Building A Data Strategy For Business Success

Helping your data strategy stand the test of time

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Introduction

Data is a fundamental part of our everyday lives and many businesses have been fast to jump on the data bandwagon. Almost 40% of CEOs[1] plan to invest in data over the next three years, with 70% expecting this investment to have a large impact on their bottom line. Data use (along with associated artificial intelligence -AI) is now something of a sprint to the finish. As with any competition, those with the optimum strategy will come out on top.

This is our ultimate guide on how to set, measure and optimise your data strategy.

The current data landscape

The Internet is largely behind the explosion of data. 3.7 billion people[2] are now online, with work underway to get Internet access to the rest of the world. This, coupled with the rise of connected devices like Google Home, Nest, and Amazon Echo (along with the wider Internet of Things - IoT- ecosystem), will fuel an exponential increase in data over the next decade.

We generate more than 2.5 quintillion bytes[3] of data every single day. That doesn't take into account the data that's created internally in organisations, as their employees go about their daily work.

Considering the current data environment, it becomes clear that data is not just the oil of our current economy - it's the entire engine. Data provides an unparalleled opportunity to generate insights, make more informed business decisions, and drive efficiency across every organisation. How do you do this? Create a data-driven culture.

Why use data in the first place?

The case for using data is clear when you look at the results. A survey from Dell[4] discovered that companies with data strategies have grown by 50% compared to other organisations. The International Institute for Analytics predicts that by 2020, businesses that use data effectively will benefit from $430 billions'[5] worth of productivity savings, compared to competitors.

Many of the world's largest companies are led by data. Amazon started off as an online book retailer and has grown to one of the world's largest e-commerce companies. The same goes for Alibaba, which overthrew Amazon[6] as the largest retailer in late 2017. That's despite owning no stock or physical stores. Across other industries, data-driven companies are disrupting the status-quo. Facebook, Uber, AirBnB, and Spotify are amongst them.

Furthermore, 58% of companies[7] that currently use data report an improved decision making experience, and over 40% of them have seen expenses decrease thanks to data analytics.

With such high figures being reported, it's little wonder that organisations are embracing data. The first step to achieving these results is creation of an effective data strategy.

What is a data strategy?

A data strategy is a vision of how an organisation intends to use its data. It contains a framework that explains exactly how a company will derive value from data. Data strategies work in tandem with a business strategy. That is, a business strategy comes first, and from that a data strategy is developed. It isn't independent of the business strategy.

Data strategies differ across organisations. There's no set rulebook for it, but there are some key areas that must be included for the data strategy to be effective. It must be closely aligned with the organisation's business goals and objectives. This equips the data strategy with the direction needed in order to provide value for the organisation and senior stakeholders.

A data strategy will be used as a narrative to explain to the wider team how data and analytics will assist and drive an organisation. In this way, it can be a great aid to gaining buy-in for individual data projects. It should demonstrate how a business can leverage its data to reach the required objectives and gain a competitive edge.

It will be a tool used to propel data-use and investment in data projects, teams, technology and other resources. It is therefore vital to get right, as an ineffective data strategy can greatly damage the reputation of data within an organisation.

When there are multiple data projects undertaken without a data strategy to oversee them, there can be overlap with teams, resources, results, and insights. A data strategy makes this much more efficient. With a master overview of an organisation's entire data use and resources, a data strategy prevents overlap and ensures everyone has the data and resources they need to work efficiently. It also identifies any gaps in the tech stack, or missing skills that may require additional training or recruitment.

There are many uses for data - such as the ability to train artificial intelligence to detect cancer, optimise operations and increase supply chain efficiency. Having a data strategy that is aligned to your organisation's goals means that you are able to focus on the data projects that will provide the most business value.

Brilliance in data

Thanks to the sheer volume and range of data available, the applications for data are also vast. Unlocking the insights within data and/or using it to train AI has had huge impacts on climate change, healthcare, agriculture and much more. You might not always see it, but AI is working behind the scenes to improve our health, food chain, businesses, economy, and even saving the planet.

The Green Horizons project by IBM[10] detects and tracks air pollution levels to give an accurate representation of current toxicity in cities. It also uses predictive analytics to determine what, if any, interventions might decrease pollution levels.

PayPal uses real-time data analysis to detect fraudulent transactions and keep its fraud rate at 0.32% - well below the industry average of 1.32%[11].

Drinks brand Coca-Cola[12] has been experimenting with an AI-powered vending machine that can personalise drink formulas to customer tastes and the external environment. A vending machine in a cinema, for instance, would offer a different selection to one in a hospital.

Detecting cancer early is an important part of stopping the disease developing further and can be vital to a patient's survival. However, some cancers are notoriously difficult to detect through conventional means. AI is being developed to detect certain cancers. So far, AI has been trained to detect lung[13] and colorectal cancer[14] - and also heart disease.

Machine learning is also being used for precision agriculture. It is helping farmers produce greater yields and respond more readily to changes in environment and weather conditions. Plus, a Google Ventures funded start-up called Abundant Robotics[15] is developing autonomous farming and harvesting.

