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5 Data Integration Options for Microsoft Power BI

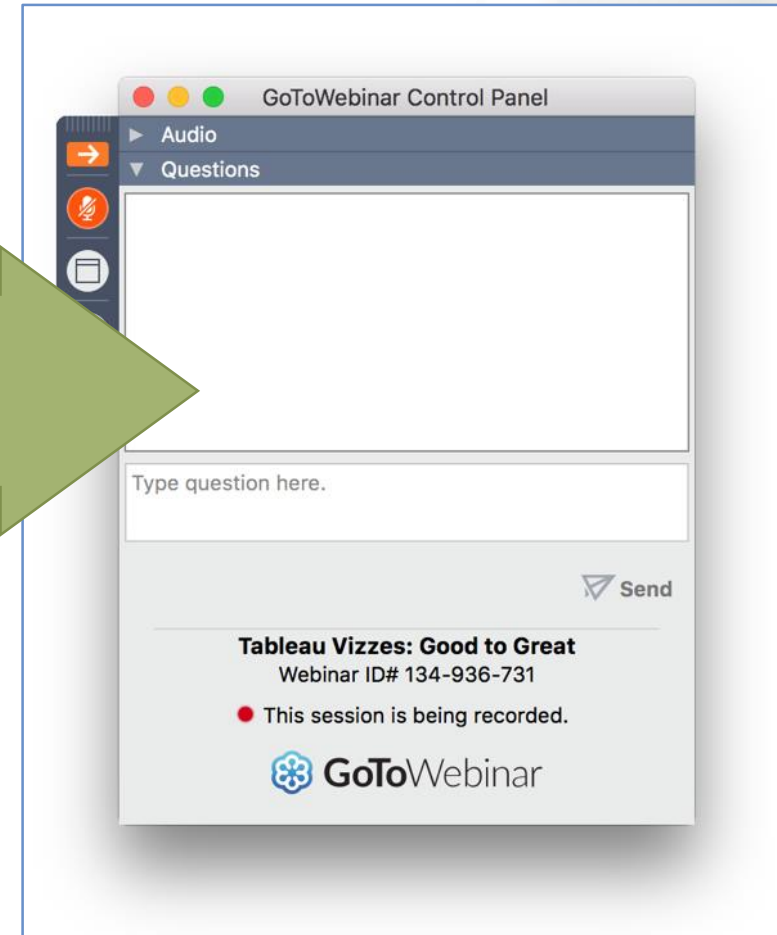


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SHEDDING LIGHT ON CLOUD BI OPTIONS
Amazon. IBM Cognos Cloud. Microsoft Power BI Service. Tableau Online.
Azure.



BUSINESS
STRATEGY



IBM COGNOS REPORTING TOOLS: FEATURE SET COMPARISON
Visual Reference Guide



FEATURES



A COMPARISON OF POWER BI, TABLEAU & COGNOS
Differentiators Demo'd



FEATURES



Agenda

Introductions

Brief BI/Analytics architecture overview

Data integration options for Power BI

Senturus overview

Additional resources

Q&A



Introductions



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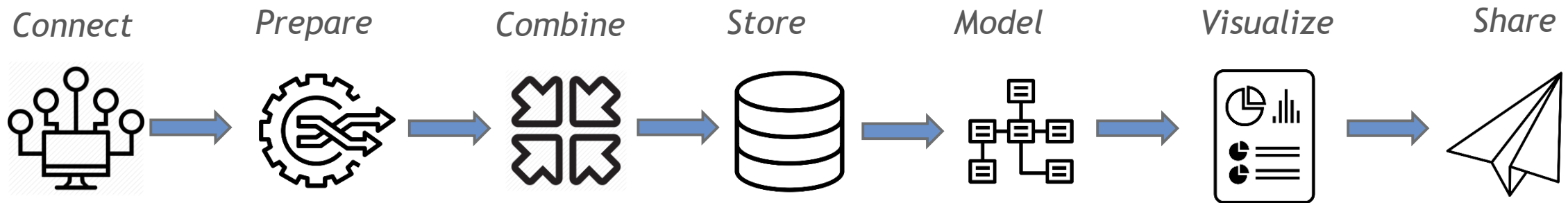
Founder & CEO
Senturus, Inc.



