

DIGITAL TRANSFORMATION PUTTING DATA TO WORK

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Abstract

Our world is rapidly undergoing an enormous digital transformation.

Everything is digital data – what we observe, what we discover, what we record, and how we act. And everything is a data analysis problem - understanding the world around us, understanding the world inside us and understanding how we can make this world a better place for each and every one of us.

Keywords

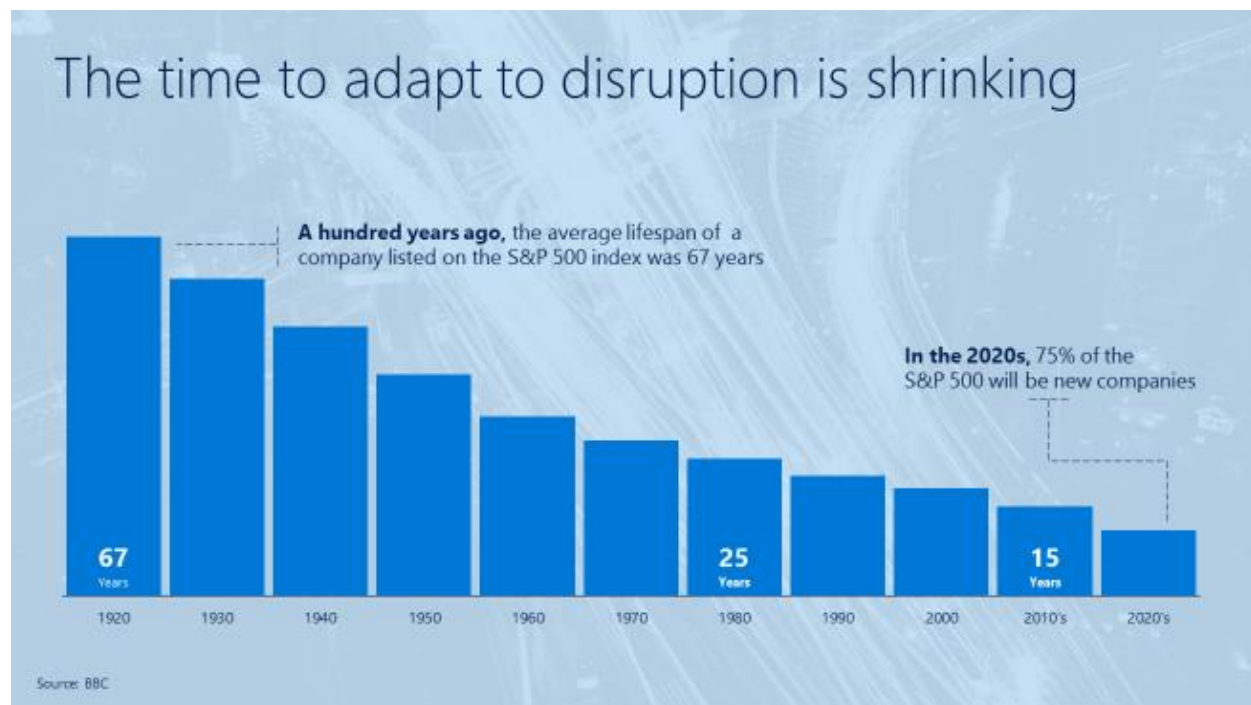
digital transformation, cloud, cloud services, big data, Azure



Whether, it's unravelling the mysteries of the universe, or curing cancer, or making the world a more sustainable place for us to live in.... the answers to these problems lie hidden in the vast amounts of data we are now able to collect. It's the same in business and government.

With platforms and tools to extract the key insights from this world of data, we stand to make enormous progress.

<https://spu.fem.uniag.sk/fem/sem-eunis/eunis20/>



Compared to the past, what's unique about the disruption happening today is the **rapid pace of change**. During past revolutions, firms had many years, even decades, to adapt. Today, that is no longer the case. One indicator of just how fast the landscape is changing is the longevity of companies on the S&P 500, an index of leading US companies.

