



Unlock your business potential with the Microsoft Core Data Platform

Managing growing amounts of data has never been so fast, agile and secure as it is today. The Microsoft Core Data Platform combines data warehouse, BI and big data capabilities in on-premises, cloud and hybrid environments.

The data shift and the new reality

Every time we engage, we generate data.

Expanding ten-fold every five years, with an over 85 per cent increase¹, data is coming from both the traditional relational data warehouse and from new sources such as mobile, social, videos, sensors, devices, RFID, web logs, advanced analytics and click streams.

Today, everybody is talking about the **big data shift**²: the ability to use data to obtain actionable knowledge, timely insights, real-time monitoring and predictions. It's a world of opportunities no one wants to miss because it results in fact-based decisions and improved performance management.

Moreover, data analytics can open the way to innovations, sometimes even revolutions. For instance³, the growing technology of the Internet of Things generates large amounts of valuable data, waiting to be collected and interpreted. Smart cars and smart homes rely on the collection and interpretation of localised data to optimise their performances.



Sources:

1) Big data & Data Warehousing 2) DNV-GL Business Assurance
3) Network World 4) DNV-GL Business Assurance



All industries are becoming heavily automated, processing large amounts of data to predict market trends. Machine learning, network optimization, semantic search and many more technological advances are the result of data analytics.

There is an entire ocean of data across almost all verticals ready to be exploited by companies that are smart enough to recognise its potential.

Companies see the biggest potential for value creation through better data management and automation, mainly bound to efficiency aspects:

Key Improvements



52% in day-to-day operations



48% cost reduction



27% safety and security



19% compliance⁴

Numerous market and business drivers push modern companies towards better data management:



Competition and growth, the top driver, as companies continually strive to be better, faster and arrive first "at the right place, at the right time".



New business models and technical capabilities, **digital transformation** and new deployment models in hybrid and cloud environments.



New generations of the workforce that offer different office environments and remote-working options, making a mobile office their top priority.



Security breaches, **Shadow IT**, **BYOD**, massive uncertainty due to **Brexit** and new **government directives**.



Difficulties in **managing massive amounts of data with increased speed and variation**.



Responding in real-time becomes an imperative, where company valuation places huge consideration on customer and technical data.

"Big data is known to improve operational excellence, create a better understanding of customer relations, improve risk management, and drive business model innovation. The business value is clear."

- Gartner

Missing strategies and tech skills

According to a DNV GL – Business Assurance survey⁵ that included 1,800+ professionals from companies in different sectors in Europe, North and South America, and Asia, **only one in four** companies is actually using big data to boost productivity and create value.

Most companies characterise big data as too large to process with conventional software systems and databases. They still don't have the comprehensive strategies and technical skills to make the most of their vast pools of information.

Common scenarios include:

"We have just lost a contract even though the issues could have been seen months ago – it is all in the data; we just didn't use it."

"Scaling our current data warehouse model to match data needs is too expensive. We require a new option."

"Responding in real-time is becoming business-critical in our sector. We need a solution to support it."



Sources:

5) DNV-GL Business Assurance

Keeping pace with advancing manufacturing technology

Many efficiency improvements can be made with data, not just through the machinery your business owns. However, despite the fact technology is moving quickly, manufacturing organisations struggle with managing multiple data types and collecting information from a growing number of devices – sometimes from all over the world. Adding to this are numerous key issues causing multiple pain points when it comes to data migration.

Technological advancements are enabling people to be more self-serving, using tools like Power BI to get the information they need. Empowering employees with new ways to access information is vital when it comes to driving motivation and productivity. However, with this comes increased complexity; as technology is changing so dramatically, so too is the demand for app-like solutions that can tell users how to talk numbers and dig quickly into detail.

The implication of GDPR is also having a huge impact on how businesses are migrating, storing and using their data. Because of the outdated ways in which data is being managed, for example using spreadsheets, compliance is proving a big challenge for many organisations.

Due to overseas competition, British manufacturers are struggling against other countries producing goods at a fraction of the cost. Adding to this financial pressure is the demand to produce high quality goods; resulting in the need for efficient systems to help UK businesses stay competitive.



Thanks to the evolution of the IoT, machine learning is advancing at a rapid pace. Machines are getting smarter and collecting data themselves, which poses the question; who will manage the data? Data needs to be consolidated and interpreted in order for you to make better decisions faster. And, if your business is global with disparate systems, accessing one single view of your data that is easily actionable may prove challenging.

