



Navigate Data Literacy Challenges for Enhanced Decision-Making

Maximise Business Intelligence Impact

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Executive Summary

This paper delves into some common data literacy challenges and explores actionable ideas to address them.

Introduction

We seem to have reached an impasse. There are more data than there have ever been. We all know we can gain advantage by using it, and we spend lots of effort obtaining and disseminating it. Yet, most of us in Business Intelligence roles complain that what we produce isn't used to its potential, and possibly barely used at all by some.

Thomas Edison invented the light bulb, but what good was that when nobody had electricity? So, he invented electric power distribution (the national grid). There is equally little point in creating beautiful dashboards and reports if they are not used.



Three compelling reasons for embracing data literacy

1. Wasting time & money

Companies invest significantly in market data acquisition, processing, and software licenses. In addition, resources including team efforts and departmental time, are devoted to report creation and dissemination.

The production of reports has little value in and of itself; ROI only comes from others in your company understanding the data and making better decisions off the back of it.

There's a good chance a portion of those receiving regular data are ignoring it. Some because they don't think they need it, but some because they don't feel confident in using it.

2. Even the brightest face limitations

Just because you are smart, it doesn't mean you can play the flugelhorn. That takes lots of practice, and often someone to at least teach you the basics first.

The same goes with most things in life, and certainly for understanding data. The difference between providing data and providing insight is perhaps the extent to which the user understands what it means, and what they should do as a result of it. Our industry is full of bright people, but I suspect some of them don't play the flugelhorn either.

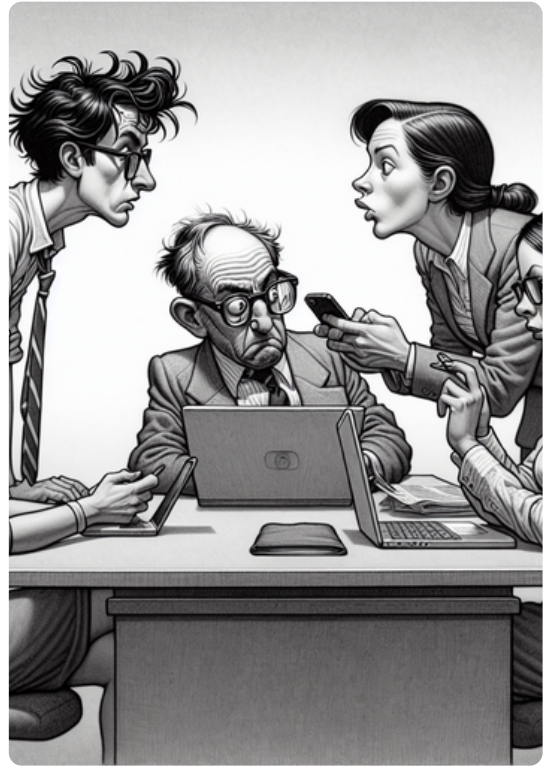
While our industry prioritises tools, data processing, and dashboards, emphasis on training and supporting report utilisation remains a crucial aspect often overlooked.

3. Some talent isn't getting heard

In recent years, the consensus is that diverse teams make better decisions. Those more able to put forward arguments backed by facts and figures are at an advantage around any meeting room table over others who may have novel, creative ideas, but who are less confident backing their ideas up with numbers.

Would they be more successful convincing the team to be courageous if they could use data to support their argument?

The natural imbalance of data literacy in any team has a knock-on effect on the “volume” of each team-member in a debate, and we know the smartest person doesn't always shout loudest.



The data literacy challenge

For the purpose of this paper, I'm broadly defining data literacy as the ability of an individual to use the data assets at their disposal, correctly and appropriately to support their decisions and actions.

Age & Technology

It is not just about age and technology. Confusing technological proficiency with data confidence is a common mistake, but these are separate things. Just because someone is adept with technology doesn't necessarily mean they can interpret data. The assumption that younger users are more data-literate due to technical proficiency is often incorrect.

