

Quality Assurance

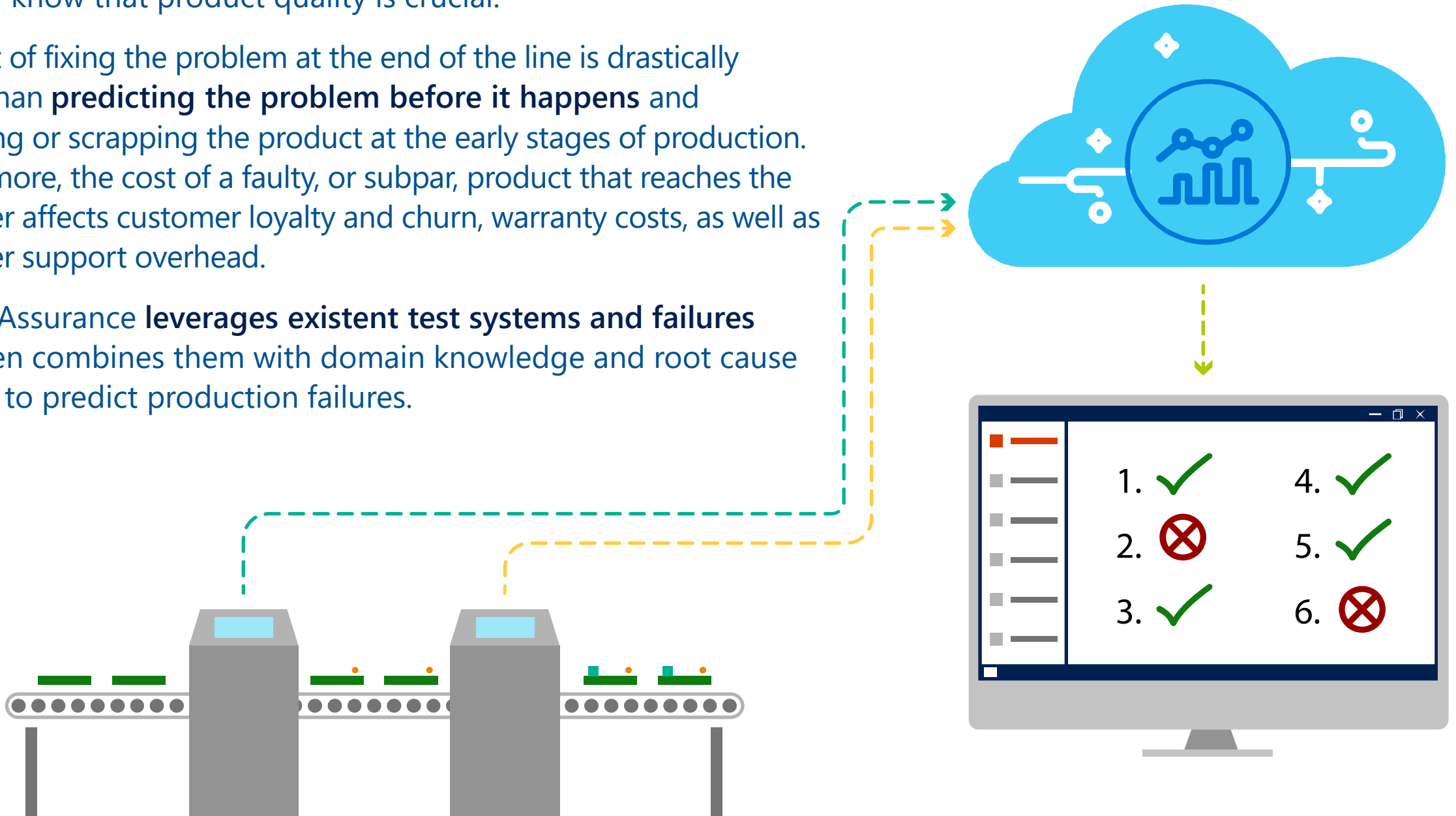
Cortana Intelligence Suite



Professionals in the discrete, process or repetitive manufacturing industry know that product quality is crucial.

