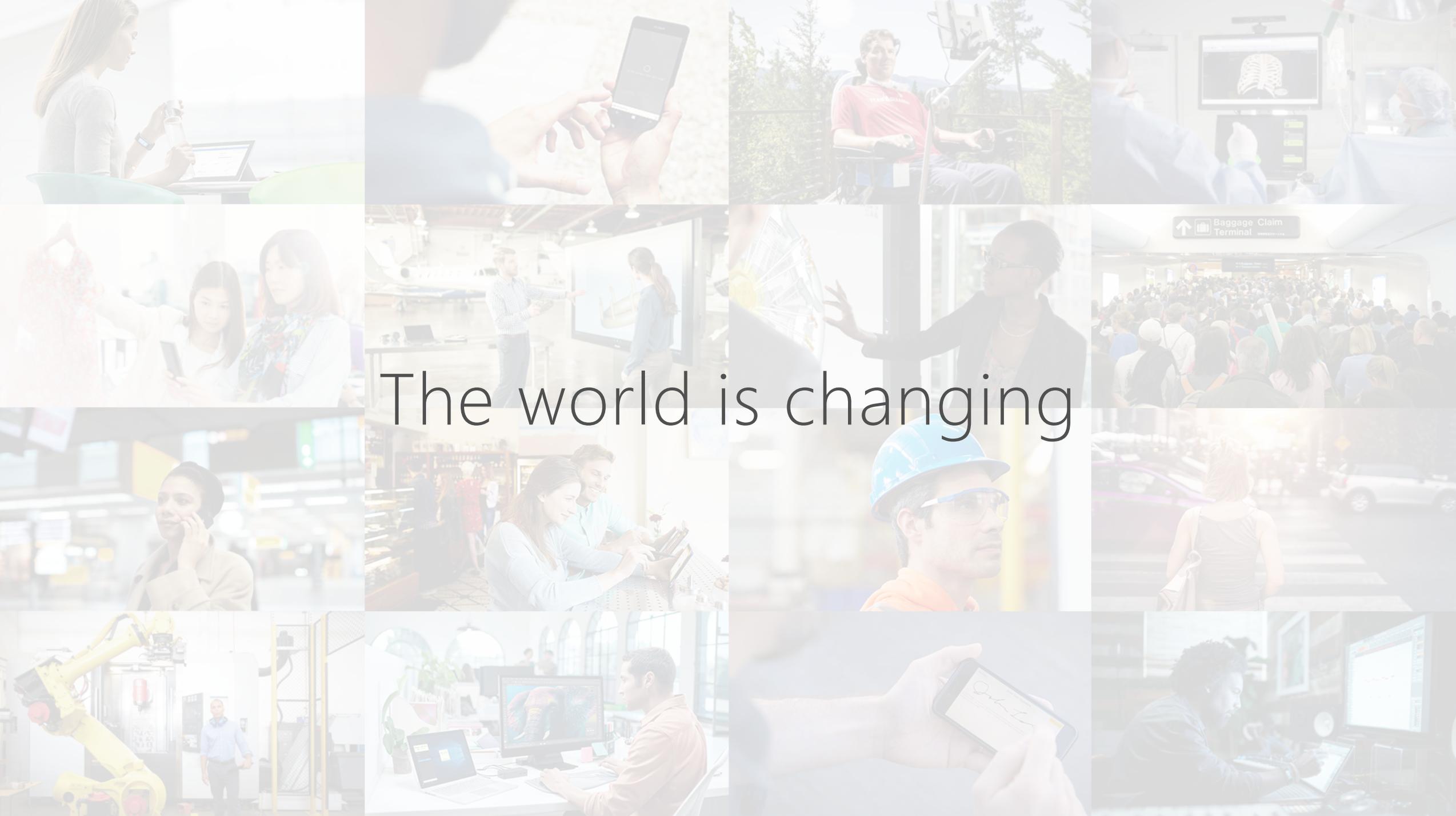
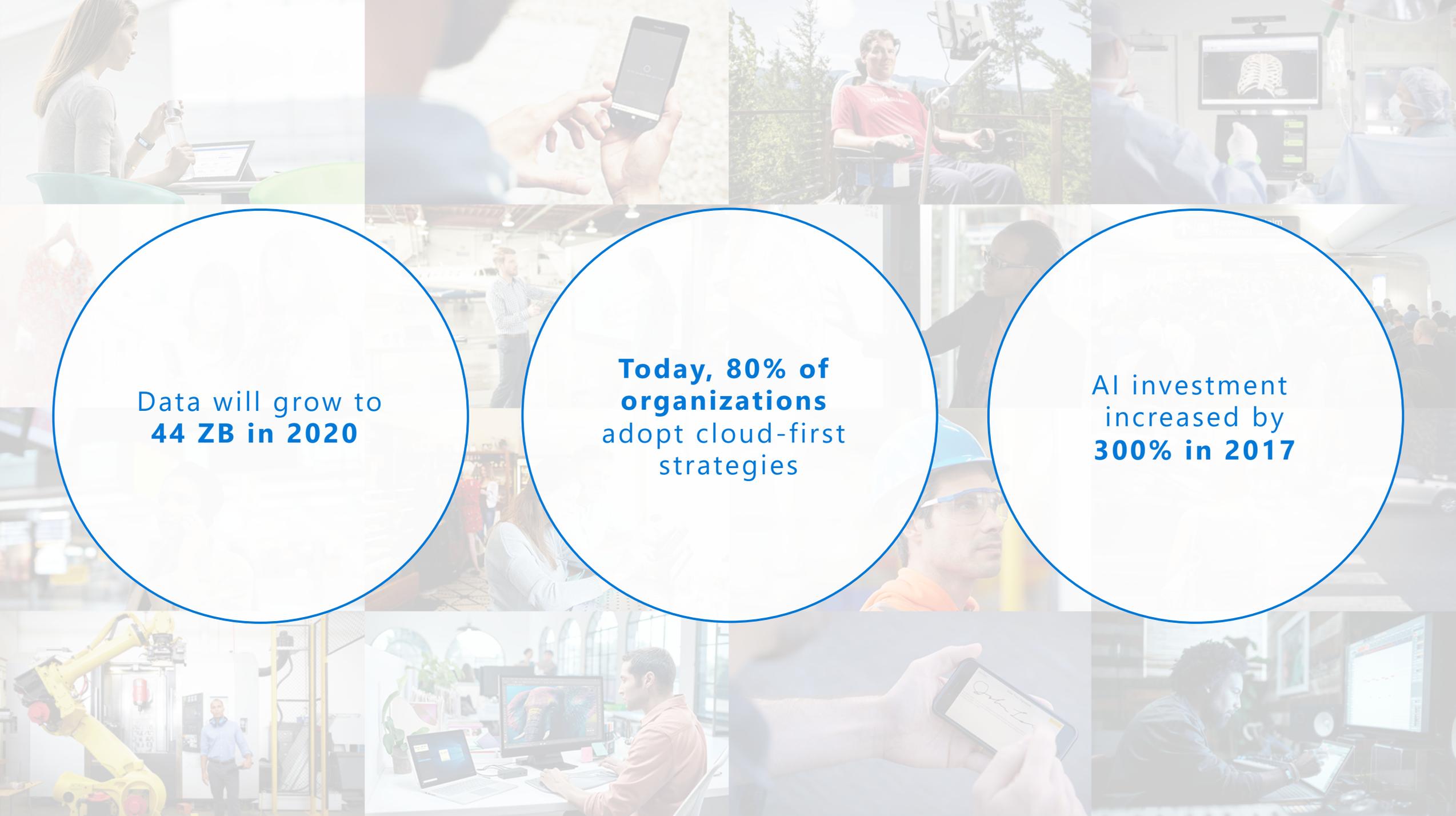


Transform your data estate with cloud, data and AI

SQL Server 2017 and Azure Data Services



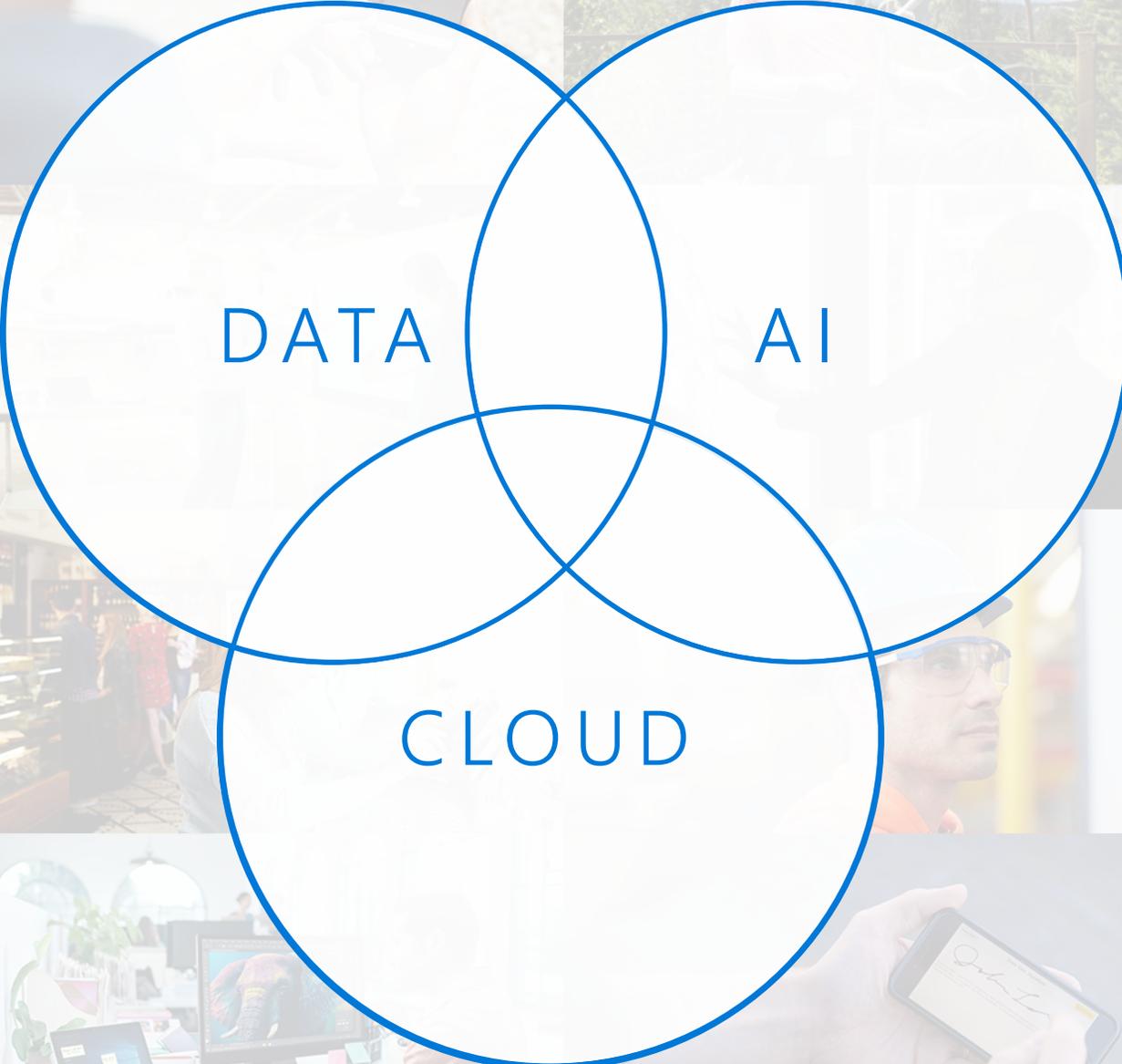
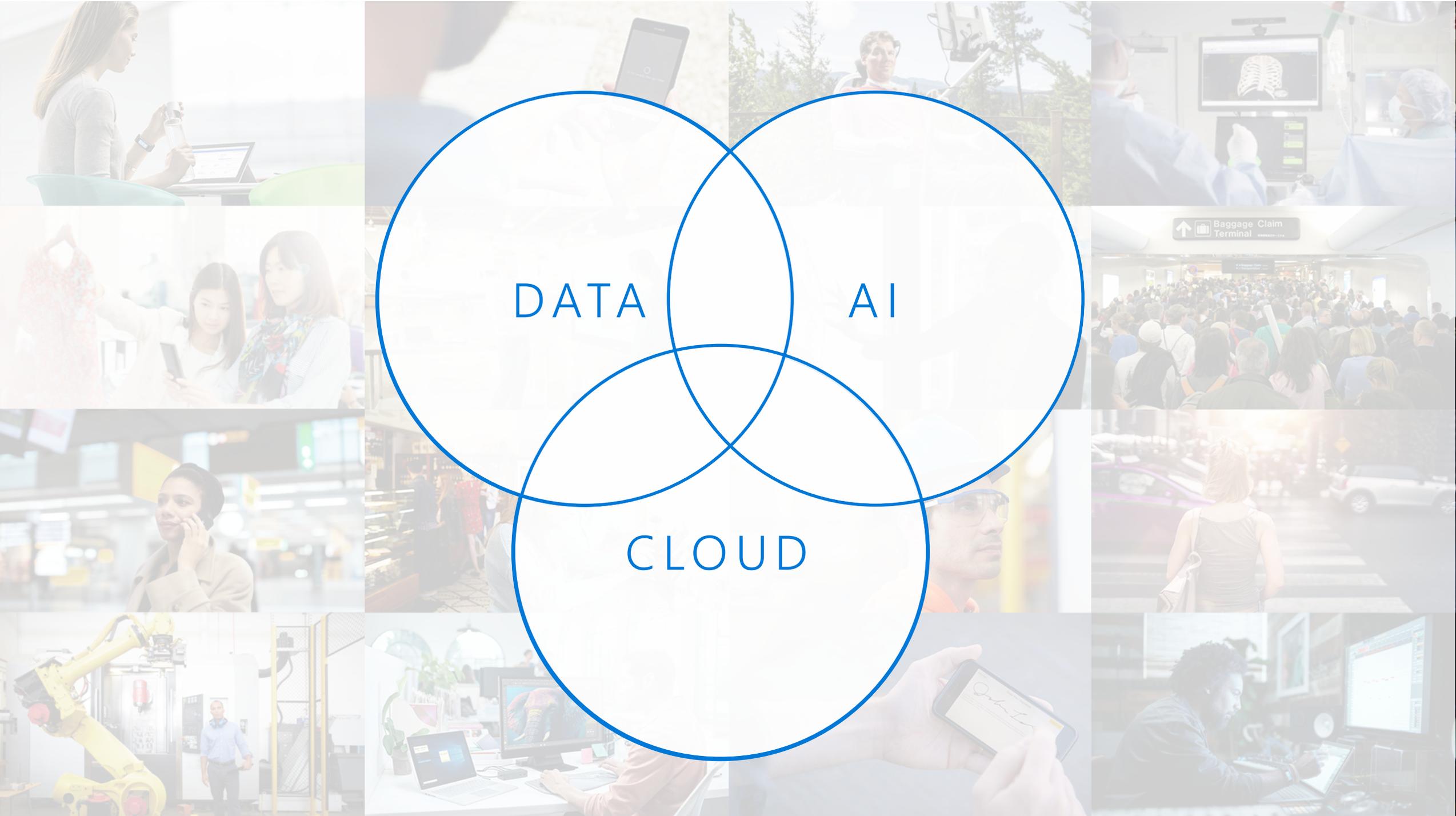
The world is changing