Almost two thirds of young children (years 7 and 8) in the UK enjoy maths at school[i], but this gradually declines as they get older. By the ages of 14 and 15, 40% of pupils are afraid of maths and not confident in their abilities[ii], and over a third of adults feel anxious about maths[iii]. While maths is different to data literacy, it is perhaps reasonable to expect that many of those feeling sick at the thought of having to do maths, are also less likely to be comfortable working with charts and tables to gain insight.

For a considerable number of colleagues, receiving data may be a negative experience. Let's explore some of the most common examples of the issues that we encounter, and some suggestions for improving them.

Tackling negativity associated with data

I don't know what the data is telling me

Most of us can read words on a page and hear a voice in our heads reading them. Far fewer people can look at a page of sheet music and hear the tune in their minds. Similarly, it's a minority of people that can look at a page of data and see the patterns and exceptions that hide within.

Representing the data in pictures helps many more access the information, but in an effort to convey complex messages, charts also can swiftly become challenging for many to follow.

Recipients of reports are almost certainly smart enough to understand them; they just haven't been shown how, lack confidence in how to interpret them, or have no access to support to clarify and check their understanding.



If there is a general perception that something is “easy”, those that find it more difficult are less likely to voice their need for help, and more likely to avoid it to save face, especially in a professional environment.

Suggested first steps

Talk about data literacy

A carefully crafted narrative around the business' intentions to help support everyone in their understanding of data, alongside some practical ways users can seek support, is a first step to making it safe for those interested in improving their skills to put their hand up.

Providing support and resources around the data is extremely valuable. For example, promoting an on-call analyst internally who can assist users with questions or verify their data interpretations fosters confidence, creating a positive feedback loop.

Follow the story

Users will find it easier to use the analytics we provide if it naturally follows the flow of the most common use case(s). For instance, most users will want to know whether they are doing well or not so well. If not so well, where are they falling behind – which accounts or which products. Once they have identified where they are not doing so well, they will want some clues as to why.

Enabling and encouraging a flow from the top level KPI (what I'm measured on), through the output metrics (measuring outcomes) to the input metrics (our activity) makes for a simpler journey through the analytics for users.

The data doesn't fit with what I know on the ground

"The report is wrong – I know Dr X prescribed one of our products last month but the report says zero". Sometimes the report is wrong – we've all had those days at work, but most of the time there are reasons why perception and reporting diverge, especially when there are complexities of supply chain or indirect customer relationships.



Users often lack sufficient understanding of the sources and meaning of the data that reports are based on (perhaps because they have never been told). For instance, our report might be showing wholesaler sales into a hospital, not prescriptions from it, and the stock could have been purchased in the prior month.

When data doesn't tie up with user's perceptions, some lose confidence in the data, while others lose confidence in their own ability to understand it.

Suggested first steps

Provide descriptions of the data alongside the data itself

Providing resources such as data dictionaries can be really useful. These need to be written with the user in mind and use accurate and common language that doesn't assume everyone has a common terminology. For instance, we have seen in the work that we do that all pharma companies talk about "meetings" but not all companies mean the same thing by that seemingly ubiquitous term. As reps move around the industry, a lack of clarity can quickly lead to confusion. With attention to "data fluency" (the language used around data) we can ensure everyone knows what the "Evolution Index" for this "MAT" means.

If users can read how a dataset is collected, what it's strengths and weaknesses are, and what it can and should be used for, this will improve their confidence that they are using it appropriately too. I would argue that we should be honest about the imperfections of any dataset, ensure that these are well understood, and so make sure appropriate decisions can be made off the back of them.

I'm not sure how I'm supposed to use the data to help me

This can be a particular problem when the data provided doesn't obviously align with strategy, or when a lot of data is presented from the outset, without a flow or a story. Some will dive straight into the details and love the accessibility, while others won't know where to start.

Often data is presented in a way such that the user must look in several places to find different pieces of the puzzle, before drawing conclusions. This is frequently complicated by the fact that different datasets are available at different geographical levels and time periods, or measure things in slightly different ways.

