Microsoft

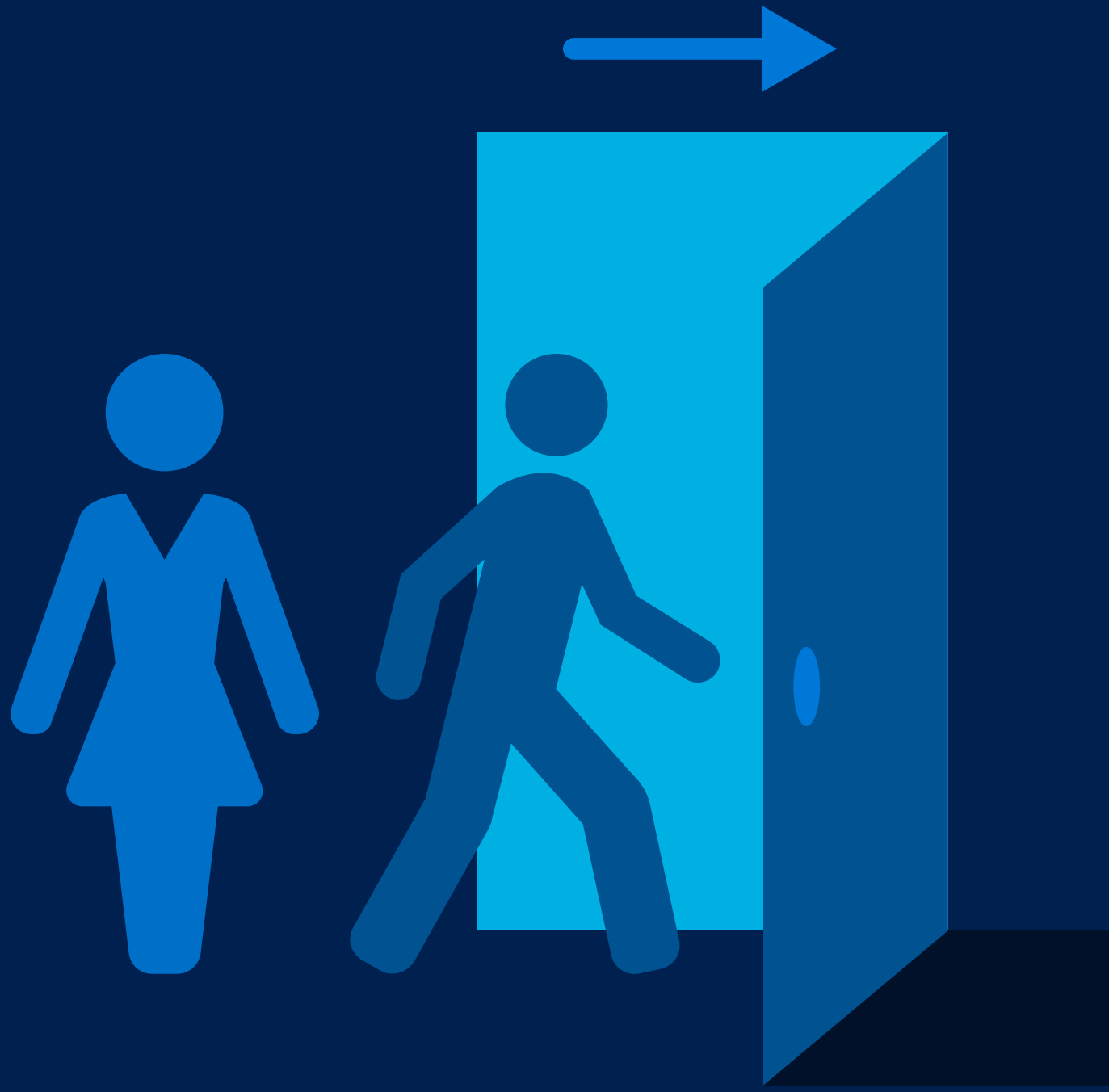
Customer Churn Prediction

Cortana Intelligence Suite

Keeping existing customers is five times cheaper than the cost of attaining new ones.[1] For this reason, marketing executives often find themselves trying to **estimate the likelihood of customer churn** and finding the necessary actions to minimize the churn rate.

Customer Churn Prediction uses Azure Machine Learning to **predict churn probability and helps find patterns in existing data** associated with the predicted churn rate. This information empowers businesses with actionable intelligence to improve customer retention and profit margins.

Why do we need Customer Churn Prediction?



Increasing customer retention by

5%

can increase profits by

25%-95%

Harvard Business School - http://hbswk.hbs.edu/archive/1590.html

The impact of losing a customer is substantial and long reaching. Impacts include:

- Lost Sales and Revenue
- Opportunities for Competition
- Lost Brand Ambassadors
- Missing Customer Acquisition Goals

The Value of Existing Customers

CHEAPER TO KEEP

A 2% increase in customer retention is the same as decreasing costs by 10%[2]

EASIER TO SELL TO

The probability of selling to an existing customer is 60-70%, selling to a new prospect is 5-20%[3]

INCREASED SALES OVER TIME

Repeat customers spend 67% more in months 31-36 than in their first six months[4]

FREE VALUED ADVERTISING

Repeat customers refer more people to businesses through word-of-month[5]

COMPOUND INVESTMENT

Referred customers can spend 150-175% more than the people that refer them[6]

