



# Quality Assurance for Manufacturing

---

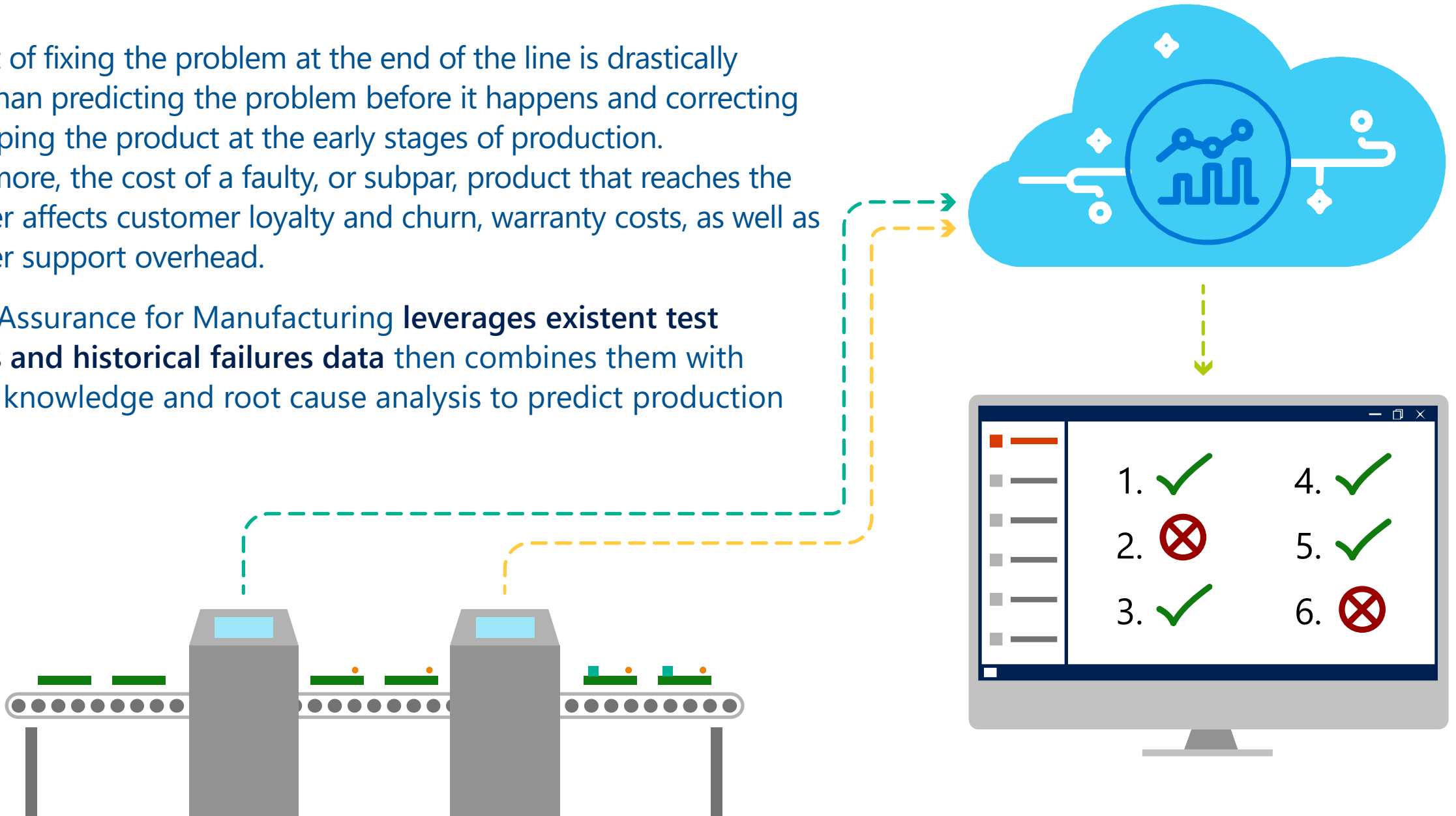
Cortana Intelligence Suite



Product quality has become key in manufacturing for good reason.  
COST.

The cost of fixing the problem at the end of the line is drastically higher than predicting the problem before it happens and correcting or scrapping the product at the early stages of production. Furthermore, the cost of a faulty, or subpar, product that reaches the customer affects customer loyalty and churn, warranty costs, as well as customer support overhead.

