



Building a Modern Data Platform

Making data driven decisions



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Making data driven decisions

Organisations of every size and shape are focused on improving the quality of the decisions being made in their organisation. A key element of this is how people are using data to make better decisions. Did you know that 41% of businesses struggle to turn data into decisions? The time to invest and focus on setting your business up to better make data driven decisions is now.

A data-driven digital strategy can help organisations create entirely new business models, improve the customer experience and drive revenue growth. Ensuring you have the right processes, technology, people and control framework to generate value from your data is critical.

Your organisation has a data platform, whether you have invested in one or not. Your existing processes, spreadsheets and disparate systems all make up your data platform. In this whitepaper we discuss how creating a modern data platform in the cloud is key to unlocking data driven decision making.

In 2020, 90% of business professionals and enterprise analysts said data and analytics were key to their organisation's digital transformation initiatives. With investment in data & analytics expected to grow by 12% per annum for the next 6 years.

Bridgeall is a multiple Microsoft Gold partner including a gold competency for Data Platform and Data Analytics. We help organisations make data driven decisions, visualise data and build modern data platforms using Microsoft technology.

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Section 1

An introduction to cloud data and reporting

There are many terms, topics and trends in data that you might be unfamiliar with. We wanted to start by explaining some of these terms and why they might be important.

- › **Data strategy** – A data strategy is the process of looking at your current data infrastructure, practices, technology and skills and setting a roadmap for how your organisations data will look in the future. A data strategy should be endorsed by the leadership team, be clear on the objectives and benefits of success and be embedded in the technology and overall business strategy.
- › **Data platform** – A data platform is a term used to describe the suite of technologies used by an organisation. This can include reporting technology, data sources and the databases or data warehouses that store your organisations data.
- › **Data pipelines** – A data pipeline is the flow of data through your organisation. It involves taking data from its original source, sometimes transforming or cleaning that data and moving it through the pipeline to somewhere in the cloud where it can be analysed and acted upon.
- › **Data warehouse** – A data warehouse is normally a cloud-based solution where you store all your data. This data is accessible to other solutions, analytics and reporting tools. Data warehouses are where all reporting should be run from. A data warehouse is a relational database where the data and schema are predefined in advance.
- › **Data lake** – A data lake is another way of storing data in the cloud. A data lake is less structured than a data warehouse so it can store a wider range of unstructured data.
- › **AI/ML** – AI/ML or Artificial Intelligence and Machine Learning, are both terms that refer to analytics that learn and can be used to take data and run a wide range of functions such as predictions and forecasting.
- › **Business intelligence and data visualisation** – Business Intelligence is the practice of extracting insight and value from your data. This is normally done by visualising the data in dashboards and reports. These dashboards and reports are made up of charts, graphs and visual representations of the key pieces of information. The content is normally available to drill down into specific areas of interest.