Data will grow to
44 ZB in 2020

Today, 80% of organizations
adopt cloud-first
strategies

AI investment
increased by
300% in 2017



DATA

AI

CLOUD

Organizations that harness data,
cloud, and AI outperform

Companies surveyed include well-known enterprises across key industries

Financial services



Retail



Manufacturing



Consumer goods



Organizations that harness data, cloud, and AI outperform

**Nearly double
operating margin**

**\$100M in additional
operating income**

They out-innovate



jet

The Jet logo is displayed in a bold, lowercase, sans-serif font. It is overlaid on a semi-transparent image of a modern shopping mall with multiple levels, escalators, and people walking.



DocuSign

The DocuSign logo features the word "Docu" in a bold, sans-serif font, followed by "Sign" in a black, cursive script font. A registered trademark symbol (®) is located at the end of the word "Sign". The logo is overlaid on a semi-transparent image of a hand holding a pen over a document with a signature.

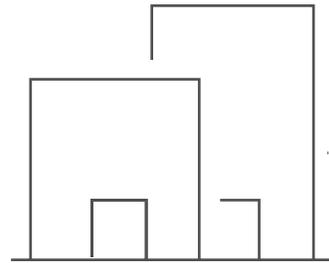


Honeywell

The Honeywell logo is written in a bold, uppercase, sans-serif font. It is overlaid on a semi-transparent image of a person's hand holding a blue mobile device, possibly a PDA or early smartphone, with a white cord attached.

They rely on a modern data estate

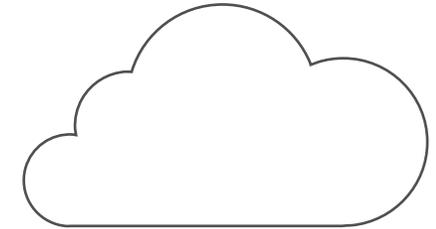
THE MODERN DATA ESTATE



On-premises
Private cloud

- Operational databases
- Data warehouses
- Data lakes

← HYBRID →



Cloud

- Operational databases
- Data warehouses
- Data lakes



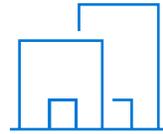
Reason over any data, anywhere

Flexibility of choice

Security and Performance

THE MODERN DATA ESTATE

Microsoft's on-premises solution



SQL Server

1/10th the cost of Oracle

Operational databases >



Industry leader 4 years in a row

Data warehouses >



#1 TPC-H performance

Data lakes >



T-SQL query over any data

Reason over any data, anywhere



Only commercial DB with AI built-in



Flexibility of choice



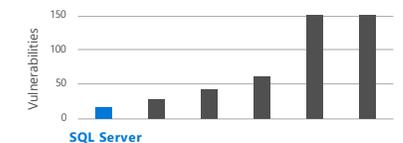
Any language, any platform, anywhere



Security and Performance



Most secure over last 7 years



SQL SERVER 2017

INDUSTRY-LEADING PERFORMANCE AND SECURITY NOW ON LINUX AND DOCKER

Choice of platform and language



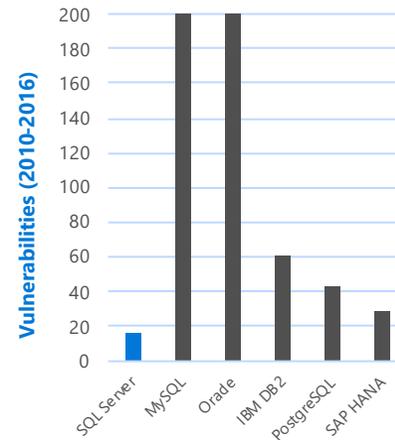
T-SQL	PHP
Java	Node.js
C/C++	Python
C#/VB.NET	Ruby

Industry-leading performance



- #1 OLTP performance
- #1 DW performance
- #1 price/performance

Most secure over the last 7 years

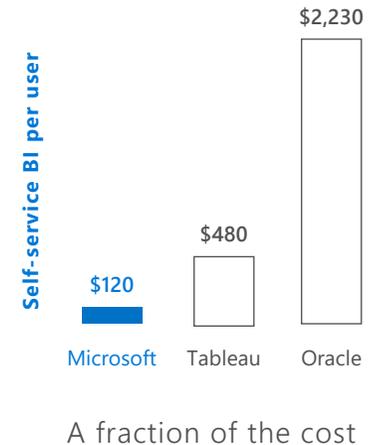


Only commercial DB with AI built-in



R and Python + in-memory at massive scale
Native T-SQL scoring

End-to-end mobile BI on any device



In-memory across all workloads

Most consistent data platform



INDUSTRY LEADING TCO

AVOID EXPENSIVE ORACLE ADD-ONS WITH BUILT-IN FEATURES

IN-DB ADVANCED ANALYTICS	\$320K	Everything built-in
MOBILE BI & SELF-SERVICE BI		
#1 TPC-H—DW		
BUILT-IN ETL	\$3,745,000	11.7x more
INDUSTRY LEADER—OLTP	ORACLE®	

LEADER IN OPERATIONAL DATABASE MANAGEMENT SYSTEMS



Leader in BI and analytics platforms



Leader in data management solutions for analytics

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NEW FEATURES IN SQL SERVER 2017

Support for graph data and queries

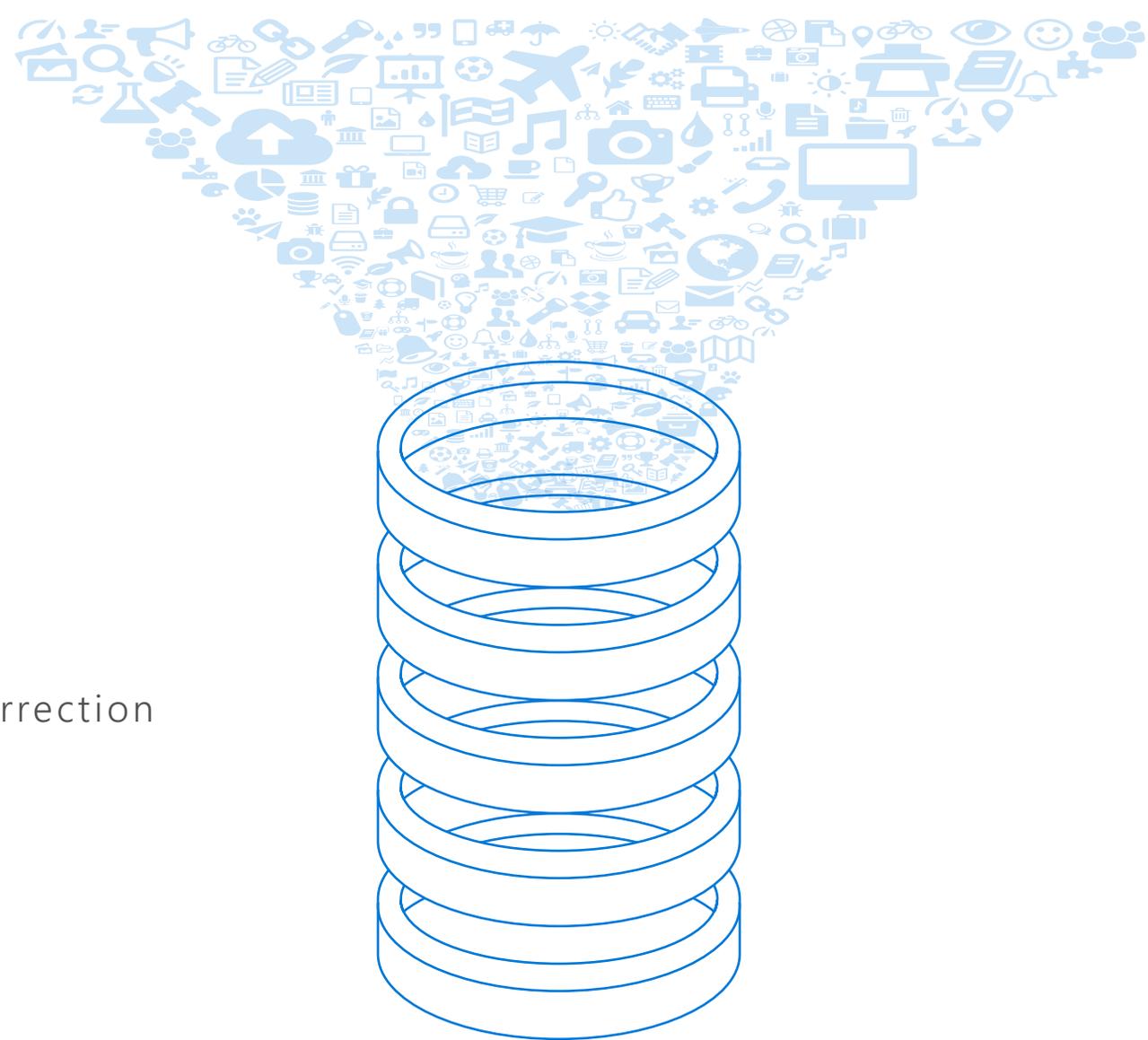
Advanced Machine Learning with R & Python

Native T-SQL scoring

Adaptive Query Processing and Automatic Plan Correction

Cross Platform HA (OS level redundancy)

Agile Dev/Ops with support for containers



DELIVERING INSIGHTS FOR INVESTORS 15X FASTER

Real-time analytics with SQL Server on Linux

Challenge

- FinTech company's loan intelligence platform experienced performance slowdowns with PostgreSQL
- Slow query speeds and time-consuming maintenance

Impact

- Query times cut from 30 to <2 seconds with SQL Server
- Management time reduced 90%
- Simplified dev operations with Linux



"The biggest benefit for us was that we were able to switch SQL Server to Linux and not have degradation in other areas."