Quality Assurance for Manufacturing **leverages existent test systems and historical failures data** then combines them with domain knowledge and root cause analysis to predict production failures.



# Why use Quality Assurance for Manufacturing?

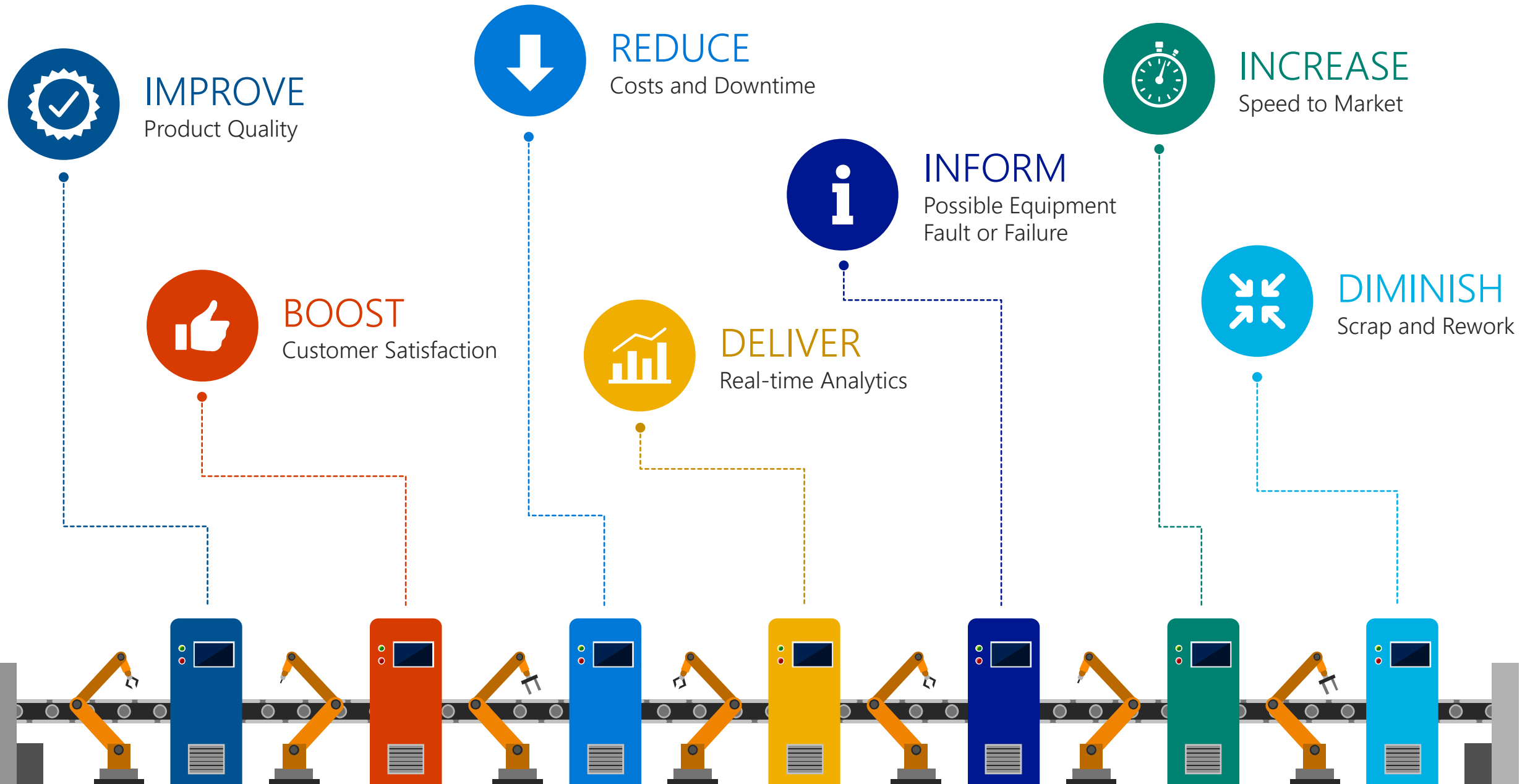


# Predict Costly Production Issues

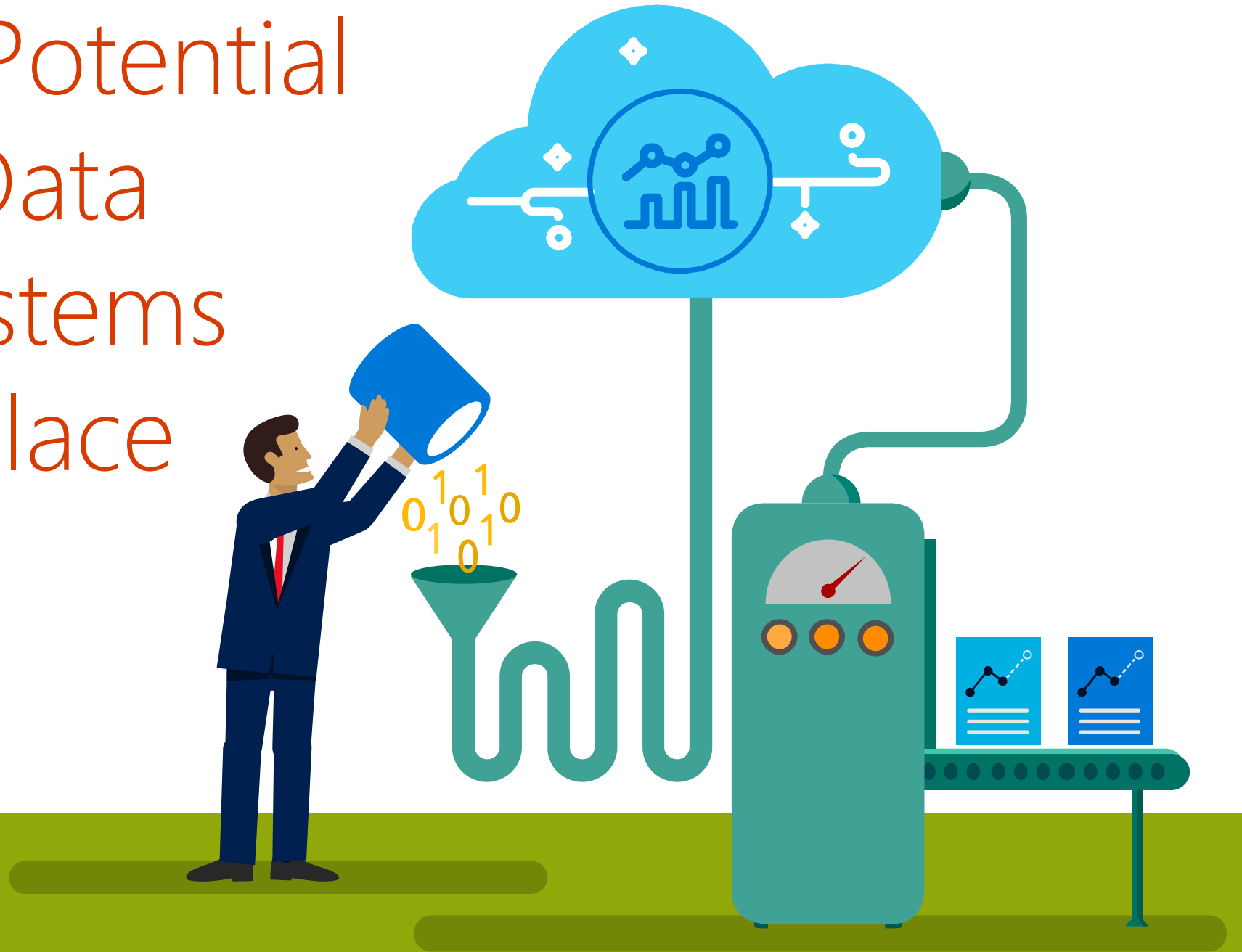
Quality assurance across the assembly line is imperative. Identifying errors, slowdowns and predicting potential failures before they occur, rather than after they are detected, helps companies be proactive and improve productivity.



# Quality Assurance for Manufacturing | Benefits



# Unlock the Potential of Existing Data and Test Systems Already In Place



# Customer Use Case





# Minimize downtime with predictive capabilities

## Challenge

Better predict errors or failures on assembly floor before they occur, saving customers' time and money.

## Strategy

Transformed its manufacturing production line with advanced analytics solutions like Azure IoT Suite and Cortana Intelligence Suite.