Image recognition is assisting farmers in detecting and identifying pests that might destroy crops. Potato firm McCain's[16] is one of the businesses experimenting with this technology to increase potato yields and reduce farming costs.

Want to use AI? You'll need data

Because of its ubiquity, 2017 was dubbed the year of Artificial Intelligence (AI), and many businesses are seeking to take advantage of it. However, AI isn't simply plug and play. In order to do the smart stuff, there needs to be a strong foundation laid by data. AI simply won't work without investment in good quality data.

There are some great benefits available to businesses that use AI. Through AI, an online retailer was able to improve the search function of its store. This resulted in a $125 million[8] increase in annual revenue for the retailer, thanks to AI optimised recommendations and search results. Google is known to use AI to control cooling in its data centres. It reported a 15% increase in efficiency once an AI system was implemented.

Expenses chatbot Expensify reduced banking problems by 75%[9] through guiding people doing their expenses. It also notifies users if there are issues with their company credit card, or to let them know whether they're getting the best value on their travel arrangements.

AI needs to learn and for it to do that, it needs data. There's no coincidence that the most successful AI companies are the ones that generate - and use - a lot of data (Google, Amazon, Netflix and Spotify for example).

Before getting started with AI, you'll need:

» An effective data strategy that outlines any data available for training AI, data cleansing needed and overall goals

» Investment in additional technology or resources

» Data governance processes

» A clear use case or set of use cases that demand the need for AI

AI: key terms explained

Many people might get confused when dealing with AI and the many different terms surrounding it. We've yet to develop 'true AI' where the intelligence closely mimics human intelligence. Instead, we have a mix of different terminology that describes the different ways computers are being taught how to learn and use data. More often than not, you'll see this described as AI. Other terms such as machine learning and deep learning might also be used.

AI: This is where a computer mimics human intelligence. It shows human reasoning and logic, and can apply this to many different scenarios. Narrow AI is a subset of this, and it is the level of intelligence that we have so far achieved. Narrow AI is limited in its intelligence to just a few tasks. It can be broken down further into machine learning.

Machine learning: A computer is trained with certain data sets to carry out specific tasks. For example, training a system on stock market data could enable it to predict future market performance. The machine is limited to just the tasks that it has been trained on.

Deep learning: This is a subset of machine learning that has been inspired by the structure and function of our brains. Deep learning uses neural networks with individual artificial neurons that connect to each other. Much like the neurons within human brains. Each neuron is assigned a different task. One might example colour in an image, for example, and another might look at curves. By combining these, you can analyse things in more detail.

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Building a data strategy
Starting from scratch

In some ways, starting with a clean slate when developing a data strategy can be easier than if some data projects have already been undertaken. However, for most companies that have been collecting and storing data for a while, legacy systems, data silos, and poor governance practices can all cripple a business or your ability to deliver value from data.

Reviewing an existing data strategy

Data changes constantly so your data strategy will need to keep up. Regularly review your data strategy, and stay up-to-date with new technology, trends, data sources, and data legislation. If your business goals change, your data strategy will need to adapt to that shift as well. Ideally you'd review your data strategy at least once a year for good practice.

Top tips when reviewing a data strategy:

First look at any changes in your organisation's objectives. Then consider whether your business' data use is still aligned with this.

Next, check the quality of your data and whether your current data sources meet your planned data project needs.

Also consider whether any new sources of data have become available to your organisation and whether these would provide any value.

The main building blocks of a data strategy are:

Your data vision: what you want to achieve through using data and what value your organisation can expect from using data.

Your data sources: what data you need and where you will collect it from, plus how you will ensure data quality. This can also include the value of your data and who has access to it.

Data governance and management: this covers how your data will be stored and secured based on its value to your organisation and who needs to access it. Who owns what data set and processes is also included in this. Your GDPR compliance processes should also be included here.

Data analysis: how you intend to analyse data and why, plus how these align to your business goals and strategy.

Your data team: once you know what analysis your organisation intends to do, you can determine whether there are any missing skills in your team and whether you will need to train employees, hire external talent, or use a third-party.

Your tech stack: this will cover what technology your organisation currently has, what technology you will need, and also your management and data architecture requirements.

How to measure success: this section covers the Key Performance Indicators (KPIs) you will use to track the success of data projects and your data strategy as a whole. It also covers how you will communicate those successes across your organisation and externally - to gain further buy-in for data use and to help create a data-driven culture.

Once you have a data strategy in place, further plans can be developed like your digital transformation.

Netflix - scheduling shows through data

Netflix has become a mainstay of many homes, not just because of its bank of popular shows but also its original programming. Many have sat glued to shows such as 13 Reasons Why, The Good Place, Orange is the New Black, and Stranger Things. But their success is not because of a stroke of luck. These shows have been scheduled because of data.

Netflix has been using data on viewing habits across the world to inform what programmes it should buy and create. For example Adam Sandler has been found to be popular in Latin America. Netflix has therefore commissioned four new films[17] starring the actor, as a safe bet for the LatAm market.