Section 2

Your organisations journey with data

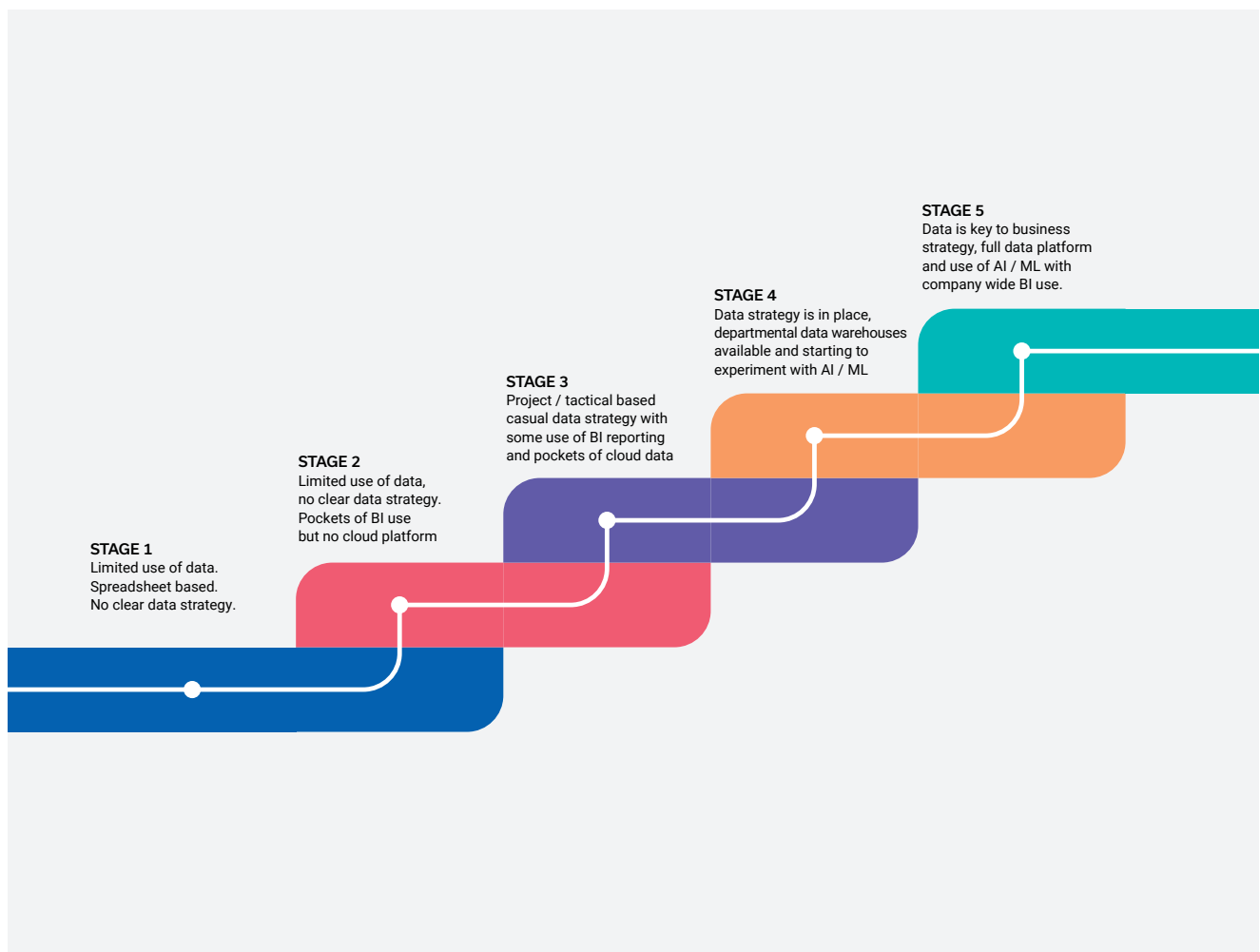
There is a lot to think about when it comes to data. The key is to gain an understanding of where your organisation is on its journey and to create a plan to move forward.

In the below diagram we have developed a 5-stage journey to showcase the steps that your organisation might take with data. What stage are you at?

For many organisations the starting point of their data journey involves long laborious reporting processes. These tend to be highly spreadsheet focused, and rely on data of an unverified quality from a wide range of sources.

For other organisations data is a key element of their culture. No decision is made without first considering the data available to aid it and subsequently dashboards and reports are created in minutes all running from a clean, accessible data warehouse. These organisations are actively engaging in the use of artificial intelligence to predict and forecast what the future holds for their organisation so they can plan accordingly.

Understanding where you are now, will help you understand the sorts of areas you need to be considering to move further up the ladder.

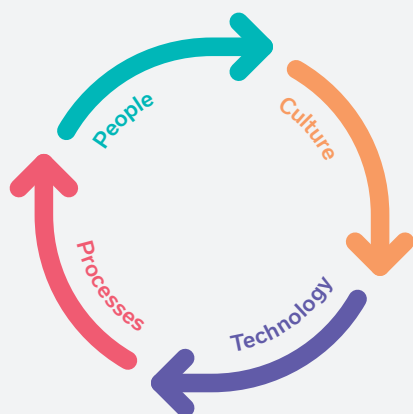




Section 3

Your data strategy

Now you have considered where you are on your data journey. Regardless of what stage you are at it is crucial that you have a data strategy in place. Business requirements will shape your unique data strategy and ensuring you have the correct processes, people and policies is key. A data strategy allows you to take your business strategy and translate that into a unique plan for your business and your data needs.



People - What people and skills do you have in your organisation for data. Are they the right people, what training and support do they need?