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



Why use Quality Assurance?

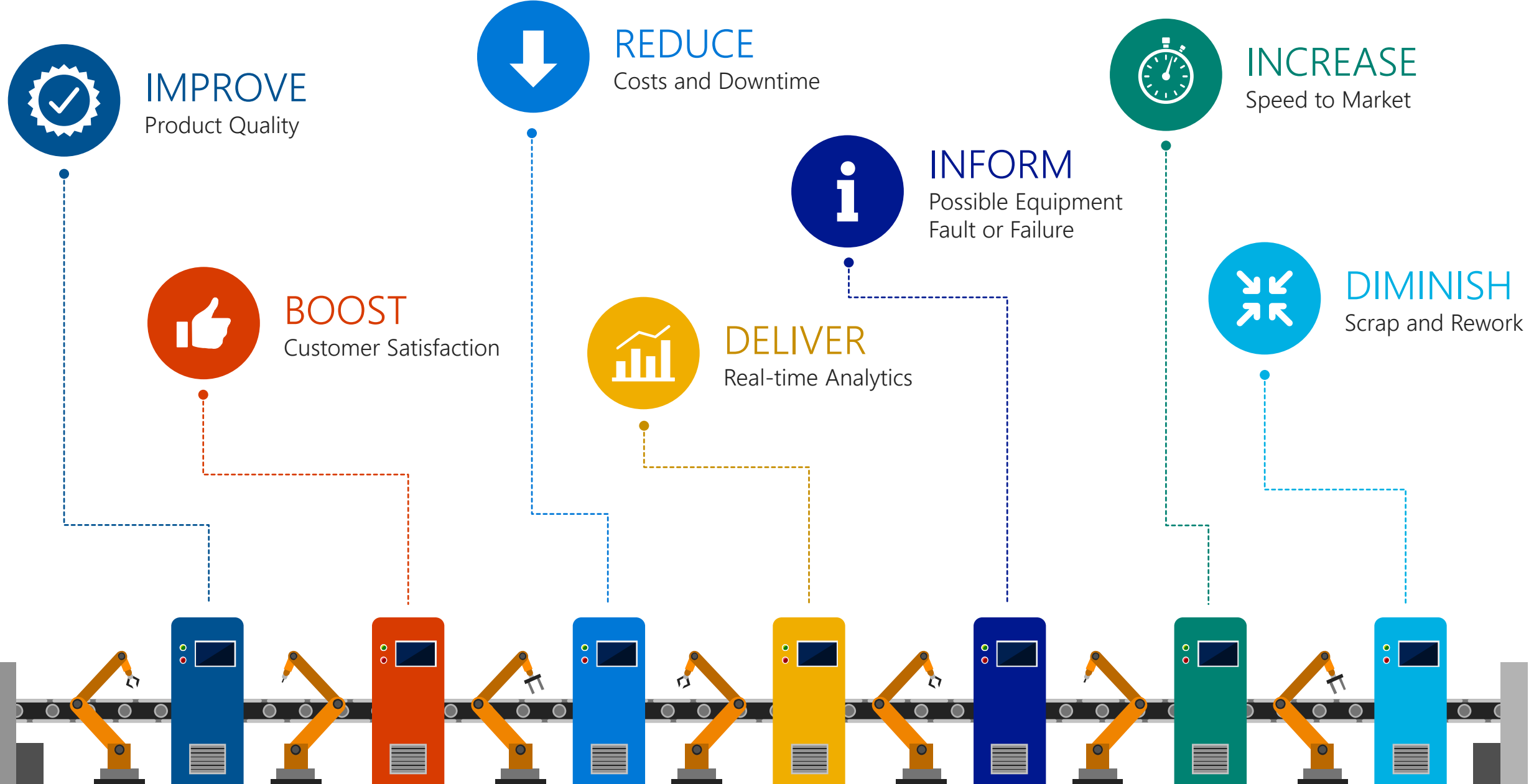


Predict Costly Production Issues

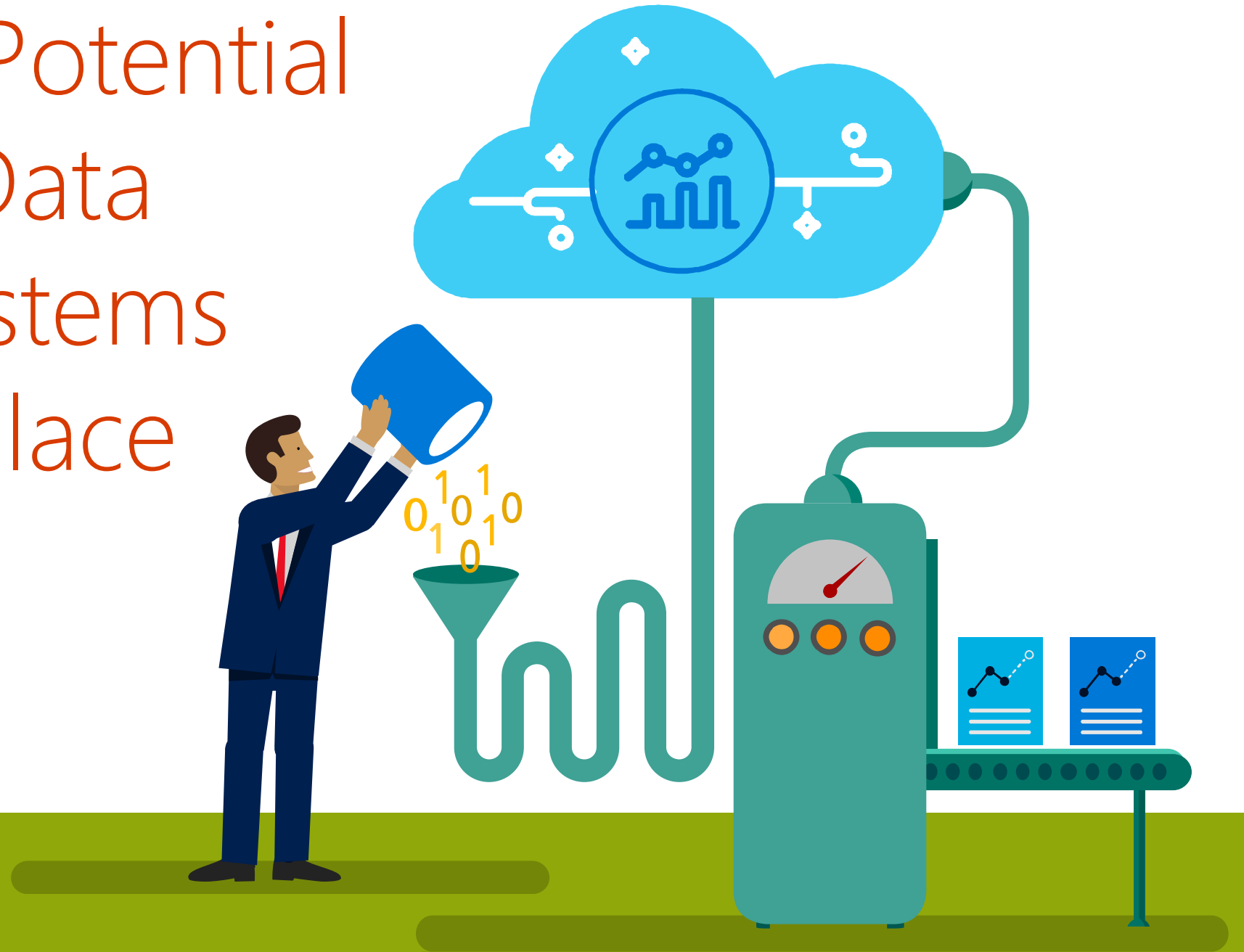
Quality across the assembly line is imperative. Identifying errors, slowdowns and predicting potential failures before they occur, rather than after they are detected, helps companies be proactive and improve productivity.



Quality Assurance | Benefits



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



Inside Quality Assurance

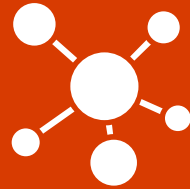


Quality Assurance | Challenges



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 insight



SCALING...

