How to Drive Data Literacy
Within the Enterprise

Contents

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Enterprises that embrace and extend the power of analytics throughout their organization will be the leaders in the digital world. However, digital transformation initiatives are being held back by a lack of data literacy.

According to MIT, data literacy is the ability to read, work with, analyze and argue with data. It's a skill which empowers all levels of workers to ask the right questions of data and machines, build knowledge, make decisions and communicate meaning with others.

Yet new research shows that those leading the business are struggling to master it, and there's a widespread deficiency in data confidence.

Not only is this preventing them from thriving in their own leadership position in today's analytics economy, but it is hampering their ability to drive a data cultural change across the organization.

And, in a new era where data is the new basis for competition and relied upon by global enterprises to derive insights and win the marketplace, this escalating skills gap is shackling success.

In this report, Qlik reveals new insights into data literacy across the enterprise. It also offers practical advice for how to empower enterprises and all employees with the data, tools and learning to achieve personal success and capitalize on an unprecedented economic opportunity.

Key Findings

Data literacy concerns dominate the enterprise:

24% of business decision makers are fully confident in their ability to read, work with, analyze and argue with data.

Senior leaders are not exempt from a crisis of confidence:

32% of the C-suite are classed as data literate, potentially holding them back from encouraging the wider workforce to use data to their advantage.

Younger generations are underprepared for the data-driven workplace:

21% of 16-24-year olds are data literate, suggesting that schools and Universities are failing to prepare students with the skills they need to enter the working world.

Organizations are missing out on a competitive advantage, with better data literacy driving higher performance across the enterprise:

85% of data literates say they are performing very well at work, compared with 54% of the wider workforce.

Data is key to professional credibility:

94% who use data in their current job role not only agree that data helps them do their job better, but that greater data literacy would give them more credibility (82%) in the workplace.

There is an appetite to learn:

78% said they would be willing to invest more time and energy into improving their data skillset.

Methodology

The research was conducted by Censuswide on behalf of Qlik. The research surveyed 7,377 business decision-makers (junior managers and above). Respondents across Europe, Asia and the US. Research was carried out between August 2017 – February 2018. Censuswide abides by and employs members of the Market Research Society which is based on the ESOMAR principles.
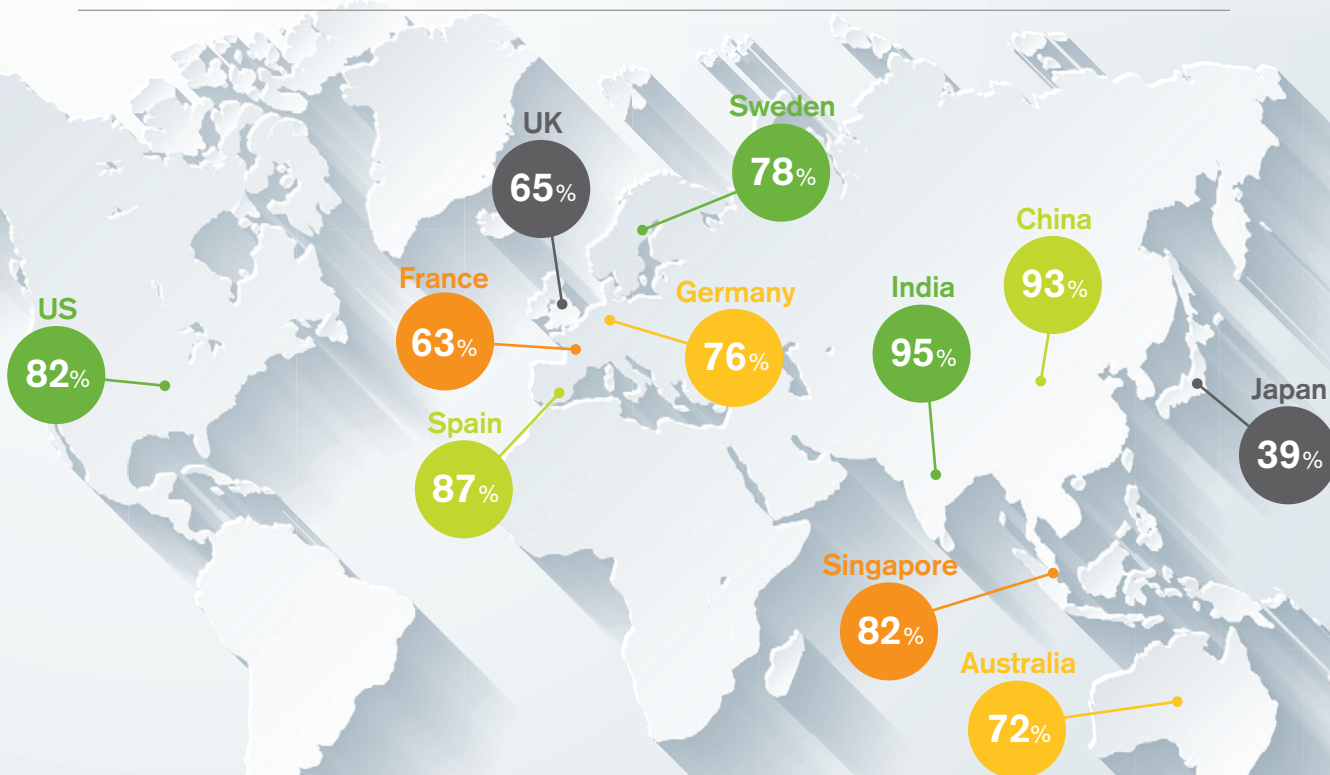
Data Literacy Across the Enterprise