Michael Weinbauer

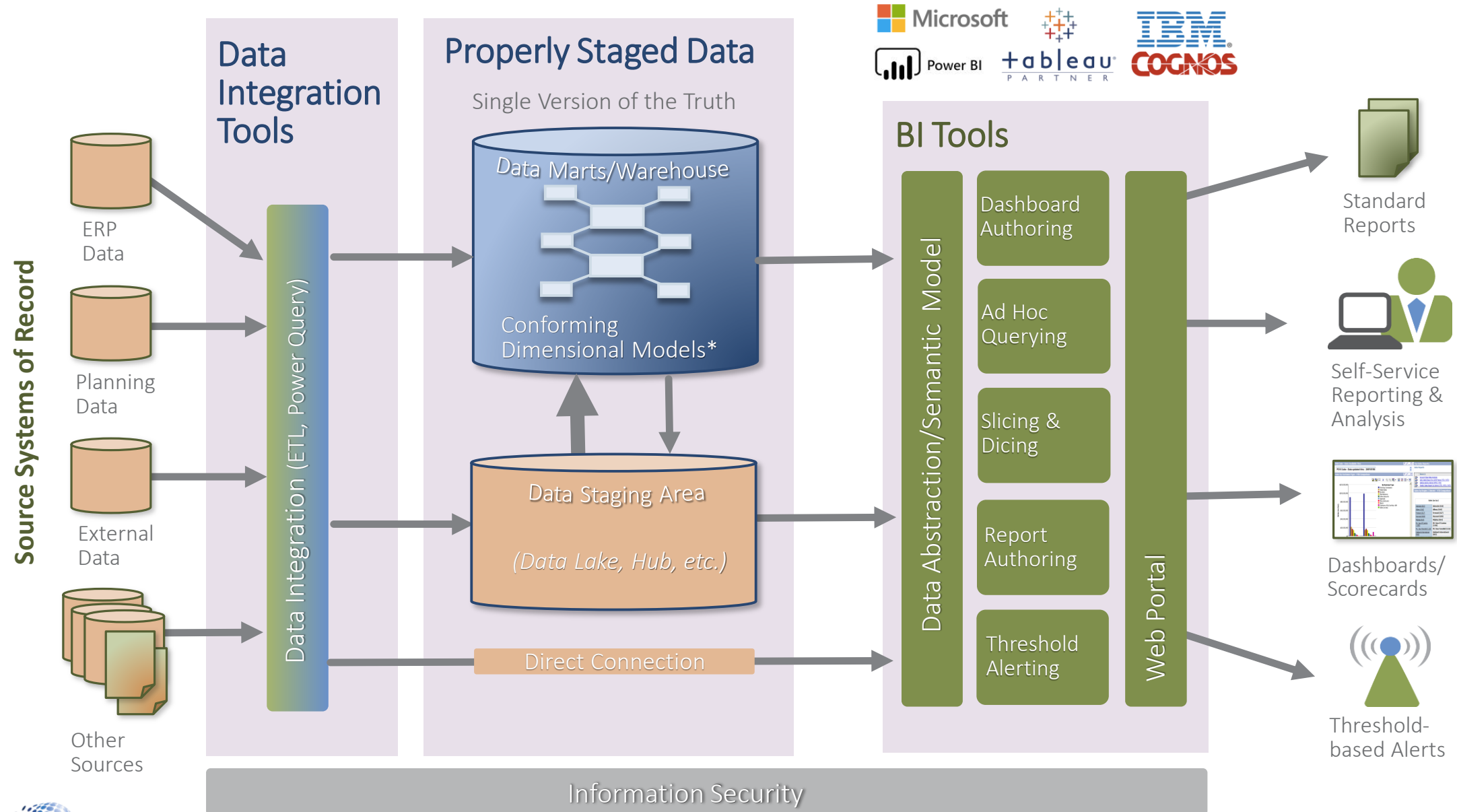
Director
Senturus, Inc.

Basic analytics (BI) system



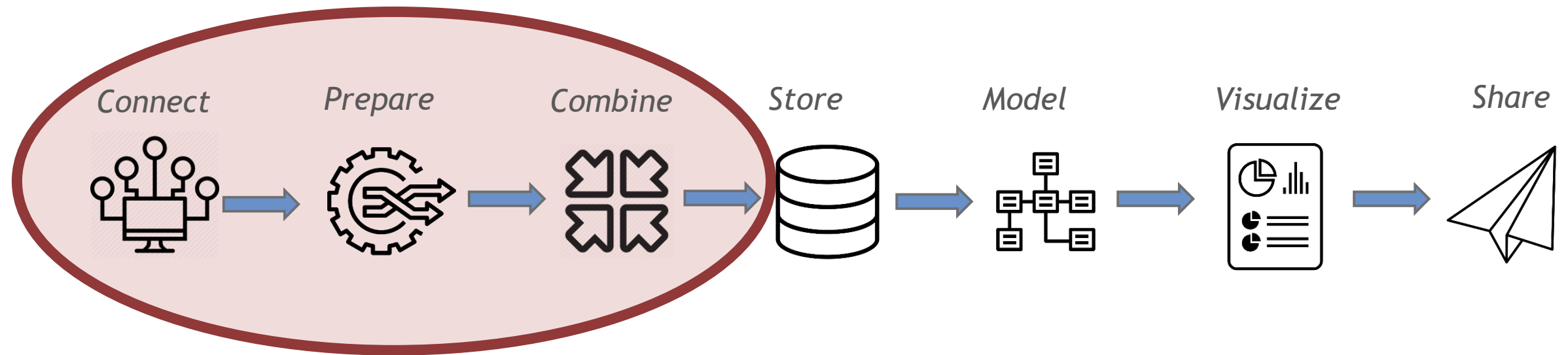
The Essential Steps

Typical BI system architecture



Basic analytics (BI) system

Today's Topic



The Essential Steps

Poll #1

What is your role in using Power BI?