Benefits

Improve Customer Retention

Proactively launch campaigns and strategies to abate customer attrition

Maximize Profit Margins

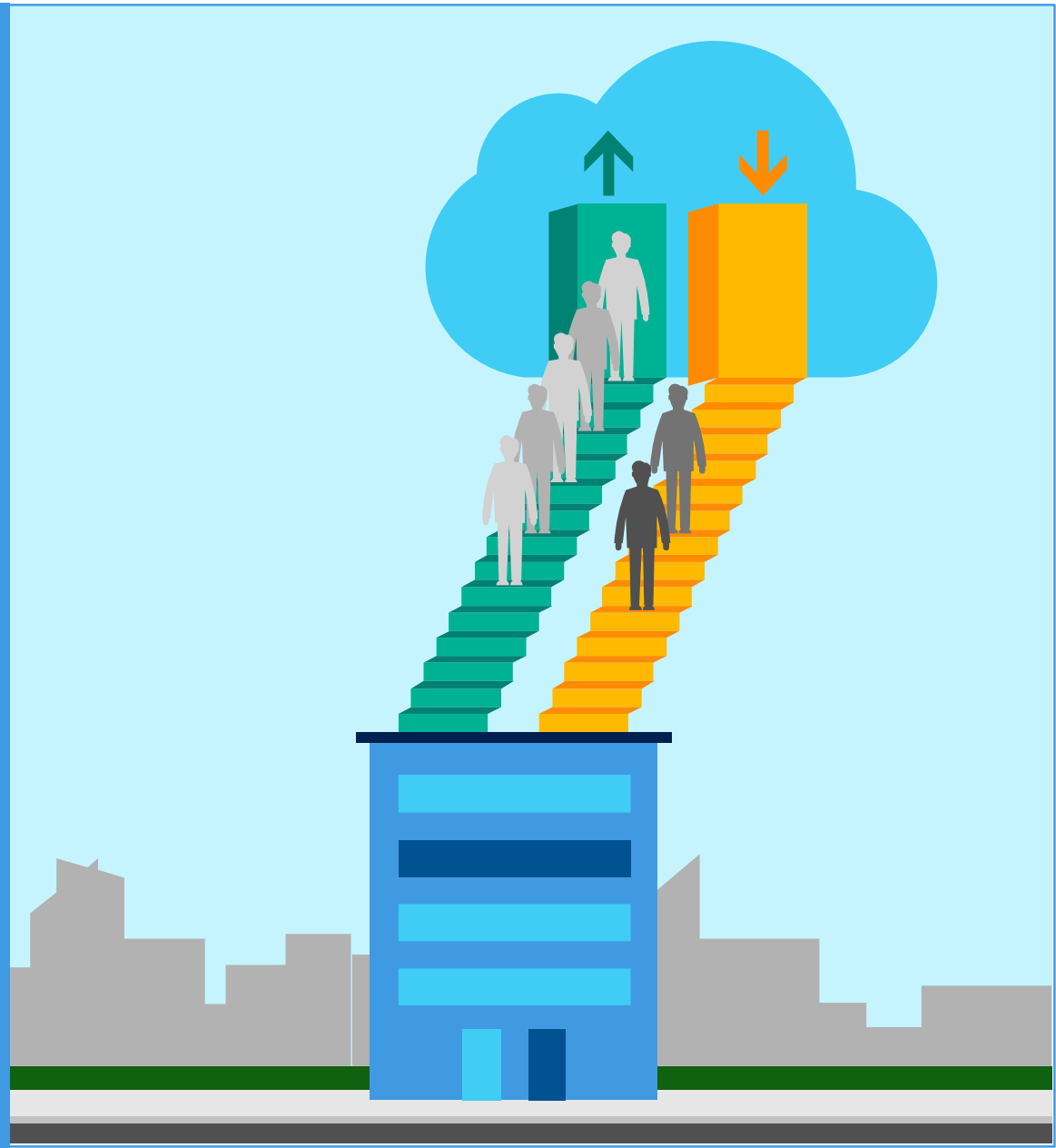
Selling to existing customers is more likely and cheaper than selling to new ones

Gain Actionable Intelligence

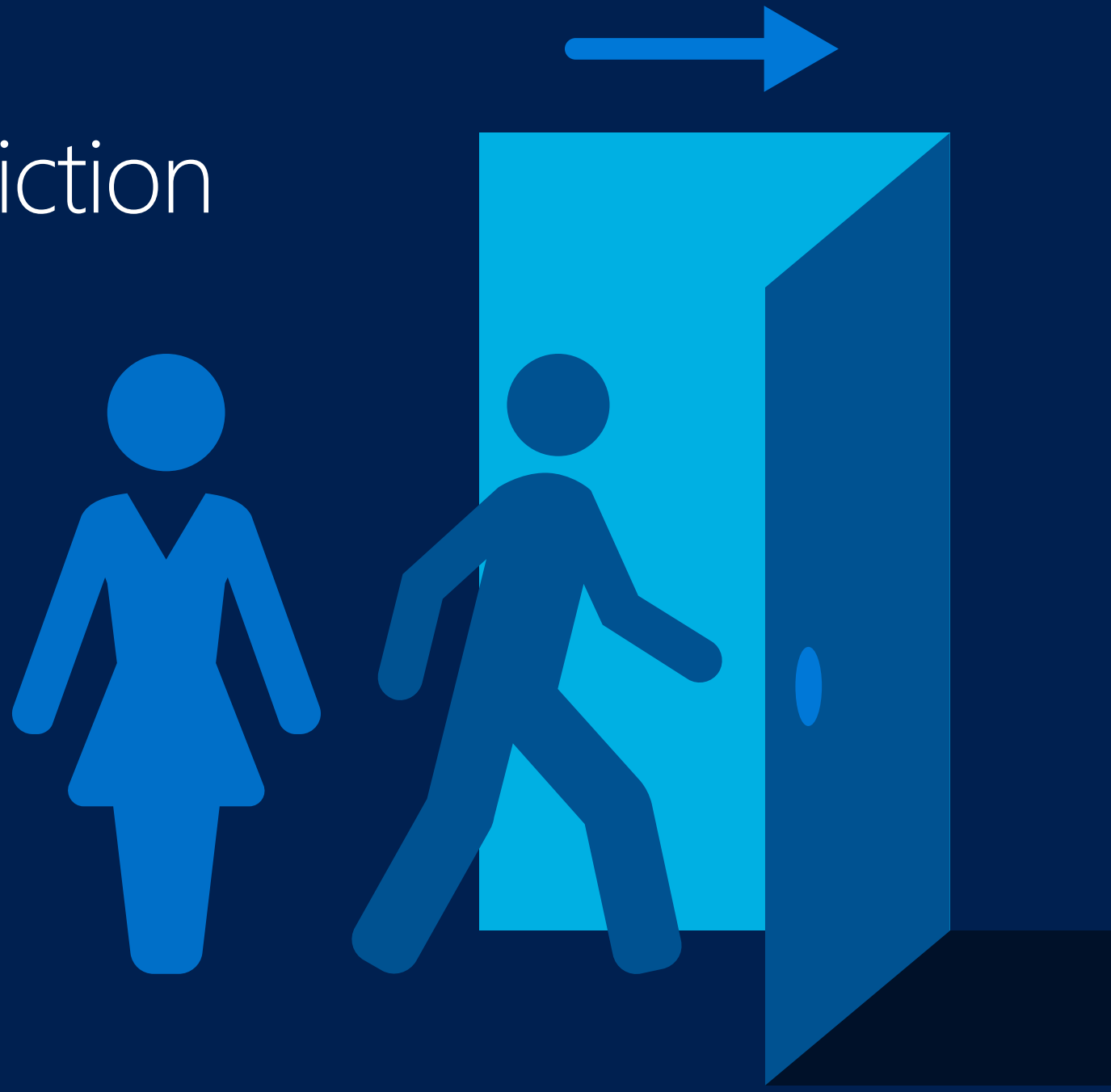
Know the effects of seasonality on customer churn and the success of campaigns and strategies