Now, everything Netflix does is informed by data. Even the thumbnails shown on the Netflix homepage are optimised to each viewer. It's data-driven strategy is paying off. The streaming service added another 8.3 million[18] subscribers in the last quarter of 2017. 6.4 million of those were international, showing that Netflix's localised approach is paying off with audiences.
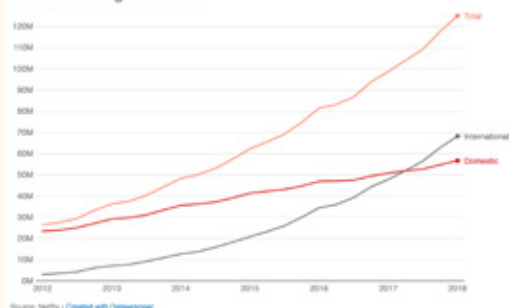
Review your tech stack and assess whether it is meeting current and future requirements. Don't be afraid to get rid of any technology that is hindering your team. Look at any new technology that might be an asset to your business.

Check the skills of your data team and whether there needs to be any additional training, new hires or external assistance.

Run through your KPIs and other success metrics to identify what data projects have and haven't performed well and possible reasons behind it. With

these insights, tweak or plan future data projects. Communicate any major successes across your organisation and externally.

Double-check that your data governance and data management is up-to-date with current legislation - and that is working effectively across your company.

Lastly, get feedback from stakeholders across your organisation to understand what projects are working for them, and where they can be improved. Through giving everyone a voice and input on your data strategy, you can help cultivate a data-first culture in your company.

Challenges faced when using data

Some challenges are to be anticipated in order to transform an entire organisation to a data-driven model. Here are some common things to be mindful of and plan ahead for:

» **Buy-in**
Gaining buy-in from the wider team and foster a data-driven culture.

» **Skills**
Hiring people with the right data skills, particularly with today's skills gap. Additionally, get the right mix of skills within your data team (not all data scientists are created alike. Some may be computer scientists, some mathematicians, and some are scientists. With a range of skills and backgrounds, you can prevent bias in your machine learning and develop a more rounded team).

» **Silos**
Data silos often exist hand-in-hand with legacy systems. For effective data use, break down silos.

» **Tech Stack**
Determine the optimum tech stack. This includes getting rid of legacy systems that are barriers to data use, and also taking advantage of new technology available on the market that will help achieve your business and data goals.

» **GDPR**
GDPR compliance when using data is a huge thing to be aware of. As best practice, make sure you gain (and store) consent for every use of personal data. Also have good data governance processes in place that are GDPR compliant. Only store and use data when you have a legitimate reason to do so.

Building the right data team

Picking the right people

Once you've outlined the goals for your data and mapped out relevant data projects, you can then identify the team you will need to work on it. A good data team has a mix of experience, background, and skills.

Broadly, you will need people with experience in:

» Business engagement

» Business analysis

» Data analytics

» Data science

» Data engineering

» Data architecture

» Innovation

» DevOps

» Design

» Data governance

» Data protection/GDPR

The benefits of broad experience

As well as hard skills, experience is also an important consideration. A data scientist, for instance, can come from any number of backgrounds including computer engineering, statistics, mathematics, biology, agriculture, and marketing. You'll want to match each team member to the right data project and goal. A project for your marketing department, for instance, will need a data team experienced in marketing analytics - not finance or HR.

A team with broad experience can provide other benefits besides aligning the best individuals with the right projects. A computer scientist, mathematician and biologist will all have different takes on a data science project that can help solve issues when they arise and prevent algorithm biases.

Take the time to consider your team set-up for different projects. Data scientists often work better when in small teams or pairs.

Closing the data skills gap

Thanks to the rising skills gap and demand for data professionals, you may encounter some resourcing difficulties. Indeed, 25%[20] of UK tech businesses reported that this was an issue for them last year, with 50% reporting a shortage of highly skilled employees such as data scientists and engineers.

Creating a data culture

Fostering a data-first culture across your organisation is critical to your strategy's overall success. It doesn't just hinge on your data team. By educating people on the value of using data, you can begin to change the culture in your company. Instead of relying on gut instinct, people will begin to consult data when making decisions.

Part of this requires access to data insights. If everyone relies on your data team, then there might be a bottleneck that prevents people accessing timely information. Self-service data visualisation tools and business intelligence systems can relieve some pressure off your data team.

It's also important to have data advocates appointed across your organisation. These key people will encourage data use and best practice in the teams, departments, and offices.

There are some potential solutions here. Recruiting external talent is often the first activity, however, training and developing talent from within is another option. For short-term assistance, a third-party or contractor can help. This is also useful if you don't wish to commit a vast amount of resources to your organisation's use of data yet, or are just testing it out with a few projects. Another route to consider is graduate schemes or knowledge exchange programmes with universities.

Automation can also take some of the strain off of data teams. Data cleansing is a good area to automate. Data scientists spend 60% of their time[21] cleansing data. It's a mundane and repetitive job that makes it well suited for automation. This frees up the data scientists to do more high-level, strategic tasks like data analysis and reporting on insights.