Alongside operational data from enterprise systems, your manufacturing businesses may be bombarded with data from cloud-connected devices such as vending machines and remote environmental sensors, social media and websites. Traditional Data Warehouses were never designed to contain – let alone secure – the vast range of data types and sources available to businesses today.

Without an effective way to capture, secure, consolidate and analyse these large amounts of structured and semi-structured data, you may be rendered unable to react quickly enough to opportunities. The result – wasted money, thanks to outdated and siloed data management processes

Sound familiar?

Does your company lack an overall data strategy, have insufficient technical skills, limited understanding of effective data management or security concerns?

If it does, you are not alone. **75 per cent** of companies share the same roadblocks in modernising core data management.

The good news is that you can fix all of this and reap the benefits of your core data in a modern, ever-changing environment with all its complexity.

The Microsoft Core Data Platform offers a comprehensive solution that surpasses traditional data processing methods and addresses modern business challenges with big data.



Before we deep-dive into the new data platform, let's elaborate on why the current widely used data warehouses cannot cope with the new reality of big data.

What happened to the good old Data Warehouse?

The predictable structure of the traditional data warehouse, which stores disparate data from transactional systems, ERP, CRM and LOB applications, was not ready when Web 2.0 stepped in. When business-related data started to come from other sources such as e-commerce, web logs, search marketing, etc., data warehouses started to lose the battle, as they were never designed for this volume or velocity of information.

In parallel, the world of data continues to evolve at a rapid pace, where IDC forecasts that by 2020 the amount of information that enterprises will have to manage is going to explode to a 40 Zettabyte digital universe.

Data warehouses just cannot keep up with the trend because they:

- Don't have a business schema model that can easily handle new unstructured data types
- Have ETL processes that are not well matched to new analytics and ML approaches
- Cannot scale at an acceptable cost
- Are not architected to deal with near real-time transactions
- Cannot take full advantage of the new cloud eco-systems

Old data management system needed to evolve.

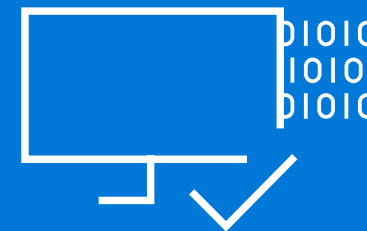
The promise of a Modern Data Platform⁶

Microsoft's Core Data Platform lives up to the promise of delivering insights from a variety of techniques, such as business intelligence and advanced analytics. It can process massive volumes of data in real-time and has the ability to deliver the right data at the right time. This is a comprehensive, logical data and analytics platform with a complete suite of fully supported solutions and technologies that can meet the needs of even the most sophisticated and demanding modern enterprise: on-premises, in the cloud or within any hybrid scenario.

Technical challenges resolved

To mitigate the pains of managing the data warehouse, Microsoft's Core Data Platform delivers a remedy that:

- ✓ Handles both relational and non-relational data in real-time, augmenting internal data with that from outside the firewall
- ✓ Provides an analytic engine for predictive analysis and exploration of aggregated data
- ✓ Enriches data with ETL capabilities or supports through big data techniques
- ✓ Uses a single federated query service to easily interrogate relational and non-relational DBs
- ✓ Supports the breadth of BI tools needed to get actionable results from data and the new breed of data scientists



Sources:

6) The Microsoft Modern Data Warehouse

Business booster

The Microsoft Core Data Platform solutions can cope with data growth, handle information of all shapes and sizes in near real-time and unlock insights with familiar tools and mission-critical performance. All this is done with the highest levels of confidence in data security.

Its impact on the business is unparalleled. The Microsoft Core Data Platform cultivates:



Fast and agile working environments, giving your teams the insights they need. Whether the data is in the cloud, on-premises, or at the edge; combining open source and industry-leading solutions you can quickly track, extract and use the data to benefit your business.

The flexible and agile data platform gets your apps to market faster and the response to customer needs is well timed.



Quick and easy access to all types of data from multiple sources, thanks to built-in intelligence apps that are using your preferred tools and technologies, as well as new solutions integrated into the platform.

Power BI delivers true self-service BI that combines the power of the cloud with the familiarity of Excel, the most widely used BI tool on the planet. Business users can access data from multiple sources, create striking visualizations, playback data changes and trends over time and query databases using natural language text.