Reduce Costs

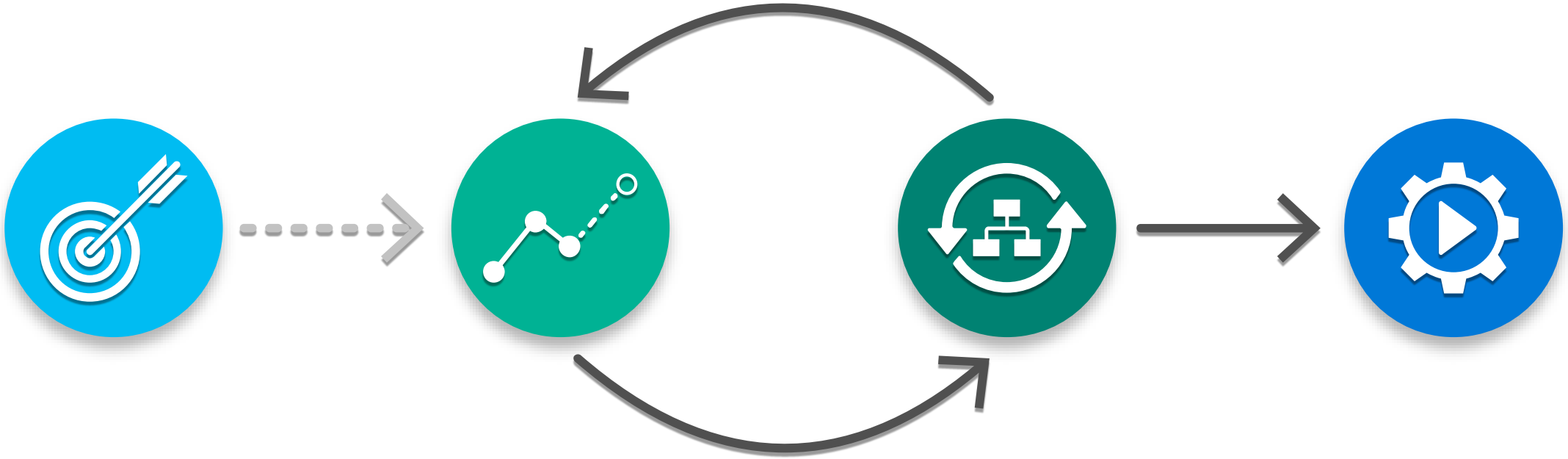
It is more profitable to keep existing customers than to acquire new ones



Customer Churn Prediction Implementation



Solution Path



DEFINE

Set success criteria for predictions at the start of the solution implementation

PREPARE & PREDICT

Ensure you have the necessary data to make predictions and employ Machine Learning to find the probability of customer churn