Roughly a hundred years ago, the **average lifespan of a company** listed on the S&P 500 was **67 years**. Today, that average lifespan of a company on the S&P 500 has decreased to just **15 years**. This demonstrates that it is becoming harder for companies to stay in the lead, or even in business, for very long.

Experts believe that we'll see this trend continue. Richard Foster, a Yale University professor and former McKinsey partner, predicts that in the next decade, **only 25% of the companies currently listed on the S&P 500 will remain there**, meaning the other 75% will be replaced by new companies. These new companies will be those that take advantage of innovative technological capabilities to rapidly gain ground in their chosen markets. Similarly, the **existing companies that remain on the index will be those that rapidly innovate** and evolve their businesses.

The bottom line is, **today's organizations must adapt quickly to change**, using new technologies that fuel competitive advantage, **or risk getting left behind**. That's why it's imperative to make the most of big data, the cloud and intelligence capabilities, all of which help companies accelerate their speed of business through smarter decision-making and faster execution.

Statistics source:

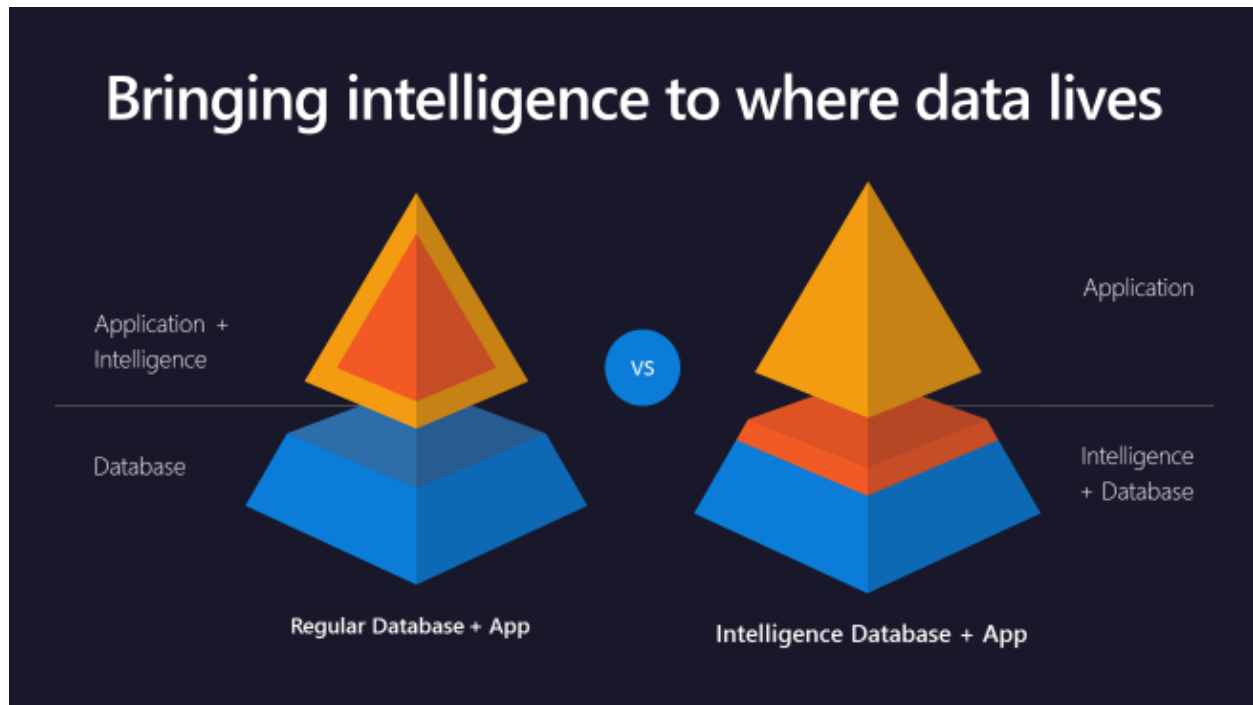
BBC, 2012, quoting Richard Foster - <http://www.bbc.com/news/business-16611040>