Culture - A culture that supports innovative and data driven decision making is critical, does your organisation have it? What steps could you take to improve it? What is the approach to risk and data security? Taking this information and developing a governance and control framework that manages how your organisation approaches data, is an important step in your data strategy.

Technology - Technology is a key component of any data strategy. What tools and platforms are available and what technology strategy is best for your organisation? For many businesses selecting a technology platform that offers a wide range of services and solutions with room to grow into them is the obvious choice.

Processes - What existing processes and procedures are within your organisations data team? Are they optimised? Can they grow and evolve with your business? Could they be optimised.

Turning these into objectives can include examples like:

- › Developing an in-house team of business intelligence and reporting people
- › Create a cloud data platform and single source of truth
- › Automate the monthly reporting cycle
- › Roll out Power BI training and creation of super users in each department

One of the key benefits of a data strategy is to help educate and get buy in from senior executives. It can prove difficult to understand why an investment of any size in data will benefit your organisation. Therefore it is important to build a strong business case upfront.

A key activity to secure investment and make your data strategy a reality is to translate it into real world benefits for your business. Making sure you capture the improvements in planning, productivity, decision making and articulate the value derived across the spectrum is a key activity.

Your data strategy should also cover details like your governance model, what data you capture, where you store your data, who has access to the data how to deal with duplicates and what sort of data quality you need.



Section 4

Building a modern data platform

A modern data platform is the principle of having a cloud data platform that serves your businesses data needs. The data platform is regularly made up of a collection of different tools and services that provide key capability and combined make up a modern data platform.

The data platform should provide key capability including running analytics, powering dashboards, feeding into reports and connecting systems to create a single source of truth, cleaning data, gathering data, data security and more. Your data platform should look to automate and simplify every data activity you carry out and unlock a wide range of future potential.

When creating a data platform, this activity generally sits within IT, or if you have a data or reporting team a collaborative approach is best. IT will be best placed to understand the current IT infrastructure and data available within it and when working with key business stakeholders be able to create a new data platform that delivers for your business.

The functionality of a modern data platform

A modern data platform should provide the following functionality to power your data & analytics work and ultimately your decision making.



Source - Understanding where your source data is, what fields are available within the source data and where and how this data is gathered and stored. How to connect or access this source data is critical.

Ingest - Is the process of connecting to your source data, this can be ERP or finance systems, CRM and marketing tools, applications, websites, data lakes or anywhere else your organisation has data. The point of this step is to connect to that data source and extract that data, then move it to the cloud.

Processing - A key and often overlooked step in the process. Another way of looking at processing is clean, validate and enhance. At this stage you are looking to run multiple checks and changes to ensure your data is ready to be put into your cloud data warehouse. Once it is cleaned and validated, you are ready to enhance it. This can be simple analytics that run calculations or more advanced AI/ML models. All results are added into your data as an additional field.

