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Data Literacy Summary Report 2022

A Programmatic Approach to Data Literacy



The Data Literacy Movement

LEARN TO WORK WITH DATA. GAIN AN EDGE.

The world around us is changing rapidly largely due to the fourth industrial revolution (4IR) and there is no turning back. One of the major driving forces behind this change is digitization. Digitization is basically replacing and improving existing processes by using technology.

With this digital wave of people, businesses and processes dematerializing and reappearing in a digital world, comes a tsunami of data created by each digital object. This data being generated is being labelled as the new oil of the digital economy and is unlocking enormous benefits for those who can use it effectively.

Data literacy is defined as the ability to read, work with, analyze and communicate effectively with data and it is the number one skill required to derive value from this new resource, namely data. So, we see that data is the fuel that is driving this new digital economy and without the appropriate levels of data literacy in

your organization, you will miss out in this new digital economy.

It is imperative that each individual and organization improve their data literacy base skills for them to remain relevant and gain an advantage in this ever-changing data driven digital economy.

Addressing this data literacy challenge from scratch can be a daunting task. The purpose of this summarized report is to share some of our experience in developing and implementing our Data Literacy program with corporate clients. We also share key thoughts from some of the leading thinkers in the emerging field of data literacy. These and other sources inspired our approach for developing a practical Data Literacy program in order to assist organizations to conquer their challenges in a practical and measurable way.

“Data Literacy is the ability to read, work with, analyze and communicate effectively with data.”





The Challenges

Gartner predicted that 80 % of organizations will start a formal Data Literacy initiative by 2020. This number is woefully overestimated, partly due to various challenges in launching and establishing new Data Literacy programs. More recently, the global Covid-19 pandemic that surfaced in the first half 2020, had a significant impact on the start and roll- out of these initiatives.

Regardless of the imposing challenges, improving data literacy remains a key focus area for data analytics and business leaders who understand the value of data and how it can be used to transform an organization. Unfortunately, the full potential of the transformational potential of data usage has not yet realized in the bulk of these organizations. The following challenges prohibits an organization from achieving a higher state of data literacy proficiency:

CHALLENGE 1: THE DATA CHALLENGE

Volumes, complexity, and velocity of data are expanding at an exponential rate with no sign of slowing down any time soon. In fact, statistic shows that the average number of data interactions per connected person per day is expected to increase dramatically, from 298 interactions per day in 2010 to almost 5000 interactions per day by 2025. So, there will be much more data and we will be expected to interact with it much, much more. In this digital data transformation era, most organizations are reliant on using data to define their strategy, developing new and refining existing offerings in order to stay competitive and relevant in their industry.

Merely understanding the importance and value of proper data, does not necessarily prepare the organization for the wave of data at its disposal, nor does it give a workable roadmap to maximize the wealth of insights hidden within this data. For organizations to confidently work with data and achieve the desired analytical insight, a broader skills base than just the small pocket of BI professionals, will have to be developed. And that speaks to our second and third challenge.

CHALLENGE 2: THE SKILLS GAP

According to a recent international survey of 15,000 respondents, the level of data literacy amongst various levels within an organization differs significantly and the overall statistics indicate that only 20% of individuals feel that they are data literate.

The Survey breaks the stats down even further:

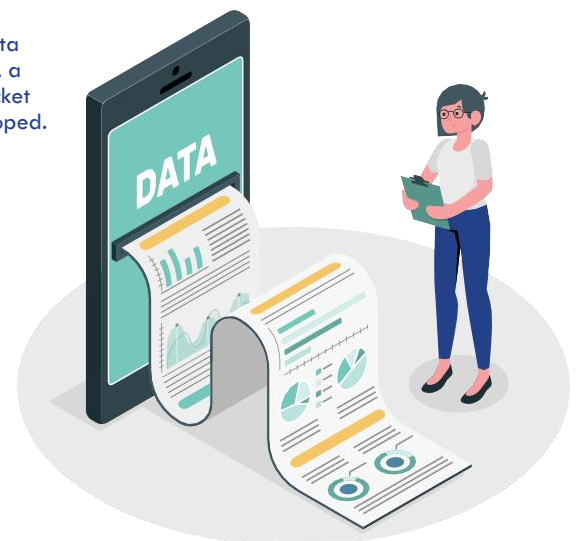
- 24% of Business decision makers feel data literate.
- 32% of C-level executives feel data literate.
- 21% of 16-24-year old's felt data literate, thus making our youth ill prepared for the future in a data driven economy.