While Gartner is promoting data and information as the second language of business, most enterprise workers lack the confidence to join the conversation. In fact, our study of over 7,300 business decision-makers found that only a quarter (24%) consider themselves to be data literate – i.e. fully confident in their ability to read, work with, analyze and argue with data.

These individuals are struggling to match the performance of their data savvy colleagues – which stands to reason given the vast amount of information that is being produced today. Indeed, IDC forecasts a ten-fold increase in worldwide data by 2025. As organizations become increasingly data driven, it is inevitable that employees who can read, work with, analyze and argue with data will be able to contribute more to their roles and organizations.

Craved career boost

The vast majority (85%) of data literates say they are performing very well at work, compared with just over half (54%) of the wider workforce. In addition, most people who use data in their current job role not only agree that data helps them do their job better (94%), but that greater data literacy would give them more credibility (82%) in the workplace. The desire to perform well at work means most workers are desperate to dive into data. In fact, over three quarters (78%) said they would be willing to invest more time and energy into improving their data skillset – if given the chance. This represents a significant opportunity to drive a culture without substantial resistance.

Workers Willing to Invest More Time and Energy Into Improving Their Data Skillset

UK 65%
Sweden 78%
China 93%
US 82%
France 63%
Germany 76%
India 95%
Japan 39%
Spain 87%
Singapore 82%
Australia 72%

Access to data

Access to data has historically been isolated to a few members of a business. However, as large organizations try to nail down a secure position within this data revolution, they are starting to democratize data, opening up greater access to individuals across the business.

While we are seeing some success stories, the research identified that vast inequalities remain. For example, senior executives (80%) are more likely to agree they have access to all the data sets they need to perform their job role to the highest possible standard compared to junior and middle management (67%).

When asked what best describes their thoughts with regards to their current company culture in terms of its data use, only a quarter (26%) said that everyone in their business is empowered and proficient in using data.

Enterprise Company Culture in Terms of Data Use

- ● Most functions are empowered to use data and the majority of people are proficient in reading, working with, analyzing and arguing with data: **28.5%**

- ● Everyone is empowered to use data and are proficient in reading, working with, analyzing and arguing with data: **26.1%**

- ● The majority of people have access to the data they need: **22.8%**

- ● Only a small number of people are empowered to use data and the majority of people are not proficient in reading, working, analyzing and arguing with data: **18.3%**

- ● Nobody is empowered to use data and the majority of people are not proficient in reading, working with, analyzing and arguing with data: **1.4%**