- ETL/ELT developer
- Power user
- Data consumer
- Manager/executive

Poll #2

How are you currently ingesting data into Power BI?

- From data warehouse
- Power Query – disparate data sources
- Analysis Services cube
- Cloud – data lake, Databricks, streaming, etc.
- Other

Integration Options for Power BI

Ingesting data into Power BI - choices

ETL and ELT defined

Microsoft platform - right tool for the job

Cost, complexity, scalability

Decision matrix

Specific Microsoft Platform Tools

Power Query

Power BI dataflows

SSIS (SQL Server Integration Services)

Stream Analytics (Power BI and data lake)

Azure Data Factory – mapping dataflows

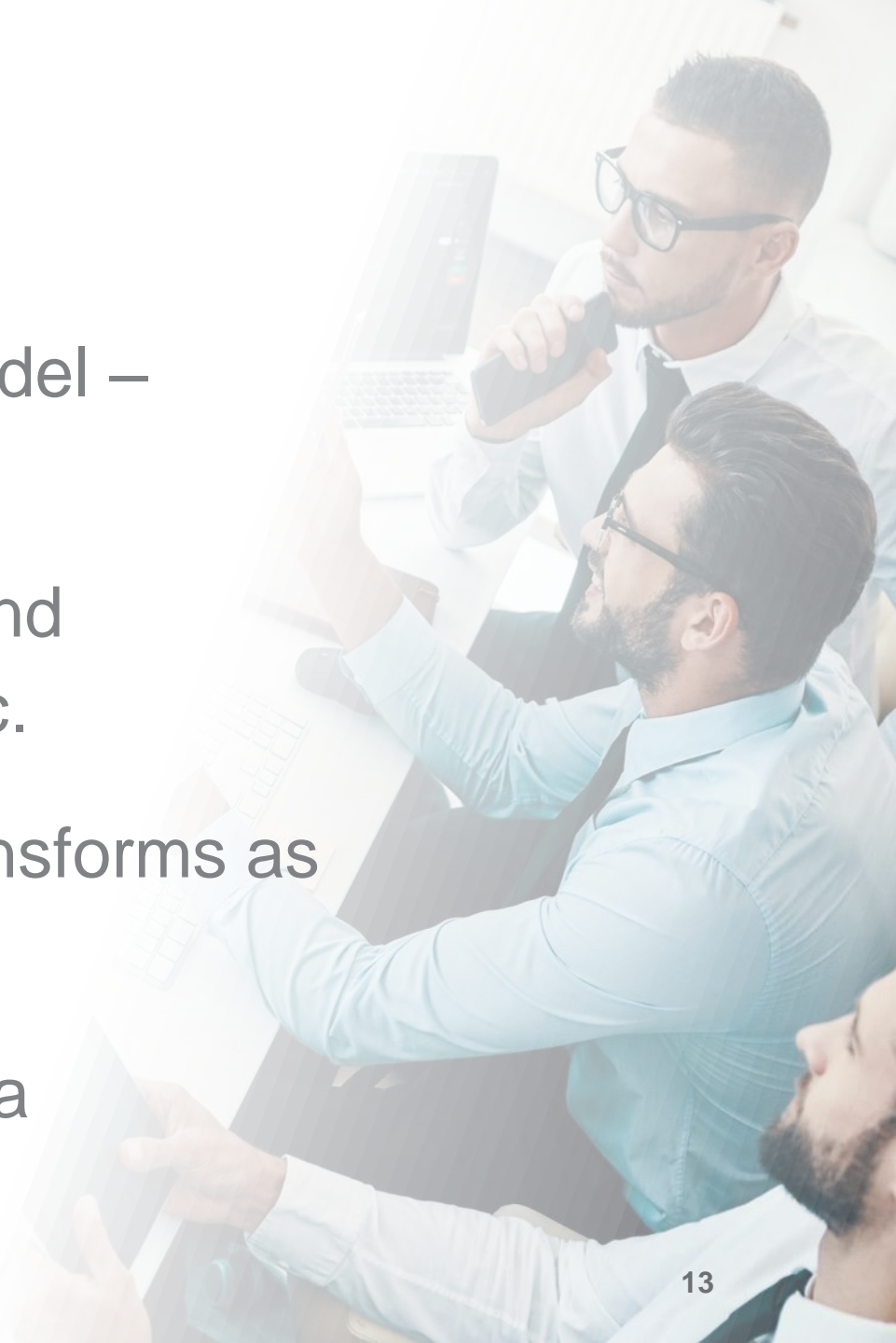
Power Query

Brings data into a Power BI Desktop model – many built in connectors

Allows for transformations, appending and merging tables, create new columns, etc.

