SHIFT PARADIGM

3 Steps to Make Your Company Data-Literate

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INTRODUCTION

How data-literate is your company?

The rapid digital transformation in recent years has put the tools of data collection, use and management into the hands of employees throughout the organization, from leadership on down.

This data democratization can help employees make more informed decisions on everything from day-to-day operations to plotting the organization's future. But it also creates a major risk from employees who are not trained in good data use.

This paper will help you understand why data literacy is so important and how you and your senior executives can make your entire organization more fluent in today's language of data.

What is data literacy?

It's more than being able to read the numbers.

Data literacy finds the meaning behind the numbers.

Data literacy is the ability to collect, manage, evaluate, and apply data. Data-literate individuals ask and answer relevant questions using data. They use data to interpret, understand, and question the results of data analysis. They also put these results into the context of the organization's larger strategy and objectives.

Data-literate employees also share this information so that others in the organization can grasp the meaning. They can identify the most important and relevant insights that drive stronger, more data-driven decision-making.

Data literacy has become a critical competency. However, it is also an area where many fail to realize its full potential.

Data literacy is the ability to collect, manage, evaluate, and apply data.

Why data literacy matters now

Being able to interpret information and make decisions based on all the information available has always been central to an organization's success. Today, however, the modes of information have changed.

In the past, it was based on experience and some key metrics. Today, we must pry it out of vast data stores. Several factors have propelled data literacy to its position as a critical capability:

- **The rise of the 'center of excellence'**

Historically, data analysts were scattered across an organization and supported many business needs and functions. They worked closely with business leaders when providing reports or building models and brought a wide range of skills and abilities to their role.

Now, many organizations house their resources in analytics "centers of excellence" that support all business units.

According to IDC, 93% of executives in the U.S. say their enterprise uses some form of a center of excellence to drive artificial intelligence (AI) and data science projects. Gartner reports that creating a center of excellence has become a best practice as organizations develop their data capabilities.

Specialization at a cost: While this approach does offer many advantages, it can also isolate deep analytics expertise from the business itself and from more general business analysis. Data scientists who are removed from business units risk losing context – how their models align with the organization's overall strategy.

Also, people within these centers of excellence often specialize in specific areas of analytics, such as data visualization, text mining, machine learning, AI, and data engineering. These experts sometimes even further specialize in a specific type of data or technique.

As they become more specialized and build deeper technical skills, they depend more on business translators to define the problem and interpret and extrapolate their results. These business translators need to be fully data literate to be successful.

- **Data gets democratized**

One of the greatest challenges in working with data is just getting it from a gatekeeping department, such as IT or customer relationship management.

In response, an ever-growing collection of self-service platforms, portals, and other business intelligence tools gives employees direct access to the data they need. This, in turn, can speed up decision-making, especially in an "agile" company.

Data democratization's side effect: It makes employees responsible for using and understanding it. This is where data illiteracy reveals itself.

In a recent Data Literacy Project survey, only 25% of respondents said they feel prepared to use data, and 37% say they make better decisions using data. Most tellingly, 74% feel overwhelmed when working with data.

Where data access goes wrong: Although self-service tools have made data more visual and easier to read, most have done little to boost users' data literacy. This can lead users to exclude data they don't understand, misunderstand or misinterpret data and make decisions that go against the organization's interests. Dashboards are only as good as users' ability to interpret them.

- **The data deluge**

A 2021 Statista report predicts that the global data volume will grow from 10 zettabytes in 2010 to 181 zettabytes by 2025. How large is that?

Picture this: Just one zettabyte equals the total data capacity of 34.4 billion 32GB smartphones. Laid end to end, those phones would circle the earth 121.8 times. Multiply that by 181, and that's a lot of phones floating overhead.

Despite this deluge, most organizations say their data is an asset they can use to their advantage. In most cases, the technology exists to help them store and process the volume of data and make that data accessible to those who need it.

What's missing? The skills needed to drive the organization forward. In other words, *data literacy*.

"There has been a fundamental failure for many organizations to realize value out of the Big Data they collect," says Emma Warrillow, SVP, Data and Analytics at Shift Paradigm. "Too often that data is locked in a data lake, and users struggle to access, interpret, analyze and share it with those who need it. And therefore to take action from it."

The risks of getting data wrong

As more decisions are influenced by data, and organizations rely more on these decisions, the risks of getting it wrong become more significant.

Your company could lose sight of the invisible problem—employees' data illiteracy—and decide instead to invest in expensive programs, divest itself of key assets, or realign a workforce based on analytic insights that are just plain wrong.

Improving data literacy will mitigate the risks of data-driven decisions gone wrong. Here are three examples:

> *Data is only as useful as the ability to understand and use it. The best models mean nothing if your decision-makers can't incorporate and implement the insights they draw from data.*

Correlation versus causation:
Suppose your purchase data shows your loyalty-program members buy more than other customers. Should you spend more to build up the program? Before you decide, consider these possibilities:

- The loyalty program stimulates more purchases.
- Your best customers are more likely to sign up for the program.
- Your attribution model is skewed toward your VIPs.