There are two primary ways to plug this gap.

Firstly, hiring external skill sets. We strongly recommend hiring key technical skills, but also talent that can act as data literacy champions within the organization.

Hiring is difficult and expensive due to acute shortage of skills in the market and not all technical talent has the business acumen needed to unearth the business opportunities from the data.

The second part of the strategy should include developing skills in-house with existing business talent within your organization. Identify individuals that show interest, skill and have the potential to become a data champion in their part of the organization. They will ultimately help the organization to inject an element of a data driven culture within the existing organizations culture. The first step, however, is to understand this gap. We will discuss this in more detail in the upcoming sections.





The Challenges

CHALLENGE 3: WORKFORCE ENABLEMENT

Massive investments have been made in data and technology initiatives yet the lack of Data Literacy programs across the organization is a major reason why they are not seeing the Return on Data Investment (RODI), that was expected. The reason is quite simple:

Most organizations have ongoing data initiatives and decent technology stacks in place however that is not enough. The organization needs a trinity of data, technology, and people in place to fully realize the value from its investment.

All three aspects are required:

- Enabled people and cutting-edge technology alone without a clean and value-added data set is useless.
- Clean and value-added data set and skilled people without the appropriate analytics technology stack is not effective and efficient.
- Clean and value-added data set and cutting-edge technology without the right level of skilled people causes misinterpretations and loss of valuable insights.

The element that is most often missing is the data skill set (Data Literacy) across the organization to work with the data and technology confidently. These essential skills are often found in a small group of

people, (data and analytics professionals) carrying the bulk of the analytics responsibility.

The problem with this approach is that these experts/SMEs are inundated with requests and they spend the bulk of their time responding to reporting requests and very little time is spent on analytics that will transform the organization.

The second problem arises when the workload gets moved to the business users, by giving them expensive licenses and tool/application training. Giving data illiterate businesspeople access to datasets and analytical tools, often causes failures due to the lack of training and grasping the concepts and skills required for data usage.

Even though the existing Data Literacy rates are low, 90% of people agreed that data enables them to do their job better.

Additional stats gathered from the workforce indicates the following:

- 75% felt that being data literate will give them greater credibility in their jobs.
- 70% said they would be willing to invest more time and energy into improving their data analytical skill set.

“90% of people, when asked, thought that data enables them to do their job better.”





Programmatic approach to Data Literacy

Data Literacy must not be seen as an intervention or one-time training event. Data Literacy is an ongoing learning approach. Not everyone needs to be a data scientist, but everyone needs a level of Data Literacy that is appropriate for their role in the organization, enabling them to transform various data into actionable insights.

The goal should be to establish what your current personal, departmental, and organizational Data Literacy levels are, against where you should be for each defined job function and then put down a Data Literacy program to drive your organization to the next level of Data Literacy.

PHASED APPROACH TO DATA LITERACY

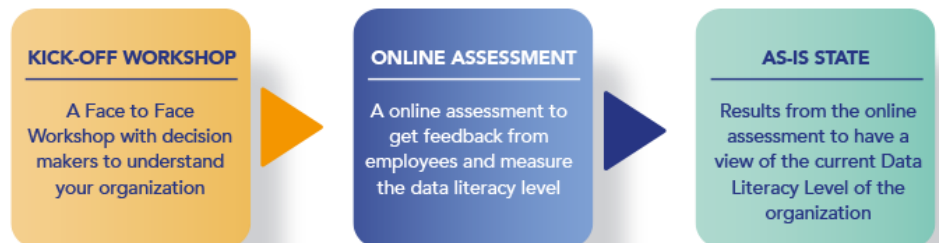
We propose breaking down the journey into distinct, independent, and manageable phases:



PHASE 1:

UNDERSTAND YOUR DATA LITERACY LEVEL: ASSESSMENT, WORKSHOP AND ROADMAP

The start of the Data Literacy journey comprises of a workshop and assessment in order to get a clear understanding of the current levels of Data Literacy across the organization. The output report of this online assessment then gives you a clear picture of the current levels and areas of quick return on investment. We then present these findings and recommendations back to the organization. This information is used to help build a roadmap across the key areas of the business.





