that executives' confidence in acting from insights is impeding some businesses' ability to lead with data.

2| LACK OF DATA SKILLS IS LIMITING WORKPLACE PRODUCTIVITY

The increased availability of data hasn't come without its challenges. An eye-opening three quarters (74 percent) of employees report feeling overwhelmed or unhappy when working with data.

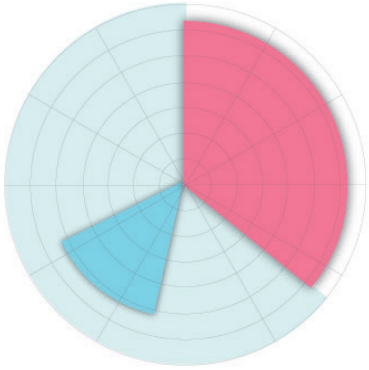
This has a negative impact on their performance: more than one-third (36 percent) of overwhelmed employees globally report spending at least one hour a week procrastinating over data-related tasks.

These feelings result in some employees avoiding data. The same number said they would find an alternative method to complete the task without using data, while 14 percent would avoid the task entirely. This presents a real barrier to businesses trying to build a data-driven culture.

These feelings result in some employees avoiding data.

More than one-third said they would find an alternative method to complete the task without using data, and 14 percent would avoid the task entirely.

This presents a real barrier to businesses trying to build a data-driven culture.



36%
would find an alternative method to complete the task without using data.

14%
would avoid the task entirely.

> As data and analytics professionals, it is key that we are able to consolidate and simplify data, so it's quick and easy for our workforce to consume.
>
> ***Mark Singleton, Associate Director of IM&T, at Warrington, Wigan and Leigh NHS Foundation Trust***

3| CHANGING TECHNOLOGY PRACTICES IS ADDING TO MODERN WORKPLACE PRESSURE

> Employers often don't know how to support their employees to develop the competencies needed for adopting new technologies, which has contributed to stress in the modern workplace. But we are now at a tipping point with data, where we understand how we can empower a data-democratized workforce, and business leaders must make it a reality in their own organizations.
>
> ***Dr. David Miller, Senior Manager, Accenture and PhD in Clinical Psychology***

The growing role of technology in the enterprise has completely transformed many working practices: the way we communicate, build customer relationships, measure success, and make decisions.

The speed of this change and the expectation for users to quickly adopt these new ways of working can, however, be overwhelming for some employees that feel like they're not 'keeping up'. Indeed, the majority of employees globally exhibit symptoms of burnout (feelings of being unproductive, frustrated or stressed) when working with customer relationship management (CRM) systems (59 percent), resource planning (54 percent) and communication tools (63 percent).

This is also true for the growing requirement to use data: 14% of employees report feeling overwhelmed when working with data at least once each day–rising to nearly half of employees once a week.

> It's important that democratizing data use in the enterprise isn't viewed in conflict with employee wellbeing. Instead, it shows that data usage and employee enablement must co-evolve. People with the curiosity, confidence and capabilities to work with data insights not only deliver greater value to the business, they also feel more empowered to trust their decisions and are more trusted by their managers, in turn. This positive data culture is achievable with the right human investment and should be what all companies seek to foster.
>
> ***Chantilly Jaggernauth, Founder and CEO of Millennials and Data (#MAD)***

HOW IS THIS TANGIBLY IMPACTING BUSINESSES?

DATA-DRIVEN EMPLOYEES UNDERPIN A PRODUCTIVE WORKFORCE

One of the greatest challenges for organizations in the digital age is not capturing data, but turning data into actionable insights to empower employees to make more informed decisions, improve productivity, and drive competitive advantage.