"The average lifespan of a company listed in the S&P 500 index of leading US companies has decreased by more than 50 years in the last century, from **67 years in the 1920s to just 15 years today**, according to Professor Richard Foster from Yale University. Professor Foster estimates that by 2020, more than three-quarters of the S&P 500 will be companies that we have not heard of yet."

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Bringing intelligence to your databases

<Transition>: Let us talk more about how we're bringing intelligence to your databases.



We are innovating on running algorithms close to where the data lives – so you can easily build fast, large scale, compliant and secure AI, without the latency of large scale data movement.

Why? In the past, a common application pattern was to build and host statistical and analytical models and business logic outside the database, in the application layer or in specialty statistics tools.

This meant that the application layer had to perform a lot of heavy lifting.

Fast data extraction, concurrency, high availability, resource management, security, access control, compliance, manageability... A lot of heavy lifting.

But a modern commercial database gives you all that built-in. It already does that heavy lifting.

We are bringing the ability to run machine learning and AI in a performant multi-threaded, distributed way at scale directly in the database.

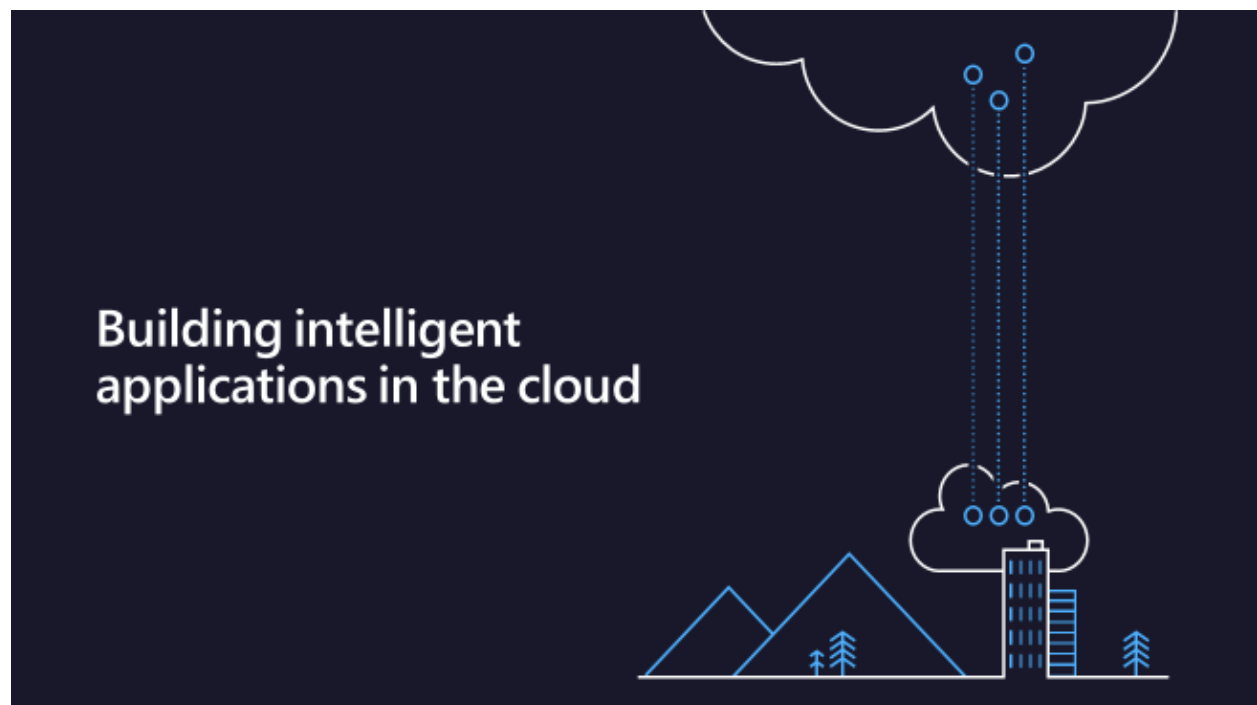
This includes the Microsoft Machine Learning algorithms grown from Microsoft's leading AI research, and even the latest in open source such as R & Python.