Data leadership and the Chief Data Officer

If you don't have a data leader in place already, then a Chief Data Officer (CDO) or similar should be seriously considered. Executing an effective data strategy starts at the top. It's a role that many organisations are waking up to. 57% of companies have expressed an interest in hiring the position, with average budgets of $8 million allocated to CDOs [22]

What a CDO is

A CDO is someone appointed to ultimately be responsible for data use, its governance and ensuring value from it is delivered to your organisation. They are critical to a data strategy's success by driving and inspiring data first decision making. The CDO is your main agent for change when it comes to data use. This is a business leadership position and they offer genuine guidance and advice to the board, whilst becoming a data champion to the rest of the organisation.

What a CDO does

The CDO is someone who oversees responsible and innovative data use and governance in your company. They drive initiatives to get the most value from data and ensure its use is compliant with data legislation and in line with best practice.

Of course, one individual cannot create an entire data-driven culture from on their own. This is where a wider multi-skilled team and internal data champions come in. A CDO will select the most appropriate team and appoint data champions across the organisation to drive change in their departments. Fundamentally, the CDO will constantly work to raise the data bar, motivate data advocates, and encourage data use company-wide.

As the Chief Data Officer of the Financial Times, Tom Betts explains, "It's about getting every part of the organisation to be more effective with what they do and democratising data across the organisation where every department has some kind of data DNA running through it. The challenge is to move beyond a centralised data function to a decentralised one, where data becomes part of everyone's responsibility."[32]

Why have a CDO

Companies currently lose almost $10 million every year because of poor returns on data analysis. Having an experienced CDO at the helm, who understands how to unlock data value and can develop a data-driven organisational culture can help reduce those losses and create positive gain instead. Organisations who have a CDO have been found to collect more data than those without a CDO and (more importantly) are able to use that data effectively [33].

How to find a CDO

If you're looking to hire a CDO into your business, you should ask yourself the following:

» What are you trying to achieve in your business?

» Do you need someone to create the foundations and establish the agenda or to accelerate and maximise groundwork already in place?

» Do you have a strategy around data and analytics? How is data being served currently?

» Where are the gaps in your data function and knowledge?

» What cultural challenges do you have to overcome?

» Are there any legacy systems your CDO will have to deal with?

Understanding these points will inform what kind of CDO you will hire and what their priorities should be.

CDOs come with a specific set of skills including the ability to translate technical concepts for multiple stakeholders and audiences, the strategic ability to shape the data function in an organisation, governance and compliance knowledge, and an innovative mindset. They can be difficult to come by.

Because the role is still relatively new, many CDOs are not hired from prior CDO positions. They could come from a technical background, a business intelligence function, digital or marketing teams or even (and one we quite like) from a commercial role.

There's also a decision to make over whether to hire a fully in-house CDO or look for an external third party. Your budget, resources and long-term plan will affect the type of hire you go for.

The CDO and CIO

The lines between the CDO and CIO are often blurred. But the two roles are completely different. The CDO is a business and commercial role dealing more with commercial value, data processes, the data lifecycle, sourcing, governance and monitoring. They should work closely with the CIO to ensure the best technology strategy is in place for data and analytics and that it aligns with the wider technology strategy.

Get a CDO now to get ready for the future

With two-thirds of organisations who have a CDO regularly outperforming their competitors [34], the role is going to be increasingly vital and sought-after in years to come. Companies which create the CDO position now will benefit from a more connected and driven data function. Many organisations have already realised this. 63% of organisations which lack a CDO have stated their ambitions to appoint one in the future [35].

Data is the new way for organisations to gain an edge over competitors. Data-savvy Netflix recently surpassed Disney as the world's most valuable media company [36]. The first time a purely digital company edged ahead of an established 'Golden Era' brand. Future success stories will be built on strong data foundations. But to create those in the first place, you need effective leadership. Someone to drive the data vision and get everyone on-board. In short, you need a CDO.

Delivering your data strategy

Your data strategy should focus on the full end-to-end process of using your data, from data generation to acting on the results and insights that it provides. There are several areas to focus on: the quality of your data, your data sources, your data analytics processes, and how you measure success.

Whilst the details are important, don't lose sight of the bigger picture. Never forget what your overall goal is for using your organisation's data. Understand how your data strategy aligns with your business goals. Have knowledge of how the strategy fits into different departments and how to communicate its value across your company in order to gain widespread buy-in.

Consider any support your employees may need in order to deliver your data strategy. This ranges from appointing internal data advocates who can champion the use of data, to providing specialised training; the successful execution of your data strategy doesn't just lie with your data and IT teams. It's a company-wide endeavour.

Training should accommodate different skill and knowledge levels. It is vital to get everyone up to speed when using data, not least because a lapse in data security as a result poor employee training could land you a significant fine under GDPR.

Finally, if your organisation lacks the skills to deliver the data strategy, then look at hiring external talent or using a third-party to plug the gap.

Know where your data came from

You may already have collected some data. The majority of organisations will have enterprise data on some level, from marketing, sales, and operations. You need to do a data audit to understand what data you do and do not have. Many businesses have come unstuck because of poor understanding of data location, type, storage and infrastructure.

TSB has been hit with costs of over £100 million (not including compensation to millions of disgruntled customers) because of poor data migration caused by a lack, ultimately, of an effective data audit.