- ● Other: **0.1%**

28.5% / 26.1% / 22.8% / 18.3% / 1.4% / 0.1%
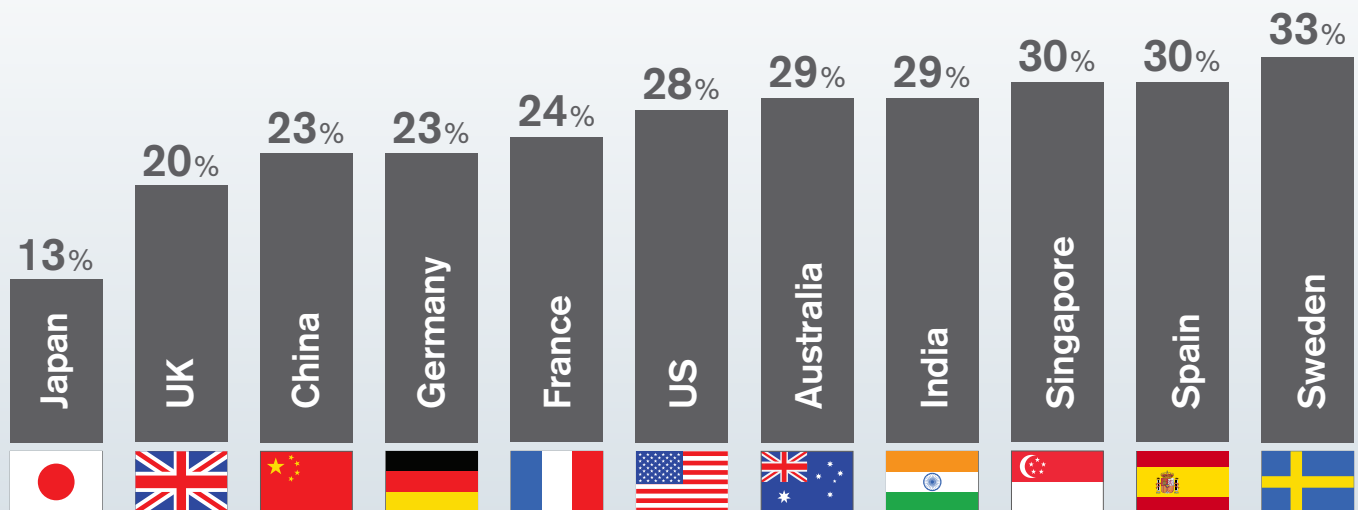
Quooker

THE BOILING-WATER TAP
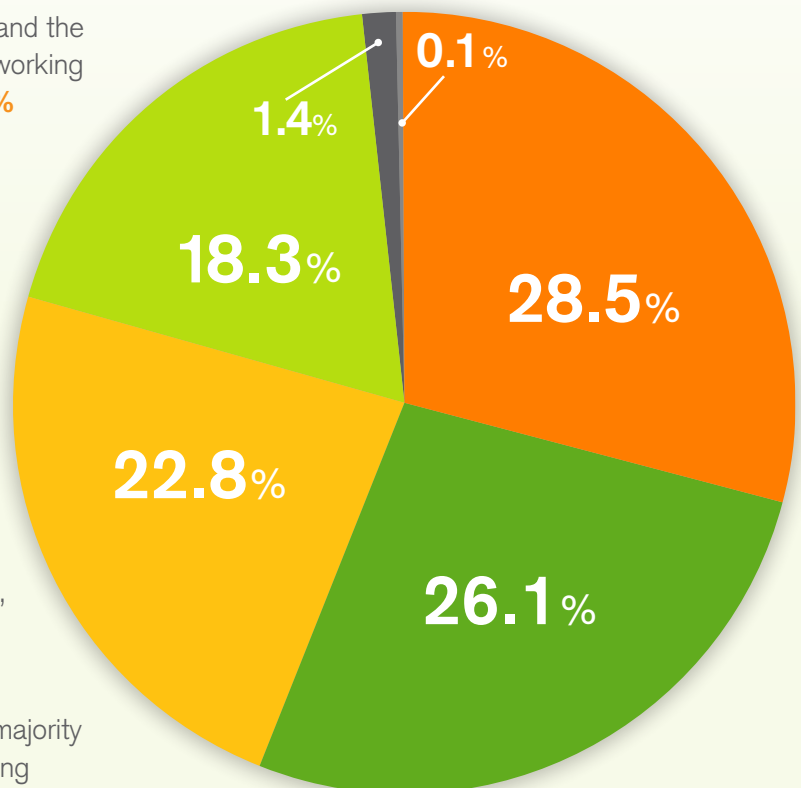
Driving Growth with the Devolution of Data

