Cortana Analytics for Revenue Forecasting

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Agenda

- Perspectives from a Corporate Vice President and Treasurer
- Overview of Cortana Analytics Suite
- Machine Learning-based Revenue Forecasting
- Demo: Operationalization of Revenue Forecasting
- Cortana Analytics for Revenue Forecasting – Architecture
- Demo: Forecasting Financial Metrics for Dow Jones 30 companies
- Partner Demo: Integration with deFacto Planning

George Zinn,
Corporate Vice President and Treasurer,
Microsoft Treasury
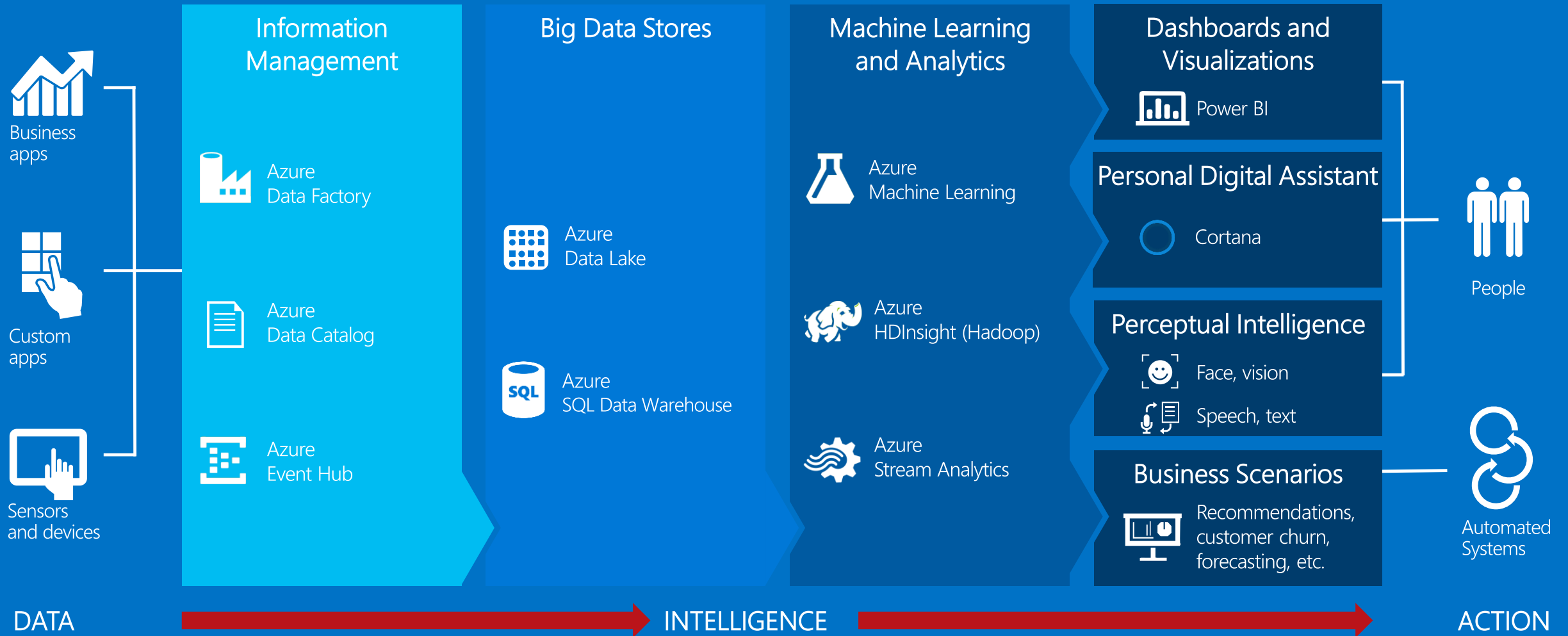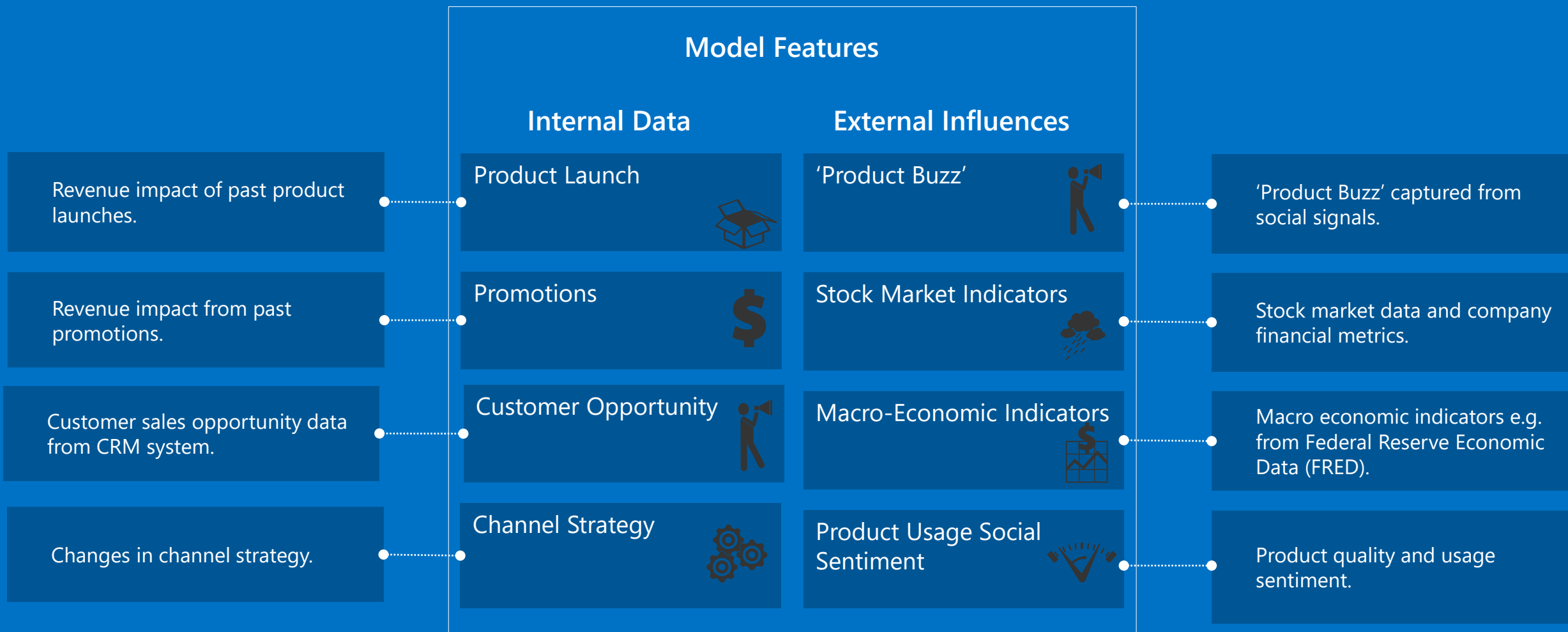
ML-Powered Revenue Forecasting at Microsoft