## Results

- Ability to predict machine processes that will slow down or fail with an 80% accuracy
- Cost savings of scrap and re-work of 17%
- Energy savings of 10%



[WATCH VIDEO](#)

**JABIL**

"Since deploying the Microsoft predictive analytics solutions, we have seen at least an 80% accuracy rate in the prediction of machine processes that will slow down or fail, contributing to a scrap and rework savings of 17 percent."

— Clint Belinsky, Vice President, Global Quality, Jabil



# Demo



WATCH VIDEO

# JABIL



# Inside Quality Assurance for Manufacturing



# Quality Assurance for Manufacturing | Challenges



IDENTIFYING...

...the correct data to  
build reliable  
predictions



ACCESSING...

...real-time and  
historic data from all  
available sources



LEVERAGING...

...domain knowledge  
and existent test  
systems



INTERPRETING...

...data and analysis  
results to find  
actionable insights



SCALING...

...the solution to  
increasing  
requirements

# Quality Assurance for Manufacturing | How to Start



## DATA

Are there identifiers for predictions?



## EXPERTISE

Are there examples of past failures?



## GOALS

Has a use case been defined?



## QUALITY

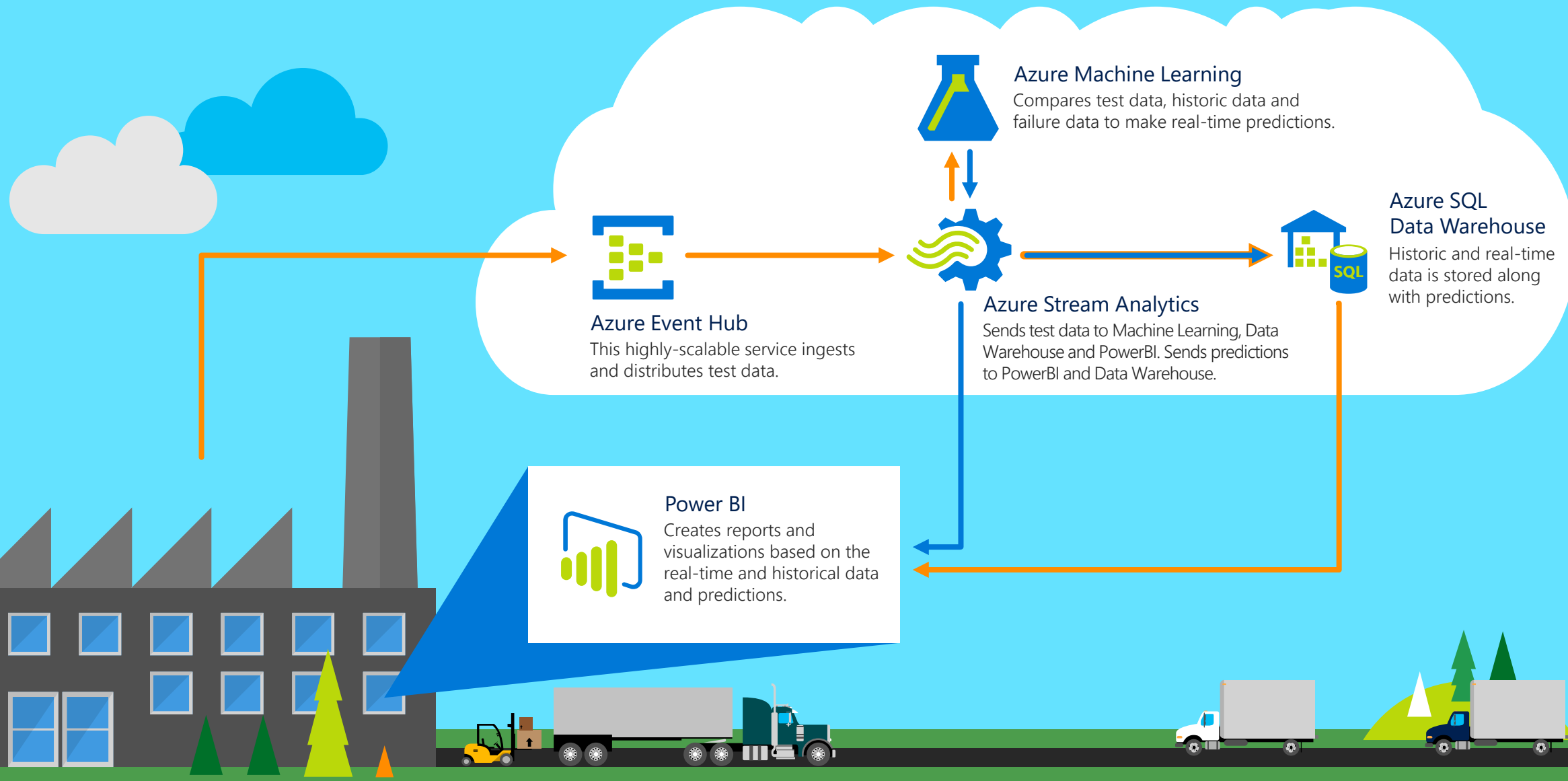
Is the data applicable and accurate?