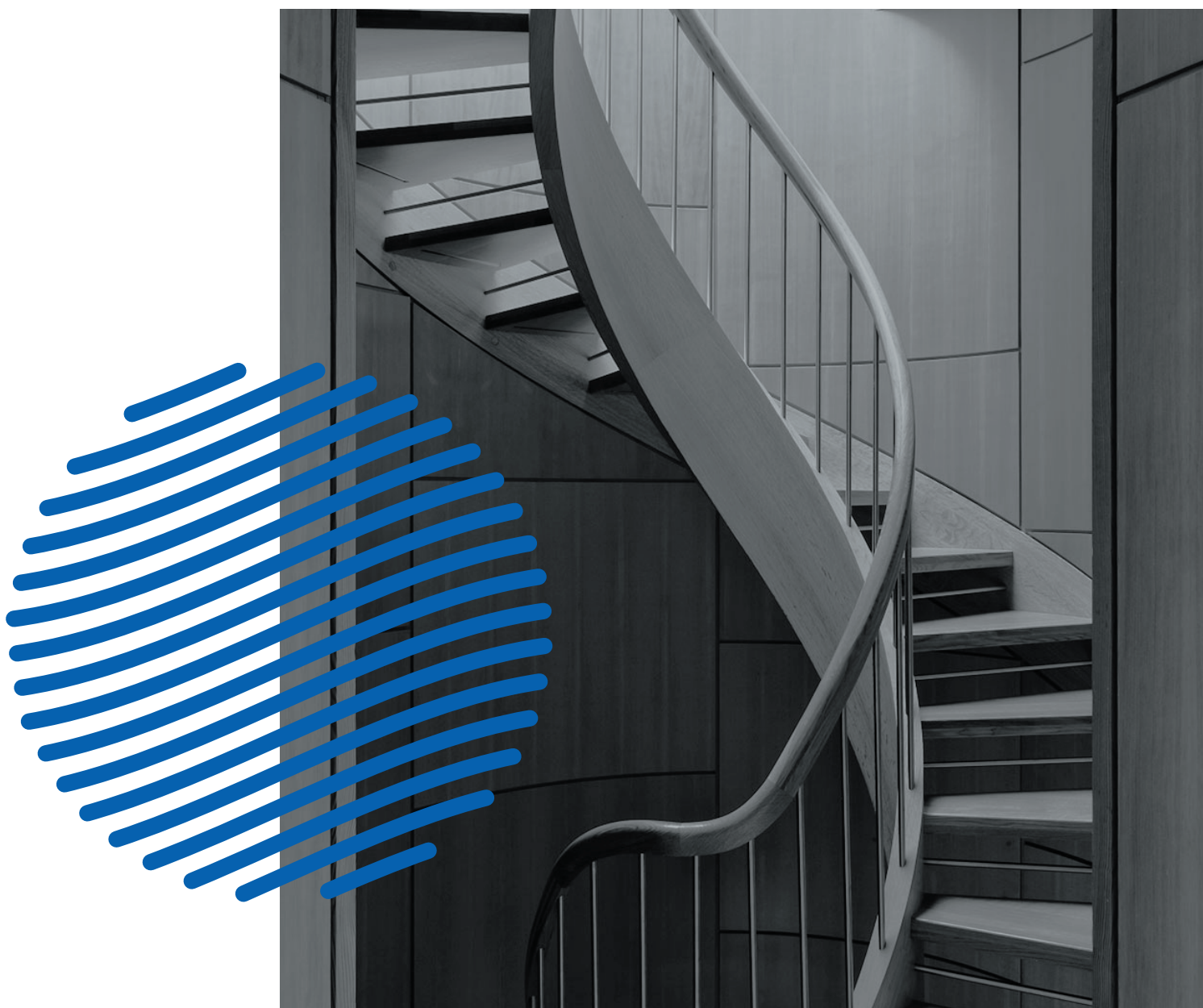


Store - At this stage you are at a cloud data warehouse where you can store your clean, structured data. The data warehouse becomes the single source of truth and go-to point for any data within your organisation.

Delivery - Delivery is where you start turning all of this into value. Whether you are looking to create reports and dashboards or use the data to power applications or websites. Ensuring you have easy access to the data for any of your business needs is a critical success factor.

Security - The final aspect of any modern data platform has to be security. You must have full confidence that your data is only accessible by key people within your organisation and have a full proof security model that allows role based, user based and line/field-based security.

Artificial intelligence (optional) - Artificial intelligence is the final aspect in a data platform to be considered. When you are ready, does your data platform have the ability to deploy and manage artificial intelligence models that you can then serve up and access? Many modern data platforms include things like auto machine learning and artificial intelligence. Here there are pre-existing models you can connect to data and then run making them more accessible than ever.