Doesn't persist the data in storage – transforms as it moves data into a Power BI model

Uses the M language – a sequential data transformation language



Demo Power Query

Connectors

GUI

M language

Power Query segue into Power BI dataflows

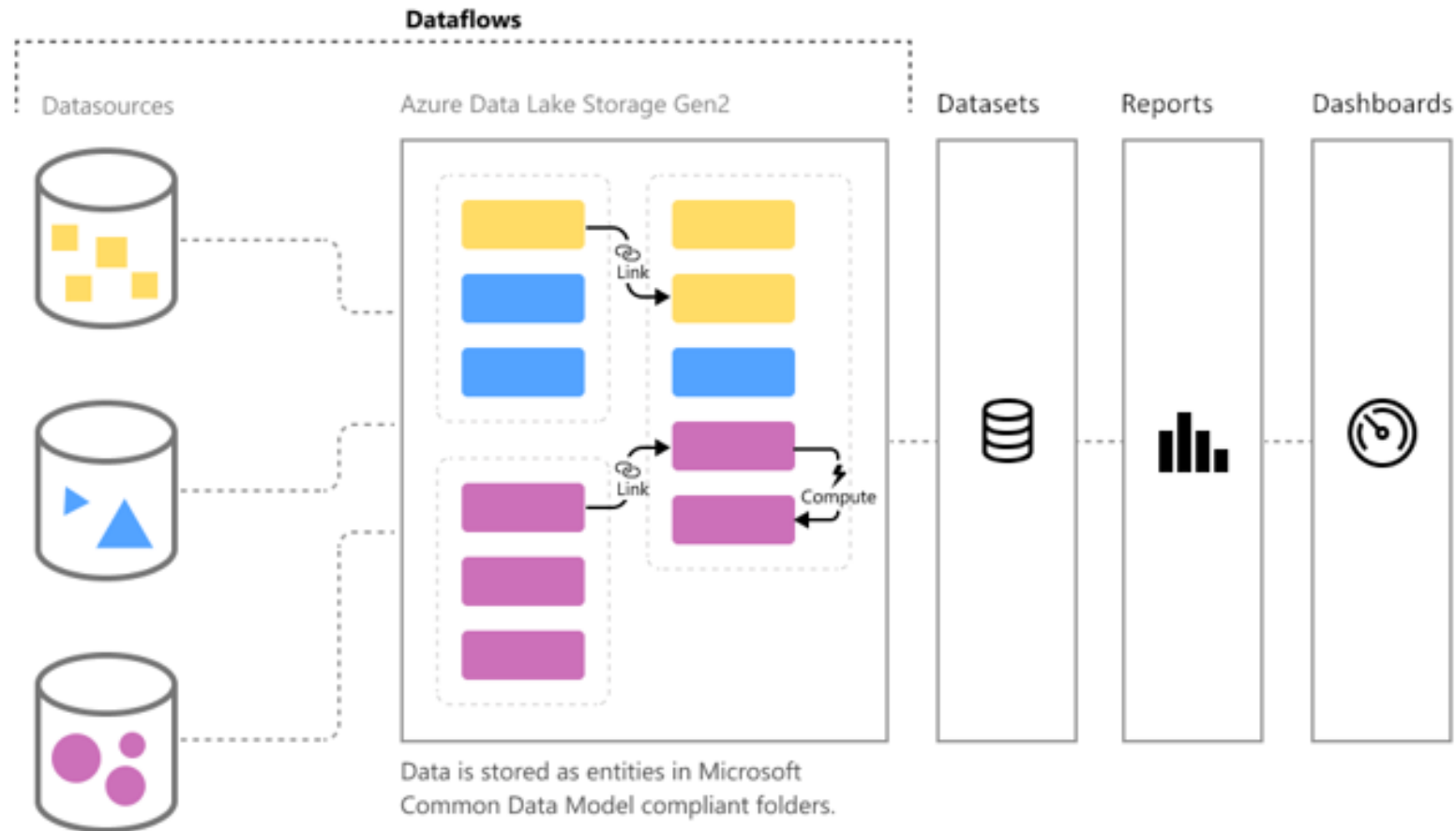
Many power users and analysts have become quite proficient at ETL using Power Query and the M language

Organizations wanted a way to reuse and share the work and data from these power users

Power BI dataflows bridges the gap between enterprise ETL and self-service analytics

Dataflows

Bridge the gap between enterprise and self-service Power BI



Power BI dataflows

Uses the Power Query GUI in the cloud

Allows you to persist (store) data in the cloud to be used by many Power BI users

Schedule data refresh

Linked datasets allow for reusability of existing dataflows to create new dataflows

Demo Power BI dataflows

Access the GUI

GUI features

M language

Scheduled refresh

Governance added to Power BI service

SQL Server Integration Services (SSIS)

Free with SQL Server license – uses visual studio for development environment

On-prem Windows App – GUI-based - drag and drop without coding

Pipeline architecture, extract transform and load tool

More robust, but also more complex – ETL developer

On-prem data warehouse ingestion

Control Flow – Sequential and Parallel conditional processing of tasks

Data Flow – In memory, pipeline data transformations

SSIS demo

SSIS Toolbox

- Favorites
 - Data Flow Task
 - Execute SQL Task
- Common
 - Analysis Services Proc...
 - Bulk Insert Task
 - Data Profiling Task
 - Execute Package Task
 - Execute Process Task
 - Expression Task
 - File System Task
 - FTP Task
 - Hadoop File System Ta...
 - Hadoop Hive Task
 - Hadoop Pig Task
 - Script Task
 - Send Mail Task
 - Web Service Task
 - XML Task
- Azure
- Containers
 - For Loop Container
- Favorites
 - Provides convenient access to your favorite elements so that they are only a click away.