Quooker is the inventor of the boiling water tap. A Dutch family business, it has achieved rapid growth and now supplies hundreds of thousands of households in Europe. However, the organization's success – doubling in size every three years – comes with its own challenges. For example, it is no longer feasible for business leaders to oversee every single decision. According to Geertjan Woltjes, Chief Operating Officer at Quooker, empowering employees with data helps them to perform their job roles better which, in turn, helps the organization to scale.

He comments: *"If you want to be agile and grow in the way that we have been doing, employees must be trusted to make their own decisions. Access to dashboards and tools means our staff do not need to consult a manager before changing schedules or calling suppliers; they can just get on and do it. We are seeing the most data literate employees really enjoying the autonomy, driving business growth and accelerating their careers. Over time, dedicated education programs will grow the confidence of all employees with varying levels of ability. We believe everyone should have the opportunity to make important decisions based on accurate insights and achieve more in their job role."*

Organizations in which everyone is empowered and proficient in using data

Japan	UK	China	Germany	France	US	Australia	India	Singapore	Spain	Sweden
13%	20%	23%	23%	24%	28%	29%	29%	30%	30%	33%

Data inequality

Empowerment with data in the enterprise varies across regions and countries. Sweden has the highest percentage of organizations where everyone is empowered to use data (33%), while Japan trails at 13%.

Data Literacy Challenges for Enterprise Leaders

There are many factors which could inhibit the proper absorption of data throughout an organization. When building a data driven culture some of things to consider include tackling resistance among the workforce, finding a suitable data champion, and developing the skillset of younger employees.

1 Tackling resistance among the workforce

Organizations and cultures are built on years of tradition – and most changes will result in some level of resistance. There are those who will want to continue in the way it has always been done and go off gut feel, as 45% of our survey respondents claimed to do frequently. Awareness among this group is critical.

2 Finding a data champion

Organizations can also experience resistance from those at the top. It's imperative that data champions have a seat at the table to help those on the executive side of the business recognise the importance of data and offer support – particularly as just 32% of the C-suite is data literate. One way to do this is through the role of Chief Data Officer (CDO) or Chief Analytics Officer (CAO). These roles are becoming critical pieces of the data literacy puzzle.

3 Opening up new data sets in a new era of governance

Enterprise organizations are experiencing a whole new world of data production and consumption. New datasets are opening up new ideas, and offering up new insights to help drive better decisions. Some may wonder whether we even need governance in this era. The answer to this is yes. When organizations take on the democratization of data and self-service analytics, governance needs to be paramount from leadership, to ensure the answers and insight are properly vetted and accurate. At Nemours's Children's Healthcare System, a Qlik customer, employees from all departments outside of the traditional IT team can now take ownership of deploying new applications and dashboards and play a lead role in championing the accessibility of data.

Data Strategist and Best-selling Author Bernard Marr:

"Data is a major source of power and the foundation for transformational change through artificial intelligence, automation and advanced, predictive analytics. And while we're seeing huge progress being made to uncover insights which will drive efficiencies and improve customer experiences, further growth is being hindered by a widespread deficiency in data confidence.

Particularly in a large organization, there are likely to be many untapped insights and pockets of productivity, and these will only be uncovered if the right questions are asked by the right people. The more empowered employees are to read, write, analyze and argue with data, the more they will be able to contribute to their roles and the future of their organizations."

④ Overcoming a lack of fresh new skills

16-24 year olds (21%) fall below average data literacy confidence, possibly suggesting that schools and Universities are failing to prepare students with the skills they need to enter the workplace. Young people have grown up in the digital world, however that doesn't necessarily translate into confidence when interrogating data. The opportunity to marry digital comfort with data literacy is enormous, and employers must not assume they know it all already.

⑤ Breaking down organizational silos

Most enterprises employ individuals with enhanced data literacy, however this talent is likely to sit in IT or business intelligence teams, which may be isolated from the rest of the business. Establishing forums for data leaders to answer questions and share their knowledge is critical to upskilling employees at all levels.