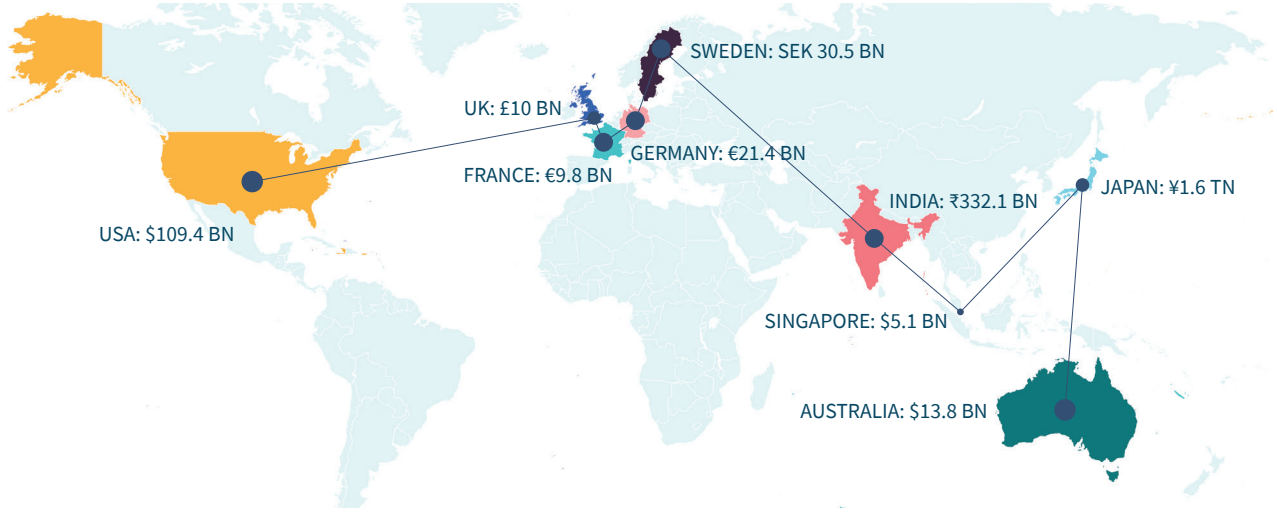
To succeed in the data revolution, business leaders enable their employees to become more confident and comfortable in using data insights to make decisions. This will help firms harness the opportunity of up to 5 percent growth in enterprise value associated with data-driven businesses, while also removing the productivity cost of data illiteracy in their organizations.[4]

However, we have seen that when businesses don't actively support employees in adopting new working practices that it can impact how comfortable and productive they feel in their role and, in turn, their professional wellbeing. Indeed, six in 10 respondents (61 percent) report that feeling overwhelmed by data has contributed to their workplace stress.

Our research actually found that, when accounting for data-induced procrastination and sick leave due to stress resulting from information, data and technology issues, companies lose an average of more than five working days (43 hours) per employee[5] each year.

The productivity cost cannot be underestimated. In fact, the cost to the US economy each year exceeded US$100 billion[6].

THE PRODUCTIVITY COST OF DATA OVERLOAD



4. When correlated to measures of corporate performance, organizations that rank in the top third of the Data Literacy Index have a 3 to 5% higher enterprise value - The Data Literacy Index
5. To calculate the average time lost for organizations through data-related procrastination and sick leave per year, we calculated the total of the average hours of time wasted from procrastination per week (measured against the average working weeks per country at 44.84 weeks) and the average days lost through data-related sick leave each year. The time lost per employee was calculated at 43.07 hours per week.
6. Gross Domestic Product by State, Fourth Quarter and Annual 2018, Bureau of Economic Analysis, May 1, 2019 https://www.bea.gov/system/files/2019-04/qgdpstate0519_4.pdf

SECTION 3

THE WAY FORWARD: BUILDING A DATA-DRIVEN WORKFORCE

The key to realizing the opportunity of data is to unlock the potential of people within the organization.

We have identified five key steps organizations need to consider when planning their data literacy strategy.

1| SET YOUR DATA EXPECTATIONS

What do you want your data to do? How will it deliver tangible value for your organization?

By outlining these clear and identifiable goals, leaders can start to define how different roles across the organization will need to work with data to achieve them.

Different groups will be accountable for creating value with data in different ways. Most employees within the organization will be Business Users, who will need to review relevant data and act quickly. Whether it's nurses managing hospital beds, or supply chain managers identifying and managing potential issues,[7] taking actions based on insights will improve their performance, boosting organizational efficiency and productivity.

> Most general Business Users actually need quite simple information, presented in an easily consumable way, that allows them to make a better decision. The notion that a frontline customer-facing employee needs or wants to spend lots of time analyzing information, is just not realistic if it doesn't directly contribute to how they do their work.
>
> ***Lee Raybould, CDO, Nationwide***

At the other end of the scale are Data Scientists, who will deliver value by improving existing models and developing new ones. In between sit Analyst Users, who will focus on the "why" and can provide deeper insights to Business Users. Then there are Discovery Users, who will deploy advanced data skills to explore and prove the value of new use cases, ultimately working toward the industrialization of new ideas. Each of these users has an important role to play in using data to deliver on their organization's goals.