## QUANTITY

Is there enough data for an accurate prediction?

# Quality Assurance for Manufacturing | Architecture

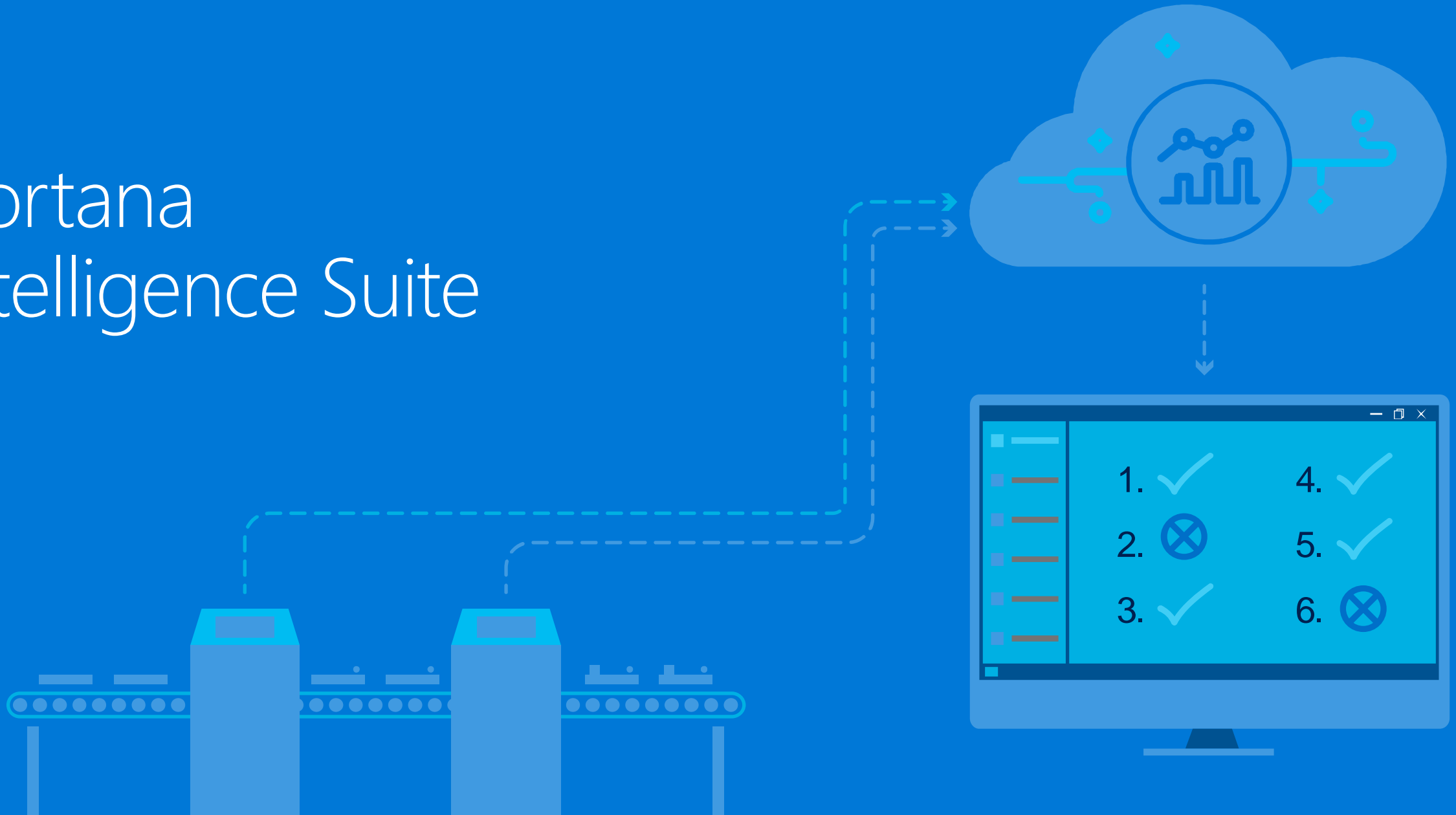




# Quality Assurance for Manufacturing | Dashboard Example



# 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.

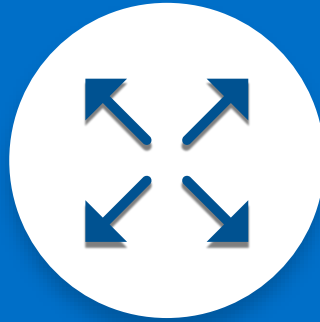