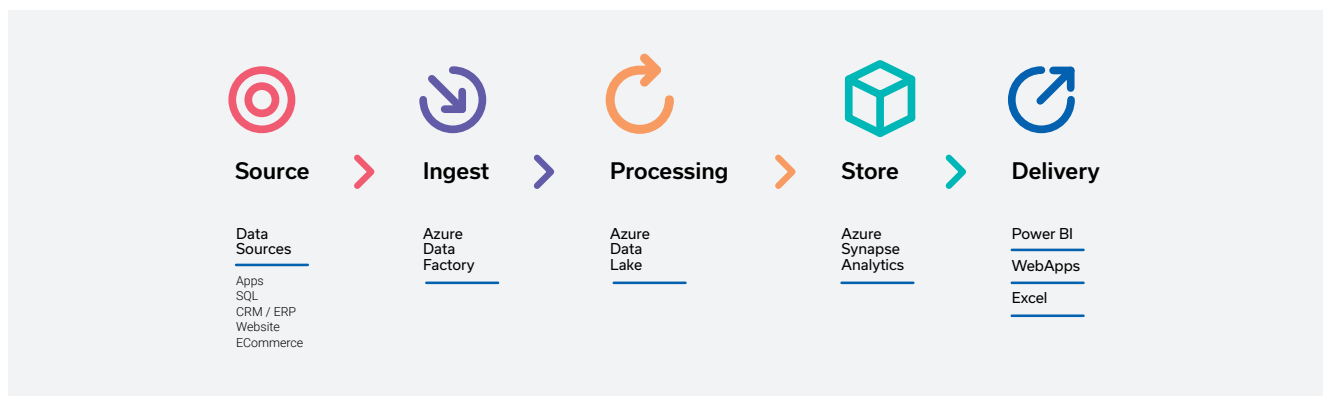
Section 5

A modern data platform with Microsoft

Now we take a look at what a modern data platform could look like with Microsoft. Below we explore 4 key Microsoft services that can form the backbone of your data platform and deliver the 5 steps required in the previous section.

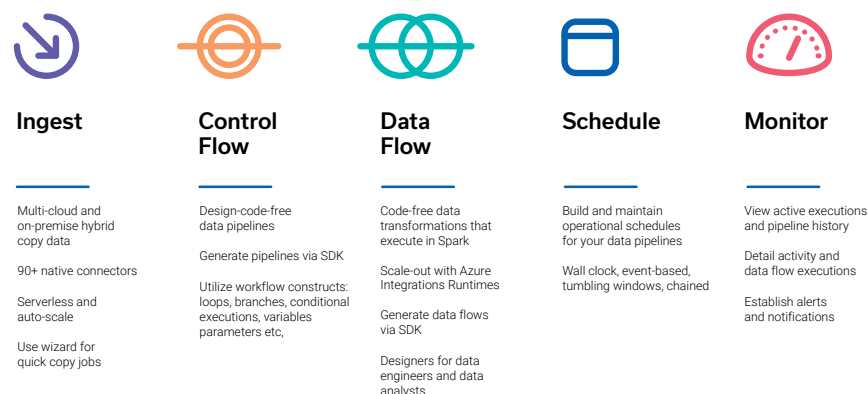
At the core of a modern data platform is Microsoft Azure. Azure is Microsoft's world leading cloud platform. It is a collection of hundreds of different cloud, hosting, platform, infrastructure, application and data services. All of these services are accessible at low cost and licenses are based on consumption. Azure is a key driver for the democratisation of advanced data capabilities now being affordable and accessible. No matter what size your organisation is.

When looking to build a modern data platform with Microsoft, due to the diversity of their offering there are a few different approaches you can take, depending on the scale and complexity of the challenge you are trying to solve. In the scenario below we have outlined 4 key technologies that for most businesses will be key to creating a modern data platform.



Azure Data Factory

Azure Data Factory is Microsoft Azure's, data pipeline solution or sometimes called extract-transform-load (ETL), extract-load-transform (ELT), and data integration. Azure Data Factory focuses on connecting to data sources, getting data into the cloud and in the right state for analysis. Azure Data Factory performs the ingest phase.





Azure Data Lake

Azure Data Lake provides us with two key areas of functionality. It allows us to store our unstructured and ingested data from across the organisation. Storing data of all shapes and types.

It also allows us to run processes and analytics on this data to clean, validate and enhance it. We do this by running checks to identify missing or inconsistent data and taking actions to clean or remove that data. We can also run analytics and calculations which we can then store in additional fields. These can include forecasting, deltas, percentage of x type figures that will be useful later in the process.



Limitless scale and 16 nines of data durability with automatic geo replication



Highly secure with flexible mechanisms for protection across data access, encryption and network-level control



Single storage platform for ingestion, processing and visualisation that supports the most common analytics frameworks



Cost optimisation via independent scaling of storage and compute, lifecycle policy management and object-level tiering

Azure Synapse

Azure Synapse or as it was formerly called Azure SQL Data Warehouse, is the data warehouse where you will store your clean, transformed data. Azure Synapse is Microsoft's flagship data solution, it takes the enterprise data warehouse and brings in several additional supporting services.