Devon Hinton, Software Engineer, dv01

700K+ CUSTOMERS PROTECTED

Most secure database

CHALLENGE

Ecuadorian bank must provide unwavering security for customers while data volume and distribution channels rapidly expand

IMPACT

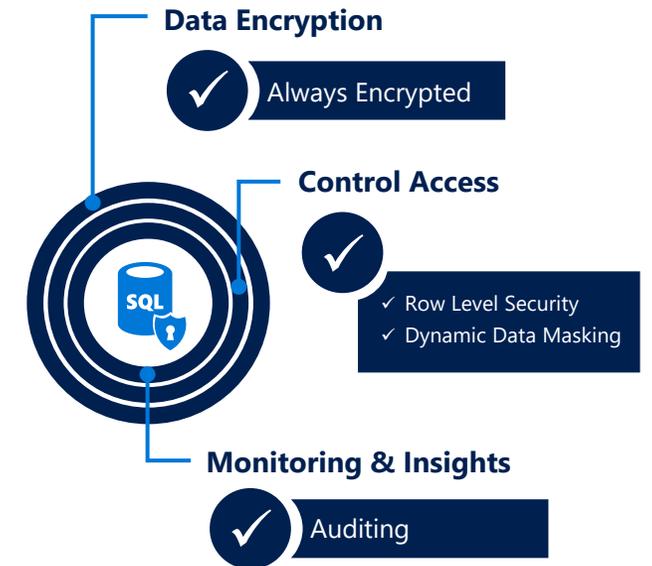
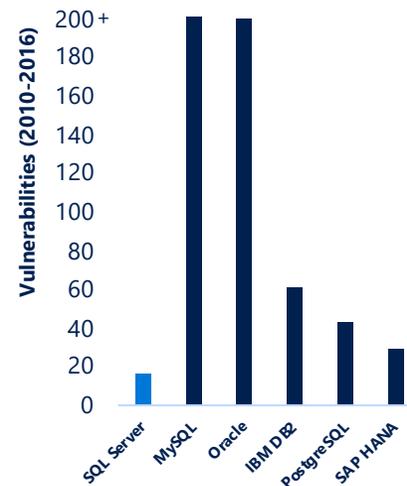
Internal data concealed with **Dynamic Data Masking** while testing applications

Customer data protected from app to database with **Always Encrypted and Row Level Security**



Layers of security

Least vulnerable over the last 7 years

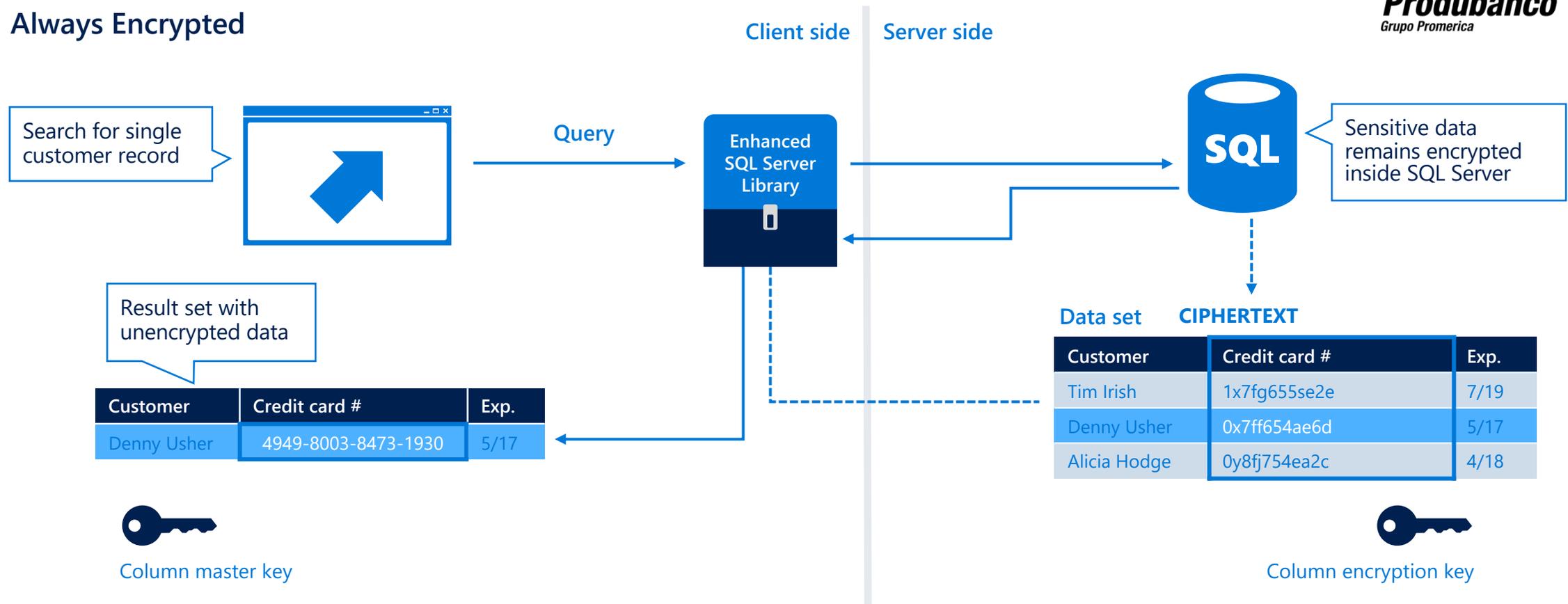


Protection at rest and in motion

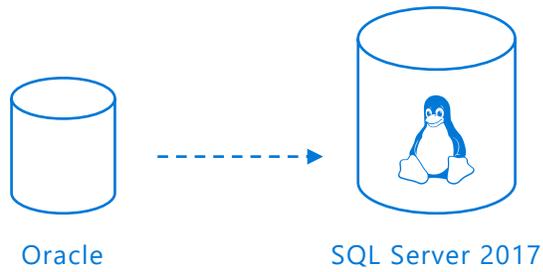
ENCRYPT DATA AT REST AND IN MOTION



Always Encrypted



KEY OFFERS

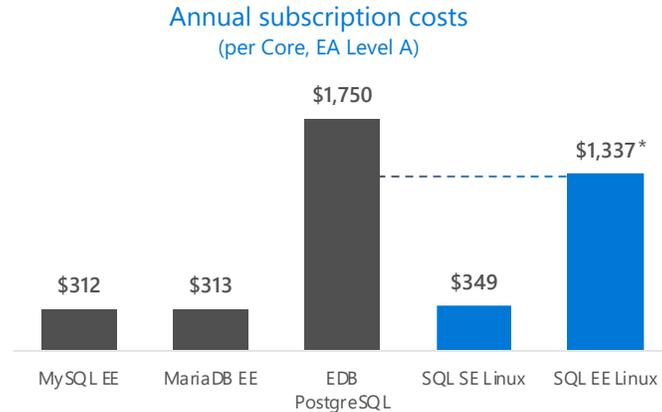


Move from Oracle to SQL Server 2017 on Windows/Linux

Migrate to SQL Server **to receive free licenses with Software Assurance** subscription, training, and subsidized support service

EA licensing requires 50 core minimum, no minimum for SCE licensing

Training and support available while supplies last through June 30, 2018



Run SQL Server 2017 on Linux

Purchase SQL Server 2017 on Linux annual subscriptions for **30% less than traditional subscription price**

Subscription is available for Standard and Enterprise Edition per core

Expires June 30, 2018

*SQL EE Linux promotion is priced 24% below Enterprise DB PostgreSQL

 **redhat.**
+
SQL Server 2017

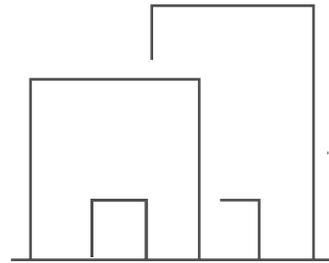
Get Red Hat Enterprise Linux on SQL Server 2017

Purchase new Red Hat Enterprise Linux operating system licenses to run SQL Server 2017 at a **discount of 30%**