Now you can build enterprise grade intelligent applications in a far simpler way.

And this is available to you both on-premises and in the cloud.

No one but Microsoft can do this for their customers.

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Cortana Intelligence is Microsoft's fully managed **intelligent, big data and advanced analytics** offering in the cloud, designed to help you **transform your data into intelligent action**.

It is a comprehensive suite that brings together technologies throughout Microsoft. It provides fast and flexible deployment, with a simple monthly subscription to reduce time and cost challenges.

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Cortana Intelligence enables customers to benefit from Microsoft's investment in the intelligent cloud and advanced analytics, spanning our leading cloud platform with easy to use tools and services that integrate with existing infrastructure and enable enterprises to extend business solutions as their needs grow over time.

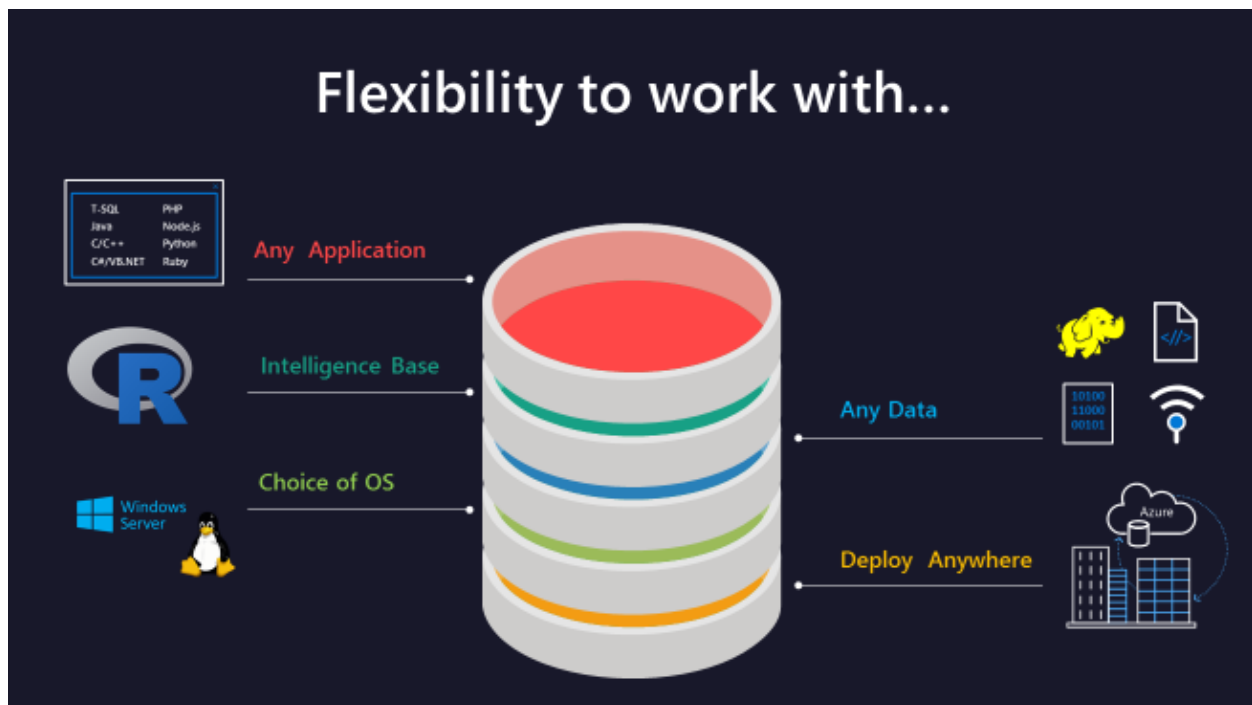
With Cortana Intelligence, we are taking years of research and innovation – spanning technology & infrastructure for advanced analytics, including capabilities such as machine learning, big data storage and processing in the cloud, intelligence capabilities like vision, face and speech recognition, and integration with Cortana, Microsoft's personal digital assistant, with the goal of helping enterprise customers make better, faster decisions to accelerate their speed of business.