Before committing more budget to your loyalty program, you must know which of these conclusions is correct. Your data-literate marketers or analysts will know how to dig out the right answers.

Bias: You've probably heard the adage "The numbers don't lie." They might not lie, but if you don't ask enough questions to overcome potential biased interpretations, the data could inadvertently cover up the truth.

Confirmation bias, in which people accept information that agrees with their perceptions and discredit conflicting information, overreliance on outliers, selection bias, or availability bias can influence data interpretations and presentations.

For example, many companies survey their best customers—loyalty program members, premium service users, or long-term clients, and assume they can apply their views to the entire customer base.

This biased information may lead to erroneous decision-making and forecasting. Just because your best customers like a feature or service, that doesn't mean all customers will buy or use it. There is nothing wrong with surveying only those folks, but you need to understand the bias in your sample.

Data-literate users know to ask more questions to ensure the results are reliable.

Viewing data through an ethical lens: We all too often think of data as an abstract concept and models as technical challenges or puzzles to be solved. In reality, data encompasses personal and sensitive information—a reality that many new data-privacy laws now aim to regulate.

Data literacy empowers people to ask how the data was collected, whether it should be used for certain purposes, and how it should be handled and stored to avoid ethical or regulatory issues. Consider a health app that collects personal data to help a user track their activity and weight loss. If that company were to decide to create a credit card that offered app users special discounts, the health data could not be incorporated into the credit evaluation process.

This is becoming a bigger concern for more sophisticated organizations. Sixty percent of companies with more than 20 data scientists on the payroll say they expect to require a professional code of conduct that incorporates data ethics by 2023.

Data literacy is a must-have for digital transformation

By its very nature, digital transformation relies on data. An organization needs the skills and capabilities necessary to collect, analyze, interpret, use and communicate data.

As with learning any language, data literacy will take time, effort, and practice. However, the benefits will outweigh the costs of training employees to achieve these new data skills:

- Data literacy ensures that employees at all levels are confident and comfortable using the data that is already available to them through self-service platforms and dashboards.
- It allows data scientists to get the most value from data and to work closely with business units and align their models with the organization's strategic goals.
- It empowers leaders to incorporate the right insights into their decision-making process.

Through it all, your company must make it possible for employees to learn data literacy. But that's just the start. You must also build a culture that rewards the use of data in all aspects of your business.

Data literacy is for everyone: Not everybody needs to become a data scientist, learn programming languages or build models and dashboards. But your employees need the skills that make them comfortable with data:

- Ask informed questions about insights.
- Communicate results to their team and understand what others report.
- Identify the information that is most relevant to their specific problem.

Improved data literacy benefits everyone. Your organization must ensure employees have the skills they need to succeed in a data-driven world.

3 steps to build data literacy in your organization

Like any new language, data fluency will not happen overnight. Nor will everyone need to be equally proficient.

Your organization can take these steps to build a data-literate workforce:

1. Assess, encourage and teach data literacy and evaluate performance

Nobody graduates from college with a degree in data literacy—yet. Academic institutions don't teach specific data literacy skills. So, the responsibility is on employers and, to some extent, employees themselves to acquire these skills on the job.

Everyone in your organization, from your executive team to your front-line workers, must understand the role data plays in their jobs and to improve their own fluency. A combination of formal education programs, led in-house or by outside specialists, and self-guided training can help your company become more data-literate.

Assessing employees' data literacy is the first place to start. You don't need to invest in a formal assessment program. A fun quiz that covers the topics that are most important to your company's data program is an easy place to start.

A hospital foundation we work with recognized the rudimentary state of their own data literacy. We helped them craft a baseline assessment quiz and to identify specific areas to develop. Over the past few years we have helped the foundation lift its collective literacy through training and informal mentoring and coaching.

The business case for data literacy: One large insurance company invested heavily in learning and talent development programs to prepare its workers for the digital economy. Besides creating a consolidated data lake and making data accessible to every employee who required it, the company built online, in-person, and blended training programs focused on data science, data analytics tools, and predictive analytics.

The increase in proficiency allowed data scientists to work closely with other professionals throughout the organization. The specific business outcome: The company now can capture more business and assess risk better when selling new policies.

From a bottom-line perspective, poor decisions that result from not understanding data and how to use it cost the company money. A marketer who doesn't understand the company's segmentation models could waste a million-dollar advertising campaign by inadvertently targeting the brand's least-responsive segment.

By finding insights, seeing trends, and interpreting them correctly, companies can capitalize on them to generate more revenue.

Test yourself! Are you a Data Dreamer or a Data Knight? Find out in about 60 seconds - take the Data Literacy Project's 10-question self-assessment!

2. Establish a common language and vocabulary

Like learning a new language, data literacy can be possible only with a shared meaning and understanding of key terminology. In other words, your company must create a common language to build its data literacy.