Red Hat Enterprise Linux OS licenses can be purchased through Red Hat sellers

Expires June 30, 2018

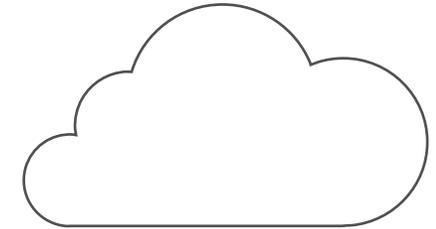
THE MODERN DATA ESTATE



On-premises
Private cloud

- Operational databases
- Data warehouses
- Data lakes

← HYBRID →



Cloud

- Operational databases
- Data warehouses
- Data lakes



Reason over any data, anywhere

Flexibility of choice

Security and Performance

THE MODERN DATA ESTATE

Microsoft's cloud solution



Azure data services

Operational databases >



70% faster than competition
Azure SQL Database



<10ms latency SLAs
Azure Cosmos DB

Data warehouses >



2x the global reach
Azure SQL Data Warehouse

Data lakes >



99.9% SLA
Azure Data Lake, Databricks, HDInsight

Reason over any data, anywhere



AI built-in



Flexibility of choice



Any language, any platform, anywhere



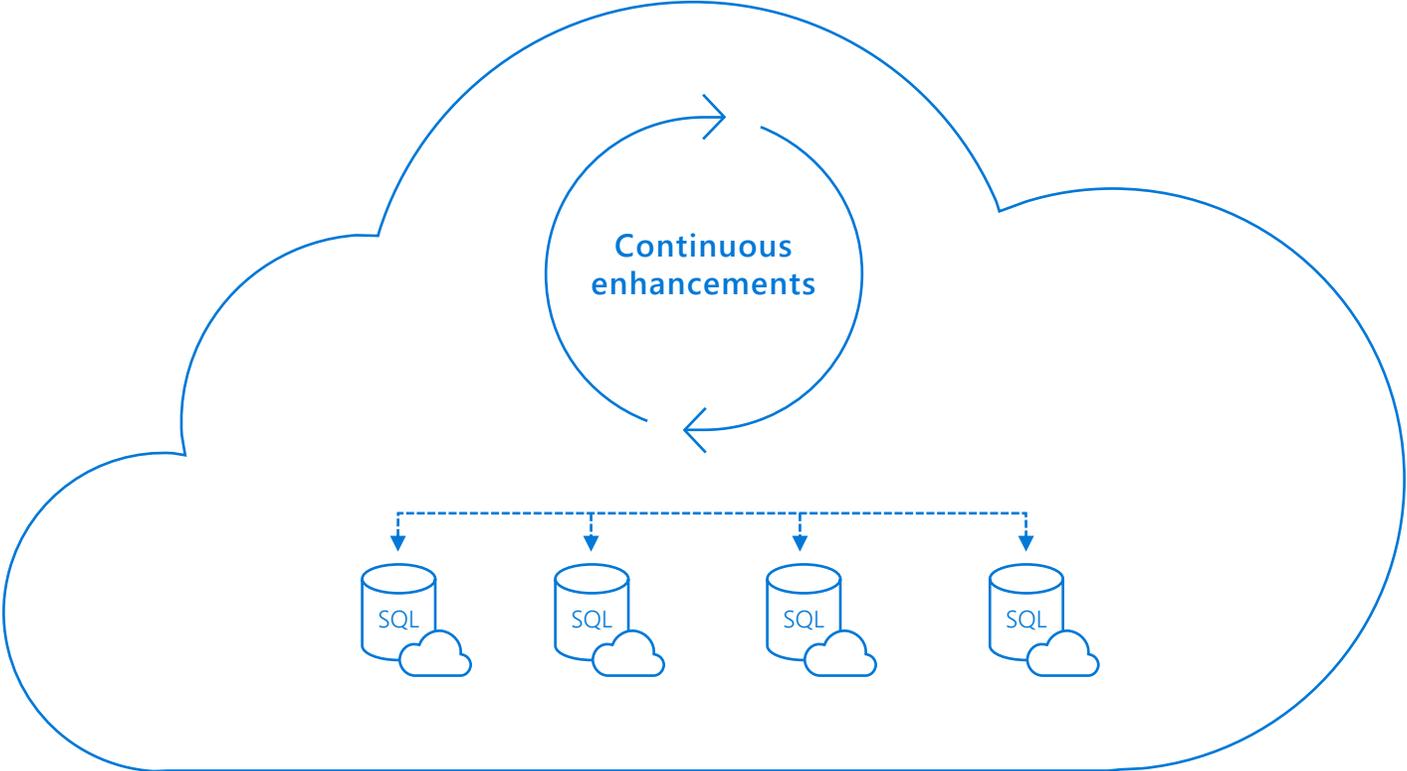
Security and performance



More certifications than any other cloud



CLOUD-FIRST APPROACH BREEDS FASTER INNOVATION



STREAMLINE YOUR JOURNEY TO THE CLOUD
WITH EASY APP MODERNIZATION

APP MODERNIZATION

Optimize IT



Lift + shift tactical apps to cloud to reduce cost

406%

Five-year ROI

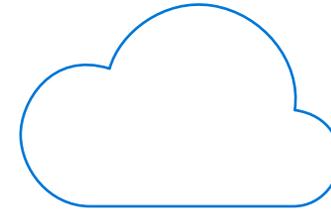
53%

Less expensive than on-prem/hosted

98%

Less database downtime

Transform customer experiences



Migrate and reimagine apps that matter to your business

100T

Transactions per day on Jet.com

100M

Customers supported worldwide with Citrix

450M

Fans get real-time experiences with Real Madrid

LIFT + SHIFT AND TRANSFORM

Seamless and reliable migration at scale

Lift and shift to the cloud with no code changes

Modernize across SQL Server, PostgreSQL, MySQL and MongoDB

Maximize current on-premises license investments NEW



SQL Server
OSS databases

Azure Database Migration Service

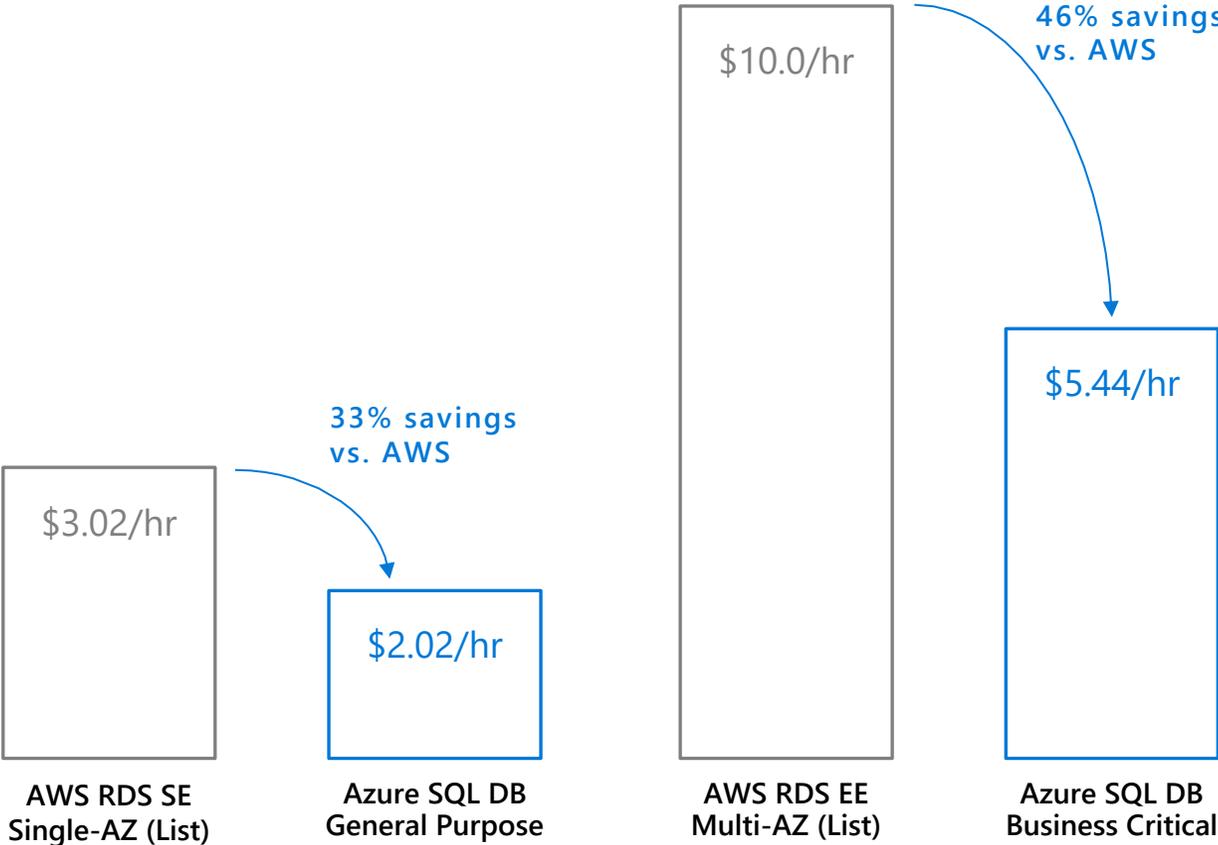
Azure SQL Database
Azure Cosmos DB with MongoDB API
Azure Database for MySQL
Azure Database for PostgreSQL



SQL PAAS COST COMPARISON VS. AWS RDS

Azure SQL DB Managed Instance General Purpose is 33% cheaper than AWS RDS SE (Single-AZ) at list prices

Azure SQL DB Managed Instance Business Critical is 46% cheaper than AWS RDS EE (Multi-AZ) at list prices

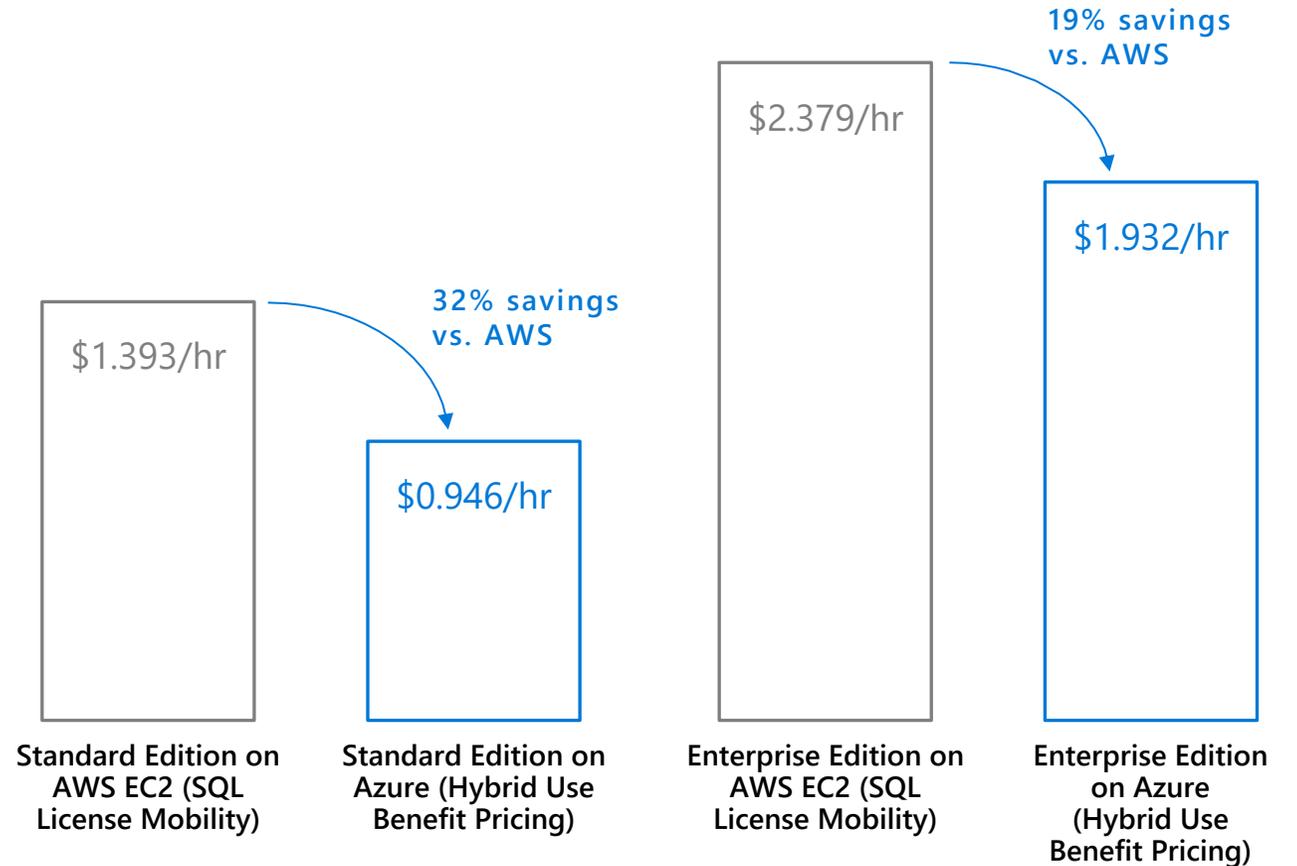


Note: On-Demand Prices for a Managed Instance price. Pricing accessed on October 2, 2017. US East 2. Comparable AWS RDS is db.r3.2xlarge. AWS Prices based on US East (Virginia).

SQL IaaS COST COMPARISON VS. AWS

Azure will always be cheaper for SQL on IaaS for customers with Software Assurance on Windows Server and SQL Server

These customers can combine both the hybrid use benefit for SQL and Windows for best savings



Note: On-Demand Prices for a D13 v2 VM. Pricing accessed on October 2, 2017. US East 2. Comparable AWS VM is r3.2xlarge. AWS Prices based on US East (Virginia). Savings analysis assumes that customer is paying software assurance on SQL Server. Does not include SA for Windows Server as those costs are fairly negligible - \$164 per 2-core license for WS DC, and \$23 for Standard (OLP, NL).

AZURE SQL DATABASE

THE INTELLIGENT CLOUD DATABASE FOR APP DEVELOPERS

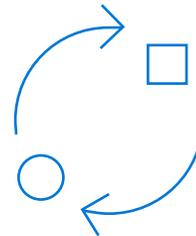
**Intelligent
DBaaS**



**Privacy
and trust**



**Seamless
and compatible**



**Competitive
TCO**



Lift and shift
SQL Server apps

Migrate SQL Server
data marts

Build intelligent
apps with R built-in

Save up to 30% with Azure
Hybrid Benefit for SQL Server

SERVING 55K CUSTOMERS WITH 100 STAFF

ISV deploys SaaS at cost-effective scale

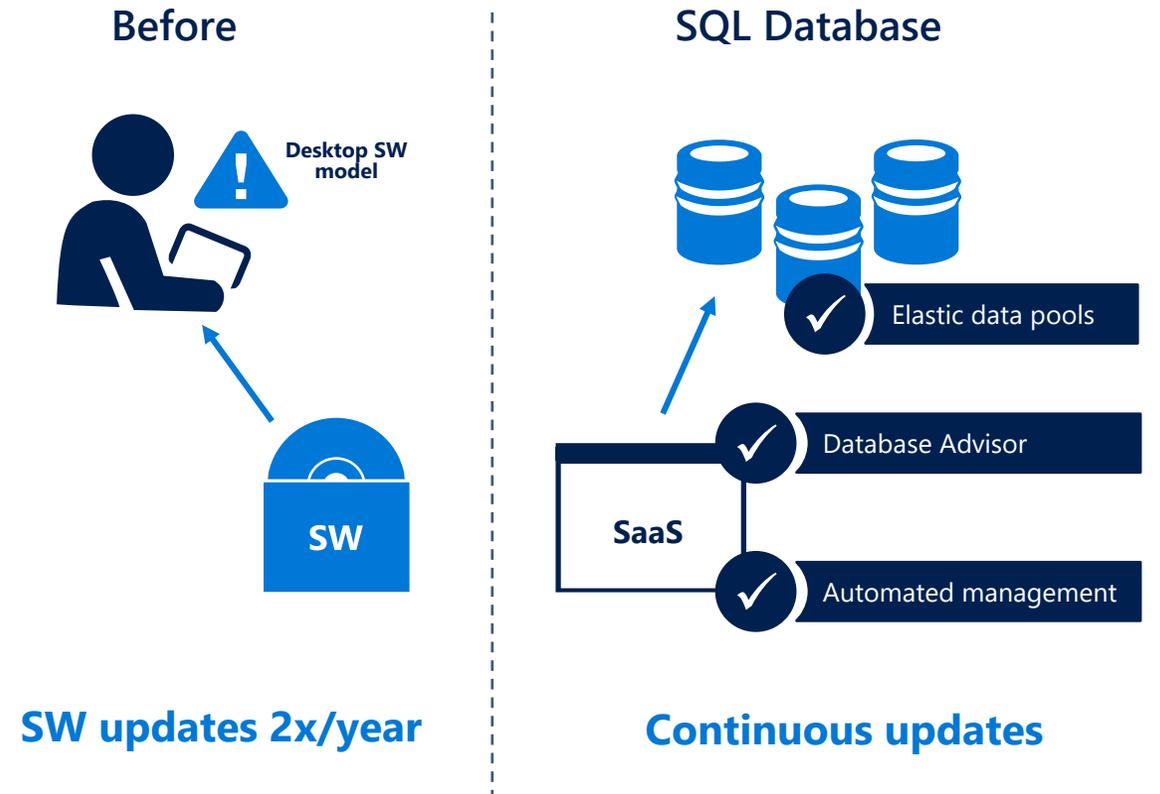
CHALLENGE

Dutch SW provider needed to replace desktop SW delivery model to innovate faster and meet customer needs

IMPACT

Better customer experience through frequent product updates and SaaS model that scales on demand