Azure Synapse is an integrated analytics service that accelerates time to insight across data warehouses and big data systems. It brings together the best of SQL technologies used in enterprise data warehousing, Spark technologies used for big data and pipelines for data integration.

This is all accomplished with a unified experience where data prep, data management, data warehousing, big data, and AI tasks can be done in a single, unified workspace.



Limitless scale

Industry-leading performance on demanding workloads



Powerful insights

Integration with Power BI and Azure Machine Learning



Unified experience

Data prep and management, big data and AI in a single workspace



Unmatched security

Fine-grained access controls and layers of protection

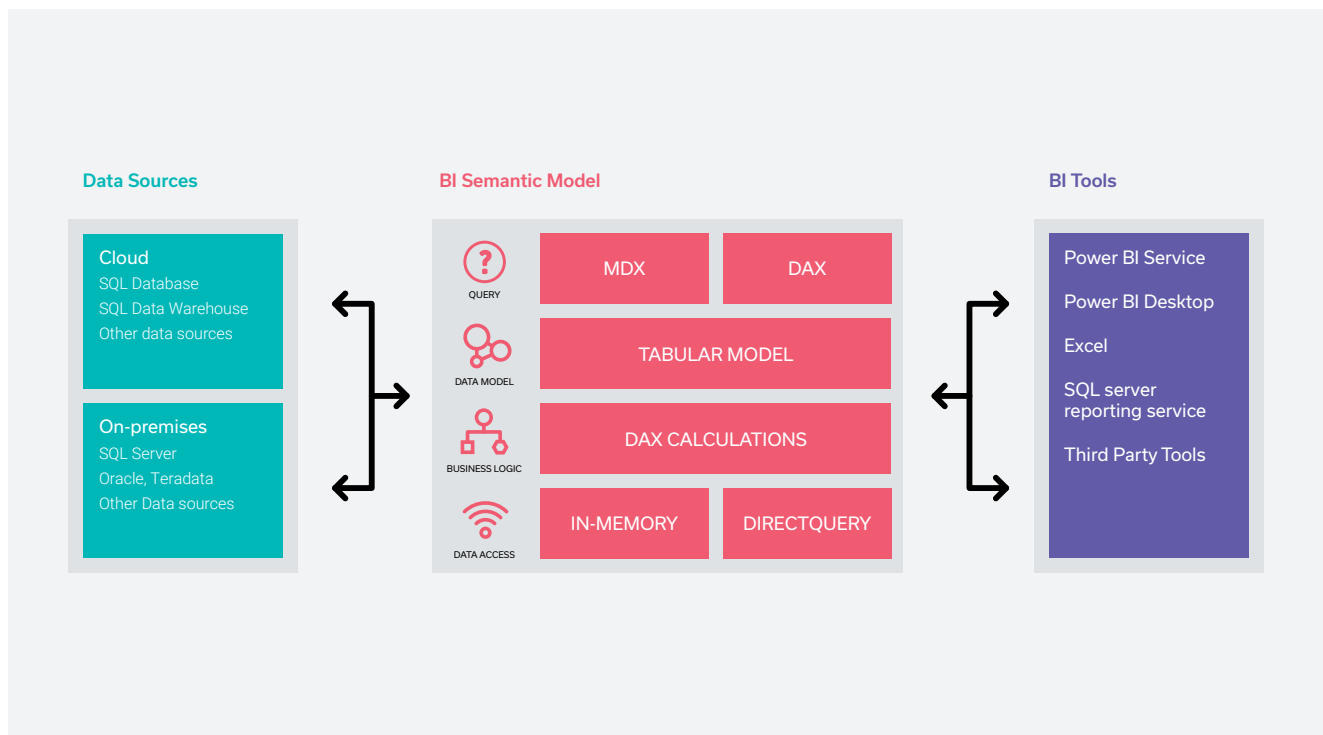


Azure Analysis Services

Azure Analysis Services is a fully managed platform as a service (PaaS) that provides enterprise-grade data models in the cloud.

Azure Analysis Services offers a cloud-hosted, PaaS, data analytics platform, allowing massive amounts of data to be queried for ad-hoc data analysis. It's easy to get started, ingest data from a variety of sources and build semantic tabular models.