...the solution to
increasing
requirements

Quality Assurance | How to Start



DATA

Are there identifiers for predictions?



EXPERTISE

Are there examples of past failures?



GOALS

Has a use case been defined?



QUALITY

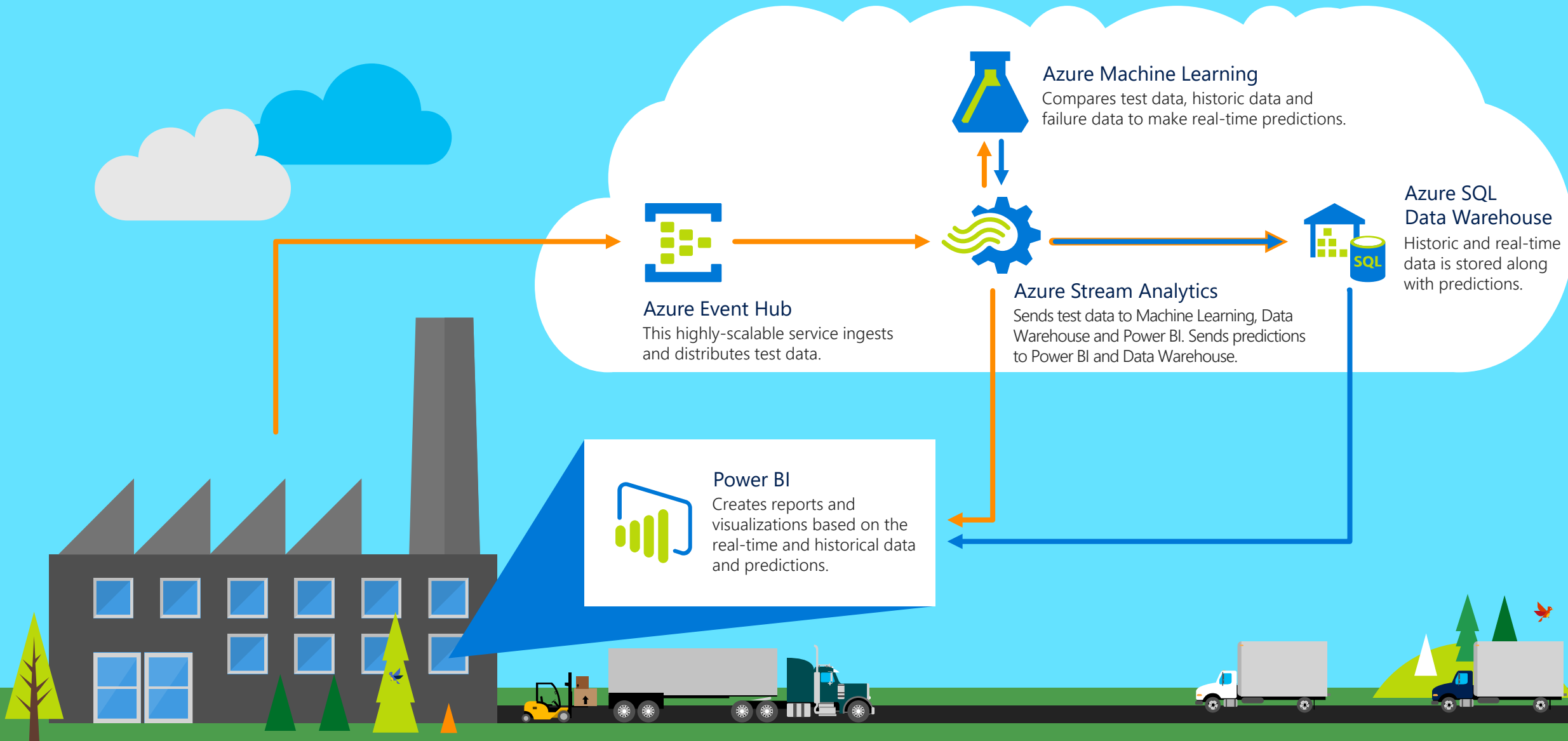
Is the data applicable and accurate?