FactCovidTransDemo.dtsx [Design]

Control Flow | Data Flow | Parameters | Event Handlers | Package Explorer

Control Flow

- Execute SQL Task
- Data Flow Task
- cleanse county state
- Load DimGeography
- Load FactTrans

Data Flow

- truncate covid tracking state
- Data Flow Task 1

Connection Managers

- Flat File Connection Manager
- Flat File Connection Manager 1
- Flat File Connection Manager 2
- LocalHost.DIGMisc

Solution Explorer

Search Solution Explorer (Ctrl+;)

- Solution 'Coronavirus2020' (1 project)
 - Coronavirus2020
 - Project.params
 - Connection Managers
 - SSIS Packages
 - FactCovidTransDemo.dtsx
 - FactCovidTrans.dtsx
 - Package1.dtsx
 - Package2.dtsx
 - Package Parts

Properties

FactCovidTransDemo Package

ForceExecutionValue: False

Identification

CreationDate	4/1/2020 12:11 PM
CreatorComputerName	INSPIRON15R
CreatorName	DIG\akinnier
Description	
ID	{4BB275FD-27C1-4384-B1...
Name	FactCovidTransDemo
PackageType	DTSDesigner100

Misc

Configurations	(Collection)
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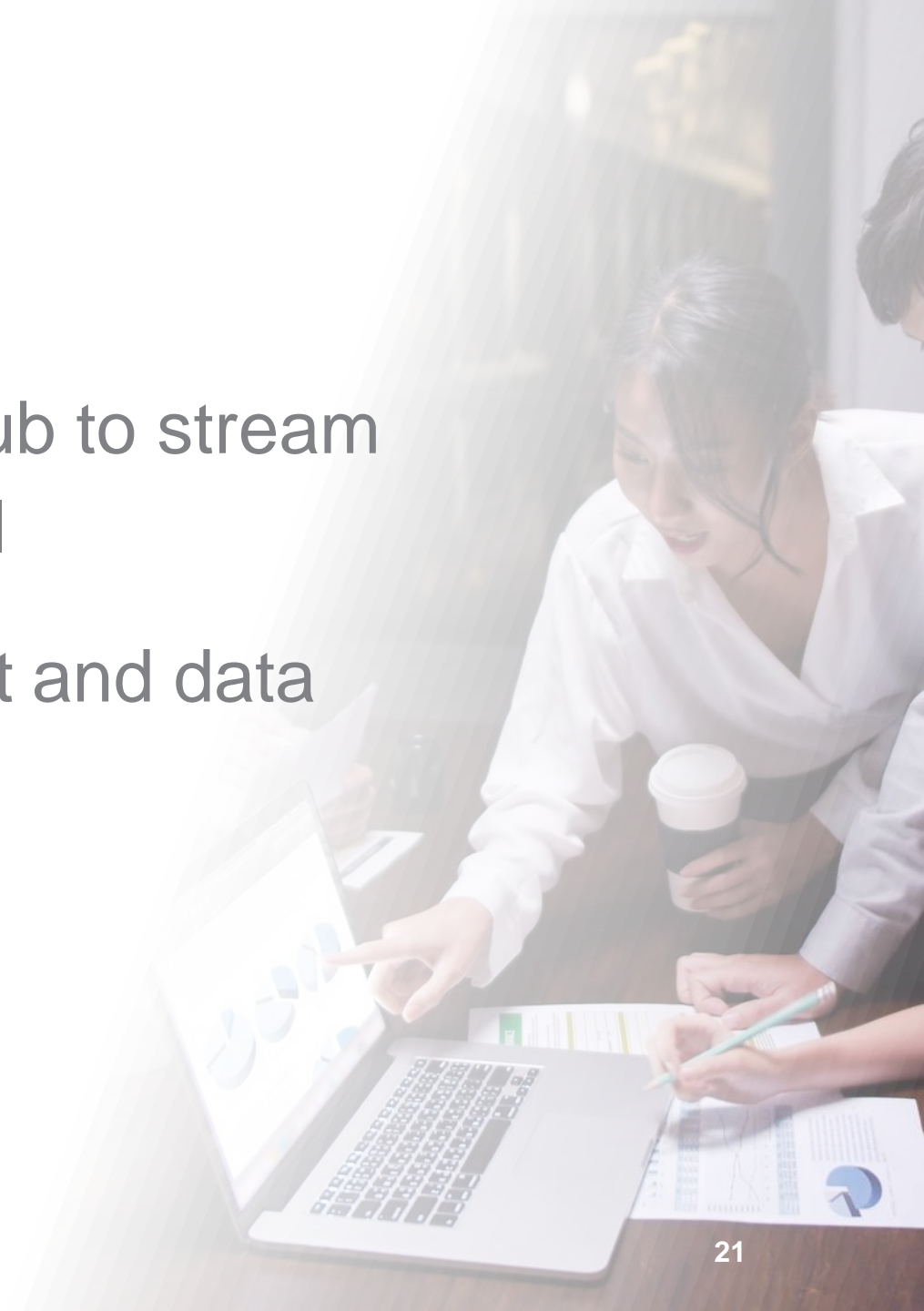
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Azure Stream Analytics