Programmatic approach to Data Literacy

STEP 1. WORKSHOP

The kick-off workshop is intended to get an understanding of the organization in order to provide a value-based Data Literacy program. This workshop should include key stakeholders, data champions and executives to establish a base for the Data Literacy program.

STEP 2. ASSESSMENT

The online assessment will provide a clear understanding of the levels of Data Literacy across the organization. Each individual will be assessed and evaluated independently and at an aggregated level within their functional area to establish the current level of Data Literacy.

STEP 3. DATA LITERACY REPORT AND ROADMAP PRESENTATION

The Data Literacy report provides insights gathered from the assessment, broken down by key demographics as defined in the workshops. The Data Literacy report is used to help build a roadmap across the key areas of the business. All findings, recommendations and a high-level roadmap will be presented back to the organization.

PHASE 2:

SOLUTION DEVELOPMENT AND IMPLEMENTATION

The output of the assessment, workshop and roadmap recommendation sessions are used to craft a solution that is tailored specifically to the organization.

The results of the assessment are used to provide a customized learning path for the individual, based on a data literacy persona that the individual falls into.

ONLINE LEARNING PATHS

Foundation Learning Path

People in the Foundation profile are classified as someone that has not yet recognized the value of data in the organization or had any exposure or training in foundational data concepts. They typically are business users whose traditional role did not require interaction with data-based decision making and there is a fundamental lack of understanding how data flows through the organization and its potential value. The foundation training gives them the opportunity to build a data literate foundation which they can harness to further their career.

Consumer Learning Path

People in the Consumer profile are classified as someone that is currently working with data, but might need some guidance, based on visualizing data and leveraging the current investment in data visualization tools. They spend most of their time working with spreadsheets and collating data, but they need to understand how to surface the value within the data.

Power Learning Path

People in the Power Profile are classified as very capable individuals that can work effectively with data. They show keen interest in data science and advanced analytics. They might need to develop their data storytelling and presentation skills.

Elite Learning Path

People in the Elite profile are classified as individuals that are earmarked to drive data initiatives throughout the organization. They need some guidance around Data Literacy maturity and Data Literacy adoption within the organization.

Executive and Champion Focus Program

The executive and champion focused education tracks should be designed in a more concentrated and compact fashion, considering the capacity and lack of times these individuals face. Typically, an online instructor led experience with experts in the field of Data Literacy. These sessions are designed to let individuals get hands-on experience in small focus groups throughout our uniquely developed learning experience.

This track is aimed at senior individuals in the organization that must make data driven decisions from a tactical and operational level up to a strategic level. This engagement can also be customized according to the organizations specific Data Literacy requirements. It will incorporate the elements from the core learning paths, i.e. Foundation, Consumer and Power learning paths.



Programmatic approach to Data Literacy

PHASE 3:

DATA LITERACY ADOPTION

The ultimate objective is for your organization to take ownership of the Data Literacy Program and foster and establish a culture of continuous data literacy improvement. In this final Phase the organization will undertake efforts to embed the practice and culture of data literacy into the organization. They can do this by taking the learning cycle of the Data Literacy Program internally or outsource the whole or parts of the process of data literacy to an external partner.

The key data literacy champions or trainers that were identified in the previous stages, will be further enabled via train the trainer classes to deliver the content inhouse. New delegates will be able to complete the assessment and training hosted by trainers/ champions by subscription to content via an online learning platform.

CUSTOMER ENABLEMENT

Following the train-the-trainer program, to upskill and enable trainers in the organization to drive a Data Literacy Program. This enables customers to become self-sufficient and own their Data Literacy Program. By identifying a candidate for the program, the candidate will be enabled to deliver the Data Literacy Program.

TYPICAL APPROACH:

- The candidate will need to complete the Data Literacy Program, certifying in all the modules with a high pass mark.
- The candidate will shadow a trainer from DL partner / Nekst.
- The candidate will present the course back to a facilitator from partner / Nekst.
- The modules to be covered will include Foundation, Consumer and Power. Excluding the Elite Module.





Additional considerations

DEVELOP INHOUSE VS SUBSCRIPTION

The Organization needs to consider whether they want to develop the Data Literacy Program from scratch or to partner with DL specialists to create a program for their organization.

3.1. DEVELOP THE PROGRAM

Benefits

- 100 % customized to your organization's needs.
- Complete control of the curriculum.