Automated management reduced overhead and provisions performance with scale



AZURE DATABASE FOR MYSQL AND POSTGRES QL

Work in the DB of your choice

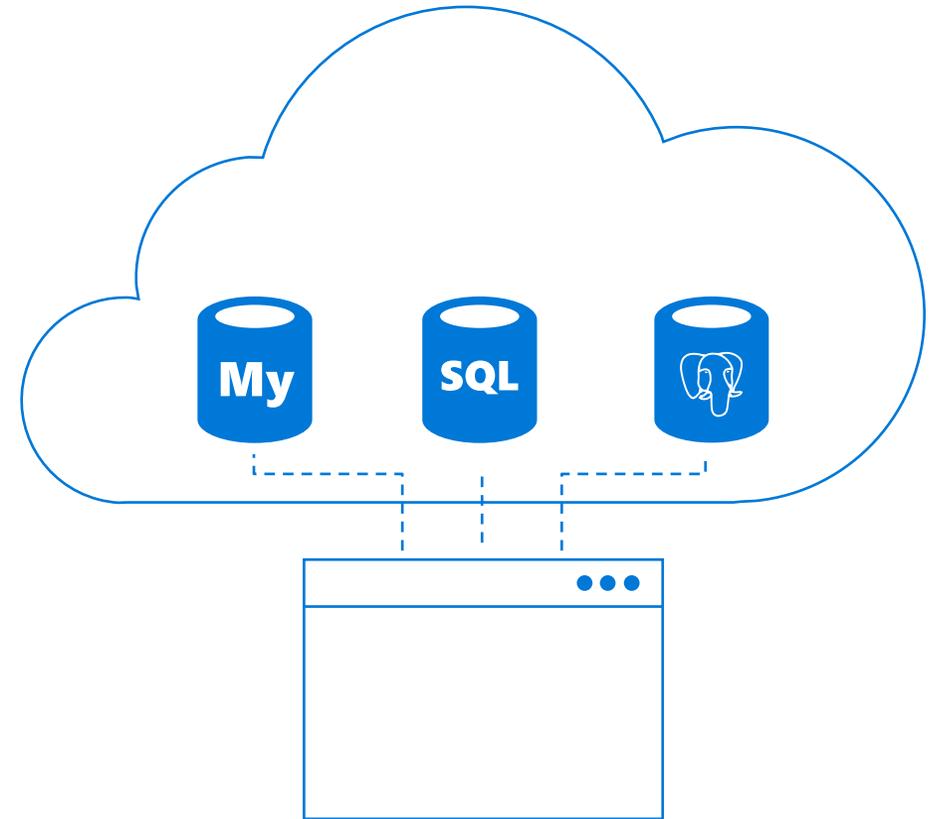
Create with built-in high availability

Set up in minutes, scale on the fly

Sustain performance with adaptive improvements

Rest easy with unparalleled security

Standard tier [PREVIEW](#)



Lift and shift MySQL
and PostgreSQL apps

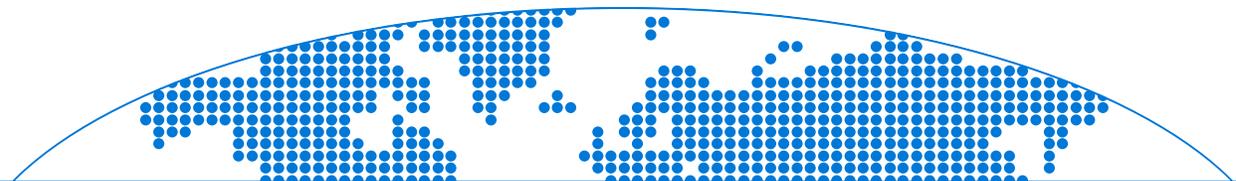
Migrate WordPress
and Drupal

Build apps with your
OSS DB of choice

AZURE COSMOS DB

GLOBALLY DISTRIBUTED, MULTI-MODEL NOSQL DATABASE SERVICE

- Multi-model data with your favorite API
- Elastically scale storage and throughput
- Multiple, well-defined consistency levels
- <10ms latency guarantees at the 99th percentile
- Industry-leading SLAs across performance, latency, availability and throughput



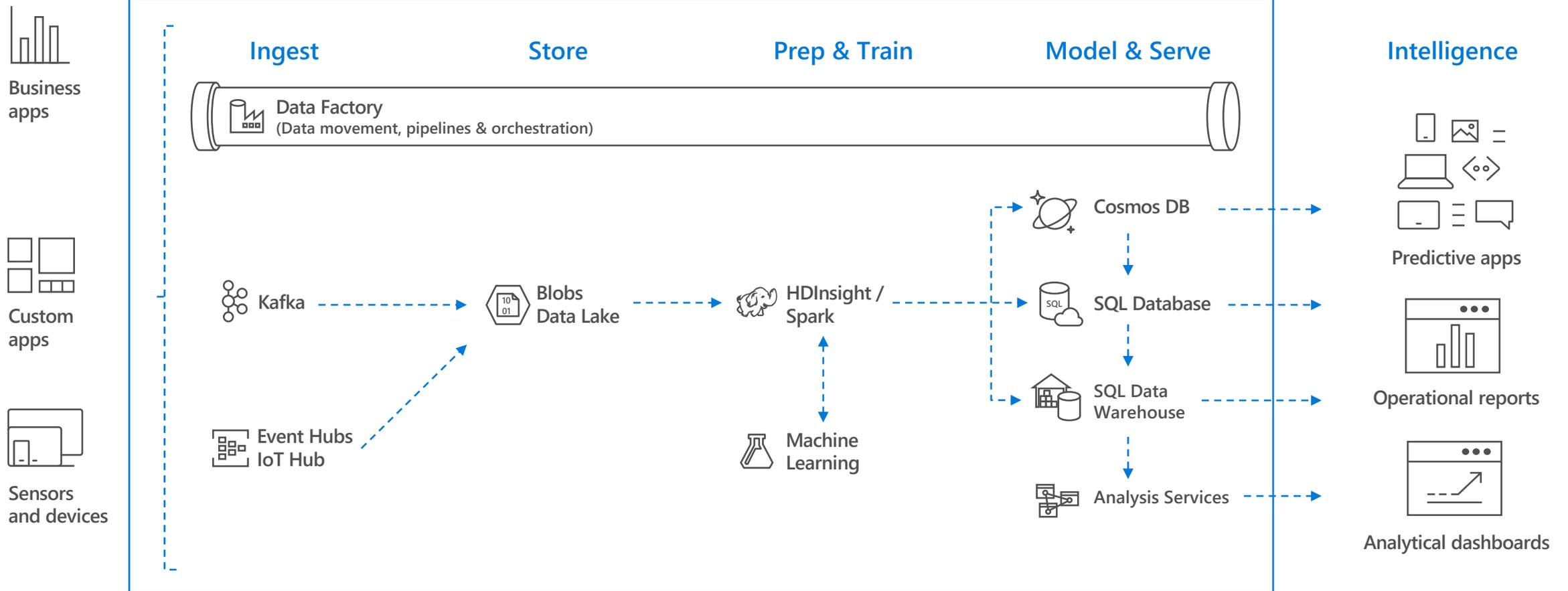
Lift and shift
MongoDB apps

Run Spark over
operational data

Build real-time
customer experiences

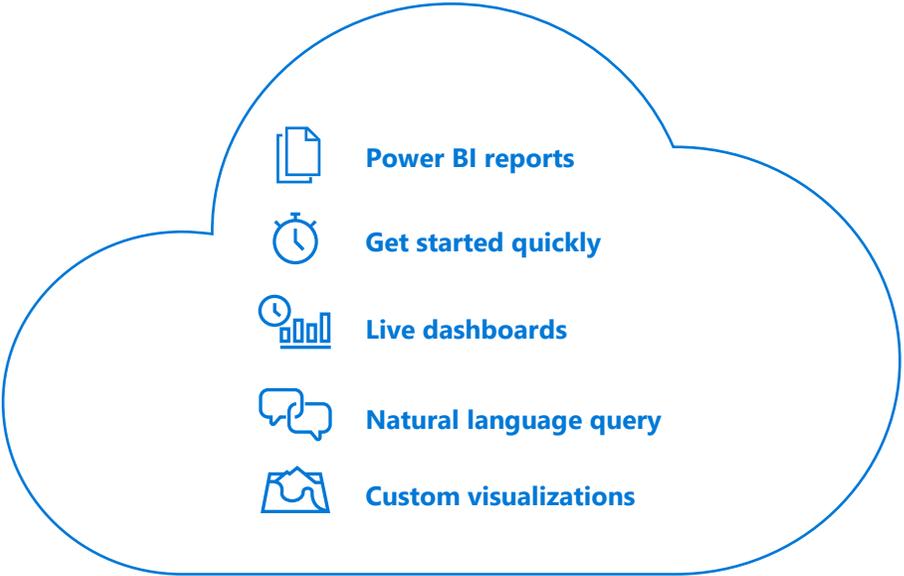
Ideal for IoT, gaming
and eCommerce

DATA MANAGEMENT SOLUTION FOR INTELLIGENCE IN THE CLOUD

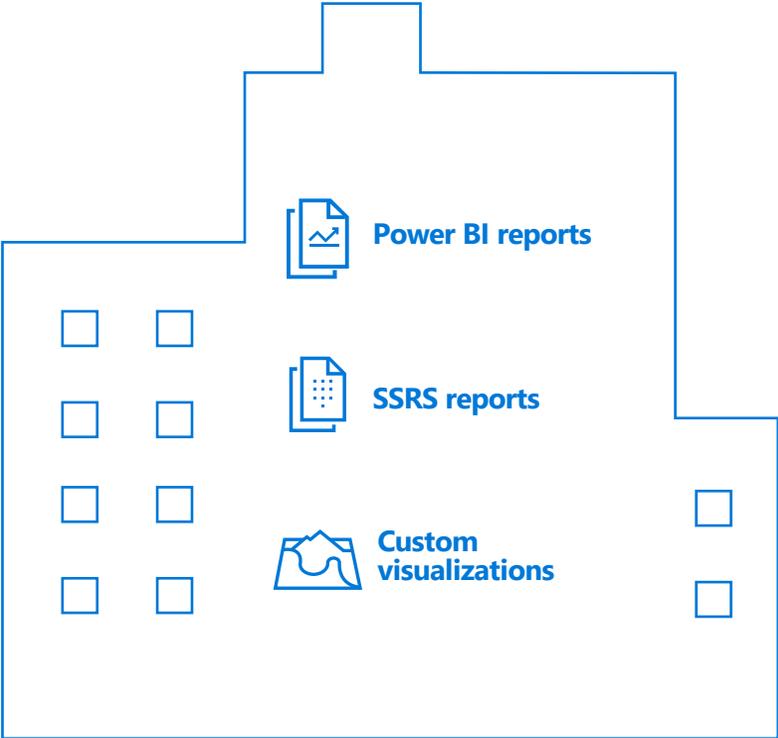


DATA → INTELLIGENCE → ACTION

POWER BI AND POWER BI REPORT SERVER



Power BI



Power BI Report Server

INTELLIGENT WATER UTILIZATION SAVES \$5.2M

Power of Advanced Analytics and AI

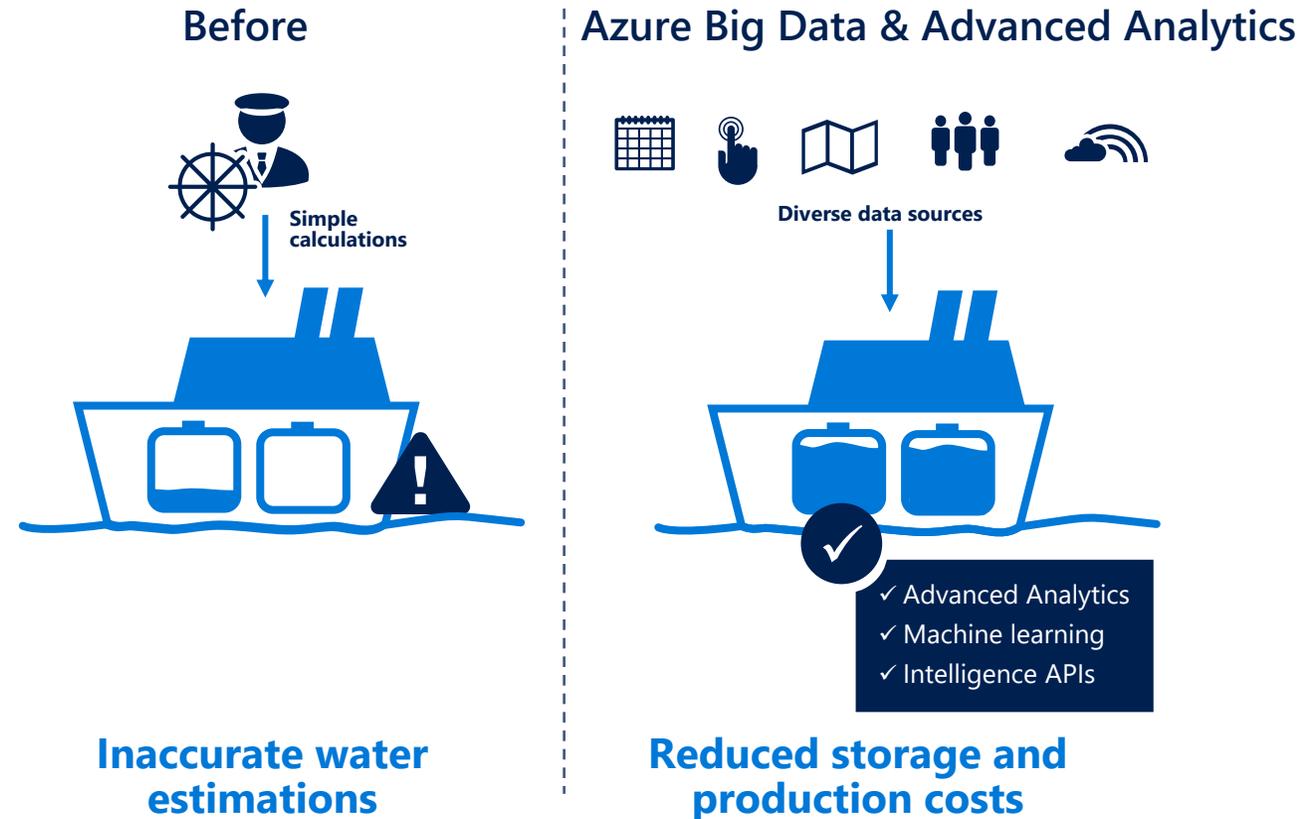
CHALLENGE

Cruise line struggled to accurately predict water usage onboard ships, leading to costly water storage or production