We use machine learning for forecasting revenue and other financial metrics in order to improve the Financial Planning & Budgeting process.

Forecast models use state-of-the-art algorithms combined with internal data and a variety of publicly available data sources.

Results:
- Improved forecast accuracy over existing judgement-based forecasts.
- Faster time-to-forecast than existing manual processes.

Vision for Revenue Forecasting at Microsoft

Model Features

Internal Data

External Influences

Revenue impact of past product launches.

Product Launch

'Product Buzz'

'Product Buzz' captured from social signals.

Revenue impact from past promotions.

Promotions

Stock Market Indicators

Stock market data and company financial metrics.

Customer sales opportunity data from CRM system.

Customer Opportunity

Macro-Economic Indicators

Macro economic indicators e.g. from Federal Reserve Economic Data (FRED).

Changes in channel strategy.

Channel Strategy

Product Usage Social Sentiment

Product quality and usage sentiment.

Forecasting Services Revenue
End-to-End Forecast Automation

Objective:
Forecast monthly WW sales revenue using sales opportunities (pipeline) features

Data:
- Target: monthly sales revenue
- Features: Lead pipeline or customer opportunity data derived from Dynamics CRM
  Volume ($) in full pipeline, or different stages of pipeline, Volume by deal size, Close rate in past months
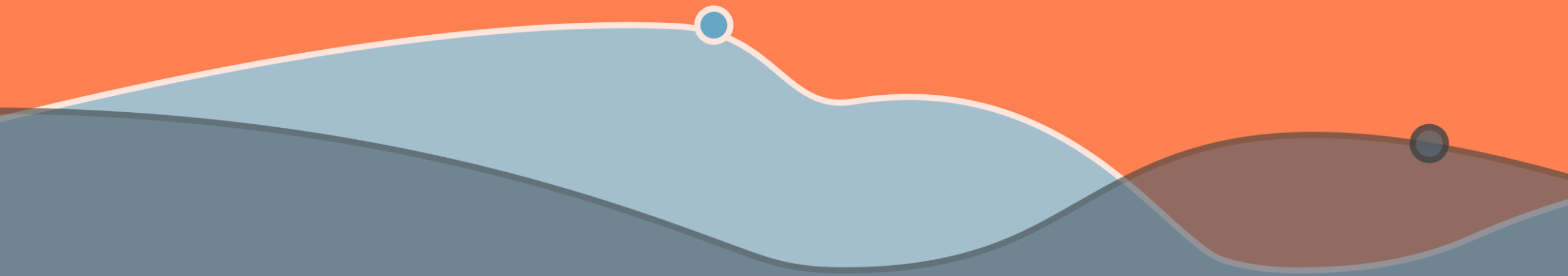
Model:
Elastic net in R, operationalized in AML and published as a web-service
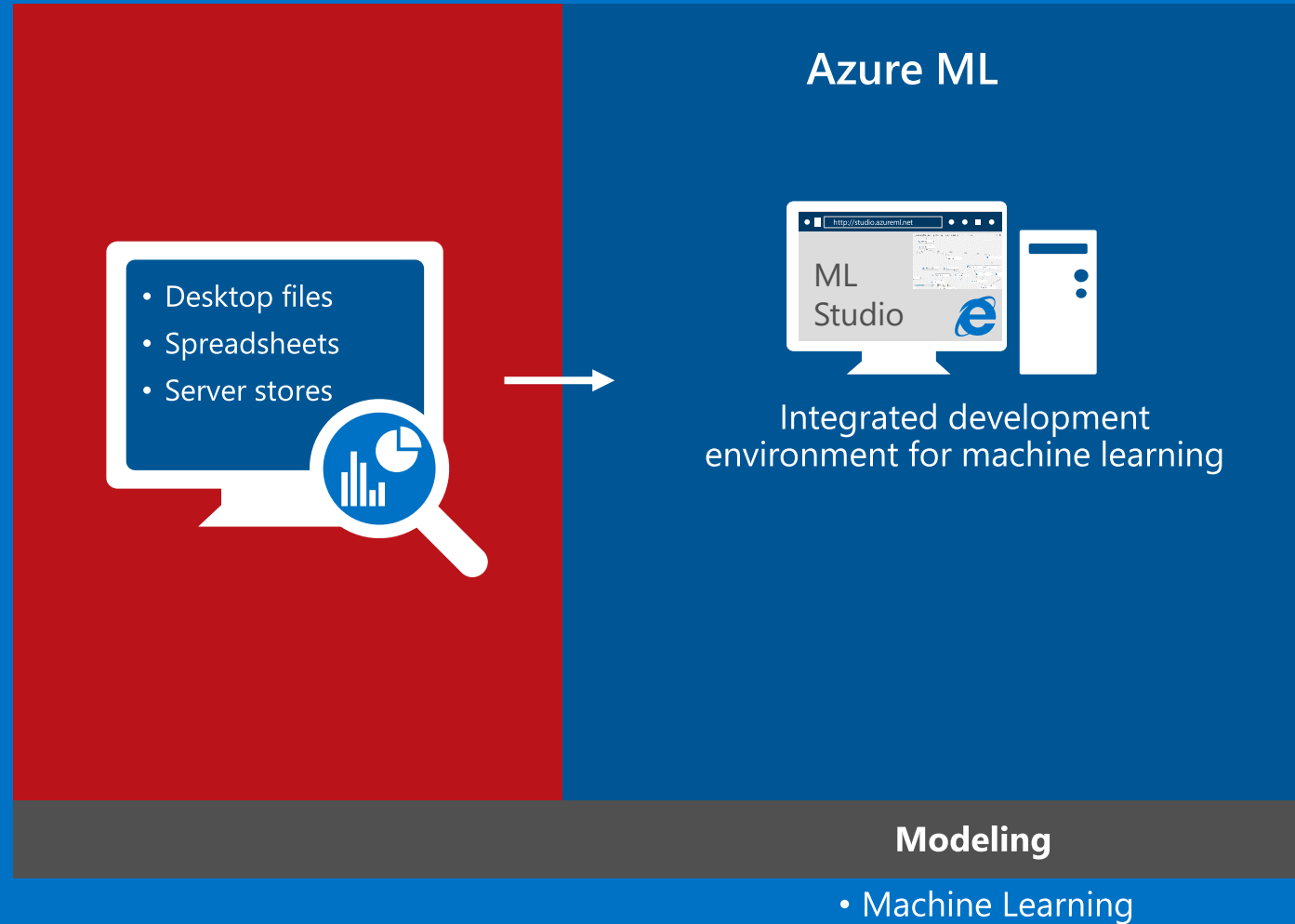
Operationalization:
- Forecasts generated daily hands-off using Cortana Analytics Suite
- Data pull from on-prem, AML model scoring, summary and visualization in PowerBI, data push back to on-prem.
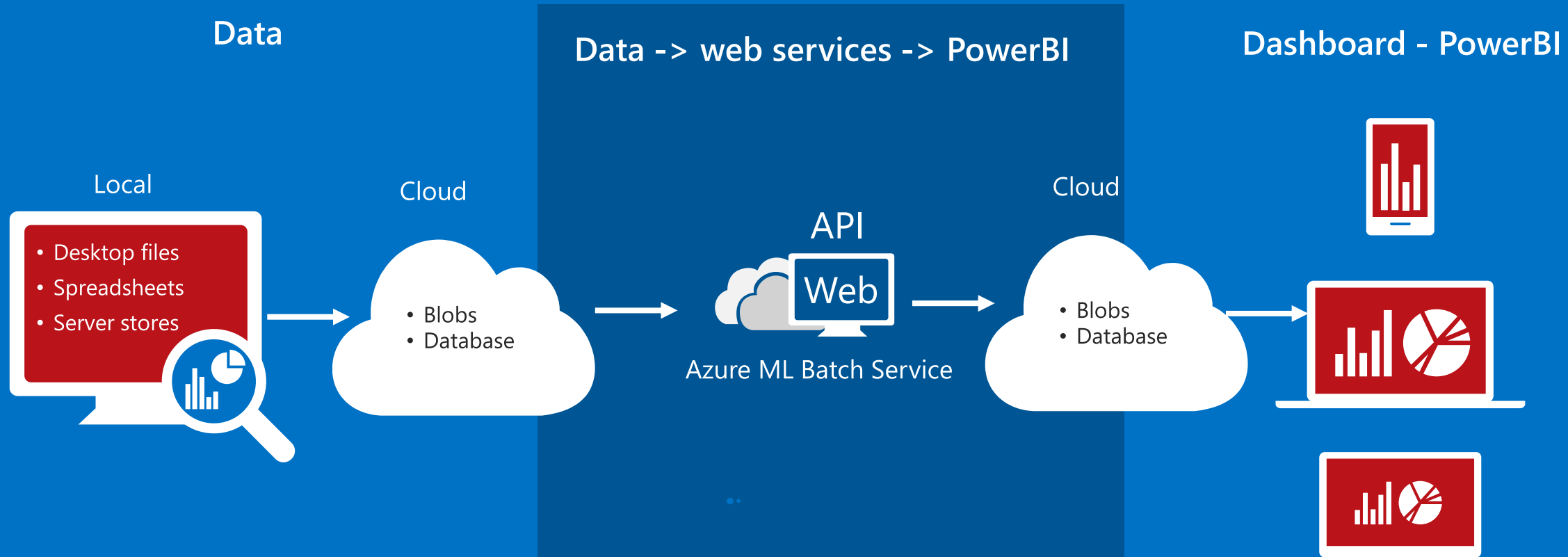
Demo