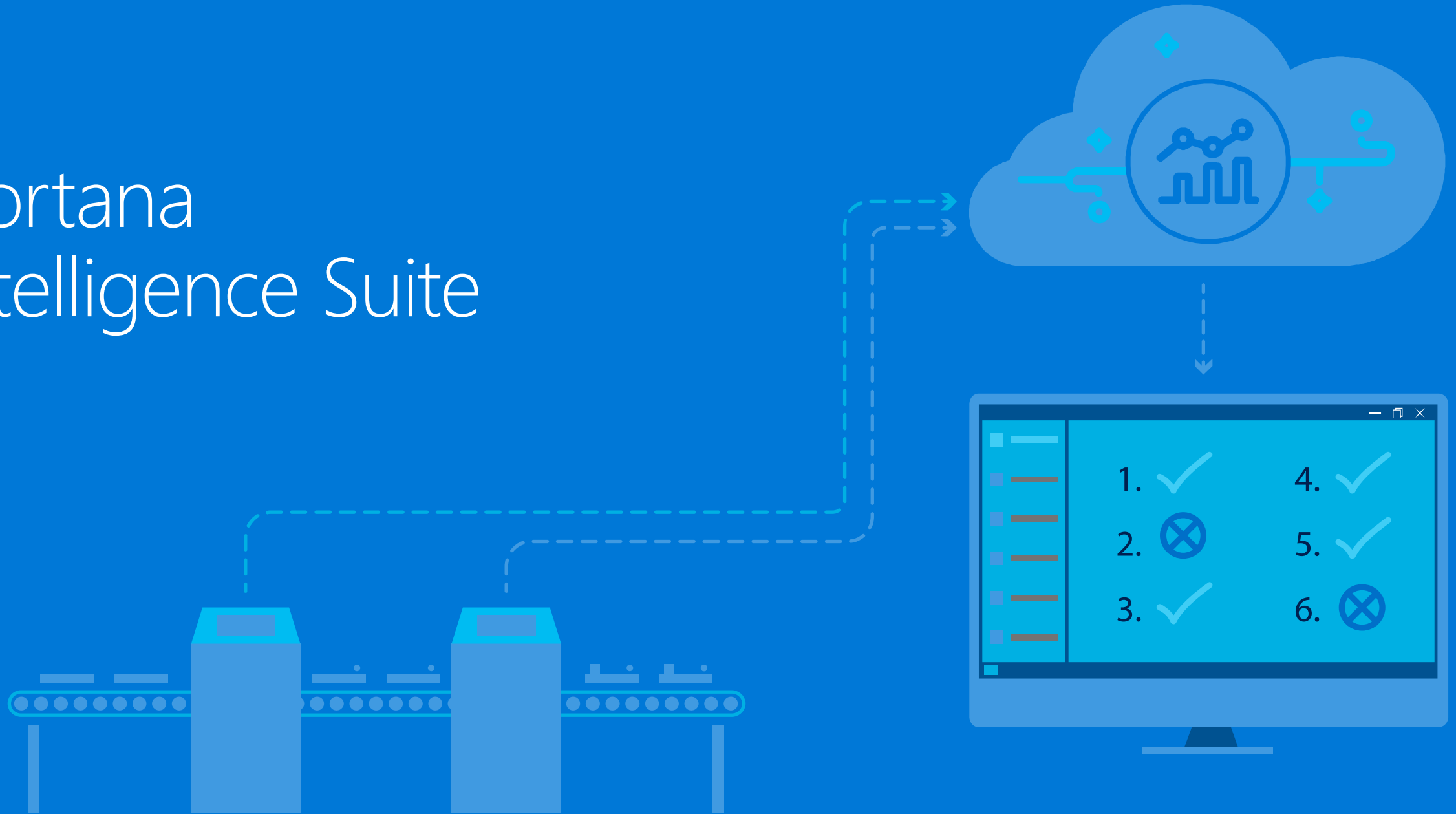
QUANTITY

Is there enough data for an accurate prediction?