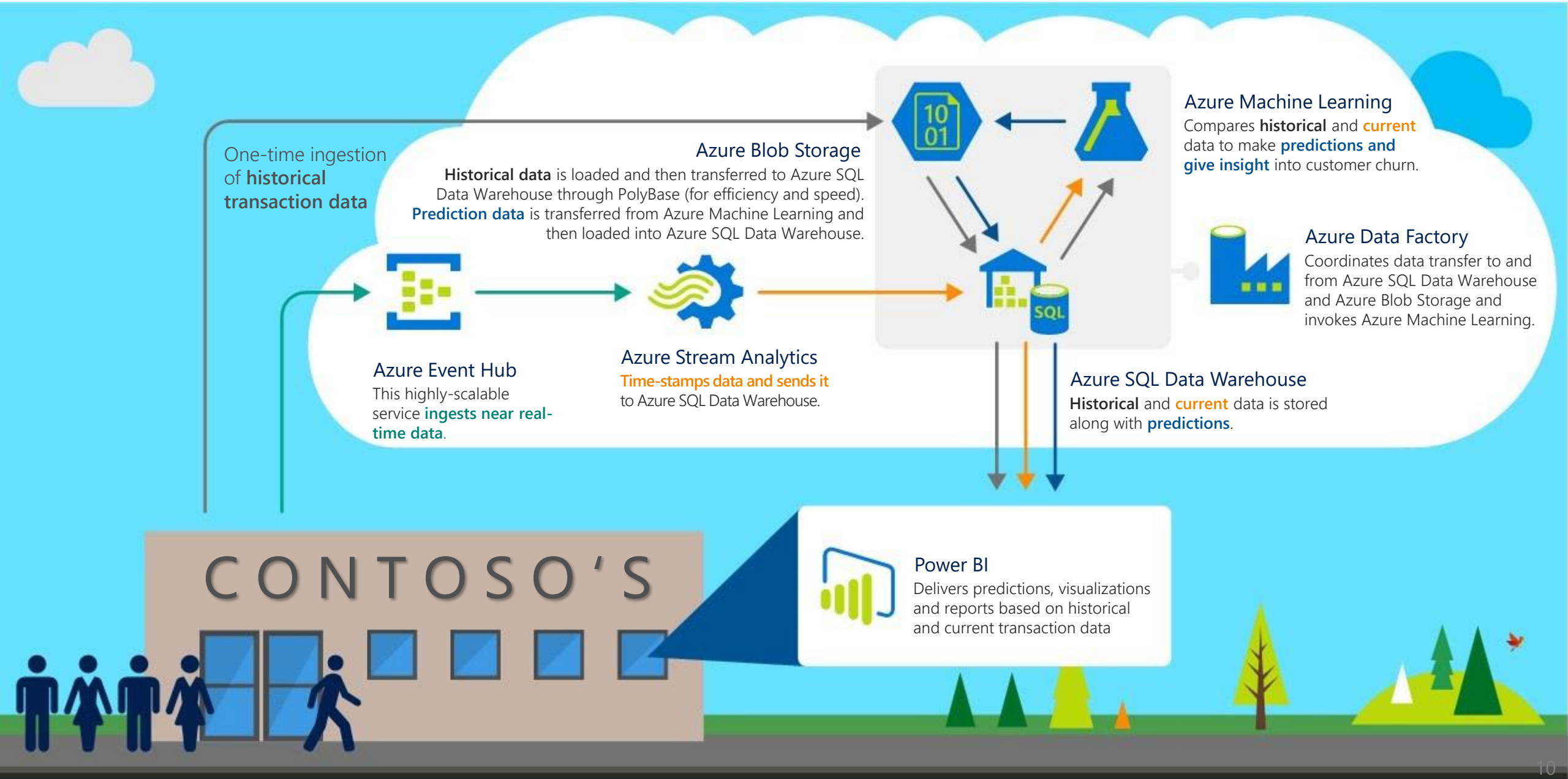
RETRAIN

Update the prediction model with the latest customer data to improve prediction accuracy