With the Microsoft data platform, AI is a part of your data - no matter where it's located.



Innovation because knowing that mission-critical needs like privacy and availability are covered with the data platform, you can focus more on new projects.

Also, with the amount of “rediscovered” data, hidden in mounds of information that finally became accessible, you can gain fresh insights that may lead to a completely new line of products and services.





The 'core' of the Microsoft Core Data Platform

The Microsoft data platform supports the largest organisations with unmatched security, performance and scale in big data infrastructure. And the best part is...

The investment lands at one-tenth of the cost of traditional tier 1 solutions.

While larger, more complex tier 1 solutions have a reputation for high implementation costs, Microsoft data platform is subscription based and uses simple pricing metrics where you pay-as-you-go (processing power for mission-critical applications and business intelligence).

The capabilities of the solution⁷ are transformative, turning businesses into competitive and progressive market-leaders. With the Microsoft data platform you can "check off" all the typical enterprise challenges in managing your data:

Scaling: Check

The Microsoft data platform is a no-limits solution for structured and semi-structured data. It offers powerful parallel analytics and massive security and scalability, all delivered through *Azure Data Lake*.

The solution includes all the capabilities required to make it easy for developers, data scientists and analysts to store data of any volume, shape and speed.

In addition, all types of processing and analytics across multiple platforms and languages are simplified.

The platform removes the complexities of ingesting and storing all of your data while making it faster to get up and running with batch, streaming and interactive analytics.



Sources:

7) The Microsoft Modern Data Warehouse



Within Azure Data Lake there are three services⁸:

1. Azure HDInsight

The Azure Data Lake offers fully managed and supported 100% Apache Hadoop®, Spark, HBase and Storm clusters. You can get up and running quickly on any of these workloads with a few clicks and within a few minutes without buying hardware or hiring specialized operations teams typically associated with big data infrastructure.

2. Azure Data Lake Analytics

Azure Data Lake Analytics is a new service built on Apache YARN that dynamically scales, so you can focus on your business goals, not on distributed infrastructure.

Instead of deploying, configuring and tuning hardware, you write queries to transform your data and extract valuable insights. The analytics service can handle jobs of any scale instantly by simply setting the dial for how much power you need. You only pay for your job when it is running, making it cost-effective.

3. Azure Data Lake Store

The Data Lake Store provides a single repository where you can capture data of any size, type and speed simply, without forcing changes to your application as the data scales. In the store, data can be shared for collaboration with enterprise-grade security.

It is also designed for high-performance processing and analytics from HDFS applications and tools, including support for low latency workloads.

Speed: Check ✓

Speed is enabled with **SQL Server 2016** in-database analytics, allowing analysis without moving data, which is inherently the most secure option.

SQL Server 2016 as an example has ground-breaking performance optimisations and efficiencies, leading to new levels of performance and scale.

Modern servers can support a large number of cores with sophisticated vector instructions, can hold terabytes of memory and provide very high I/O bandwidth with local flash storage. Optimising for the concurrency and parallelism inherent within such servers can provide dramatic speedups at scale, and often outperform large distributed databases.

For example, Microsoft recently collaborated with Intel to demonstrate superb performance on a massive 100TB data warehouse using just a single server with four Intel Xeon E7 processors and SQL Server 2016.

The system was able to load a complex schema derived from TPC-H at **1.6TB/hour**, and it took just **5.3 seconds** to run a complex query (the minimum cost supplier query) on the entire **100TB** database.



Sources:

8) The Microsoft Modern Data Warehouse

Agility: Check

Agility for app development is made real with environments created in minutes and scaled on the fly **Azure Database for MySQL**:



Lets you focus on your apps - Instead of wasting your time on the complexities of database administration and management, the managed service does it for you: automatic database patching, automatic backups, built-in monitoring, security and more.



Helps you provision in minutes and scale in a heartbeat - Scale the performance of your database with no application downtime.



Keeps you going - Trust Azure to keep enterprise apps up and running. Built to deliver high availability, it requires no extra configuration, replication or cost to ensure your apps run when you need them.



Makes it easy to develop & deploy - Do what you do best: build great apps rapidly, with the languages and frameworks you already use. Featuring tight integration with Azure Web Apps, along with popular content management apps, such as WordPress and Drupal, to deliver fully integrated services that enhance your applications and lighten the burden of database management.



Has simple and predictable pricing - Everything you need is included in simple, predictable pricing models providing vital capabilities you need, such as point-in-time restore and high-availability, at no extra cost.