Downside

- Full time job for a team. Quality will suffer if not done properly.
- Expensive. Due to no reusability, full cost of development, maintenance, roll-out and updating sits within the organization.
- Fast changing topics and technologies. Overheads to updating material to latest content.
- Not part of a community and collaborators.

3.2. PARTNER WITH SPECIALISTS

Benefits:

- Fast start to initiate program.
- More cost effective - cost saving due to shared cost of development.
- Team of specialists as opposed to part time non specialist.
- Part of a community.
- Content updated continually. Simple subscription model to scale up or down as organizations needs change.

Downside:

- Not complete control over content.
- Additional cost when wanting customer content for organization.
- If fully outsourced, it could become costly over the long period.

3.3. OUTSOURCED PARTNER APPROACH

To develop a compelling and effective Data Literacy Program is a massive time consuming and often costly journey for most organizations to undertake. For challenges of this magnitude and urgency, it is advisable to team up with a specialist partner. Particularly if you do not have the team, time, resources, and budget to develop a program from scratch.

Conclusion:

Whether you are looking to develop your own program or use an established Data Literacy training platform, consider using a Data Literacy partner to outsource or assist to FastTrack your Data Literacy journey.

@ Nekst, we focus exclusively on Data Literacy and have an experienced and dedicated team providing solutions around your Data Literacy journey. Call on our services as and when need to facilitate workshops, deliver courses, or provide expert advice or simply to share ideas. www.nekst.co.za





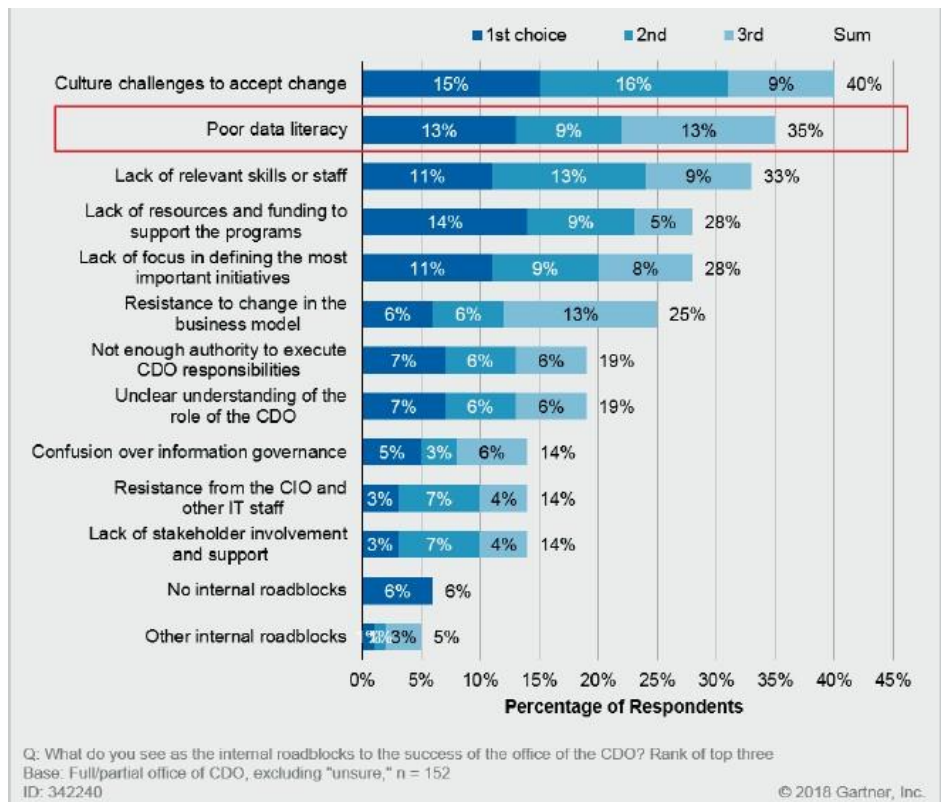
Research reference resources

4.1. GARTNER

<https://www.gartner.com/technology/research/data-literacy/>

Gartner recently predicted 80% of companies will initiate Data Literacy competency development by 2020. Chief Data Officers (CDO) have identified poor Data Literacy as the second biggest internal roadblock to success of the CDO office. Millions have been spent on data and BI initiatives, yet the return of investment is not always realized.