<Transition>: Let's talk more about what technologies Cortana Intelligence includes.

Azure provides an end-to-end platform with an integrated and comprehensive set of tools and services to help you build intelligent applications.

We call it Cortana Intelligence. It integrates services for Information Management, Big Data, Machine Learning, AI, a Bot Framework and Business Intelligence.

<Transition>: The best way to understand what's possible with all this power is to walk through an example of an AI application built on the cloud.



Flexibility to deploy anywhere;

Flexibility to use any type of data – even querying Hadoop systems and handling JSON Data.

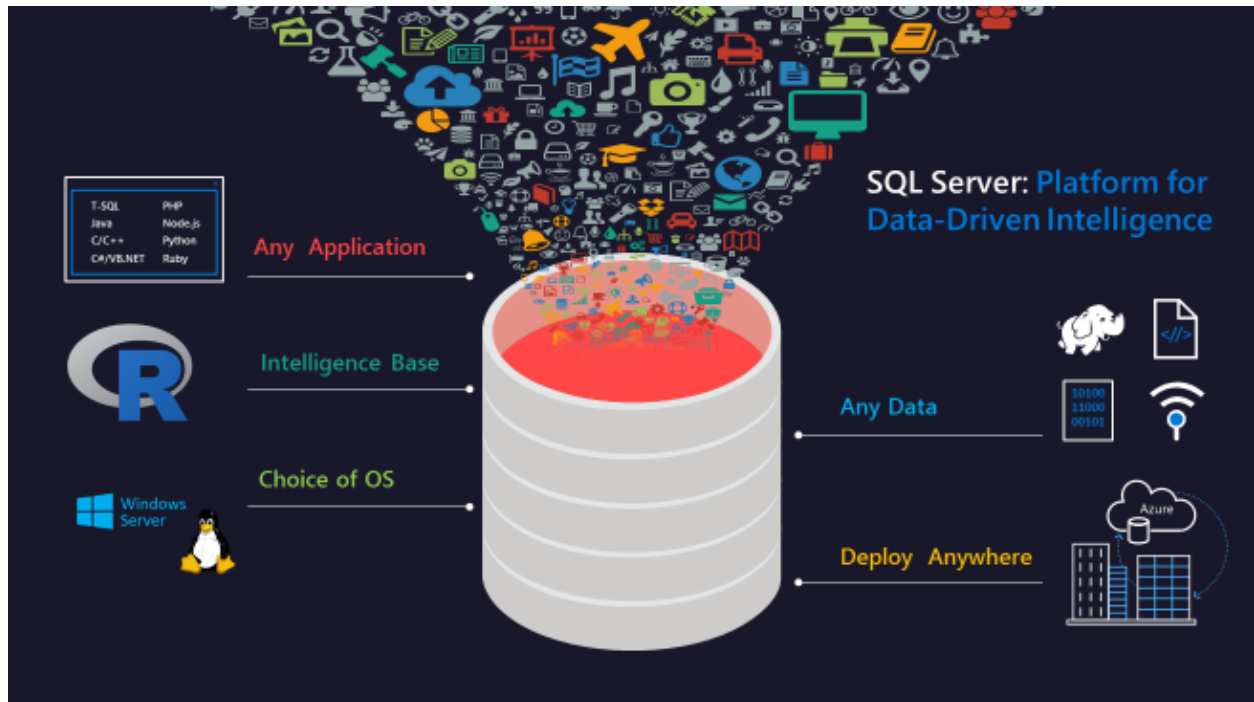
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Run in Windows, Linux, Docker.