Backs you up with the power of Azure - Run your apps on world-class infrastructure and the world's most trusted cloud. As a fully integrated service, Azure Database for MySQL plugs you into Microsoft's global network of datacentres, providing unparalleled security and round-the-clock monitoring.



Cloud-based: Check

Elasticity is a defining characteristic of cloud computing; it enables rapid provision and release of resources to match workload requirements.

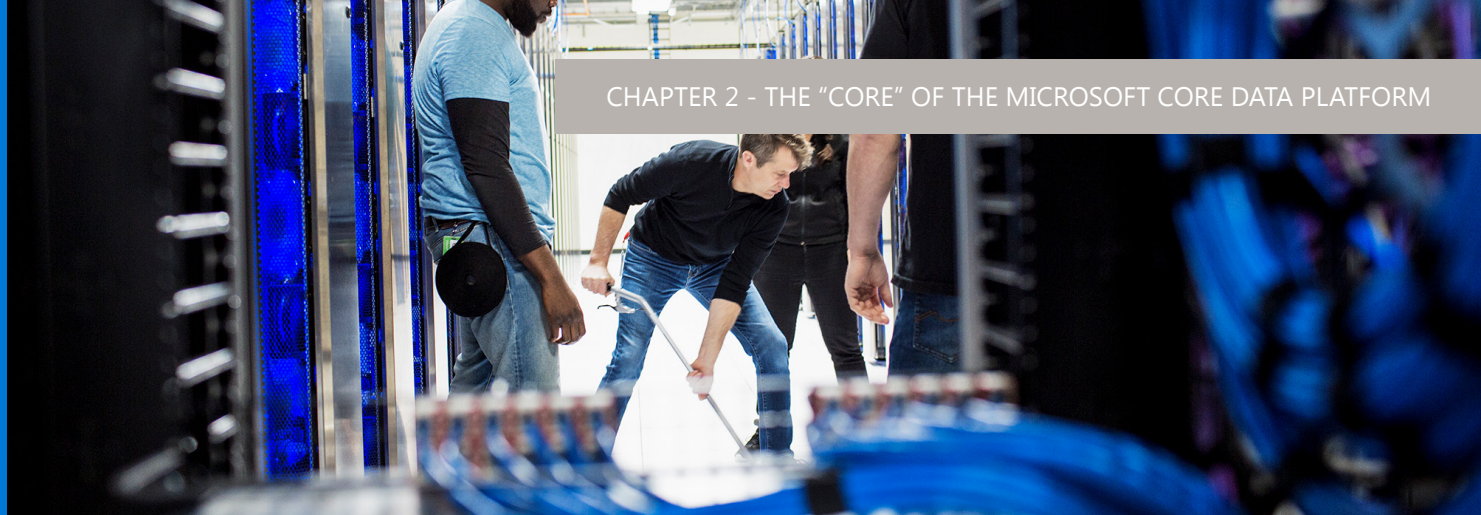
This type of just-in-time provisioning, results in the user paying no more and no less than what they need for the task at hand. This saves huge amounts of money when workloads are intermittent and often heavily spiked.

Agility in daily operations requires scale with speed, delivered by two solutions: SQL Data Warehouse and Azure Cosmos DB.



Sources:

9) Microsoft Azure 10) Microsoft Docs



1. SQL Data Warehouse⁹

The Microsoft Modern Data Warehouse offers the most comprehensive options to deploy data warehousing and big data directly to the cloud with the elastic scalability of Azure.

In the cloud, Azure SQL Data Warehouses leverages the same MPP architecture as the Analytics Platform System, allowing you to combine the scaling power of this architecture with the elasticity of the cloud.

Azure SQL Data Warehouse is a fully managed DW as a Service that you can provision in minutes and scale up to 60 times larger in seconds. With a few clicks in the Azure Portal, you can launch a data warehouse and start analysing or querying data at the scale of hundreds of terabytes.

Microsoft architecture separates compute and storage so that you can scale them independently, using just the right amount of each at any given time. A unique pause feature is also included, which allows you to suspend compute in seconds and resume when needed while your data remains intact in Azure storage.

Also, SQL Data Warehouse offers an **availability SLA of 99.9%** - the only public cloud data warehouse service that offers this to customers.

2. Azure Cosmos DB¹⁰

Microsoft's globally distributed, multi-model database enables you to elastically and independently scale throughput and storage across any number of Azure's geographic regions with the click of a button.