Forecasting Services Revenue

Revenue Forecasting – Training Models

Azure ML

- Desktop files
- Spreadsheets
- Server stores

ML Studio

http://studio.azureml.net

Integrated development environment for machine learning

Modeling

- Machine Learning

Revenue Forecasting – Operationalized solution

Data

Data -> web services -> PowerBI

Dashboard - PowerBI

Local

- Desktop files
- Spreadsheets
- Server stores

Cloud

- Blobs
- Database

API

Web

Azure ML Batch Service

Cloud

- Blobs
- Database

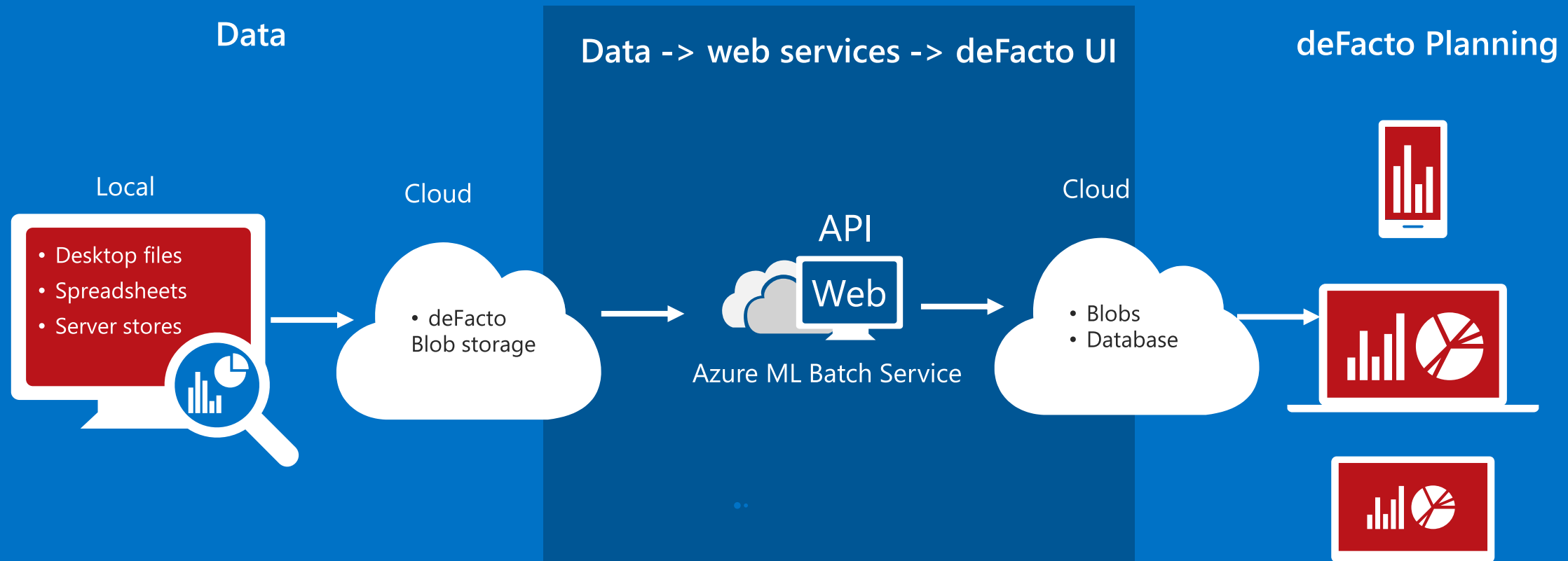| **Data preparation**	**Modeling**	**Deployment**	**Business value**
• Data Factory	• Machine Learning	• Azure portal	• Power BI

Demo

Forecasting financial metrics of Dow Jones 30 companies

POC: ML-based Forecasts Inside a Financial Planning ISV

Objective:
Integrated Azure Machine Learning-based forecasts inside deFacto Planning software