Data quality

After you have identified your current data sets, you should see how well these line up with your future data project plans. Checking the overall quality, cleanliness and format of the data is vital, as it may need further processing in order to be analysed. The value of each data set should also be determined, as this will impact its storage, use, and whether you choose to keep it or not.

Data quality is critical to your data strategy's success. Without good quality data, any results may be inaccurate and this will lead to poorly informed decision-making. You should develop a framework for deciding the quality of your data and whether it is fit for use. This should include:

» Its availability: how accessible your data is, who can use it, and how quickly it can be accessed.

» The usability: how credible is the data? This also needs to include any definitions, documentation and metadata.

» The data's reliability: this looks at its integrity and consistency, the completeness, accuracy and whether it can be audited easily.

» It's relevance: is the data fit for the purpose it is intended for?

Obtain data consent

Consent is vital. Ensure you have the correct consent for personal data. If you do not, then you will either have to request it or get rid of the data.

Data governance

Data governance feeds into this. It includes processes to ensure data is collected in the right way, that it can be transferred when needed, and accessed for analysis quickly. Plus, any changes to the data are tracked, there is a key person or team who has ownership over the data, and the data is stored appropriate to its value and risk. Data governance is covered in more detail later on.

The different data types

This is an important point to touch on. Not all data is created equal. Different types of data will require differing levels of storage. Personal financial data will require more stringent security than unidentifiable operations data. It's not worth wasting resources protecting data of little to no value, especially when the effort can be directed towards securing high-value and high-risk data.

You may also need to store a lot of unstructured data. That is data like images and videos that don't fit in traditional databases. This type of data is growing (400 hours[23] of video are uploaded to Youtube every minute, for example). Unstructured data requires slightly different storage, so bear that in mind when planning your strategy.

When outlining your data strategy, identify the type of data that you will need to collect. Data sources that you use will largely depend on the data projects you have planned and your organisation's goals. However, broadly speaking, the more relevant data sources that you have to analyse, the better your results are likely to be.

Data comes in many forms. There's structured and unstructured data, including video, image, and instant messaging data. Organisations create data on a second-by-second basis. Every click, every file saved, and every purchase made can contribute insight.

Most businesses are likely to have some access to one - or all - of these data sources:

Transactional/sales data - This data helps you identify trends in purchasing and popular products or services. It can inform product development, stock management, and marketing campaigns.

Marketing data - This includes digital and email marketing data. It can inform a marketing and business strategy, help with product development, and provide insights on customer engagement and brand value.

Types of data you can collect

Transactional/sales data - Data from sales that can be used to spot purchasing patterns and to inform marketing.

Marketing data - Data from marketing activities. Often used to inform business and marketing strategies, and product development.

Social data - This is data collected from social media networks, both external (Twitter) and internal (Slack).

Call centre/chat data - Data from a call centre used to determine customer satisfaction, for feedback and so forth.

Operational data - Data to do with the running of an organisation, I.E. financial data.

Machine data - Data from connected devices within the Internet of Things (IoT)

3rd party data - Data from outside your organisation. It can include census data, market data, and weather data.

Research data - This is qualitative data that you have collected through research (or via a third-party).

Social data - This is data collected from social media networks, including public/consumer facing platforms such as Twitter and LinkedIn, and internal enterprise ones such as Slack or Yammer. It can be analysed to determine sentiment, identify trends and measure the effectiveness of campaigns.

Call centre/chat data - This type of data can be used to identify potential customer pain points and can be used to improve user experience. Combined with social media data, it can also help determine customer sentiment. Lastly, it can be used for employee and team feedback and recognition.

Operational data - This is any data to do with everyday running of an organisation - including data on the supply chain, stock levels, HR, and finance. By analysing this data, a business can streamline operations, increase efficiency, better allocate resources, identify potential bottlenecks with production, and predict likely stock requirements.

There are many other data sources available, and the mix of different sources that you use will be unique to your organisation. With the rise of the Internet of Things and connected devices like the Amazon Echo, the amount of data that businesses will be able to access will increase enormously over the coming years. It is therefore critical that any data sources considered must align closely with a business' goals, and not simply be collected because it is available.

Govern your data

Data governance acts like a protective barrier for your data strategy. Data, much like oil, can be highly flammable. Using it without good data governance in place might result in your organisation getting burnt.

Data governance solidifies your data strategy

One of the most important elements of your data strategy to build out is the data governance element. This will outline how data is stored and managed. It will also ensure there is clear ownership and responsibility for data (and that this is communicated to the wider organisation). The transfer, format and processing of data all falls under data governance.

When your data governance is working well, the rest of your data strategy will fall into place. Without it, your data use can get messy and disjointed.

But ultimately, data governance drills down to trust. Trust between teams, trust in the data, and consumer trust.

There needs to be the certainty that the data being used is accurate and that any changes to it have been tracked. It needs to be in a format that can be analysed and combined easily with other data. Plus, it needs to be accessible to people who need it (and only them).

When personal data is involved, individuals will need to trust that their data is being used in an ethical and appropriate way. This need was highlighted by the Facebook/Cambridge Analytica scandal[24]. Public trust in data use is incredibly shaken. It is up to businesses to now demonstrate that data is being used responsibly, and to communicate the value that data analysis holds for consumers.