It offers throughput, latency, availability and consistency guarantees with comprehensive service level agreements (SLAs), something no other database service can offer.

Hybrid options: Check

For enterprises that need data warehousing and big data both on-premises and in cloud, Microsoft can accommodate this with hybrid options.

Hybrid Cloud gives you both the control and flexibility of on-premises and the elasticity and redundancy of the cloud. It also opens up a wealth of cloud computing and advanced analytics that are accessible through Azure.

Industry-leading performance for line of business applications is delivered in a scalable, hybrid database platform with SQL Server 2016.

Advanced Analytics & Power BI: Check

Microsoft provides a comprehensive set of Advanced Analytics and Machine Learning tools included as part of the Cortana Intelligence Suite in the cloud (Azure Machine Learning, Spark for Azure HDInsight) and R Server, which can be deployed on-premises with SQL Server as well as in the cloud with HDInsight.

The integration of advanced analytics into a data warehouse is revolutionary.

It introduces a new paradigm where everything connects. Aggregations and machine learning are performed securely within the database itself without moving the data out, thereby enabling analytics on real-time transactions with great speed and parallelism.

As a result, analytical applications can now be far simpler and need only query the database for analytic results. Updating machine learning models, deploying new models and monitoring their performance can be done in the database without recompiling and redeploying applications.

Integrated Power BI simplifies data with visualisations that provide context and insights and deliver business intelligence in real-time, wherever decisions are made.

Grasp new opportunities with eBECS

eBECS provide data-driven solutions in partnership with Microsoft, offering insights that enable manufacturing organisations to identify and grasp new opportunities. We have the knowledge and skills needed to help you choose the correct tool kit for your unique business needs.

Knowing whether your suppliers are meeting your demands, if your workspace is fully optimised, and how to report on findings are key to ensuring your supply chain is working efficiently. Together with Microsoft we provide manufacturers with cost-effective, efficient tools that allow you to pull billions of rows of data into valuable information that makes sense to you.

The ability to interpret information, identify patterns and gain new insight into real-time market trends give you the power to drive efficiencies and increase productivity.

Access business profitability and consumer buying habits with a modern, cloud-based data platform on Microsoft technology, that allows you to:

- Uncover greater business insight by assimilating and understanding a wider source of data
- Increase employee productivity by making better information available at the right time
- Enhance your business agility with the ability to consume new data sources on demand
- Improve data security with consistently applied, centralised procedures
- Reduce costs through more effective, hosted data management and data storage



The complete solution

Plenty of data platform providers say they can meet your data needs but it can seem like a choice between expensive, difficult to use appliances or simpler but limited solutions that only address some of your data challenges.

Many providers offer mostly on-premises data solutions that don't take full advantage of the cloud. Some do not deliver a complete enterprise data platform, while others offer a platform but no real business intelligence capabilities.

Microsoft has succeeded in addressing all of these challenges by creating a complete enterprise data platform that is:

- ✓ Affordable
- ✓ Easy to use, managing the relational and non-relational data at all volumes with high performance
- ✓ Insightful, thanks to business intelligence and advanced analytics across all your data, no matter where it resides
- ✓ Compatible with on-premises, cloud and hybrid environments



You can balance security, governance and other enterprise requirements with the varying data needs of business users.

Combining the familiarity and security of traditional databases with the flexibility and scalability of the cloud, Microsoft delivers the optimal data platform for your individual business needs.

What's also very convenient is that businesses can make the transition in stages, expanding capabilities over time without compromising day-to-day operations.

The toolbox

What makes the Microsoft Core Data Platform solution even more unique is its complete set of solutions, which gives you choice and flexibility as you transform your data platform to meet the demands of your business.

You can utilise the solution toolbox in a way that makes most sense to your business:

- | | |
|----------------------|----------------------|
| ➔ Microsoft Azure | ➔ Azure SQL Database |
| ➔ Azure Data Lake | ➔ SQL Server 2016 |
| ➔ SQL Data Warehouse | ➔ SQL Server 2017 |
| ➔ Azure Cosmos | ➔ HD Insight |

Accelerate your journey to business value with eBECS, a Microsoft Gold partner

Determining the best approach to a data modernisation project is never easy. With over 30 different data storage, analysis, and collection products available on Microsoft's Azure platform alone, it can be difficult to even know where to begin. Success will depend on the technology as well as the application of your chosen tools; which is why the first step in any data modernisation project should be to understand your requirements. Then, assess your existing capabilities and from there - build your vision.