Quality Assurance | Architecture



Cortana Intelligence Suite



Cortana Intelligence Suite | Overview

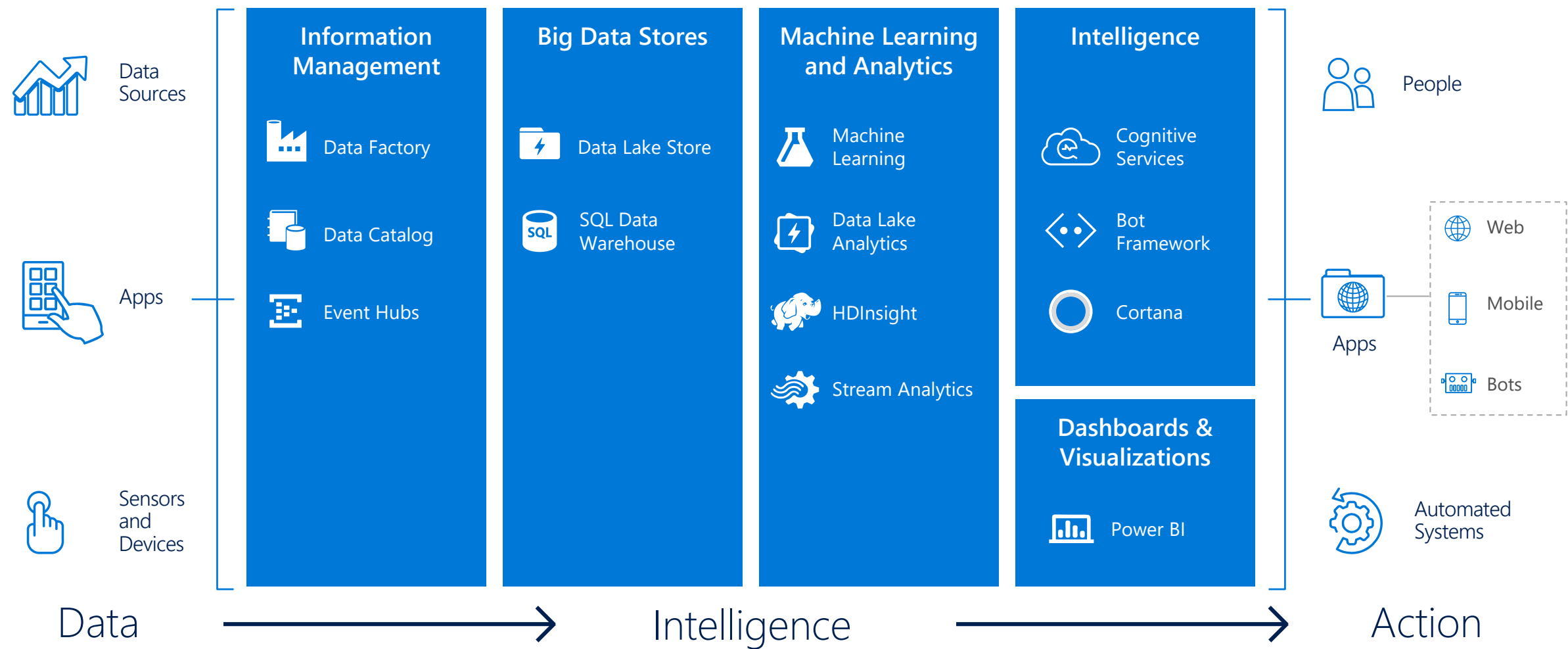
Cortana Intelligence is a fully managed **big data and advanced analytics suite** in the cloud that **transforms data into intelligent action**.