Data Champions Inspire a Data-driven Culture

United Overseas Bank Limited (UOB) is a leading bank in Asia with a global network of more than 500 branches and offices in 19 countries and territories in Asia Pacific, Europe and North America. Across its network, the bank employs more than 25,000 people. UOB is focused on providing the best possible customer experience and it has built a team of leading data scientists and analytics experts to co-innovate and drive strategic projects for the organizational.

In addition to internal training, every two weeks the team runs popular Open Learning sessions for employees. During these sessions, participants can ask data analytics experts any questions they may have. This enables employees from other departments to learn and to adopt data analytics in the course of their work. These learning sessions also enable the bank to identify areas where the wider organization may need upskilling and where further training should be offered.

David Tan, Head of Big Data Analytics Centre, UOB, said: *"We have some incredible analytical brains within our organization and they play an integral role in raising data literacy among all employees. As we adopt technology such as AI and machine learning to enhance the way in which we serve our customers, we want communications to be open so that everyone across the bank understands the data-driven possibilities."*

Blueprint to Driving Data Literacy

Starting a data literacy movement to make sure everyone can succeed with data may feel like a mammoth task – especially when you are attempting to drive a culture change in an organization of hundreds or thousands of workers.

While it might seem daunting, there is no time to delay – especially with Gartner recently predicting that, by 2020, 80% of companies will initiate competency development. The right messaging and framework will help to overcome the challenges and drive a revolution that will bring new insights and new abilities. This starts by following a 4-step process: **Communicate > Assess > Train > Iterate.** This can be applied to entire organizations or smaller teams.

1 COMMUNICATE   2 ASSESS   3 TRAIN   4 ITERATE

❶ Communicate the power of data

An organization needs to hear about the power and use of data literacy on a consistent basis, from the top of the organization down. This could be showcasing how a unique customer insight led to a new business opportunity. Or it could be sharing how an individual employee got a new idea signed off by backing up their argument with robust facts and stats. If employees can see practical examples of how data will help them individually they will be less likely to resist a data driven culture. For example, at Wrightington, Wigan and Leigh NHS Foundation Trust, a UK-based Qlik customer, the CEO sends an internal email each Monday which often includes statistics on how data services have driven improvements in quality or efficiency.

❷ Assess

As organizations proceed through the 4-step process of implementing a data literacy culture, it becomes imperative to understand the current skill-level and skill-set of the entire workforce. A full analysis can be done across the enterprise through assessments, surveys, or other means to gather knowledge. Only once this evaluation has taken place is it possible to utilize proper training programs to empower different individuals across the organization.

❸ Follow training programs for different data personalities

Our research found that just 66% believe they have had adequate data training. There is no 'one-size-fits-all' approach for training data literacy. Later in this report you will find out more about how you can support different personalities to get data equal.

❹ And repeat….

A sea of data is flooding industries and organizations. In fact, in just two days we now create as much information as we did from the dawn of civilization up until 2003. The skills needed to cope with this are ever changing and evolving. The work to drive data literacy skills across the organization cannot be a fad: it must be a long-term and sustained effort.

Making Insights-as-a-Service Work for All Staff

Nick Blewden

Lloyd's of London – the world's leading insurance provider in over 200 countries and territories – has invested in a new "Data Centre of Excellence". This aims to ensure that employees in all parts of the organization, with varying levels of ability, are given the opportunity achieve more with data.

In addition to online training courses, a new company website called "My Data" provides an overview of all the data which sits in the business, where it comes from and how it is used. The emphasis is on transparent use of data, with easy access to all the apps and dashboards which exist across the organization.

The business is focused not just on helping the people who are less data literate, but on helping the people who are more data literate to communicate how they are getting value from data. This is critical to communicating the value of data and driving a culture change across the organization.

Nick Blewden, Head of Business Intelligence and Data Products, comments: *"In the digital economy, all our staff are users of data, and we're working with a huge range of data literacy abilities. The need to up-skill is nothing to be ashamed of or frightened of. However, it does need to be taken seriously – particularly in an industry like ours where we are under intense competitive pressures and need to operate as efficiently as possible.*

Ultimately, all the data personalities across our organization have one thing in common, and that's that they want to understand the value they can get from data. Once they experience direct benefits to their working lives, and potentially even a career boost, they want to keep engaging with us and accessing data independently. To drive a culture change, there has also been an element of us becoming a "yes" team – if we go out of our way to provide insights which solve real, everyday problems, data quickly becomes deeply ingrained in the business."