Where reports and metrics don't have a clear purpose that aligns with what the user is expecting to be able to measure or be measured on, we make it more difficult for them to use the data effectively.



Suggested first steps

Always provide data in context

The brain is much better at understanding things in the context in which it expects to find them. A great example of this is how much easier we find it to remember someone's name when you meet them in the location where you normally see them, rather than bumping into them in a supermarket.

Simply adding a meaningful title to a chart can provide sufficient context to make the difference. How many charts do we see entitled something like "Hospital sales", when we could help users interpret the numbers simply by adding a title like "Number of prescriptions dispensed from hospital pharmacies by month"? Perhaps we can go further, using the title to pull out the most important take away from the data?

Be explicit rather than implicit

We are often tempted to provide lots of data – everything we have, so that users can gain the maximum insights. In reality, we end up intimidating some users, and preventing them from gaining any insight.

If something is important, it is probably worth presenting it explicitly. If a sales rep is being incentivised to increase market share, show the market share increase over the relevant period as a clear figure on the first report, rather than assuming they can work it out from a chart of market shares over time.

Bringing the problem to a head: Data literacy vs Self-service analytics

So why are we hearing about data literacy now, when we've been giving reports out to users for decades?

Data has undoubtedly become an increasingly important tool in our armory to gain competitive advantage, understand the outcomes of actions, and monitor aspects of our business, so it could easily be argued that this is why.

I suspect it is also related to the now ubiquitous concept of "self service analytics". We now have so much data, and the general consensus is to democratise it – make it available to all. Everyone wants to know something slightly different, so we give them dozens of filters to be able to cut the data however they need it, and in every time aggregation we can think of. Now everyone has everything they could possibly need!

By way of an analogy, we used to cook everyone the same meal, and most people ate it. Now we give everyone a big box of wonderful ingredients, so they can cook whatever they want. We just don't teach them how to cook, and probably don't even give them recipes to follow. Those that can cook make better meals than they ever had before, while others live on toast.



Enhancing data literacy: a strategic approach

Businesses have a lot to gain from improving the general level of data literacy across their organisations. Few of us need a company full of Bletchley Park code breakers, but encouraging a culture where data is routinely used in discussions and understood by all would have obvious advantages.

There are many relatively straightforward things we can do to improve the general understanding and use of data in our organisations. To be effective, we need to come at it from several angles:

Data strategy & management

Ensure we have a data strategy that aligns with our business strategy and ensure everyone knows how things will be measured and why.

Business Intelligence

Those in our organisations charged with disseminating our data need to be mindful of overall user proficiency and concentrate on telling stories with data that align with the strategy first and foremost.

Data consumers

The user base needs to feel supported in their use of data, confident in how to interpret the numbers and have resources they can reach out to when they need it.

Infrastructure

Systems often take precedence due to their tangible nature. In reality they need to be understood and good enough, but they are never the answer on their own.

Summary

In conclusion, it becomes evident that addressing the challenges of data literacy in Business Intelligence is not just a necessity but a strategic imperative. The risks of underutilising data, coupled with the call for inclusive decision-making and efficient resource allocation, underscore the increasing need for organisations to invest in improving data literacy.

The actionable steps provided offer a roadmap for fostering a culture where data is not just available but comprehensible to all stakeholders. In this age of abundant information, prioritising and enhancing data literacy is not just a wise choice; it's a fundamental driver for informed decision-making.

If you would like some help understanding and improving data literacy in your organisation, our team at CSL would be delighted to talk through your thoughts and see whether our services can help you achieve your goals. You can contact us at info@csl-uk.com or telephone 01483 528302.

[i] 64% say maths is enjoyable in this study http://media.nao.org.uk/uploads/2008/11/07081151_study.pdf

[ii] <https://patient.info/news-and-features/why-are-uk-students-the-most-stressed-over-studying-maths>

[iii] <https://www.nationalnumeracy.org.uk/news/third-adults-are-nervous-about-numbers>