IMPACT

Advanced Analytics model optimizes onboard water storage, **saving \$200k per ship annually**

Historical and real-time data analysis enables **predictive maintenance**



MICROSOFT FOR YOUR MODERN DATA ESTATE



LOB



CRM



Graph



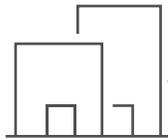
Image



Social



IoT



SQL Server

← HYBRID →



Azure Data Services

Easiest lift and shift
with no code changes

Industry leader 4 years in a row Operational databases

#1 TPC-H performance Data warehouses

T-SQL query over any data Data lakes

Operational databases **70% faster**

Data warehouses **2x the global reach**

Data lakes **99.9% SLA**

AI built-in | Most secure | Lowest TCO

Reason over
any data, anywhere

Flexibility
of choice

Security and
performance



Empower today's innovators to unleash the power of data
and reimagine possibilities that will improve our world

SQL Server focused feature slides

INSIGHTS TO AGENTS 10X FASTER

Fastest in-memory technology

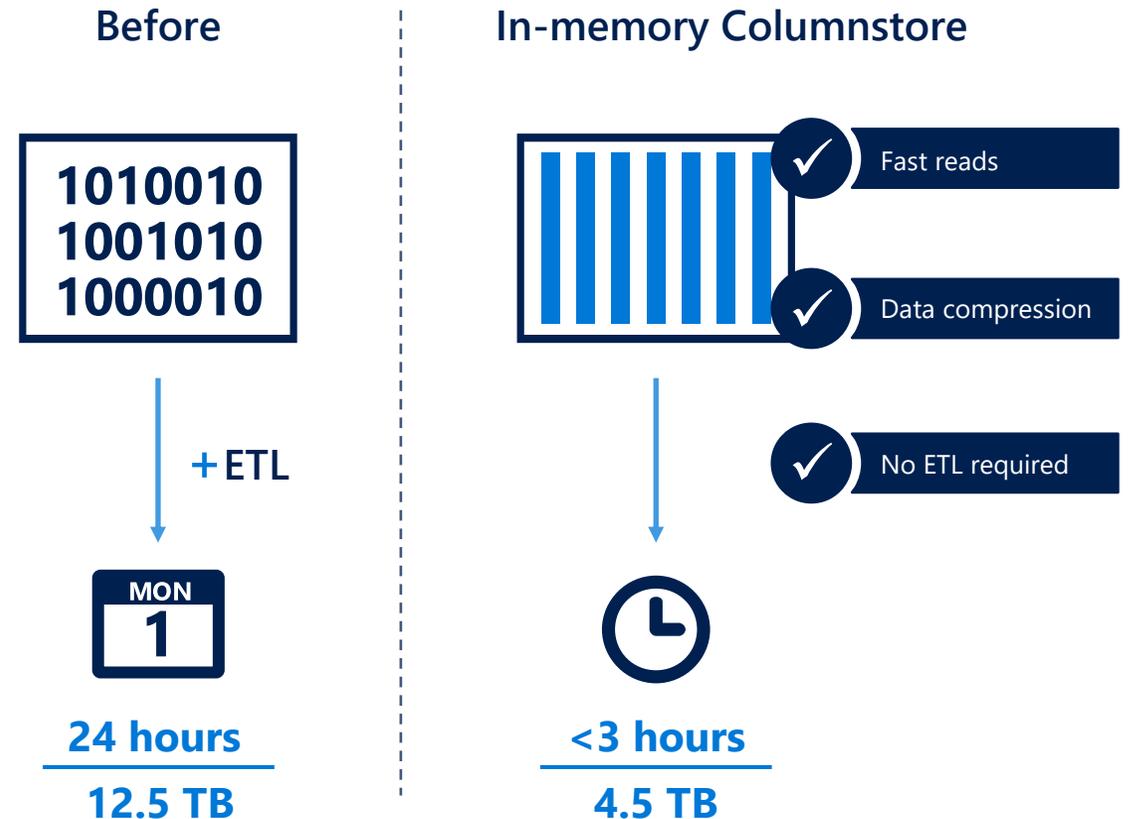
CHALLENGE

Real estate data business struggled to meet customer expectations for on-demand services on 150M+ real estate listings

IMPACT

Accelerated service updates from **24 hours to <3 hours**

Storage costs slashed by **compressing data 64%**



BUSINESS INSIGHTS IN 1/5TH THE TIME

Mission critical data warehousing

CHALLENGE

High costs, limited performance, and slow reporting pushed UAE health insurer to consider enterprise DW migration

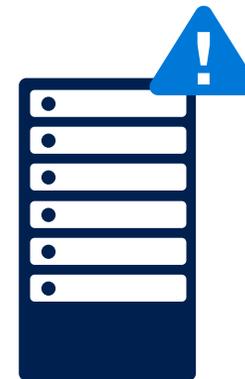
IMPACT

Queries **64% faster** than Sybase, **98% faster** than Oracle, and **13% faster** than SAP HANA

Reports are **5x faster** and built-in security **saved \$250k** in expenses



Before



Sybase DW

Monthly reports
in 48 hours

SQL Server DW



SQL Server DW

Monthly reports
in 10 hours

CLEAR DATA HELPS SAVE LIVES

Interactive and intuitive reporting with SQL Server

CHALLENGE

Global health NGO struggled to efficiently and effectively report and share complex health information

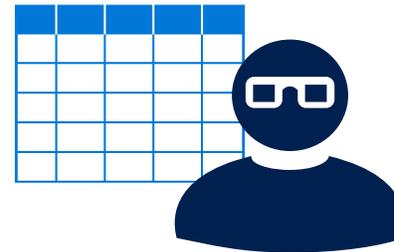
IMPACT

Up to 100x increase in staff relying on data to improve decision-making

Centralized, secure reporting sent to 350 staff members around the world

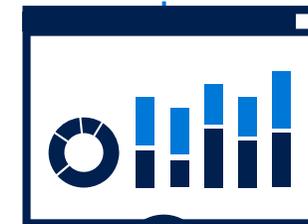
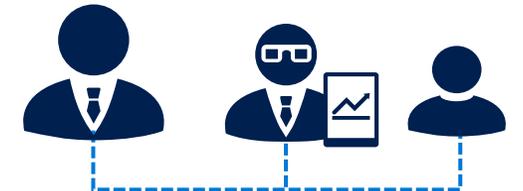
ELIZABETH GLASER
PEDIATRIC AIDS
FOUNDATION

Before



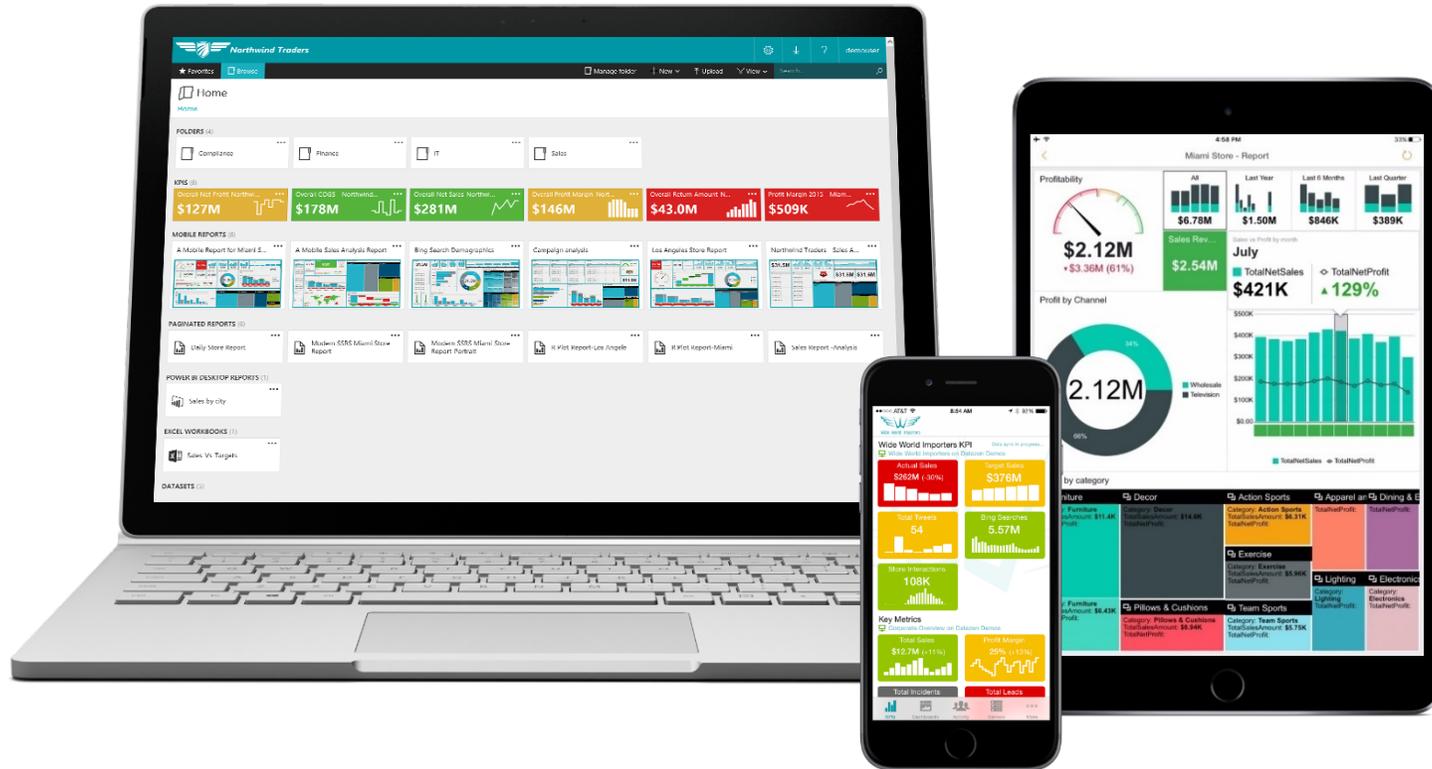
Slow and complex reporting limited to data experts

Mobile reports with SQL Server



- ✓ Automated reporting
- ✓ Insights across all devices
- ✓ Interactive visualizations

BRING DATA TO LIFE WITH REPORTING ANYWHERE



MOBILE REPORTING

Online and offline —on iOS, Windows, and Android mobile devices

UPDATED REPORT VIEWER

A free developer component

ELIZABETH GLASER
PEDIATRIC AIDS
FOUNDATION

PRICING PROCESSES DELIVERED 100X FASTER

Pricing company speeds customer updates with R-based analytics

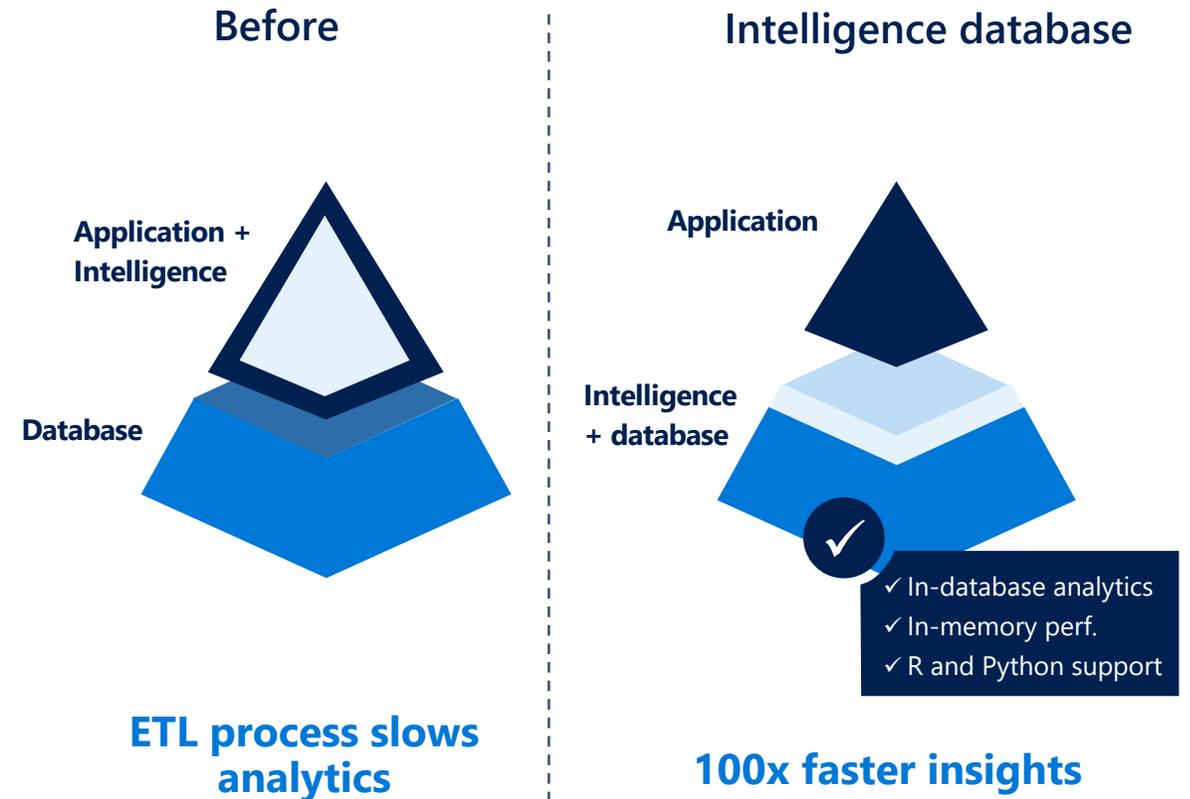
CHALLENGE

Ecommerce companies including airlines and retailers need immediate pricing updates based on complex and ever-changing demand data