Use Open Source R and Python to program intelligence.

And any type of application – Java/Ruby/Python – can efficiently use the database.

It's truly a platform for data-driven intelligence.



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We are embedding machine learning directly into our cloud services to deliver intelligent data services that keep your data safe. For example, consider the security features in Azure SQL DB.

Our ML systems analyze and learn from over 700 TB data/per day to ensure we keep your applications highly efficient and data safe – through automatic auditing and threat detection. With active Threat Detection, the service can identify anomalies in your workload and alert you of a potential attack like SQL injection. The service does the hard work so you don't have to – so you can focus on the business problems you're solving and creating breakthrough applications.

In addition to automatic threat detection, [Azure AD authentication](#) provides an alternative to SQL Authentication. It simplifies password management by allowing you to connect to a number of Azure services including Azure SQL Database using the same identity.

[Row-Level Security](#) allows access to rows of data based on a user's identity, role memberships, or query execution context.

[Dynamic Data Masking](#) lets you define masking patterns on database columns to limit the exposure of sensitive data.

<Transition>: Let me show you how easy it is to turn on auditing and threat detection in Azure SQL Database.

The graphic features a dark blue background with a world map in the center. The map is overlaid with various icons representing different types of data and connectivity, such as a smartphone, a car, an airplane, a truck, and a server rack. The text 'Grow with your needs' is prominently displayed at the top in white, followed by 'Globally-distributed, blazing-fast NoSQL – Azure Document DB' in a lighter blue. Below the map, the text 'Run your mission-critical applications at global scale' is written in white. At the bottom, there is a blue horizontal bar containing four circular icons with corresponding text: a globe for 'Globally Distributed', a circular arrow for 'Limitless scale of throughput & storage', a clock for 'Single digit millisecond latency', and a bar chart for 'Comprehensive SLAs'.

DocumentDB is designed for such ultra large scale SaaS applications. It's the 1st planet-scale globally-distributed NoSQL database service.

<https://spu.fem.uniag.sk/fem/sem-eunis/eunis20/>

It's designed as a globally distributed database system from the ground up, allowing customers to distribute their data across *any* number of Azure regions worldwide.

Apps can serve data from a region closest to their users for fast, uninterrupted access.

It allows customers to scale throughput and storage independently across any number of regions.

It's low latency, and guarantees less than 10 ms latencies on reads and less than 15 ms latencies on writes for at least 99% of requests.

And it is the only service that offers comprehensive SLAs for data-loss, latency, availability, consistency and throughput.

The trusted platform

- Keep your data safe**
 - You own & control your data
 - We conform to global standards
 - >90% of Fortune 500 use Microsoft Cloud
- Grow with your needs**
 - More Azure regions than AWS & Google combined
 - Machine learning accelerated DB performance
 - Highly scalable data services

First let's talk about keeping your data safe.

You own your own data. With Azure, you have ownership of customer data—that is, all data, including text, sound, video, or image files and software, that are provided to Microsoft by you, or on your behalf, through the use of Azure. You can access your customer data at any time and for any reason without assistance from Microsoft. We will not use customer data or derive information from it for advertising or data mining.

You are in control of your data. Because the customer data you host on Azure belongs to you, you have control over where it is stored and how it is securely accessed and deleted.