Gartner says that anywhere from 70 to 80 percent of business intelligence initiatives end up failing. As businesses create more data than ever before, that failure rate is astounding. IT departments make the mistake of looking at BI as an engineering problem that requires a specific package solution. This usually leads to more investment in the same or different technology. The problem is not more technology but rather enabling your most valuable resource, your people, to be able to harness the power and potential of the data and the technology.



Source: Gartner (February 2018)

THE DATA LITERACY SURVEY

A global analytics company set out to understand the overall scope of Data Literacy in the world, surveying over 15,000 individuals worldwide. These individuals came from varying skill-levels and jobs within different organizations and industries.

Through this survey, we learn that:

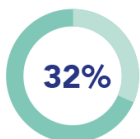
- 24% of business decision makers feel data literate,
- 32% of C-level executives feel data literate, and in a surprising finding, only
- 21% of those 16-24-year old's felt data literate.
- Overall, about 20% of individuals felt data literate.

Even though we are seeing such a low rate of Data Literacy, 90% of people thought that data enables everyone to do their job better, 75% percent felt that greater Data Literacy gave them greater credibility in their jobs. Also, of those who said they were data literate, around 83% felt they were performing very well in their jobs.

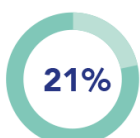
Around 70% said they would be willing to invest more time and energy into improving your data skillset, but only 25.8% felt most functions were empowered to use data and most people are data literate.



Business decision makers confident in their ability to use data



C-level executives classified as data literate



16-24-year olds who qualify as data literate



Research reference resources

4.2. THE DATA LITERACY INDEX

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.

THE HUMAN IMPACT OF DATA LITERACY REPORT.

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

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.

Forrester found that between 60 and 73 percent of all enterprise data is never analyzed.

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

Those that lead with data reap its advantages: The Data Literacy Index survey 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.

THE PILLARS OF CORPORATE DATA LITERACY

Data Literacy Skills - Data literate organizations require employees who are themselves data literate. While most organizations obtain data skills through hires, education programs are also needed to help everyone understand and use data in their role.

Data Driven Decision Making - Data driven decision making is measured by two different aspects: Data Decentralization, so individuals have access to the necessary data they need to make decisions in their role; and Data Resources, which ensures insights are captured and presented in a way that supports data-driven decision making. Data Dispersion - Data skills dispersion measures how widespread the use of data is throughout the organization, as every department, beyond clusters of specialist functions, must be able to derive insight and act on it.

The findings were startling. The Data Literacy Index discovered:

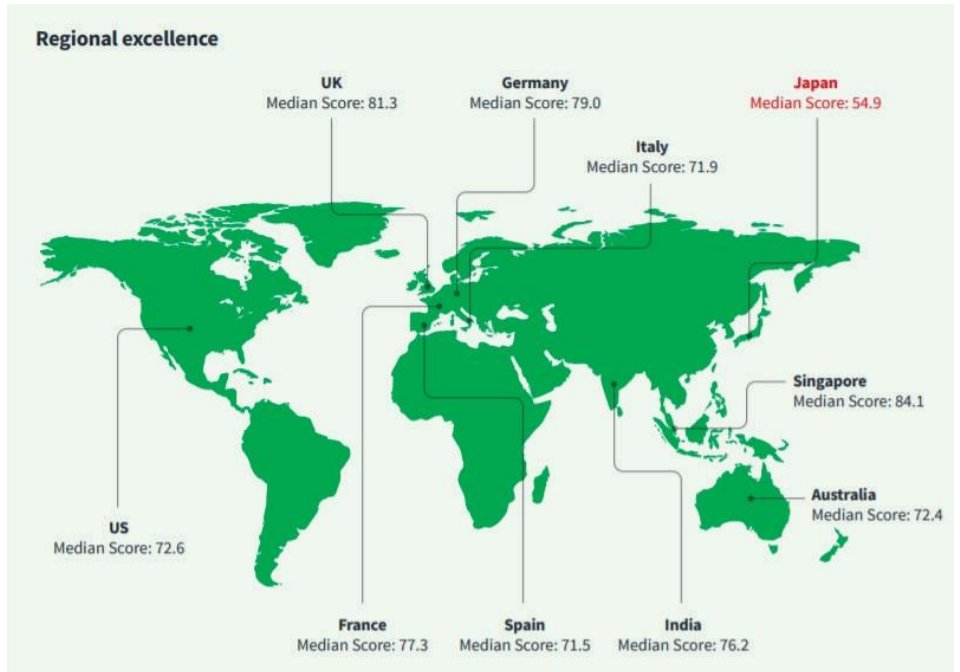
- Workforce Data Literacy has a proven correlation with corporate performance. Organizations ranked in the top third of the Data Literacy Index are associated with three to five percent greater enterprise value (market capitalization)
- Based on the average organization size of this study (\$10.7b enterprise value), enterprises that have higher corporate Data Literacy scores can have \$320-\$534 million in higher enterprise value
- Improved corporate Data Literacy positively impacts other measures of corporate performance as well, including gross margin, Return-on-Assets, Return-on-Equity and Return-on-Sales