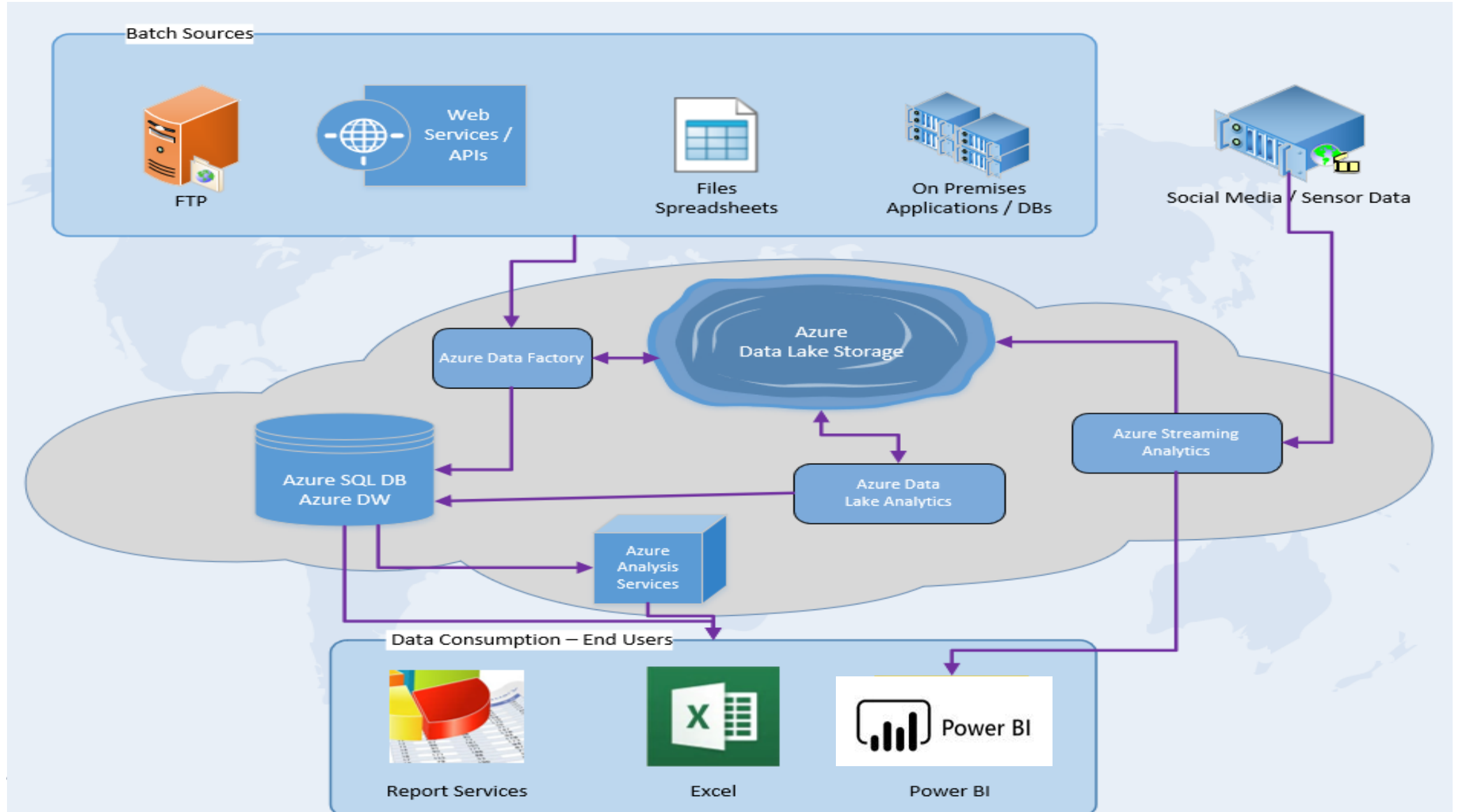
Works in tandem with Azure Event Hub to stream data into your data lake and Power BI

Big data processing for specific report and data warehouse ingestion












Real-time data analysis



Streams & lakes



Demo Stream Analytics & Power BI

Name	Size	Last modified
 00_1369417_3598fd38125c49b599bae05539...	229 KB	3/7/2018, 8:00:07 PM
 01_1369417_81793821a02e44809c1c6e51be...	221 KB	3/7/2018, 9:00:09 PM
 02_1369417_73060297d4e94f209f773d6e15...	152 KB	3/7/2018, 10:00:01 PM
 03_1369417_73cfed45028d47199096a6f929...	284 KB	3/7/2018, 10:59:57 PM
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Azure Data Factory

Browser-based Azure (cloud) application for ETL/ELT

Cost is usage based – pay for the amount of data you load

Originally a “Lift and Shift” technology for moving large files into the cloud

Version 2 has recently added a GUI components

- SSIS, data flows, wrangling data flows

Enterprise level

- DevOps, alerting, scheduling, test/QA/prod environments

Pipelines can manage multiple technologies

In summary...