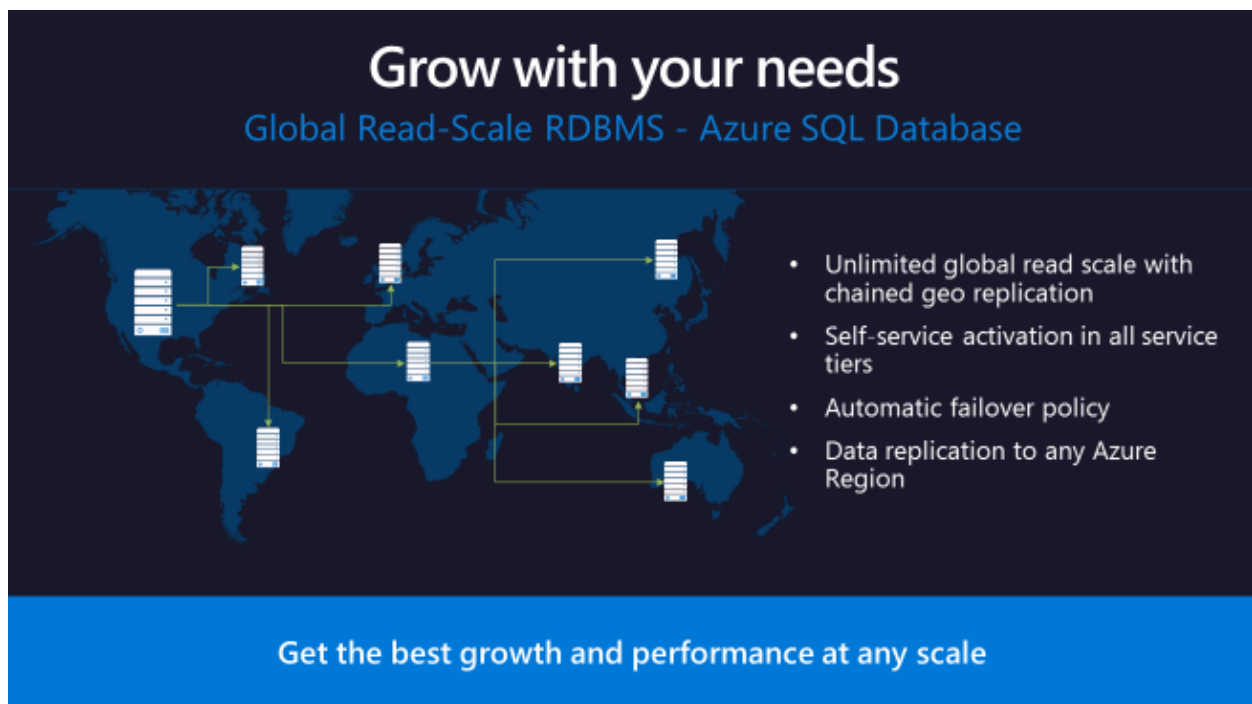
We conform to global standards. Azure meets a broad set of international and industry-specific compliance standards, such as ISO 27001, HIPAA, FedRAMP, SOC 1 and SOC 2, as well as country-specific standards like Australia IRAP, UK G-Cloud, and Singapore MTCS.

Second, you can trust us to grow and scale, so that your cloud services have no limits on headroom. With every iteration and release of our products we continue to improving our capabilities to ensure that we keep your data safe and that our infrastructure can grow with your needs over time.

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Jan-2017: Azure compliance coverage includes 53 offerings



Our databases are built to scale for the most demanding applications leveraging the incredible global scale of Azure.

For example, Azure SQL-DB allow any SaaS application to achieve Unlimited global read-scale with chained geo-replication.

Azure SQL-DB supports Self-service activation in all service tiers

<https://spu.fem.uniag.sk/fem/sem-eunis/eunis20/>

You can set an Automatic failover policy
And you can replicate Data to any Azure Region, allowing you to serve read queries for SaaS applications from multiple regions globally.
Your applications have plenty of headroom!



The Azure cloud offers more than 100 datacenters serving 140 countries

Kontakt

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