# Cortana Intelligence Suite | Advantages



## 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

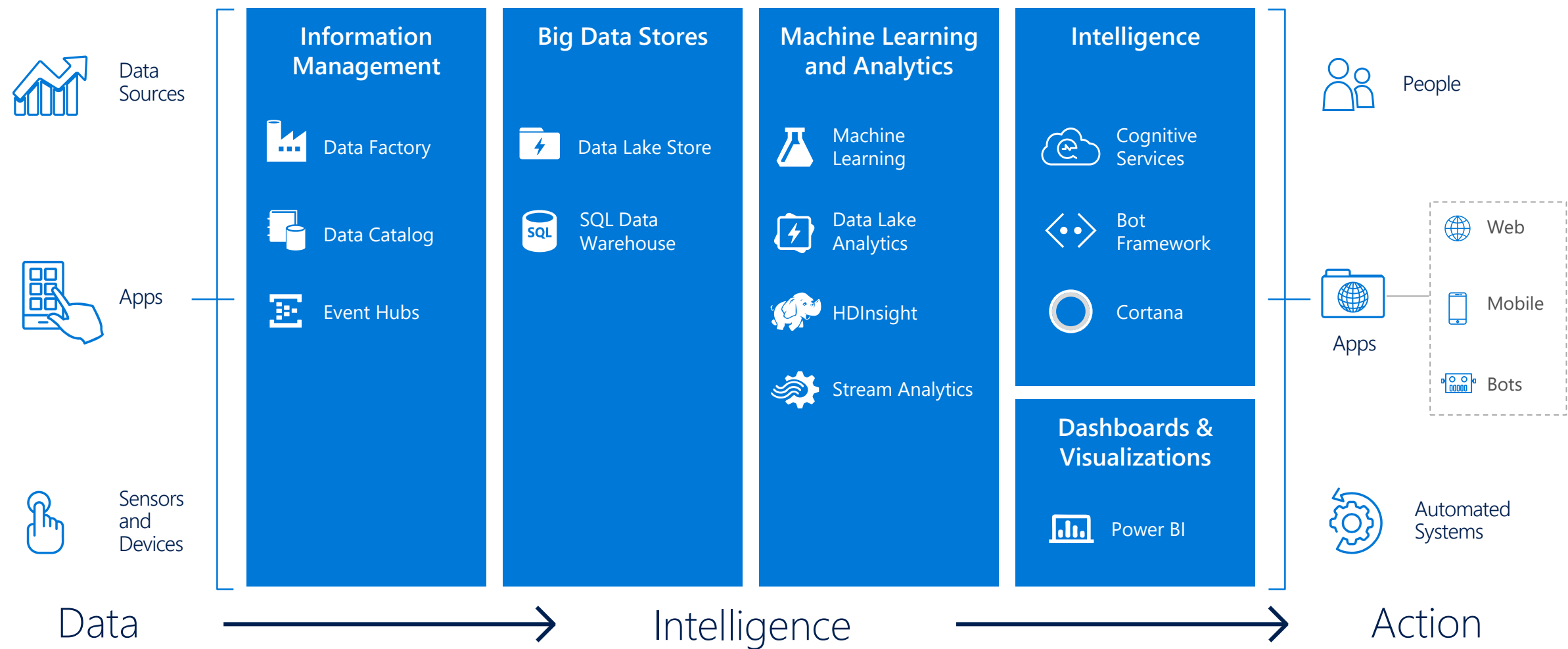
Servers for computing and/or storage can be deployed and scaled on an as-needed basis and can be done quickly and easily. This effects the cost efficiency advantage of a cloud-based solution with a pay-for-what-is-used policy.