7. Data Literacy Project Stories

Setting clear expectations means that everyone—whether they're in product development, marketing or business intelligence—understands what is and isn't expected of them. This must go beyond the processes they should be using data for, encouraging them to collaborate and communicate with data, as well as to challenge its insights.

To help employees embrace working with data, leaders must first understand how employees work with data and then ensure that they understand how data supports the overall goals of the organization. By doing so, employees can recognize data-related tasks as achievable and appreciate how they will, in turn, create value for the business.

This makes the role of a data champion in every organization ever more important. They work with senior business stakeholders, data experts and team leaders to ensure that the goals utilize the data's absolute potential, while being achievable for users.

> Employees must understand business expectations around how they should work with data in their roles. Taking this top-down approach will help business leaders drive the greatest value from their data at every level while helping all employees form a healthy, positive and productive relationship with data.
>
> ***Sanjeev Vohra, Group Technology Officer & Global Lead—Data Business Group, Accenture Technology***

2| CREATE A ROADMAP TO ACHIEVE YOUR DATA GOALS

Business leaders need to understand the state of data in their organizations so they can identify the investments needed for empowering employees to deliver against the business goals.

Our research has shown that some business leaders overestimate the capabilities of their workforce and their readiness to work with data. Three-quarters (75 percent) of C-suite level respondents believe that all or most of their employees have the ability to work with data proficiently, and even more (79 percent) believe that their employees have access to the tools they need to be productive. However, middle managers and below are less optimistic, with half feeling that all or most employees have the right abilities and 50 percent echoing the same sentiment about access.

> Everybody initially thinks that "I'm data literate and I understand data." But often when you test the waters, you realize this isn't the case. So, we need to build individuals' confidence back up and show them that they shouldn't be frightened of data—that they can understand it—and give them the tools to answer their business questions confidently.
>
> ***Emma Alexander, Head of Commercial Investment and Analytics, Samsung Electronics***

FOR ENTERPRISES, THE ROADMAP TO BECOMING MORE DATA-DRIVEN MUST FOCUS ON THREE KEY AREAS:

1| Assessing individual levels of data literacy.

2| Understanding the current availability and required adoption of technology and tools to support each type of user.

3| Defining the data that users need to access to be productive and managing governance.

3| ARM YOUR EMPLOYEES FOR DATA-DRIVEN WORKING

Organizations must provide employees with the tools, processes and methodologies that enable them to use data as required and meet business goals. For more expert users, investments should be made in solutions that reduce data cleansing and quickly deliver data that's ready for analysis, monetization and productization.

FOR BUSINESS USERS, THE FOCUS SHOULD BE ON:

1| Providing them with solutions that deliver the right insights. This will empower the employee to take actions that will improve productivity and deliver business value.

2| Delivering easily consumable insights as part of users' existing working practices. For instance, the organization can embed dashboards into communications tools such as Slack or in CRM systems.

3| Equipping them with frameworks and methodologies that will enable them to own the data process, from data gathering and analysis to generating insights and value.

Enabling employees to work with the right data will not only improve their ability to realize its value, but also help boost their confidence to take actions from insights—ensuring that data is seen as a benefit, not a burden.

CASE STUDY: NEMOURS CHILDREN'S HEALTH SYSTEM

Nemours, a U.S.-based nonprofit children's healthcare system, is committed to providing life-changing medical expertise and research. Holding a huge amount of data from electronic health records across the country, the company realized that if it could better access and analyze this information, it could help improve patient outcomes.

THE DATA SWAGGER SESSIONS

"Many of us didn't know what data was available, let alone how to read, analyze or even interpret it, so we created an educational series called the Data Swagger Sessions," shares Rishi Muchhala, manager of Enterprise Intelligence at Nemours. "These bite-sized tutorials aimed to inspire everyone. They showed us how data could provide actionable insights and inform better decision-making. Beyond learning about existing applications and data sets, attendees also learned how to use technology to generate actionable and timely insights at the point of decision-making."

"Our citizen developers and citizen analysts are also an always-on point of contact for data queries, so all employees know they're not alone when dealing with challenging insights," Muchhala adds.

PRESCRIBING BETTER CARE

Putting data in the hands of medical practitioners as well as business intelligence and operations teams across the business, has had a tremendous impact on the organization. Data literacy training has been integral to the success of this initiative, with staff feeling empowered, rather than overwhelmed.