Research reference resources

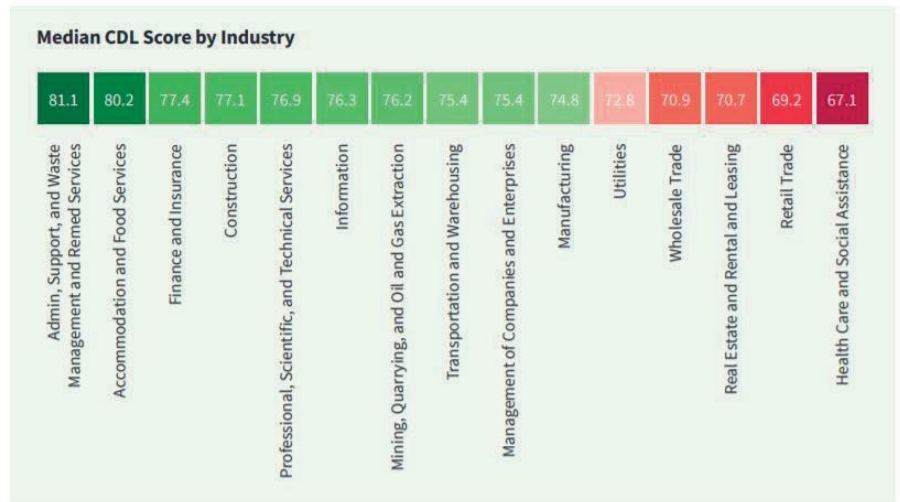
THE GLOBAL PICTURE

While the positive relationship between Corporate Data Literacy and corporate performance is consistent across every region and industry analyzed, the breakdown provides a clear benchmark for business leaders.



Industry leaders

There are far greater differences in corporate data literacy between different industries than between regions.



Source: IHS Markit



Research reference resources

WHERE ARE ENTERPRISES FALLING SHORT WHEN IT COMES TO DATA LITERACY?

While there are regional and industry differences in the understanding, adoption of and investment in Data Literacy, the survey of global business decision makers used to inform The Data Literacy Index has identified areas that may be holding organizations back from effectively harnessing the data opportunity.

HAVING DATA VS. UNDERSTANDING IT

There is a gap between the importance that companies put on data, and their appreciation for it to drive business and economic outcomes: 93 percent of business decision makers believe that Data Literacy is relevant to their industry, and it is important for employees to be data literate, yet less than a third see Data Literacy as an important factor in a successful economy.

THE VALUE OF DATA SKILLS

Companies recognize they need more data skills, with 63 percent of large businesses planning on increasing the number of Data Literacy employees. However, there is a significant skills gap, with just 24 percent of the global workforce fully confident in their ability to read, work with, analyze and argue with data. Despite 78 percent of the global workforce being willing to invest more time and energy into improving their data skill set, just 34 percent of firms currently provide Data Literacy training and just 17 percent “significantly encourage” employees to become more comfortable with data. Companies also are not incentivizing upskilling, with only 36 percent of business leaders willing to pay higher salaries to employees who are data literate.

THE DATA GAP IN DECISION MAKING

Nearly all business leaders acknowledge that data is important to their industry and in how their company currently makes decisions. But shockingly, just eight percent of firms have made major changes in the way the data is used over the past five years. In fact, data driven decision making has the lowest score of the three dimensions of Corporate Data Literacy measured. So, even companies that have data literate employees across every business unit are not likely to be turning data into useable information as effectively as they could.

DATA TECHNOLOGIES GO HAND-IN-HAND

While not included in the measure of Corporate Data Literacy, our research has revealed that certain technologies - such as business intelligence, advanced analytics, and visualization - also have a positive effect on corporate performance. Unprecedented amounts of data are now being created by the Internet of Things including sensors, edge devices and more powerful computing. Data technologies simplify data, enabling employees to analyze and interpret it more quickly. However, a tool is only as effective as whoever uses it. Companies need a workforce that know how to input data, generate better insights, and are empowered to use it to inform decision making.