These tools all share the same fundamentals of loading and transforming data so that Power BI can produce useful analytics to help your company make better business decisions

Decision matrix – how do I decide?

Continuously evolving stack of technologies

Power BI assistance many ways

Training

Get and Transforming Data with Power BI on 12/14, 1/19, 2/ 23, 4/13

<https://senturus.com/training/course-schedule/transforming-data-with-power-bi/>

From desktop to enterprise

Get on the path to efficient, accurate, shareable dashboard reporting

<https://senturus.com/power-bi-desktop-to-enterprise/>

Bucket of hours

Support you need, how you need it

<https://senturus.com/business-intelligence-staffing-and-support/>

The authority in business intelligence & analytics

Focused exclusively on BI, Senturus brings expertise on the **entire BI stack** to **multiple BI platforms**.

Our **pragmatic** experience can **help you** determine, design and deliver the **right architectural options and tools** for your analytics needs, no matter how complex the environment.

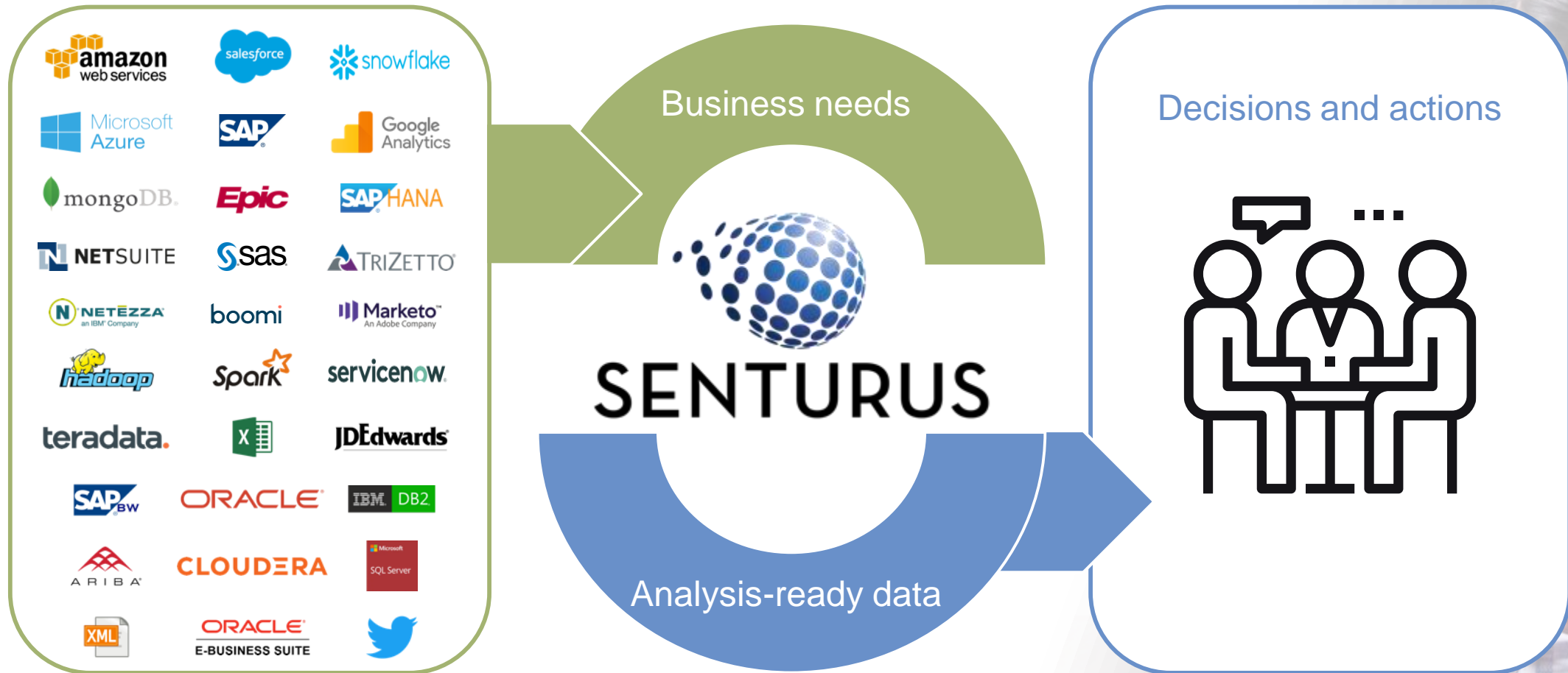
20+ Years

1,500+
Clients

3,000+
Projects

20,000+
Trained

Bridging the data and decisioning gap



Full spectrum of BI services

- Dashboards, reporting and visualizations
- Data preparation and modern data warehousing
- Hybrid BI environments (migrations, security, etc.)
- Software to enable bimodal BI and platform migrations
- BI support retainer (expertise on demand)
- Training and mentoring