Our Data Modernisation Service helps manufacturing organisations through this process. Working together, we'll guide you through every stage and design a modern, state-of-the-art Data Warehouse for your business based on Microsoft's cloud-based Azure platform.

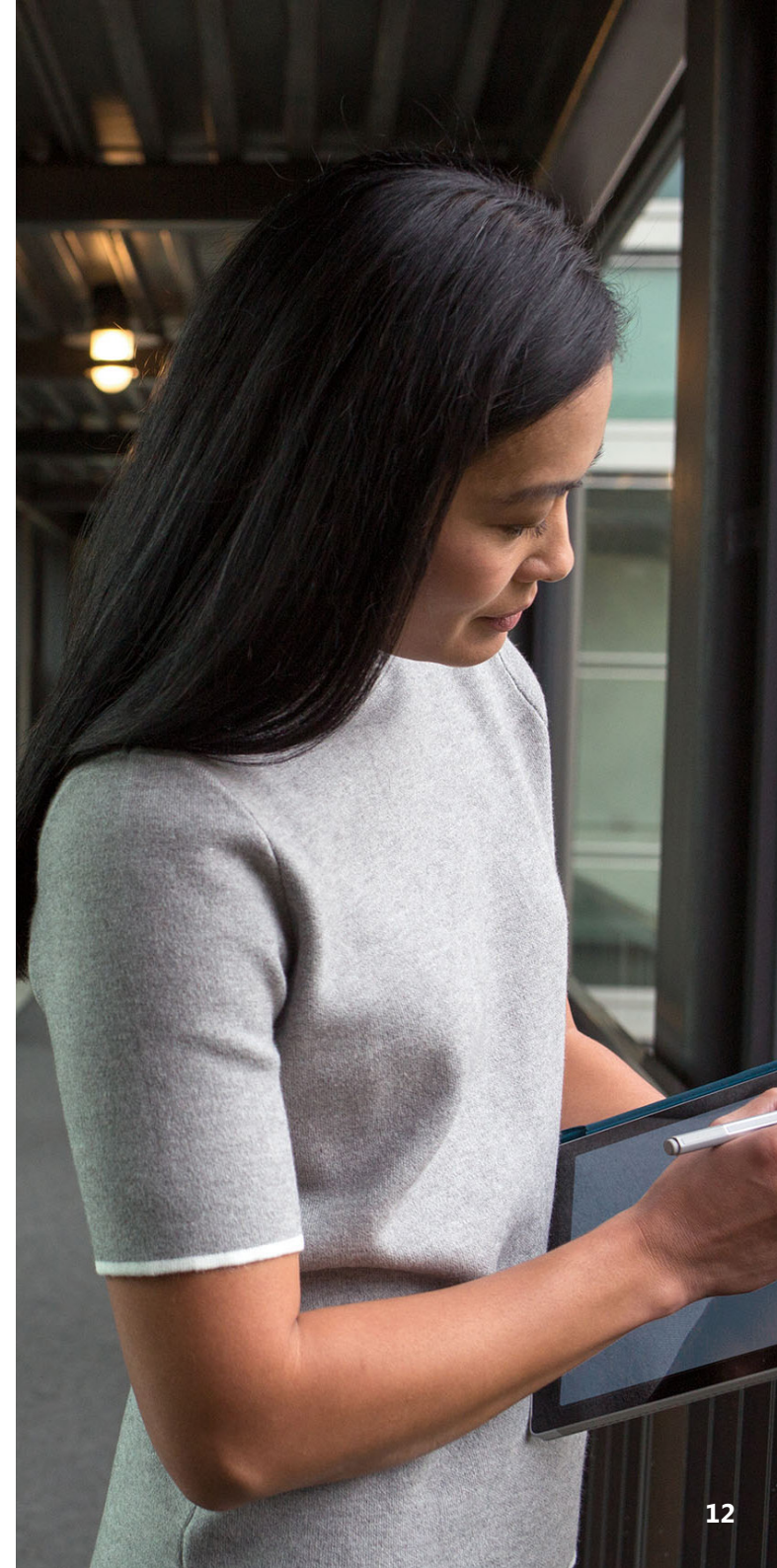
Our initial strategy review involves working in close collaboration with your in-house data managers. We'll identify the value your business will gain from a data modernisation project, so you'll understand the benefits before investing in new technology. Experts in Microsoft data solutions, our consultants will pinpoint any gaps in your current capabilities. They'll then develop detailed solution roadmaps and migration plans to steer you towards achieving your goals.