Research reference resources

“Companies are struggling to close the gap between the value that data makes possible and the value that their existing structures capture — an ever-expanding chasm we call ‘trapped value.’”

CLOSING THE DATA VALUE GAP Published in August 2019, Accenture

ONLY
32%

of companies reported being able to realize tangible and measurable value from data.

ONLY
27%

said data and analytics projects produce insights and recommendations that are highly actionable.

SO, WHAT IS HOLDING COMPANIES BACK?

Companies face three key challenges in tapping into data to realize business value:

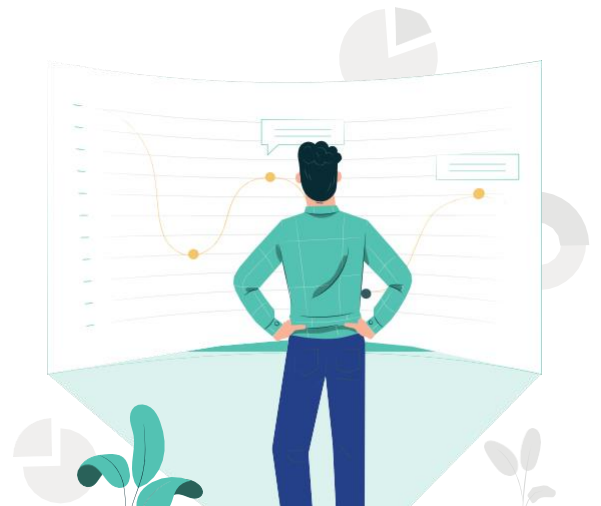
1. Lack of an enterprise-wide strategy for data, C-level sponsorship, and skills, resulting in the lack of a data-driven culture.
2. Poor data quality, requiring tremendous time and effort to improve the trustworthiness of data and make it usable for business purposes.
3. Siloed data and slow data supply chain due to legacy technologies and outdated data governance practices.

WHAT CAN FIRMS DO TO BECOME DATA-POWERED ENTERPRISES?

Research shows that data-driven companies are propelled by four key drivers. They:

- Establish a solid data foundation: Achieved through an agile data supply chain with cloud-based and scalable platforms. Such a foundation helped one of our clients realize a 40 percent increase in conversion rates for new lending products—this was over and above the industry benchmarks.

- Ensure data is secure, relevant, and trustworthy: Accomplished through robust data governance, metadata management and data veracity solutions. This is enabled by machine learning (ML) or artificial intelligence (AI) technologies, right people structure and processes. According to our research, only a third of firms trusted their data enough to use it effectively and derive value from it.
- Create an analytics strategy: Attained by focusing on augmenting human efforts with AI and by building capabilities in advanced analytics. Almost 90 percent of data-driven champions in our survey could attest to being highly involved in data analytics processes and automated approaches as opposed to 54 percent of others.
- Envision and launch new data-driven services: Realized through innovative business models and operational efficiency measures. Using data value scorecard, business outcomes can be measured, tracked, and reported effectively. Our survey confirms this assertion about the data-driven champions.





Research reference resources

4.5 ATTRIBUTES OF A DATA LITERATE PERSON

Benn Jones, Founder of Data Literacy, LLC made a valuable contribution to the DL community with his summary of the key attributes of a data literate person and thus the training elements that should be considered for a Data Literacy program.

A HIGHLY DATA LITERATE PERSON:

HAS KNOWLEDGE OF:

1. Basic elements of data
2. Data storage methods
3. Data analysis principles
4. Data visualization rules of thumb

PUT TO USE THE FOLLOWING SKILLS:

5. Reads visual displays of data.
6. Prepares data for analysis.
7. Explores data.
8. Creates clear visuals.
9. Communicates data effectively.

EMBODIES THESE ATTITUDES:

10. Inclusive
11. Confident
12. Alert
13. Ethical

PRACTICE THESE BEHAVIOURS

14. Resourcefully utilizes data.
15. Continuously improves data.
16. Effectively advocates for data.
17. Enthusiastically spreads data literacy.

Additional research resources: https://en.wikipedia.org/wiki/Data_literacy.