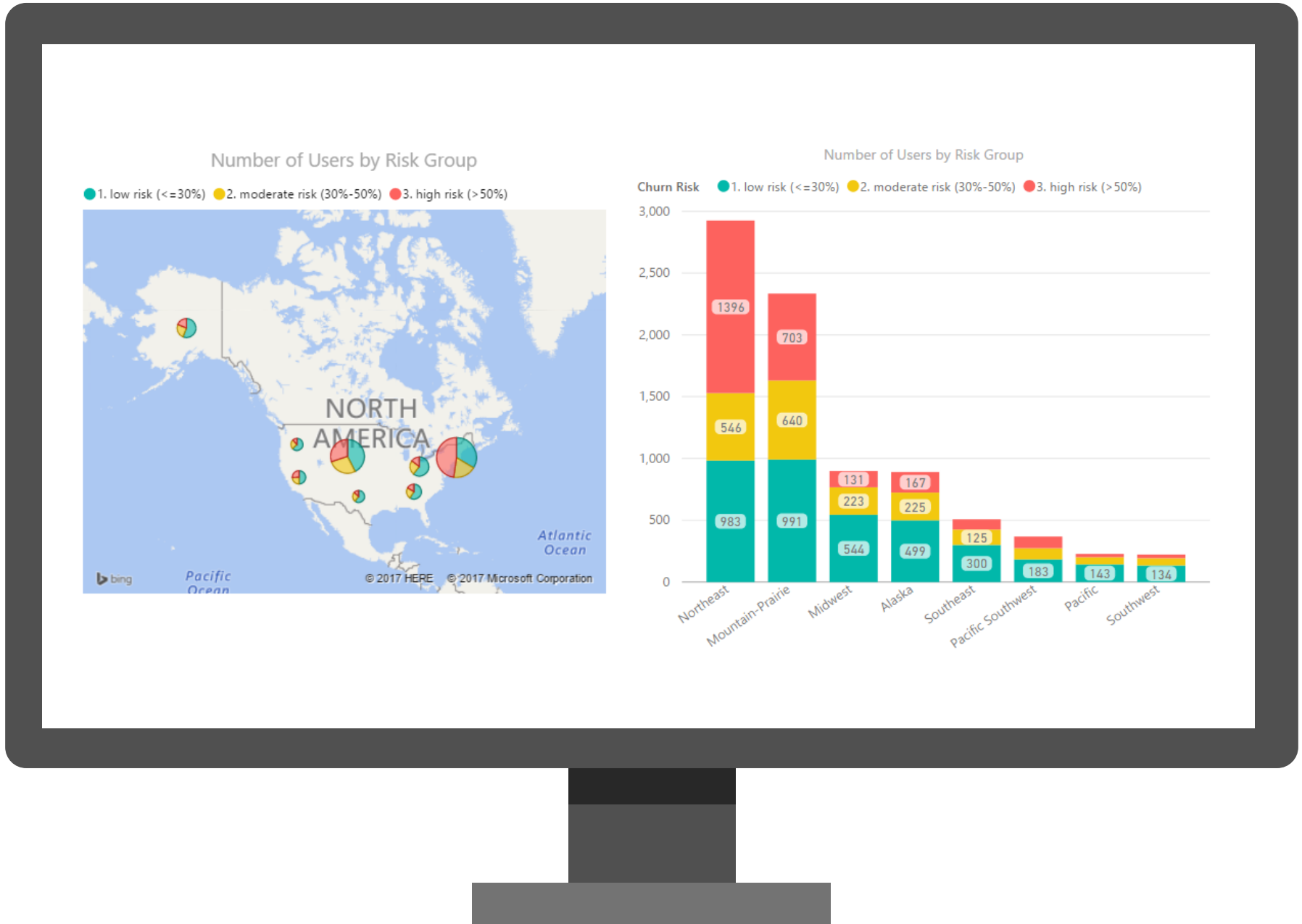
STRATEGIZE & ACT

Develop plans for customer retention based on prediction results and utilize them