How to implement data governance

To get started with data governance, create a framework. This will include details on:

» How you intend to capture and store data (whether this will be in a data warehouse or a data lake).

» Use of data, how you intend to track changes to data.

» Data KPIs and key terms.

» How it will be protected (your data security).

» The business ownership of the data.

» Your organisation's measures to ensure the data is GDPR compliant (or in line with other data legislation).

A good starting point for implementing any data strategy is beginning with definitions. Organisations often use a whole range of different terminology that can mean the same thing, or the same terminology that can mean different things to different people. Clearly articulating the entities and definitions of your data assets is vital in ensuring a successful data strategy.

As well as defining terms, identifying your most important metrics and how KPIs are calculated is also important. Nothing breaks trust in data quicker than the same metric being reported with 3 different values.

Setting up clear definitions will also help with the implementation of a good master data strategy. Organisations often struggle with master data and it is quite often overlooked, or (if it gets implemented) it's eventually broken. Much like reporting the same metric in different ways, having 5 different versions of your product hierarchies in use without any clear controls will damage trust in the capability you are trying to build. A strong process and suitable tools for managing master data is a key element to any good data strategy.

Tracking data is crucial to making sure that your data is in the right format and of good quality. You will need to document how data has been used, how it has been altered, where it has come from and so forth. This information will be needed to demonstrate GDPR-compliance. It will also inform anyone using your data of any changes to the data set that they should be aware of. Failure of this could impact the accuracy of any data analysis.

Because of this, you should set out a system for formatting that everyone on your team follows. Any changes also need to be logged and relevant parties should understand where to view these details. There must be a team or person who has clear ownership over the data and who others can report any changes or issues to.

Data security is critical, especially with the topic so vividly in the public eye. You need to detail how your data is secured, according to its sensitivity and the level of risk. Remember that some data that might seem low risk at first (such as postcodes and ages) could be combined to estimate the value of more sensitive data (like someone's identity in a certain postcode). Consider who needs to have access to what data. Make sure everyone is aware of the processes to request and receive access. You will also need physical security and regular penetration testing.

Evaluate your technology stack

Evaluating your tech stack is a two-pronged approach. First, identify your existing systems (any system that may generate, store or manipulate data).Check how well these are performing, plus assess how well they will work for your future data plans. Secondly, look for new tools on the market and evaluate whether these will benefit your organisation and data goals. At the same time, work out whether these new tools will require new skills and expertise (and how you will acquire this if they do).

Understand data flows

Another key activity is to understand how data flows around your organisation. Then assess whether this data flow is suitable for current and planned data projects, or whether your architecture will need to change. For example, as previously mentioned, many businesses have departmental data silos.

Get the right tools

Generally, your organisation will need tools that assist with profiling, ingesting data, data management, data analysis, data manipulation and data visualisation. For data storage and management, consider the benefits of cloud vs on-premise or a hybrid approach. To decide on the best tools, you should look at the following:

» The cost to your organisation (not just with the tool itself, but any additional training or hires that may be required).

» The tool's compatibility with existing systems and processes.

» It's functionality and features.

» Your existing team's skills and if they are able to use the tool.

» Whether to use open or proprietary tools.

You may also want to consider tools like self-service BI and dashboards that all employees can access and understand. This prevents your data team from becoming a bottleneck for the wider organisation. As a rule, self-service tools are usually best as they equip and empower employees with on-demand insights. In doing so, they encourage and facilitate more data-driven decisions, create a data culture, and take pressure off your data team.

Consider ongoing maintenance

It's important to consider the maintenance and longevity of your systems. Make sure that any technology you invest in won't become outdated in a short space of time. Do your research on the different technology available, and if there is a newer version that will soon become available. Make sure your system can achieve current, as well as future, plans. Likewise, only commit to maintenance that your data and IT teams can deliver.

Involve other people

This highlights another vital point - that you shouldn't evaluate your tech stack without the input of relevant stakeholders. These include the CIO, IT team, and any key stakeholders.

Investing in the right tech stack is the foundation to all your data projects. Some within your organisation may view it as an overhead, however, it is vital to the overall success of your data strategy.

Effective Data Analysis

With the right governance and infrastructure in place, look at data analysis next. This is the process that cleans, transforms, and models data to gain insights from it. You cannot get actionable results without undertaking some form of analysis.

The information you obtain from data analysis can be used to inform many different aspects of an organisation, from your overall business strategy, to your sales function, marketing efforts, and operations. It is data analysis that will unlock the value of data for the rest of your organisation to see.

Data analytics use cases

Many financial institutions use data analytics to detect fraud or to determine risk when offering a loan or mortgage.

A marketing team working for a charity could use analytics to determine the marketing channels that will offer them the most return.

A start-up could analyse early sales or marketing data to understand what products they should invest more research and development into.

A local council could track use of its services over a year to identify priorities for investment in the future.

Thanks to the range of data available to every organisation, there are many different ways to do data analysis. There are bound to be many that will offer value for your business.