"Our doctors and nurses now start every day with a snapshot view of patient-first metrics. Displaying standard metrics around appointments, patient flow and revenue cycle management helps us plan ahead, improving the overall patient experience and our ability to deliver the highest level of care," says Muchhala.

> Creating visual applications that can be accessed across the organization from board to ward—on PCs, touchscreen TVs and mobile devices—has enabled us to deliver consumable insights to our staff to support them in providing the best possible care to our patients.
>
> ***Mark Singleton, Associate Director of IM&T, at Warrington, Wigan and Leigh NHS Foundation Trust***

4| CLOSE THE DATA LITERACY SKILLS GAP

Being self-sufficient to work with data is not the same as having self-service data and analytics. No matter how consumable the data is, employees need to be curious and capable of understanding, questioning and taking the right action based on the insights delivered. This, in turn, improves their experience of and confidence in using data: employees who identify as data-literate were at least 50 percent more likely than data novices to say they feel empowered to make better decisions and trusted to make better decisions.

> Data literacy training has improved employees' self-confidence to ask the right questions and assess the recommended insights. This has helped them better understand not only the trends but also the rationale behind them, leading to more confident decision-making and meaningful discussions with other colleagues.
>
> ***Shahid Younis, CEO of Data Whizz Academy***

With just one-fifth of the global workforce reporting that they are confident in their data literacy skills, business leaders should consider how data upskilling could help improve their employees' use of data. Such training should not focus solely on the hard, technical skills needed for data processes, but also encompass soft skills that help people realize the full value of data—such as collaboration, curiosity, critical thinking and storytelling.

Data literacy training can take many forms—some companies integrate it into existing skills initiatives, provide standalone e-learning courses or offer specialized classroom training. There are also free e-learning courses and resources available as part of the Data Literacy Project, including an initial assessment that helps users identify their current data literacy level.

Given that more than one-third (37 percent) of all employees believe that data literacy training would make them more productive and 22 percent believe that it would reduce stress, it's clear that there is great appetite among employees to improve their data skillsets.

This hunger to upskill presents an exciting opportunity for business leaders, given the important role that data literacy plays in future-proofing organizations in a data-literate world.

5| CREATE A CULTURE OF CO-EVOLUTION

As we saw with the growing prevalence of New Data technologies such as automation and machine learning across the enterprise—we have not, and never will, reach the endgame for data.

Companies must understand that as the use of data continues to transform, so must the ability of their workforces to make the most of these new opportunities.

Therefore, the data tools for all roles should be regularly reassessed to ensure that they continue to deliver against the user requirements.

Data literacy training cannot be approached as a tick-box exercise but should be incorporated into the organizational training program. Once in place, this program should be kept up-to-date to reflect the evolving use of data in the enterprise. Data literacy should be a compulsory part of all employees' learning and development programs and be measured in their reviews to ensure that they continue to create the greatest value from the organization's data.

The most powerful asset for businesses in creating value from data is their people. Education and empowerment will be the true determining success factors in a data-literate world.

FURTHER READING

For more information on how to equip your workforce on the journey to becoming a data-driven business, check out these useful resources:

- 6 Step Guide to Launch a Data Literacy Initiative: Six-step adoption framework for creating a data literacy program
- Qlik Continuous Classroom: Several free and paid-for data literacy learning resources
- Closing the Data Value Gap| How to become data-driven and pivot to the new: Analysis of and recommendations on becoming a data-driven business
- The Data Literacy Index: A study that identifies the enterprise value opportunity of a data literate workforce

ABOUT THE RESEARCH

Qlik and Accenture commissioned Opinium to survey 9,000 full-time workers in companies of 50+ employees in the UK, USA, Germany, France, Singapore, Sweden, Japan, Australia and India. The survey was from September 10–24, 2019.

ABOUT QLIK

Qlik's vision is a data-literate world, one where everyone can use data to improve decision-making and solve their most challenging problems. Only Qlik offers end-to-end, real-time data integration and analytics solutions that help organizations access and transform all their data into value. Qlik helps companies lead with data to see more deeply into customer behavior, reinvent business processes, discover new revenue streams, and balance risk and reward. Qlik does business in more than 100 countries and serves over 50,000 customers around the world.

Qlik LEAD WITH DATA

Data Literacy Project