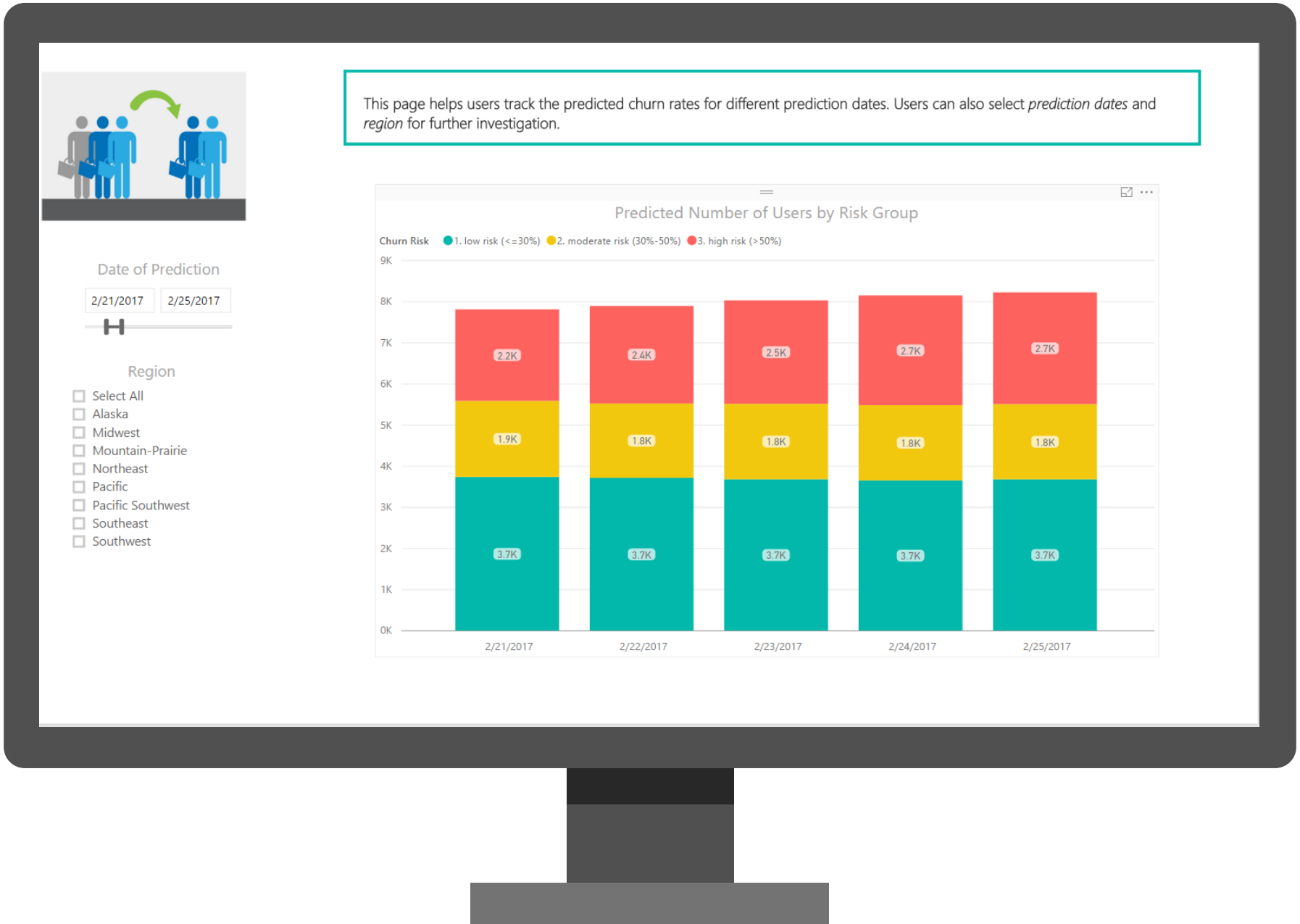
Architecture



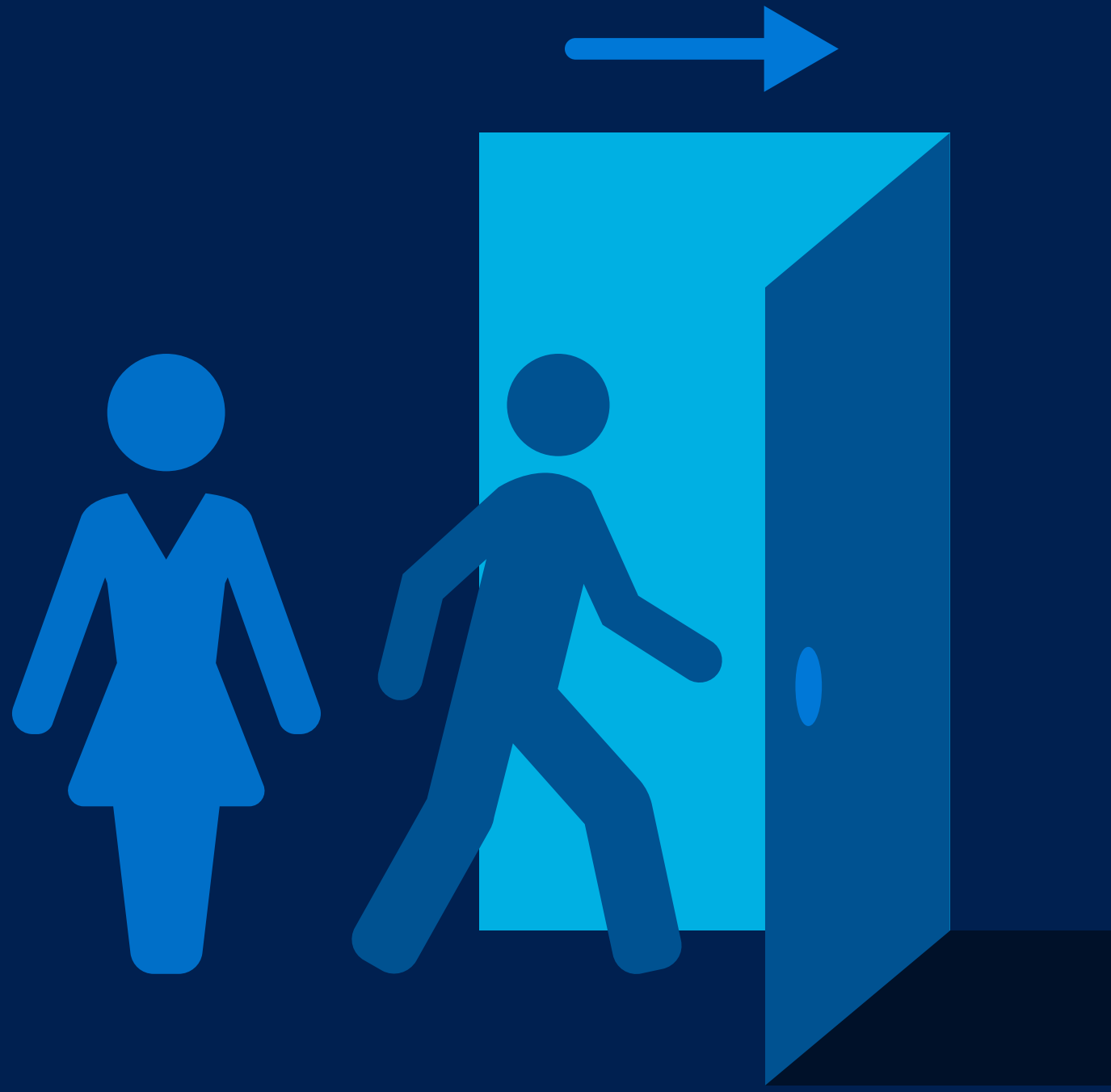
Sample Dashboard



Sample Dashboard



Cortana Intelligence Suite



Cortana Intelligence Suite | Overview

Cortana Intelligence is a fully managed **big data and advanced analytics suite** in the cloud that **transforms data into intelligent action.**

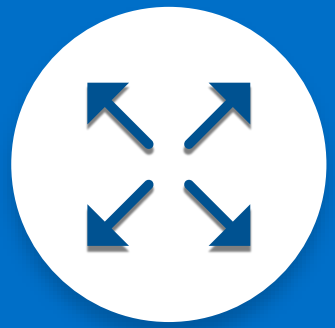
Cortana Intelligence…

- Allows you to collect, manage, process and store all your data that can seamlessly and cost effectively grow over time in a **scalable** and **secure** way.
- Provides **easy** and **actionable** analytics powered by the cloud that allow you to predict, prescribe and automate decision making for the most demanding problems.
- Enables **intelligent** solutions through cognitive services and agents that allow you to see, hear, interpret and understand the world around you in more contextual and natural ways.

Cortana Intelligence Suite | Advantages

COST

There are no upfront costs or COGS (Cost of Goods Sold) component costs associated. Meaning there is no need to invest in hardware, software, and/or IT maintenance. This translates into a substantial reduction in business risk.