The benefits of data analysis

A SAS report[25] groups the benefits of data analysis into three areas:

» more informed decision making,
» the creation of new products or services
» reducing cost.

Just Eat case study

Online food company, Just Eat, uses data to improve its customer and restaurant experience. It uses a mix of transactional and open data to map out where restaurants are located, and in what areas customers order the most. These insights are then used in several ways:

Sales teams use the information to better target restaurant sign-ups. Knowing what postcodes order the most regularly, helps to identify restaurants that aren't yet signed up to the platform but can fulfil the demand.

In areas identified with high demand, restaurants on the platform that don't yet serve those postcodes are encouraged to extend their delivery areas. Data on delivery time from the restaurant is also used to ensure the extension will work for both restaurant and customer.

Data insights have shown the points where regions become too saturated with restaurants and the benefits of adding more restaurants tails off. This stops sales teams from focussing on restaurants in those areas and to focus their efforts on other areas that promise greater value.

Digital transformation

Digital transformation is a term used to describe revitalising your company's systems, processes and information through digital technology. It is now critical to any organisation's long-term success. Digital transformation plays a big part in gaining value from data. It's difficult to effectively execute your data strategy without digitally transforming your organisation to some degree.

Through digital transformation, many companies have experienced drastically improved productivity. It also allows you to respond quickly to market changes. 42%[26] of UK CEOs have already begun digital transformation in some form.

To do digital transformation well, you first need to identify the digital needs of your customers and employees. For instance, any pain points that a customer may have encountered when interacting with your brand online.

Throughout the process, monitor the performance of your tech stack to see if it can keep up with the changes. If not, then investment in more robust technology will be needed. Your talent will be another key factor in your digital transformation. If your organisation is lacking the requisite skills, recruit or use other means to obtain the necessary expertise. Finally, it is vital to consult and constantly communicate with everyone in your organisation throughout the transformation. This will uncover any potential issues or concerns quickly, and also improve uptake and motivation for the process.

Set your priorities

The key to effective data analysis is to work out what you want to know. If you set your priorities first, you'll be able to collect the data sets that support your ambitions. Success metrics are also important when determining the performance of data analysis projects. As is training and choosing the right data models and tools to work on the analysis. Once you have results you can interpret them and then act on any insights.

This last step is crucial - even if the results aren't what you wanted or expected. For example, a retailer might discover that a product line it was originally hoping to expand hasn't been very popular amongst its customers. The product should therefore be discontinued, or not expanded further. However, it can be difficult to act on this if the product has a great number of internal champions within the retail company.

Remember that data analysis is nothing without action. Your organisation won't see any benefits if you fail to act on your insights. No matter how unpopular they might be.

Looking ahead

The future of data use (and how it impacts your strategy)

With so much data around, the term big data has largely become redundant. It's all just data. It's set to get even bigger over the next decade. Advances with the Internet of Things, smart cities, AI, and other technology will create data at a huge rate. This will likely have the same, if not more, impact on data creation as the invention of the Internet.

This dramatic increase in data will be matched with technology that will undertake a lot of the data processing and cleansing that data scientists have to do now. 80%[21] of a data scientist's current role is spent on preparing the data for analysis. With AI and automation doing much of the leg work in the future, a lot more time can be spent on interpreting insights and acting on them. Conversely, 76% of data scientists view data preparation as the least enjoyable aspect of their job. Automation, therefor, offers a win-win for everyone.

As the skills gap worsens, more businesses are likely to turn to self-service tools that will open up data insights company-wide and alleviate pressure on data teams. In particular self-service BI and data visualisation will become popular. Self-service BI is expected to produce more analysis than data scientists by 2019[27].

With GDPR enforcement (and the U.S. Government considering following the EU's lead) the next few years will be defined by a greater awareness of data privacy. The public is waking up to the value of their data and their right to control its use. Thanks to cases such as Facebook and Cambridge Analytica, everyone is more wary of unethical data use. The onus will be on organisations to really champion the benefits of data and to show consumers that most data use is responsible and beneficial.

Data as a service (DaaS) recently made an appearance and will continue to grow in popularity as more businesses seek to gain value from data. This model is similar to software as a service (SaaS) in that it offers companies access to real-time data as and when it is needed, via the cloud. It breaks down the silos that often hinder a data project. The market share for DaaS is expected to almost double over the next few years, from $4.1 billion in 2018 to $7 billion in 2020[28].

With the increase in data, there will be further development of AI. In its current form, AI is limited to a few select tasks. In the future, we will move towards more 'true AI'. That is, AI that can do many

different tasks and will more accurately mimic human intelligence. As a result, the applications of AI may change from routine, menial tasks, to higher-level activities.

There is much anticipated with the data economy over the next few years. Businesses that fail to keep up with the pace of change may find themselves redundant - a Blockbuster of their industry. The key takeaway for your data strategy, therefore, is to start sooner rather than later. Businesses are increasingly using data to gain a competitive edge. It is better to invest some resources in your data strategy now, than to wait for the competition to overtake.

Start with whatever data is available currently. You can then move on to using more novel data sets like smart home or open data. Self-service tools are a good option for many businesses that have limited resources or a small data team. It will also equip employees with the ability to use data without them having to ask a dedicated team or person to help. Thereby fostering a data culture within your organisation.