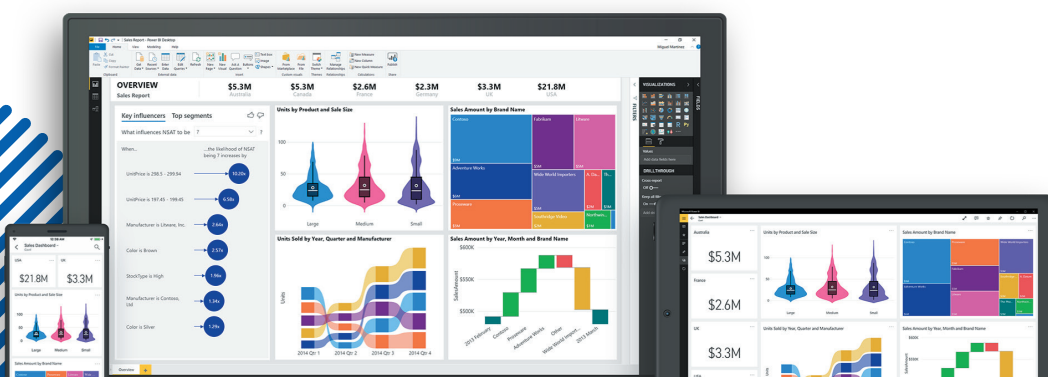
Azure Analysis Services provides full integration with Power BI and provides a semantic layer between your Azure Synapse data warehouse and your business users. A semantic layer sits between the original database and a reporting tool in order to assist business users with ease of reporting. Azure Analysis Services becomes the main entry point for data access for most business users when they are creating reports, dashboards, or running ad hoc queries.



Power BI

Power BI is Microsoft's class leading business intelligence and data visualisation platform. Power BI is made up of several different services and products each servicing a different business intelligence need. Each offering provides users with a simple drag and drop editor to easily visualise data, create reports and build real time dashboards.

It is an extremely intuitive solution and will be a key step in moving your employees away from spreadsheets. For most employees in your organisation this will become the mechanism in which they access and analyse data. It will become a key piece of technology that delivers data to decision makers.





Data visualisations

Select from hundreds of data visualisations or build your own to bring your data to life



Any data

Connect to any data source to find the best insights and answer tough business questions



Save time

Reduce the amount of time spent wrangling data and spend more time getting answers with AI-driven insights



Native intelligence

Ask questions of your data, deliver automated insights: all visualised in the context of your business

Azure Active Directory

Azure Active Directory is one of the ways you can easily secure access to your entire Azure infrastructure.

Azure Active Directory provides a single place where you manage permissions and access. You can control roles, teams and user-based security protocols that allows you to easily manage access to your data down to a field and row level.

Getting started - Think big, start small

Now you know the approach and tools available to build a modern data platform, you need to consider the best way to start your journey. The great thing about the tools discussed above is it is really easy to get started with one or two of the solutions and build up your capability as you need it.

For example:

- › You could start with Power BI and connect it directly to your core data sources and quickly start building up data visualisation reports and dashboards. This would improve the decision making in your organisation rapidly.
- › Then start looking to get that data into the cloud using data factory and data lake to ingest and store it. This would make it easier for everyone using Power BI to access it.
- › Finally, you could introduce analytics to clean, validate and enhance your data and eventually start to import data into a data warehouse to improve the productivity, quality and accessibility of the data within your organisation.

Each of these solutions can be easily added into your data platform and can start from a very low license cost, depending on the volume of data.

Modern Data Platform Briefing

Our Azure Data Platform 2-hour briefing is for organisations to see and understand how they could benefit from creating a Data Platform on Microsoft Azure.

FIND OUT MORE ›

Bridgeall is a leading Microsoft gold partner based in Glasgow. We provide a full range of advice, implementation and support services to help you build a modern intelligent workplace. We provide a full range of services covering Microsoft 365, Power Platform, Azure, .NET development, Managed IT and more.

We help organisations do more with their data. We are a Microsoft Gold Partner for Data Analytics and Data Platform. We help organisations develop a data strategy, build data platforms and create real time Power BI reports.

WE'LL HELP YOU BUILD YOUR MODERN INTELLIGENT WORKPLACE QUICKLY AND SECURELY.



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