IMPACT

100x faster insights with R Services inside the data layer

Customers realize up to **20% performance improvements**



700K+ CUSTOMERS PROTECTED

Most secure database

CHALLENGE

Ecuadorian bank must provide unwavering security for customers while data volume and distribution channels rapidly expand

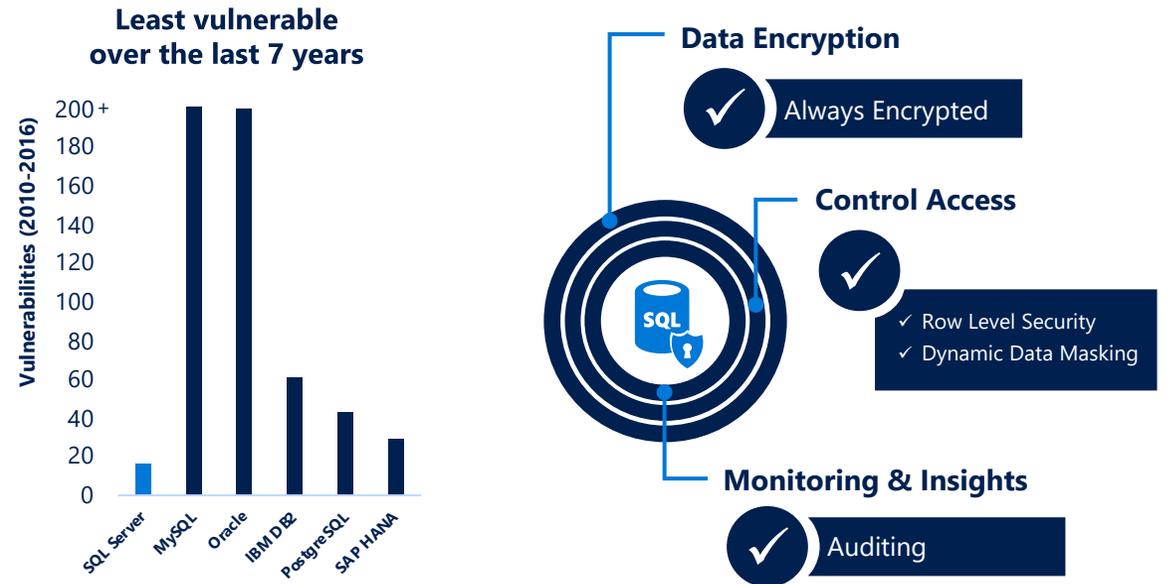
IMPACT

Internal data concealed with **Dynamic Data Masking** while testing applications

Customer data protected from app to database with **Always Encrypted** and **Row Level Security**



Layers of security

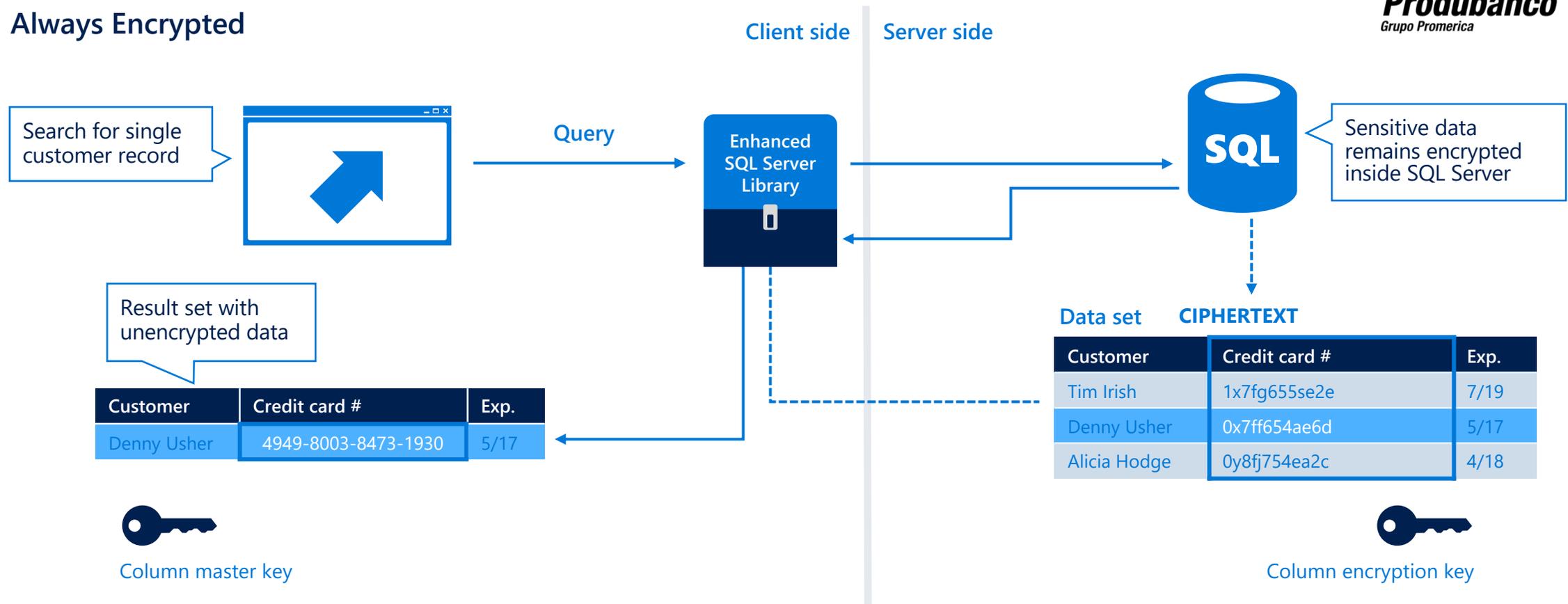


Protection at rest and in motion

ENCRYPT DATA AT REST AND IN MOTION



Always Encrypted




Column master key


Column encryption key

ENGINEERING A 24-7 LUXURY EXPERIENCE

Vehicle platform integrates personalized services

Customer need

BMW envisioned an intelligent, highly personalized world of digital services integrated seamlessly into a vehicle and the life of the customer—available 24-7, in or out of the car.

Impact

- **Open Mobility Cloud**, an intelligent, continuously learning platform based on Azure, melds environment, context and services to address customers' individual mobility needs



TRANSFORMING RETAIL

Delivering most competitive pricing to customers with real-time price comparisons

Customer need

Scalable and integrated cloud + data environment to support innovative pricing strategies.

Needed a development environment that supported .NET + open source technologies.

Impact

Built from zero to full-fledged commerce marketplace in 12 months

Processes 100 trillion transactions a day across multiple regions with single-digit performance using Azure Cosmos DB



MINIMIZING AIRPLANE REPAIR DISRUPTION

Azure platform transforms airplane maintenance

Customer need

Jet engine manufacturer Rolls-Royce faced with unprecedented volume of aircraft engine data needed modeling platform to forecast airplane repairs.

Impact

- Massive **cost savings** across the lifetime of an aircraft engine
- Innovative insights into aircraft management



Rolls-Royce[®]

ENHANCING DIGITAL PRESENCE

Dynamic experience boosts customer engagement

Customer need

Geico wanted an enhanced digital presence to better connect with customers across multiple digital touch points.

Impact

- 24-7 customer experience across devices and apps
- Continuous innovation with a DevOps development methodology and cloud application development platform

GEICO[®]



SMOOTHING THE RIDE

Predictive models improve service and cut costs

Customer need

Elevator service provider ThyssenKrupp faced challenges with variable elevator uptime, and aimed to improve customer service and differentiate against the competition.

Impact

- Dynamic predictive models forecasted preventative maintenance services around the globe
- Increased elevator uptime and reduced costs for customers



SERVING 55K CUSTOMERS WITH 100 STAFF

ISV deploys SaaS at cost-effective scale

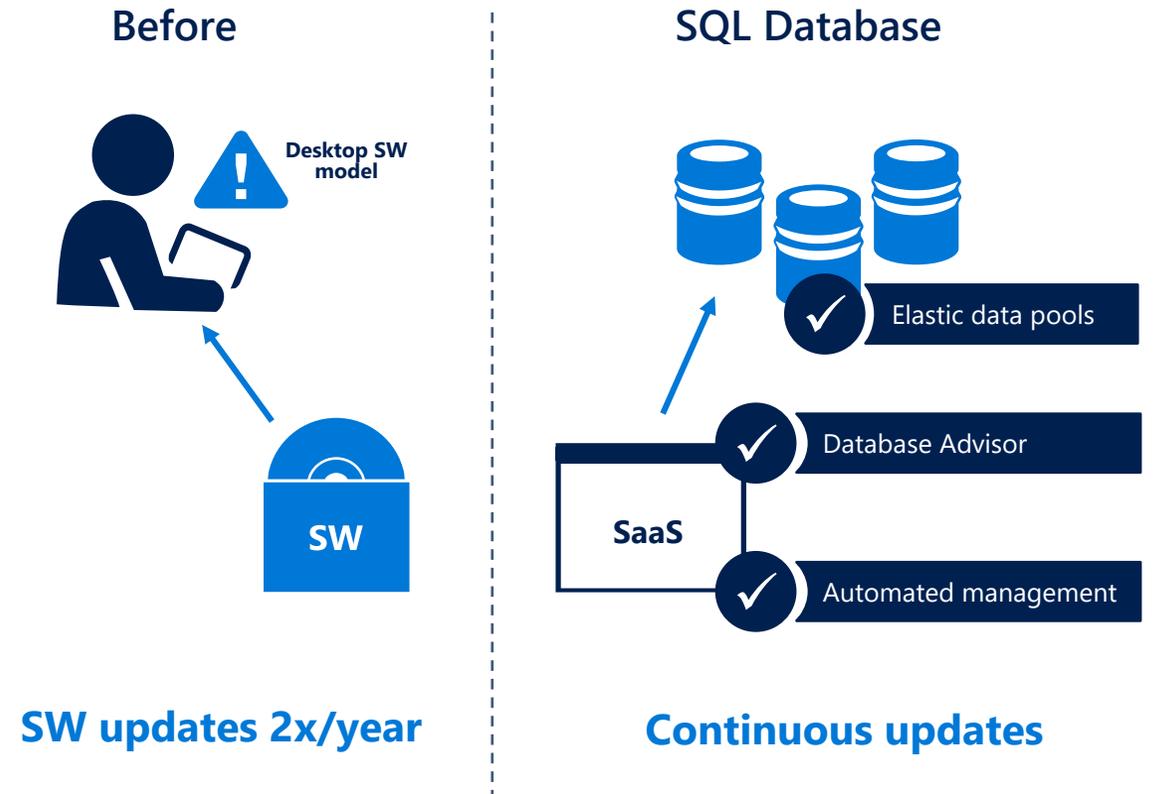
CHALLENGE

Dutch SW provider needed to replace desktop SW delivery model to innovate faster and meet customer needs

IMPACT

Better customer experience through frequent product updates and SaaS model that scales on demand

Automated management reduced overhead and provisions performance with scale



SINGLE SIGN-ON FOR 10M USERS

Flexible data model for unstructured data

CHALLENGE

Customers encountered multiple sign-in prompts between disjointed Citrix websites, impairing the user experience