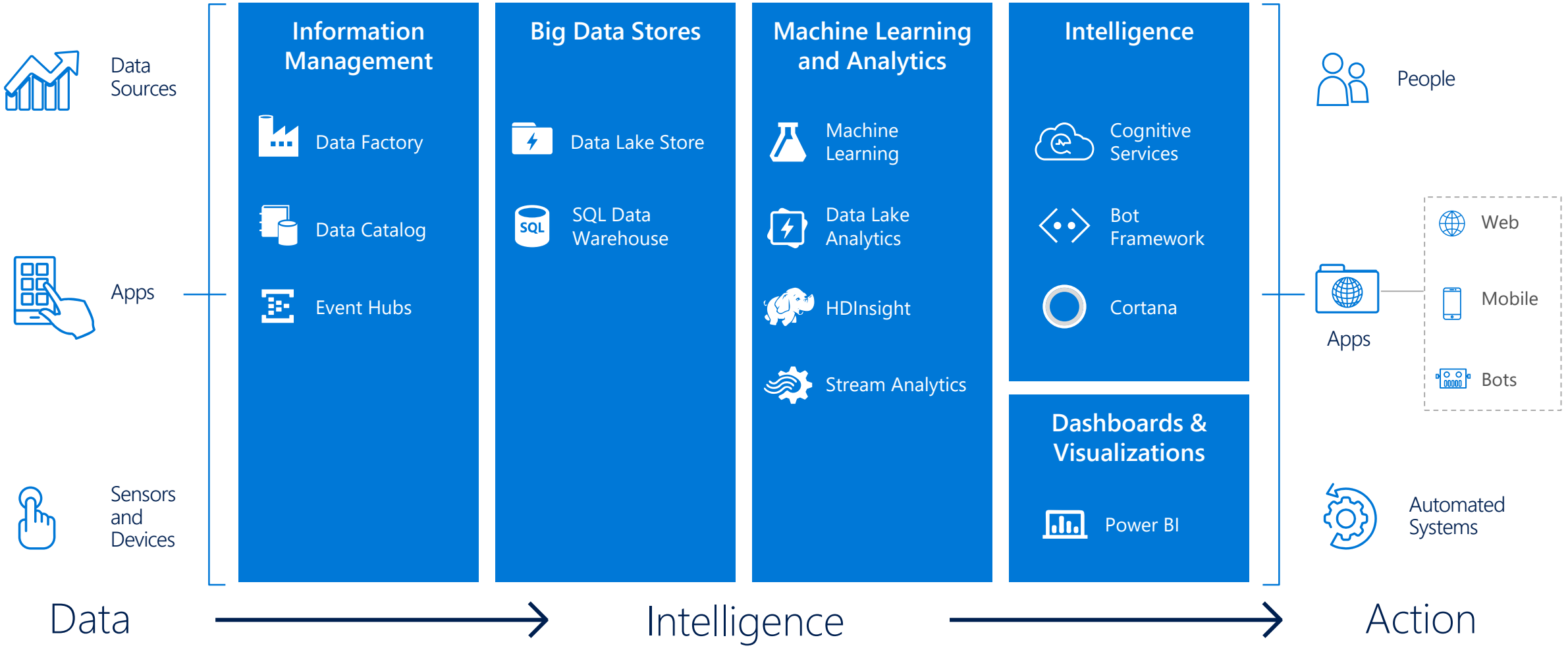
SCALABILITY

Servers for computing and/or storage can be deployed and scaled on an as-needed basis and can be done quickly and easily. This effects the cost efficiency advantage of a cloud-based solution with a pay-for-what-is-used policy.

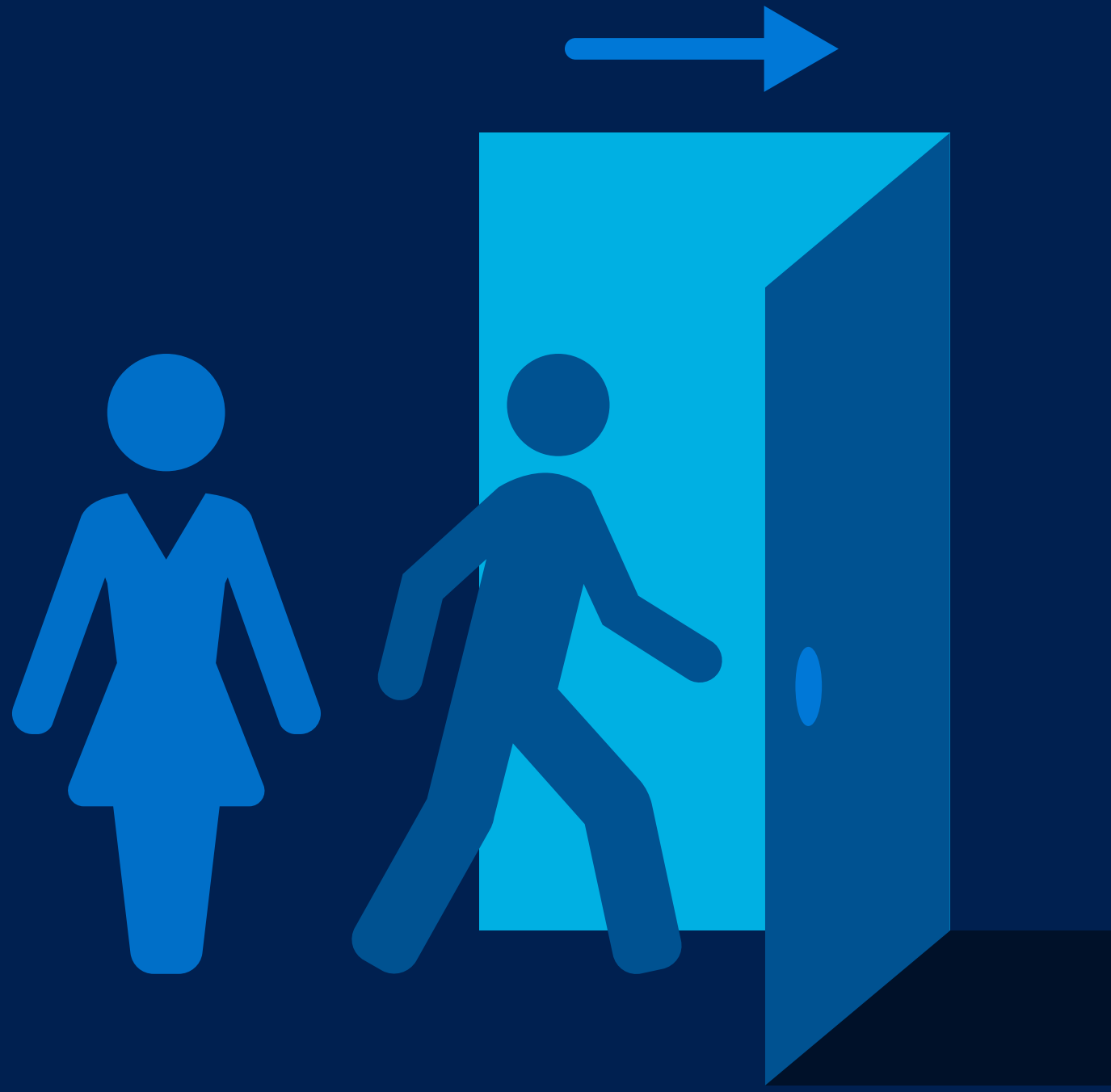
GROWTH

Features, components, and capabilities are consistently being introduced and evolved in Cortana Intelligence Suite. As such, they can easily and quickly be implemented in a cloud-based solution.