## GROWTH

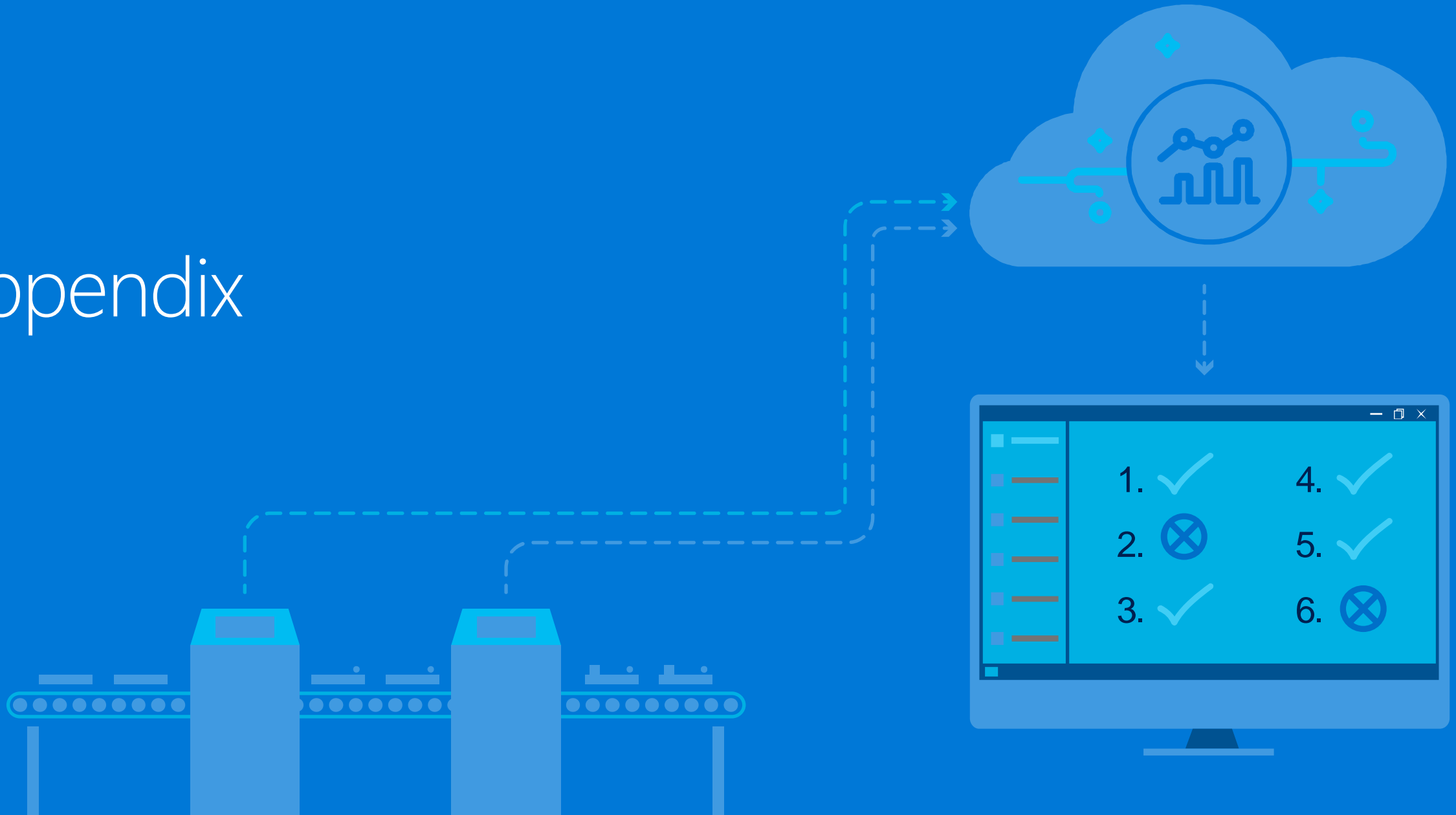
Features, components, and capabilities are consistently being introduced and evolved in Cortana Intelligence Suite. As such, they can easily and quickly be implemented in a cloud-based solution.

# Cortana Intelligence Suite | Overview





# Appendix



# 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.

# 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 existing 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.