A long, strong history of success

- 20+ years
- 1500+ clients
- 3000+ projects



Expand your knowledge

Find more resources
on the Senturus website

senturus.com/senturus-resources



Complete BI training offerings



Power BI



Tailored group sessions



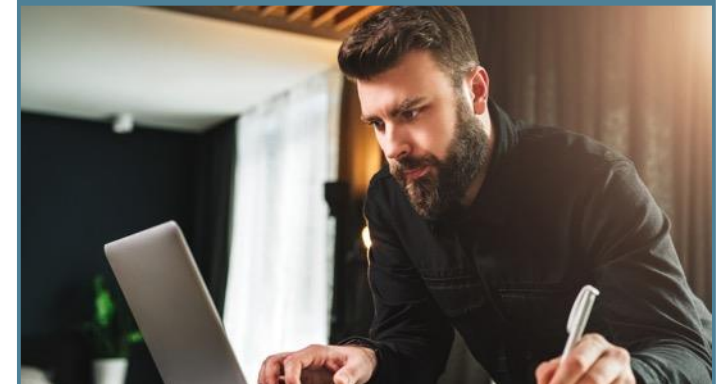
Mentoring



Instructor-led online courses



Self-paced learning



Additional resources from Senturus

Unbiased product reviews



Technical tips



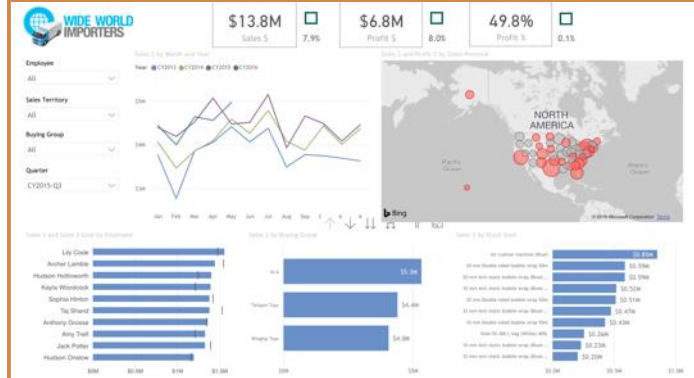
Insider viewpoints



More on this subject



Product demos



Upcoming events

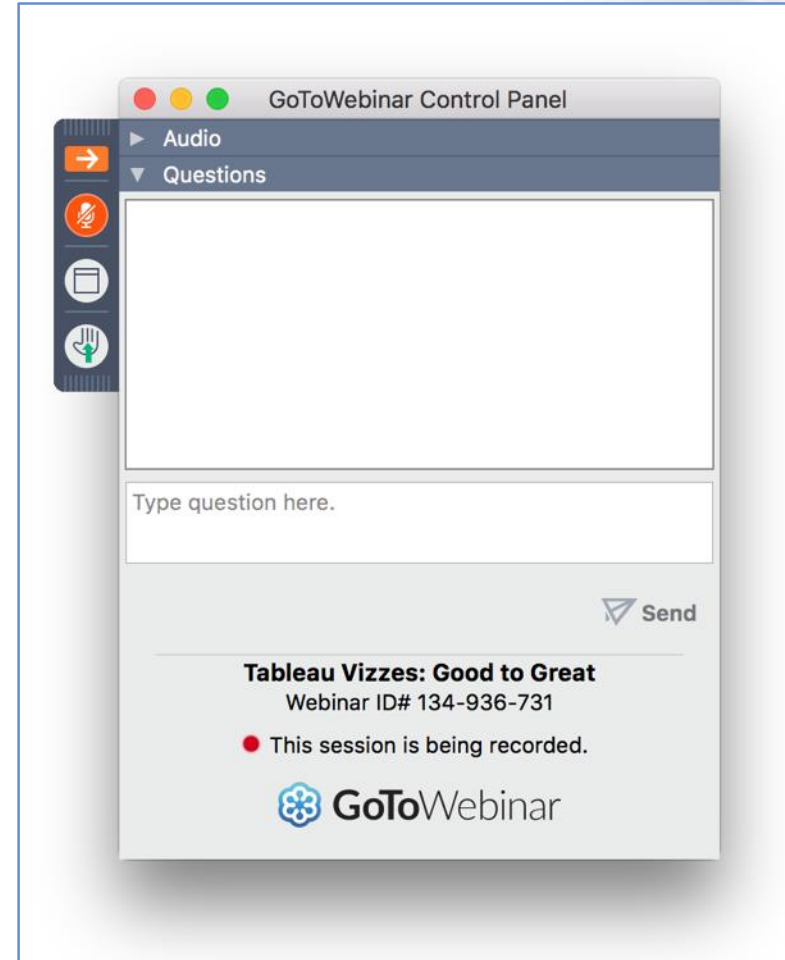


Q & A

If your question or issue is broader than what we are able to answer today, contact us at

info@senturus.com

and we will set up a free consultation.



Thank You



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