Data

Data -> web services -> deFacto UI

deFacto Planning

Local
- Desktop files
- Spreadsheets
- Server stores

Cloud
- deFacto
Blob storage

API
Web

Azure ML Batch Service

Cloud
- Blobs
- Database

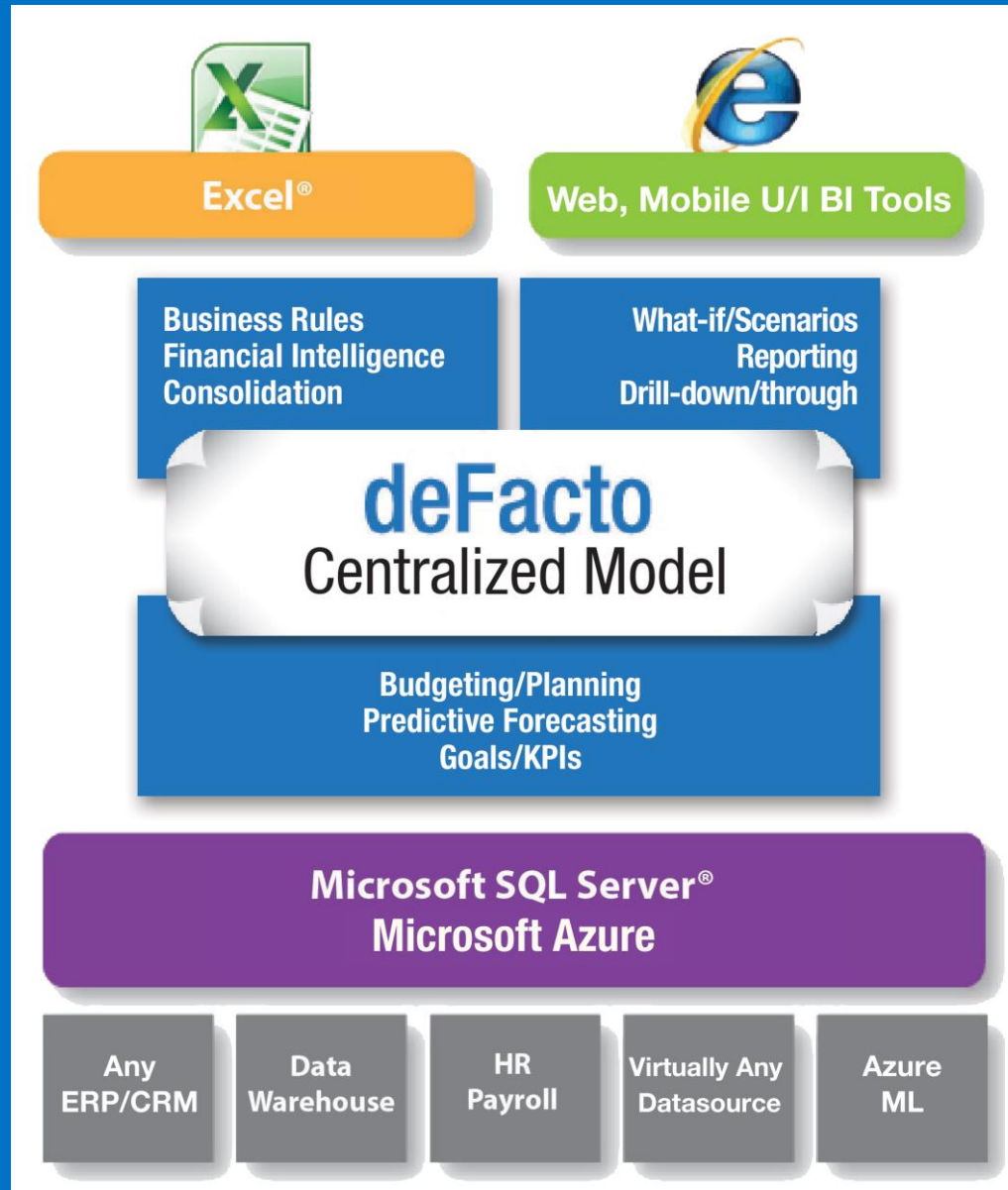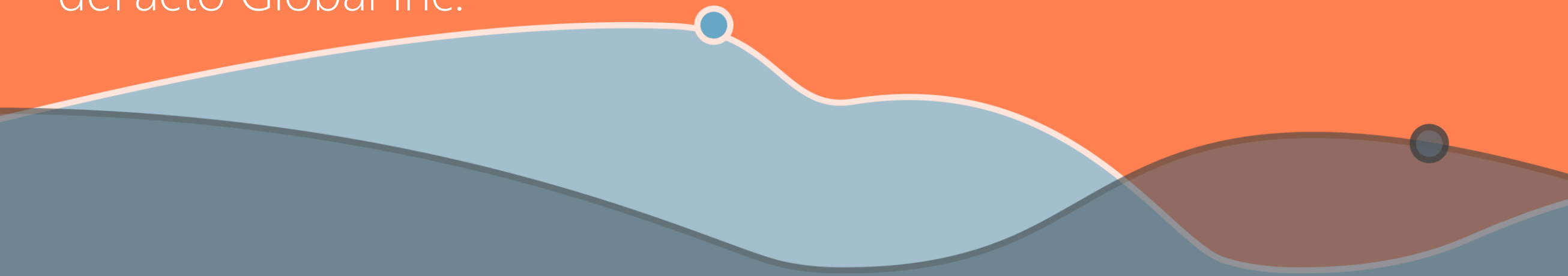| Data preparation	Modeling	Deployment	Business value
• Data Factory	• Machine Learning	• Azure portal	• deFacto Planning

deFacto Planning Architecture

Demo – deFacto Planning

Anthony D'Anna, Chief Operating Officer
deFacto Global Inc.

Q & A

Microsoft