Each organization will develop its own dialect, so to speak, as words take on meanings that reflect the company's industry, purpose, and business strategy.

In general, however, your data language should articulate three areas when creating a common vocabulary.

- **Statistical and analytic concepts**

These are terms based in mathematics that relate to how data is collected, used, and interpreted. Data analysts and data scientists use them commonly, but everyone in your organization must use and understand these terms to communicate effectively with data.

Examples include knowing how mean, median, and mode differ, calculating percentage increases (a commonly misunderstood concept), the concept of statistical significance or understanding correlation and causation.

One that frequently trips people up is the concept of an outlier. Recently while working with an insurance company, some initial work involved looking at average automobile value for policyholders in specific customer segments. After some inconsistent numbers were revealed, we realized that the dataset contained some extreme outliers (Bugattis and Lamborghinis!) These luxury cars were clearly skewing the results.

- **Domain and industry knowledge**

This type of language is relevant to business units and decision makers. But just as everyone should know statistical concepts, data scientists should understand the context of their analysis within the larger business.

This context can include terms specific to functional areas, such as marketing or finance terms, or common industry terminology. These could include metrics such as website visits for digital marketers, or loss ratios for those in insurance.

It's also essential that data scientists and analysts also understand how the data will be used or what the goals are and to be included in discussions and the decision-making process at all levels.

- **Organizational dialect**

These are terms your organization uses to define and communicate KPIs and metrics. Some examples: differentiating between marketing-qualified leads and sales-qualified leads, or how to measure customer attrition rates or employee turnover.

At Shift Paradigm, we had to tackle this essential aspect of data language and vocabulary. Our company was created after bringing together several companies, each with its own dialect.

One example: Each of the originating service organizations defined "employee utilization" differently. Our early conversations about utilization caused some confusion. Several did not include vacation time while others did, for example, and this resulted in different KPIs.

Understanding these terms ensures everyone is driving toward the same objectives and allows your organization to define what's important based on your unique business goals.

Get everyone on the same page: Newly trained graduates might possess a stronger understanding of analytic concepts, but your tenured employees understand the company dialect.

Showcasing the value of all three components—statistical and analytical concept, domain and industry knowledge and the company's unique language—builds mutual respect along this journey.

3. Lead by example to build a data-driven culture

In another Gartner survey, 85% of respondents said that their firms had started programs to create data-driven cultures, but only 37% reported any success. Why did they fail? Management understanding, organizational alignment, and a general organizational resistance to change.

Send in the data visionary: This is a senior leader who sees the value of data and can look outside the organization for inspiration on how to use it. Your visionary will be a champion for understanding and using data, someone who will take on your data-literacy challenge and run with it.

In many cases, this role falls to the chief data officer (CDO). In 2018, 68% of companies reported having a CDO. By 2021, this number had jumped to 76%. At Shift Paradigm, we are fortunate to work with many clients who have someone in their organization who truly champions data as a CDO or another title. These individuals help us get considerable momentum as we bring data-driven thinking and technical projects to support them.

But your data visionary can't act alone. Your entire executive team must walk the walk, too. A few ideas for embedding the data quest in your company:

- Discuss data and its role in the organization through daily conversations, board meetings, and team calls.
- Encourage decision-makers to think about the data they have and the data they need when solving a strategic problem.
- Justify and explain new initiatives through the data and insights that led to them.
- Make data access easier for the employees who need it, while maintaining privacy and security.

If you don't reinforce and encourage data-driven thinking from the top, you'll find employees' initial enthusiasm will fade as they resort to their familiar routines.

Wrapping up: Why data literacy matters more than ever today

Data literacy can seem like an abstract concept, but decisions that ignore or misuse data can have a devastating impact on a company's fortunes.

Consider the company where a marketing employee didn't understand how the company's customer scoring models worked. That employee targeted a million-dollar advertising campaign to people who were the least likely to respond. Could your company afford a similar mistake?

Avoiding obvious calamities like this is one reason for upgrading your company's approach to data literacy and expanding it throughout the organization. Using data wisely will help your company discover insights and trends it can capitalize on to generate more revenue and comply with an evolving set of global data and privacy regulations.

Shift Paradigm has experts who are skilled in helping companies manage the internal processes needed to help your company meet this new data environment. We welcome the chance to show you what's possible and how to achieve it!

ABOUT SHIFT PARADIGM

We are purveyors of truth. Connectors between strategy and tactics, harnessing the power of today's technology to create truly meaningful relationships with customers.

After pioneering the email marketing and marketing automation movements by helping thousands of organizations implement marketing technology platforms, we know that technology alone can't get your business growing. Usually, it takes a paradigm shift to grow.

Our team of over 300 marketing professionals consists of strategists, creatives and technologists. With full-service capability we deploy the best mix of consulting, agency and analytic services to complement our clients' needs and exceed expectations.

Shift Paradigm serves clients across North America with headquarters in Austin, TX, and offices in Scottsdale, AZ, and Guelph, ON, Canada.

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