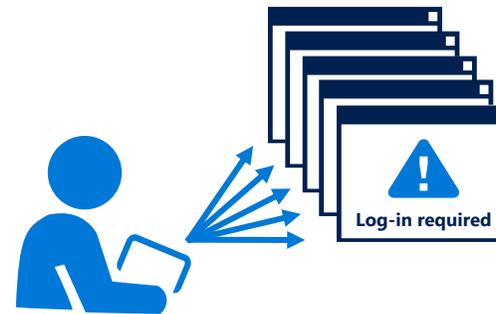
IMPACT

Streamlined access with **>99.99 percent availability and enterprise-grade SLAs**

Global distribution to Azure regions brings data to the customer for guaranteed low latency at any scale



Before



Multiple sign-in prompts and low responsiveness

Cosmos DB



Improved access for 10M users

GREATER SCALE AND PERFORMANCE FOR LESS

Lower costs with improved performance for high-traffic website

CHALLENGE

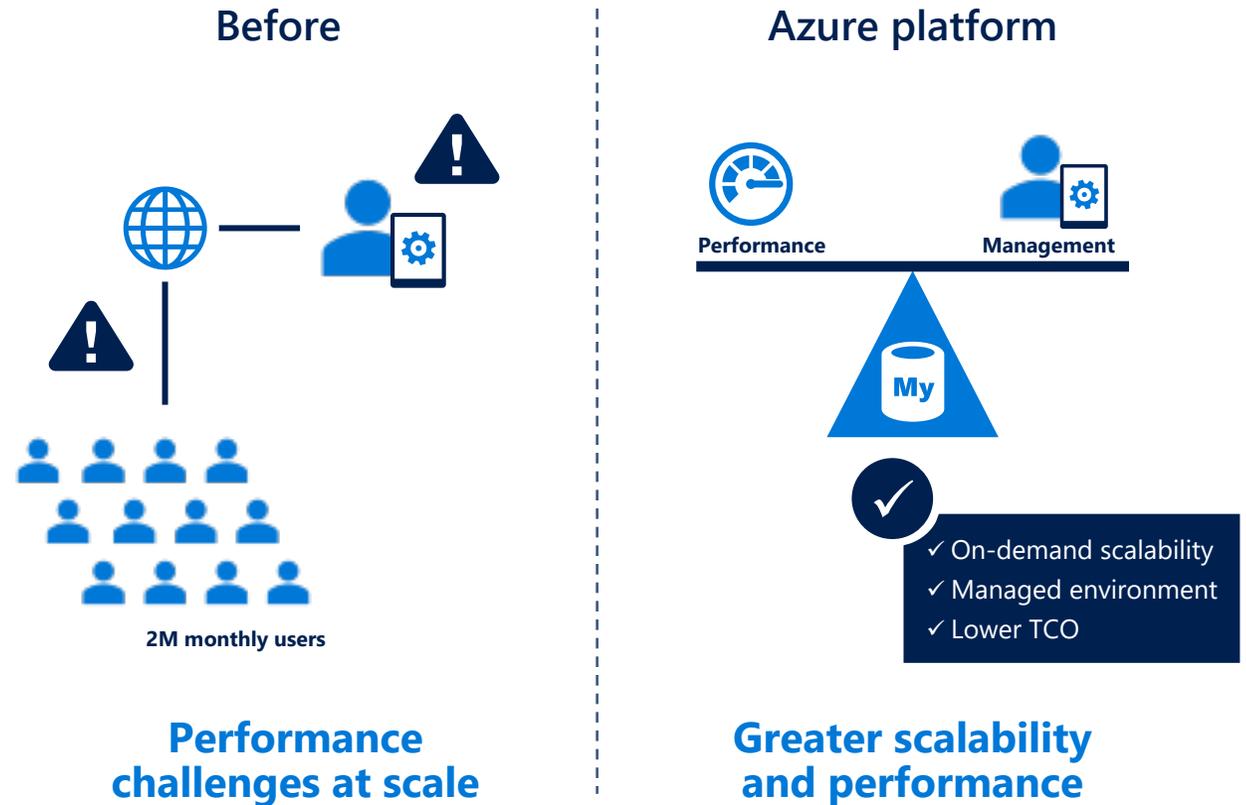
Technology news website faced performance problems due to spikes in user traffic, requiring resource-consuming external support

IMPACT

45% lower costs with simplified management and faster webpage loads

Azure Database for MySQL **scales on the fly** without downtime for 2M monthly users

GeekWire



SMARTER INCENTIVE COMPENSATION

Faster insights at 1/4 cost with SQL Data Warehouse

CHALLENGE

Incentives company needed to consolidate and analyze employee behavior data at scale to create customized offerings

IMPACT

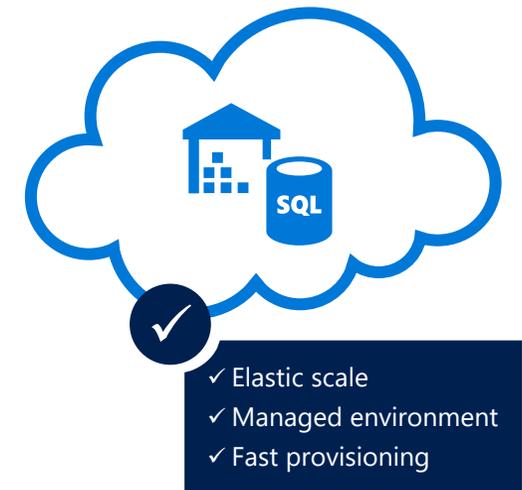
75% reduction in storage costs and 70% cut in time spent on data collection

Maritz rapidly scales up unified data model **2.5x** and scales down to minimize costs



Prolonged and faulty data consolidation

Azure SQL DW



Unification of disparate DWs

MANUFACTURER RESPONDS TO CUSTOMERS FASTER

Insights in real-time at a fraction of the cost with Power BI

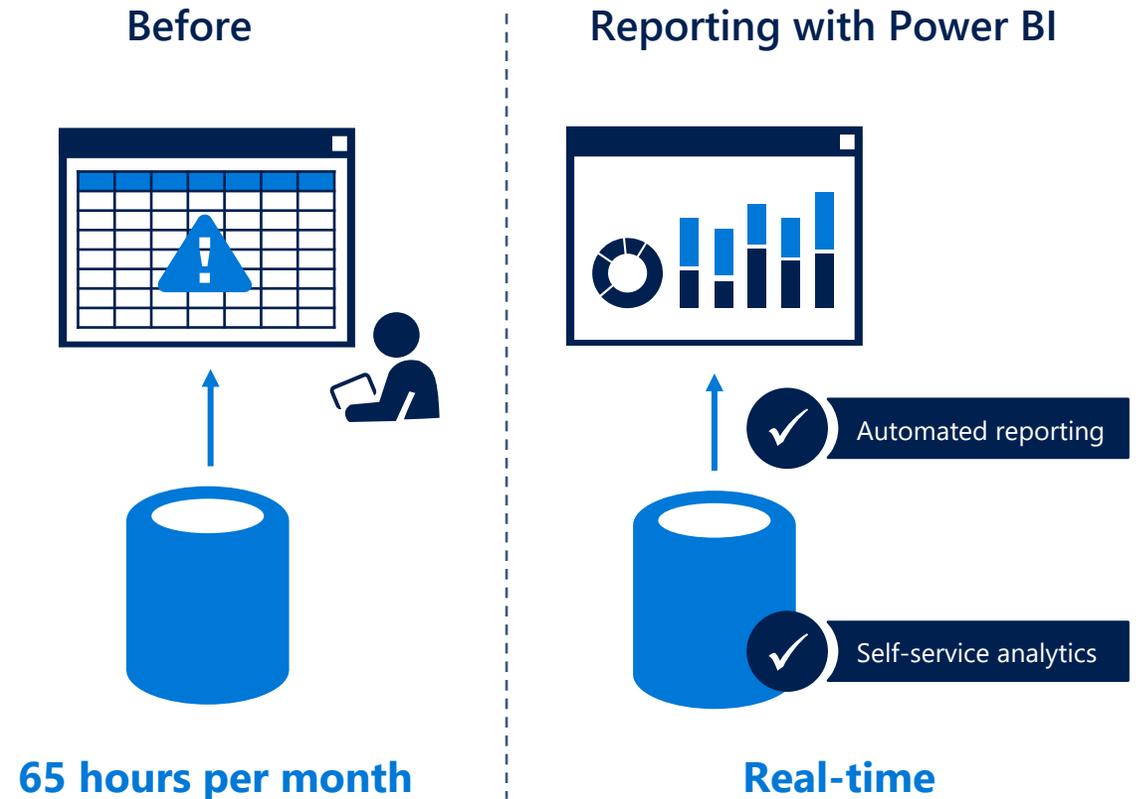
CHALLENGE

Engine part manufacturer struggled to forecast sales and customize marketing due to time-consuming and onerous BI reporting

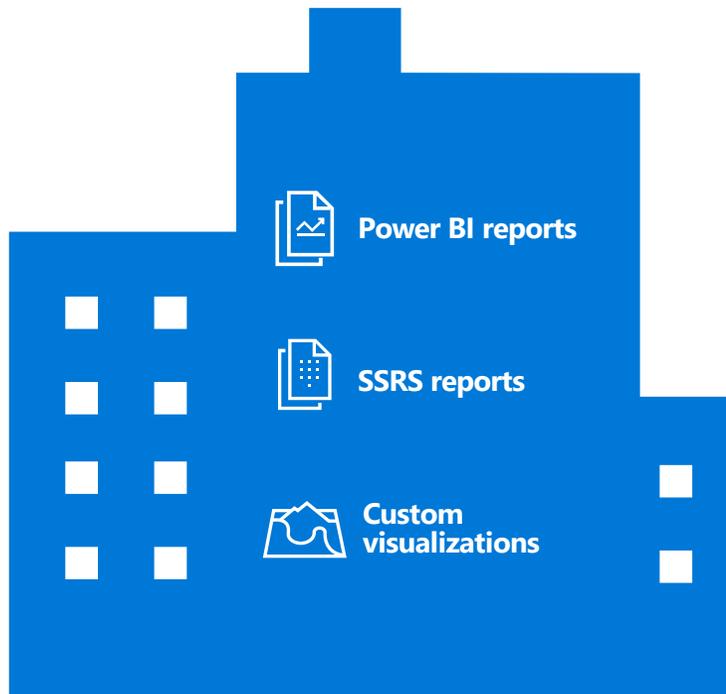
IMPACT

Complete BI solution at **40% less than the competition** delivers savings

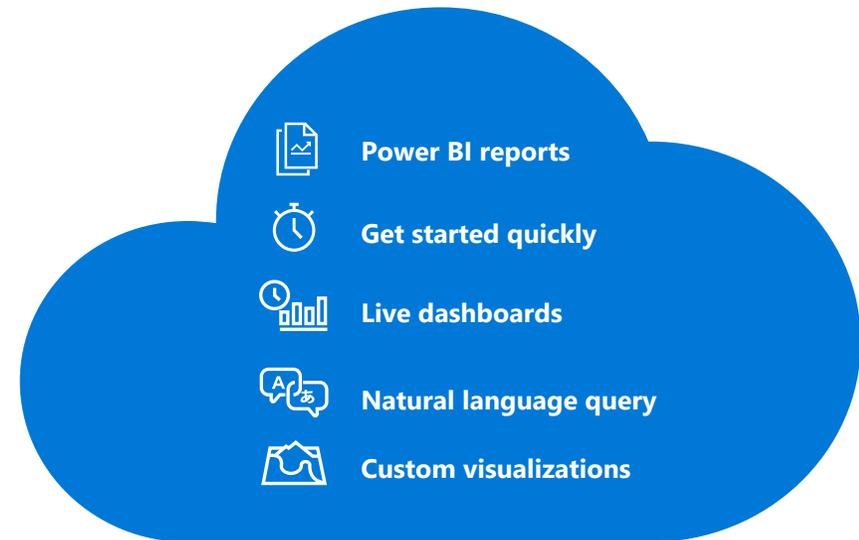
Elimination of manual reporting **saves employees up to 65 hours a month**



EXTENDING POWER BI CAPABILITIES TO ON-PREMISES



Power BI Report Server



Power BI Premium

PREDICTIVE MAINTENANCE THROUGH BIG DATA

Maintenance costs reduced 90% with HDInsight

CHALLENGE

Industrial automation business outgrew data capacity and required a full managed Big Data solution

IMPACT

Full oil and gas pipeline visibility with reduced maintenance at **90% less cost**

Development time cut 80% for shorter time-to-market, reduced costs, and improved customer responsiveness

Rockwell Automation

Before



Fixed capacity and limited insights

HD Insight



Complete data visibility for less

INTELLIGENT WATER UTILIZATION SAVES \$5.2M

Power of Advanced Analytics and AI

CHALLENGE

Cruise line struggled to accurately predict water usage onboard ships, leading to costly water storage or production

IMPACT

Advanced Analytics model optimizes onboard water storage, **saving \$200k per ship annually**

Historical and real-time data analysis enables **predictive maintenance**