Cortana Intelligence Suite | Overview



Appendix



References

[1]Harvard Business Review - https://hbr.org/2014/10/the-value-of-keeping-the-right-customers

[2]"Leading on the Edge of Chaos" by Emmett C Murphy

[3]"Marketing Metrics" by Paul Farris, Neil Bendle, Phillip Pfeifer, and David Reibstein

[4, 5, 6]Bain & Company - http://www.bain.com/publications/articles/the-value-of-online-customer-loyalty-and-how-you-can-capture-it.aspx

Cortana Intelligence Suite | Used in this Solution

Azure Machine Learning

Azure Machine Learning is a cloud predictive analytics service that makes it **possible to quickly create and deploy predictive models as analytics solutions**. It learns from data in order to **forecast future behaviors, outcomes, and trends**. These forecasts or predictions from machine learning can make apps and devices smarter. You can **work from a ready-to-use library of algorithms**, use them to create models on an internet-connected PC, and deploy your predictive solution quickly. **Start from ready-to-use** examples and solutions in the Cortana Intelligence Gallery.

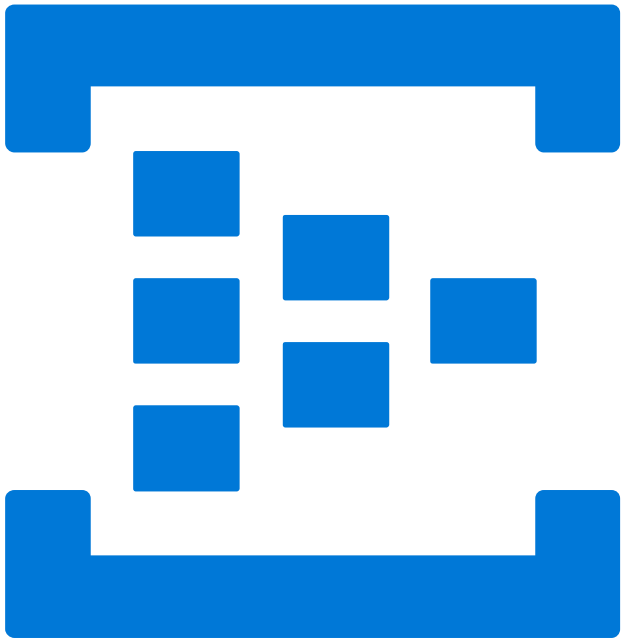
Azure Machine Learning not only provides tools to model predictive analytics, but also provides **a fully managed service** you can use to deploy your predictive models as ready-to-consume web services.

Cortana Intelligence Suite | Used in this Solution

Azure Event Hubs

Azure Event Hubs is a hyper-scale telemetry ingestion service that **collects, transforms, and stores millions of events**. As a distributed streaming platform, it offers **low latency and configurable time retention** that **enable ingression of massive amounts of telemetry** into the cloud and read the data from multiple applications using publish-subscribe semantics. Event Hubs ingests events with **elastic scale to accommodate variable load profiles and the spikes**.

As a fully managed service, there are no servers to maintain and no software licenses to acquire. Pricing is simple and easy to predict. Event Hubs lets you focus on getting value from your telemetry rather than on gathering the data.



Cortana Intelligence Suite | Used in this Solution

Azure Stream Analytics

Azure Stream Analytics produces insights from devices, sensors, infrastructure, and applications. It **processes ingested events in real-time, comparing multiple streams or comparing streams with historical values and models**. Stream is also able to detect anomalies, transform incoming data, trigger an alert when a specific error or condition appears in the stream, and is able to display this real-time data in your dashboard.

Stream Analytics **scales to any volume of data** while still achieving **high throughput, low-latency, and guaranteed resiliency**. Get all of this without incurring hardware or other up-front costs and without time-consuming installation or setup.

Cortana Intelligence Suite | Used in this Solution

Azure SQL Data Warehouse

Unlike other cloud services SQL Data Warehouse (DW) truly delivers on the promise of **cloud elasticity**, making it **ideal for batch-based data warehouse workloads**. Utilizing a decoupled storage and compute model, DW allows you to **easily scale compute in seconds** without over-provisioning or over-paying.

Built-into SQL Data Warehouse, Microsoft PolyBase technology **simplifies and enables distributed analytics** and allows you to run a single query using familiar tools over multiple data sources. Seamless compatibility with SQL Server Integration Services, Azure Analysis Services, Azure Stream Analytics, Azure Machine Learning, Azure Data Factory, and Azure Storage **ensures insight across all of your data, as fast as it's coming in**.

Cortana Intelligence Suite | Benefits

Cortana Intelligence Suite enables you to realize your business outcomes by providing tools to transform data into intelligent action. It transforms entire systems of production, management and governance by enabling you to reap business benefits such as:

Improve visibility and prediction accuracy

Get the right products to the right places efficiently

Offer customers exactly what they want, when they want it

Fix problems proactively before they start

Capture new business opportunities

Use Cortana Intelligence Suite to improve outcomes and solve challenges across all aspects of your business.