To accelerate the solution design process, we offer a portfolio of process templates and automation tools. We also develop roadmaps and migration plans based on agile project methodologies that enable you to realise benefits faster. You get peace of mind that all options have been fully considered, project costs are clear, and risks mitigated.

Your solution will be developed to meet your precise requirements, integrating any number of Microsoft products including Azure SQL Data Warehouse, Azure SQL Database, HDInsight, Power BI and Data Lake Analytics.

Our service is fully flexible and tailored to your needs, no matter what project stage you're at, and includes:

- Capabilities Assessment
- Gap Analysis
- Recommendations
- Data modernisation vision
- Solution roadmap
- Scope migration from existing platforms
- High level project plan
- Proof of concept
- Implementation
- Continuous development





Berendsen plc & eBECS

Berendsen plc and eBECS leverage the Microsoft Azure platform to optimise asset utilisation

Sheer scale of textile items in circulation results in data capture headache

Berendsen plc provides textile services across 16 European countries, renting and laundering textile items such as workwear and hotel linen to a diverse and demanding range of customers.

Volumes—and the scale of the operation—are impressive. The UK hotel and hospital linen services business operates out of 30 factories spread across the country, each equipped with a fleet of vehicles collecting used linen and delivering freshly-cleaned replacements.

From a data capture point of view, one major challenge was the sheer number of items in circulation. Each day Berendsen handles nearly 1million pieces of hotel linen, and needs to know what items are where in order to optimise asset utilisation and maintain a regular flow of fresh linen. After ruling out conventional approaches such as manual barcoding due to high costs, Berendsen discovered RFID technology to be more practical - as well as cost-effective. However, one problem still remained; how to store, analyse, and extract value from what was quickly going to become a deluge of RFID data.

Driving efficiencies with invaluable insights, from Azure

A discussion with Microsoft led Berendsen IT Director Duncan Macmillan to approach two prospective Microsoft partners, but very quickly, Macmillan selected eBECS as their preferred choice.

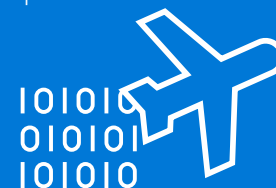
Microsoft Azure's cloud-based bundle of Apache Hadoop data processing and analytics was the chosen solution; a technology purpose-designed to scalably handle Big Data volumes at speed.

Termed HDInsight, the solution can be deployed under Windows or Linux, process unstructured, semi-structured, or structured data, and scales to petabytes on demand. It's fully-integrated with familiar Microsoft analysis tools, such as Excel and Power BI.

The financial return is driven by improved operational efficiencies, increased asset utilisation, and decreased asset losses. Thanks to the greater operational control that Berendsen will achieve over its linen assets, their customers can now enjoy an exceptional and efficient service.

"Our investment in RFID and Microsoft Azure HDInsight allows us to perform that job to a higher standard, through better understanding how our customers are using our product, which in turn enables us to better provide them with the linen that they require, when they require it."

Duncan Macmillan, IT Director,
Berendsen plc





Learn how to drive profitability by harnessing the power of BI, in our webinar hosted by eBECS and Microsoft

Webinar: New strategies in Business Analytics and Business Intelligence

The world of data analytics, business intelligence and business analytics is changing so fast that it can be difficult to keep abreast of the latest developments. As a global specialist in this area, we'd like to share our knowledge with you.

Join our 30-minute webinar and learn about the rapidly-changing world of advanced BI and IoT. We'll show you how to harness these new technologies, in order to create opportunities and drive operational efficiencies.

Our webinar is aimed at equipping Business Managers with the insight needed to make better-informed decisions and ultimately drive growth and profitability. We'll demonstrate how to present business intelligence as a decision-making tool to get the most out of your data.

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Gold Data Analytics
Gold Cloud Customer Relationship Management
Gold Cloud Platform

Register now for our Strategies in Business Analytics and Business Intelligence webinar - hosted by eBECS and Microsoft.

Date: Thurs, May 17, 2018
Time: 2:00 PM - 2:30 PM BST

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T: +44 (0)8455 441 441
www.ebeecs.com