Data Personalities to Manage Across the Enterprise

Organizations are made up of very different people, parts, and pieces. The entire organization needs to buy into data and help each other to help create the right culture where data literacy skills can thrive. Culture is a key to ensure learning, mentoring and stewardship.

People will be familiar with the different data personalities that exist within an organization. While all must be trained on a data literacy culture, here's how to raise their individual skillsets:

Data Aristocrat

Data Aristocrat: No data stone goes unturned when the Data Aristocrat is around – and this high aptitude for understanding sets them in great stead for the future. They need to help up-skill and uplift others in an organization through mentoring, communicating and training.

APPROACH:
- Develop as a leader and mentor, with enhanced skills in storytelling.
- Training should include leadership, mentoring, and continued education on algorithms and latest methodologies within data and analytics.

Data Knight

Data Knight: Data Knights are feeling the increase in data volume on their shoulders. Thy are skilled at battling with data, but their armour is not bullet proof and it can sometimes be overwhelming both at work and at home. By combining smart data discovery with laser sharp analysis, they've got the opportunity to fly through the ranks.

APPROACH:
- Develop skills within data science, algorithms, statistical analysis.
- Data Knights also playing a crucial part with leadership and people leaders, so enhancing storytelling skills to spread the message of data literacy is key.

Data Dreamer

Data Dreamer: Data Dreamers are keen beans! They recognise the importance of working with data and the benefits it can have on their role…The downside, they can take the data you are given at face value, which is a concern when the don't receive enough support to interrogate it and improve their data skills.

APPROACH:
- The data dreamer really needs to start at the beginning. First, with a foundational course on data and analysis, including content on critical and analytical thinking.
- Once the foundation is set, you expand to teach more advanced analytical concepts.
- Build on this with skills in visualization, storytelling, and culture.

Data Doubter

Data Doubter: Intuition never lies – that's the data doubter's motto. In their mind, automated processes and data-driven decisions are no match for gut-feel. In fact, they are tired and fed-up of the amount of information, stats and facts that they are bombarded with every day. Half the time, they just ignore it and they're certainly not empowered to use it at work. They also think it's the job of analysts or data experts to worry about it.

APPROACH:
- The data doubter needs to start with awareness training, helping to expand the mindset out.
- Introductory training will occur to build foundational thoughts within data and analytics.

Empowering and Engaging a Workforce

WWL NHS Trust – which has nearly 5,000 employees – minimized workforce resistance by developing data-driven applications in a collaborative way collaboration with frontline staff. This helped to secure early buy-in and ensure new technology introduced into the organization was answering the right questions for employees.

In addition, the Trust set up a voluntary program called "Quality Champions" which trains employees how to use information to help identify where quality improvements can be made. According to Mark Singleton, Acting Associate Director of IM&T head of business intelligence at the Trust, the key to its success is empowering employees to use the data toanswer questions and make real changes.

He comments: *"Our approach is to give employees the training & tools to view their dataand ask questions that haven't been able to answer asked before. Turning insights into action and experiencing positive outcomes for themselves means employees continue to lean on data to inform and enforce new ways of working. We are building up the skills and the abilities across the organization – from domestic staff cleaners to nurses and analysts – so the BI team shouldn't be to be a bottleneck to them getting the answers they need."*

Learn More About How to Get Data Literate

Surviving the future of work will require employees of all levels to be data literate. Now is the time to make a change, with businesses, employees and the education system taking joint responsibility.

Qlik is helping individuals and organizations through a new education program which will bring value across entire ecosystems and industries. The new program is designed to empower everyone with the ability to understand, analyze and use data with confidence, as well as help foster a culture of data literacy inside organizations. The learning is product agnostic – built around widely adopted data, analytics and statistical concepts that can be used in any context and with any BI tool.

For more information and to get started, visit qlik.com/getdataliterate

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