Work to gain your customers' trust now by clearly communicating with them how you use and secure their data. Make sure good data governance processes are put in place.

With the skills gap becoming more acute, you may have to consider developing talent internally, or through exchange schemes with universities. This will help futureproof your organisation against future shortages.

Finally, AI is going to increase in its ability and value to businesses. It is worth experimenting with some AI now, to better understand how it can assist your organisation and what you are likely to need from AI. There are a number of tools that you can easily test without making major changes to your tech stack. These include AI assistants like x.ai[29] who can schedule meetings for you, to proofing tools like Grammarly[30] and marketing optimisation tools such as Automat[31].

Help your data strategy stand the test of time

Whilst focussing on the details of your data strategy is a good idea, you must never lose sight of the wider picture. Always consider your longer-term data strategy and how it aligns with your business goals.

01 Review regularly

Plan to review your data strategy on an annual basis, at least. By doing this regularly, you can take advantage of any new data sources and technology. You'll also be able to correct any issues and increase investment in project areas that are working particularly well.

02 Look for quick wins

When starting out with a data strategy, especially when it's completely new to your organisation, look for 'quick wins'. These projects require little initial investment but can offer great returns and increase confidence in data-use amongst senior stakeholders. This will make getting further investment a lot easier. Make sure you communicate these wins company-wide as well, to encourage enthusiasm for your data strategy.

03 Communicate success

Tying into this, you should consider how you will communicate success and progress with your data strategy across your organisation. If you have a dedicate internal comms team, it's worth including them in your plans early on. Likewise, any data governance processes and GDPR compliance procedures need to be understood by every employee.

04 Get data champions

Alongside a successful data strategy, there will come a cultural shift in how your organisation views and uses data. To help with this, consider appointing dedicated individuals to drive the data culture locally within their teams and departments. These data advocates will help generate motivation and enthusiasm throughout your company. At the same time, identify potential blockers to your data strategy and work out solutions to resolve them.

A data-first culture is integral to the success of your data strategy. Employees should be encouraged to use data in all decision making. Find ways to get them in the mindset of using data and its insights, to understand that data is good and can supplement their knowledge, experience, and gut instincts.

05 Measure success

Part of this is having measurable success metrics that can be communicated to your wider team. When you have these, then running some internal workshops, company meetings, and roadshows can increase enthusiasm for data use. It is also important to listen to your organisation. Their feedback is vital to the data strategy's success. Fostering an open culture of

learning, sharing, and advocating data use is a good idea.

For further buy-in and motivation, you can also select some key data projects that are good examples of your organisation's innovative work. From this, you can create case studies that you can share internally, show prospective customers, use in your marketing, and even enter awards with.

06 Prioritise your work

With some initial groundwork to lay the right foundations, your data strategy will stand the test of time. Data is powering every business, so every company will need to learn how to use it. This can be directionless without a clear data strategy that lines up with the business strategy and wider goals. It's also worth noting that not everything outlined in a data strategy needs to be done all at once. Organisations with limited resources can still take advantage of data by prioritising the areas that are most critical to its success.

Your data strategy roadmap
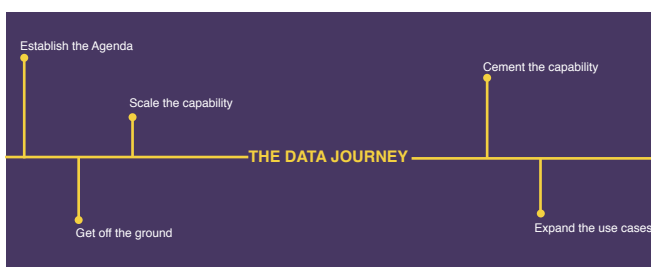
Once your data strategy has been created, you will have to set out what plans and projects you will implement first. It's a good idea to go for the projects that will offer you quick results for little initial investment. You will also have to consider what bits of your tech stack you'll update, what data governance processes to prioritise, and so forth.

Executing a data strategy is different in every organisation. Some may take a route of primarily outsourcing all activities and hiring a third-party for additional skills. Some may take an all-in approach where they invest completely in the data strategy and getting all required talent and technology from the beginning. Others may use a hybrid approach.

That said, the key pillars (as described throughout this piece) of your data strategy will not change. They remain the same regardless of organisation size or resources. It's just a matter of how you approach each one, and when.

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cynozure

Cynozure is a data and analytics strategy consultancy who are on a mission to change the way people do business. They are obsessed with using data and making sure that incredible business value is delivered through it.

Cynozure works in partnership with forward-thinking organisations to advise on and deliver data and analytics strategy. This is done through advisory services, coaching, solution and organisational design, implementing technology or business change programmes. Cynozure's goal is simple - equip business leaders and their organisations with the ability to understand and leverage their data.

Cynozure's team are thought leaders and experts in this space. Many with a background in industry and frontline experience of what is required to create leading data-driven organisations.

Organisations that have benefited from Cynozure's approach include The National Trust, Soho House, Tokio Marine Kiln, The Really Useful Group, Kondor and Tungsten Network

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