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 | Overview

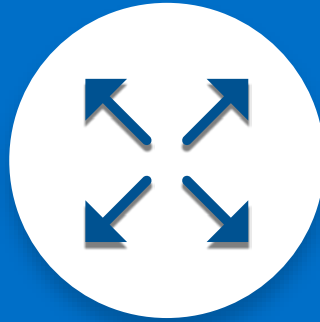


Cortana Intelligence Suite | Advantages



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 | Used in this Solution

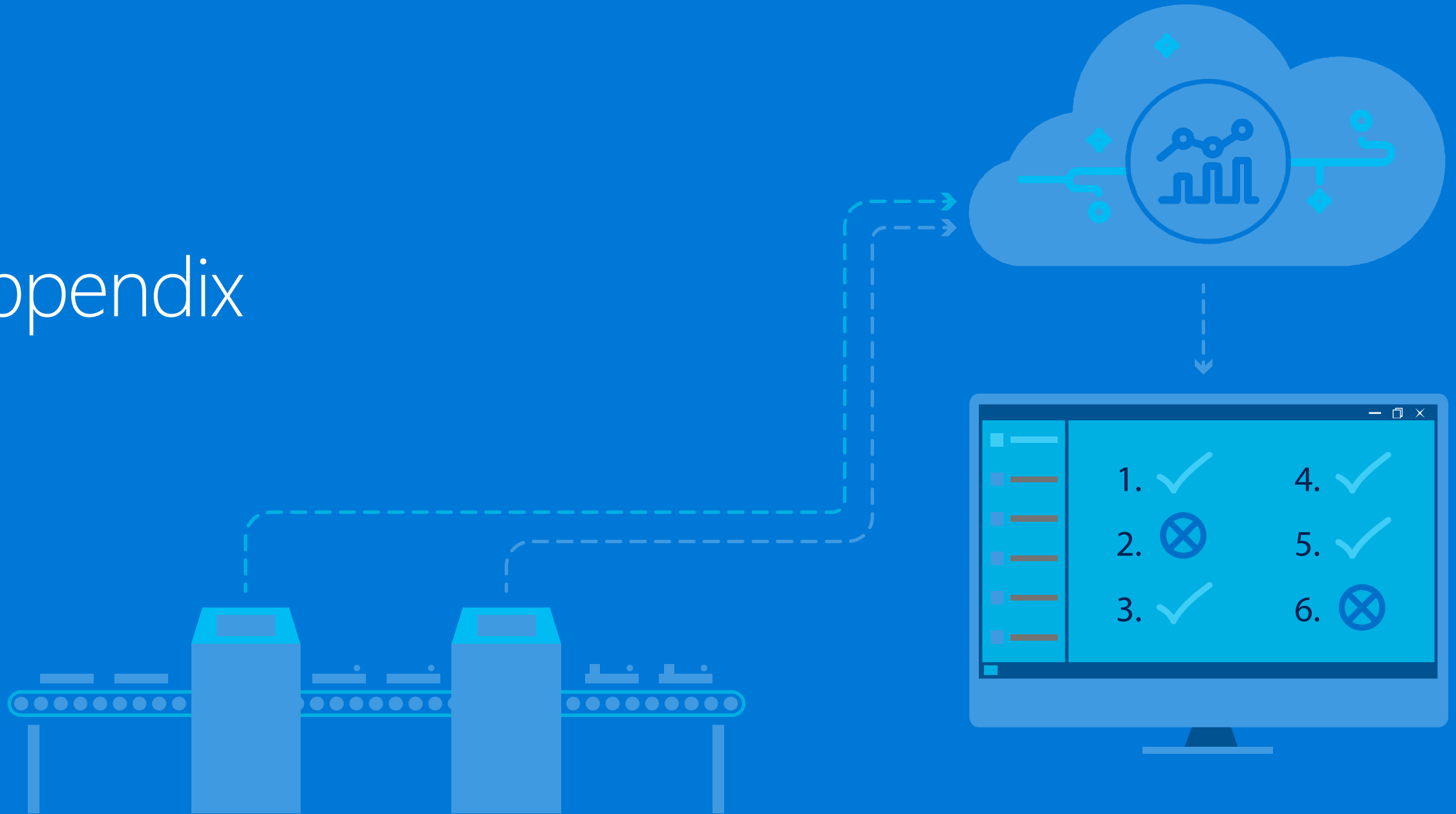
Azure Machine Learning

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.



Appendix



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%

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

JABIL



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.