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Americas' SAP Users' Group

Learn how Microsoft enables Telemetry for ERP, S/4HANA & SAP SaaS on Azure

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Session ID #83791

SAP SAPPHIRE**NOW** | **ASUG** ANNUAL CONFERENCE

May 7 – 9, 2019

Key Outcomes/Objectives

1. Understand how the 'SAP at Microsoft' internal implementation leverages Telemetry and Monitoring across SAP on Azure

2. Learn best practices implementing SAP Telemetry and Monitoring on Azure

3. Maximize your SAP on Azure Telemetry investment for the future

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Agenda

- 'SAP at Microsoft' introduction
- Key challenges we needed to solve
- How we did it with enterprise Telemetry
- Telemetry and Monitoring of the Future

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SAP at Microsoft

Microsoft

Concur

SuccessFactors

SuccessFactors

IBP

Integrated Business Planning

ERP — ECC 6.0 EhP6

Finance/Corporate Services: Finance, Controlling, Accounting, Enterprise Controlling, Treasury, Project Systems, Financial Services, Real Estate, Corporate Finance Management, InHouse Cash Center, Rev Acc & Report

FI	CO	AC	EC	TR
PS	FIN	RE	CFM	IHC
				RAR

Human Capital Management: Personnel Administration, Benefits, Organizational Management, Talent Management, Personnel Time Management, Payroll

PA	BN	OM	TM	PT
				PY

Supply Chain Management: Sales and Distribution, Materials Management, Logistics, Logistics Execution

SD	MM	LO	LE

Add-On: Core Country Version for Central and Eastern Europe

CEE

GTS — 10.1

Global Trade Services: Compliance Management, Customs Management

CON	CUS

TREX: for Sanction Party List Screening

TREX

SCM — 7.0 EhP2

Supply Chain Management: Demand Planning, Event Management, Supply Network Planning, Global ATP Check

DP	EM
SNP	gATP

BPC 11.1 on HANA

Business Planning & Consolidation

BPC

HANA

HANA

BI/BPC — 8.1

BPC

Business Planning & Consolidation, BI

BI

OERDSC NW 7.4 9.2

Object Event Repository: Secure Track and Trace Scenario

STT

Add-On: Auto-Infrastructure ID

AIN

HYBRIS CI/RMCA — ECC 6.0 EhP7

Convergent Invoicing: Receivables Mgmt, Contract Accounting

RM	CA

IS: Telecommunications

IS-T

OER — NW 7.0 EhP2

Object Event Repository: Secure Track and Trace Scenario

STT

Add-On: Auto-Infrastructure ID

AIN

CC — 4.0

BL

Conv. Charging: Direct Billing, Rating

RT

Ariba Network

Ariba Business Network

Ariba Sourcing

Ariba Direct Sourcing

SMG — 7.2

Solution Manager: Custom Development Management Cockpit, Maintenance Optimizer, SAP Support Services
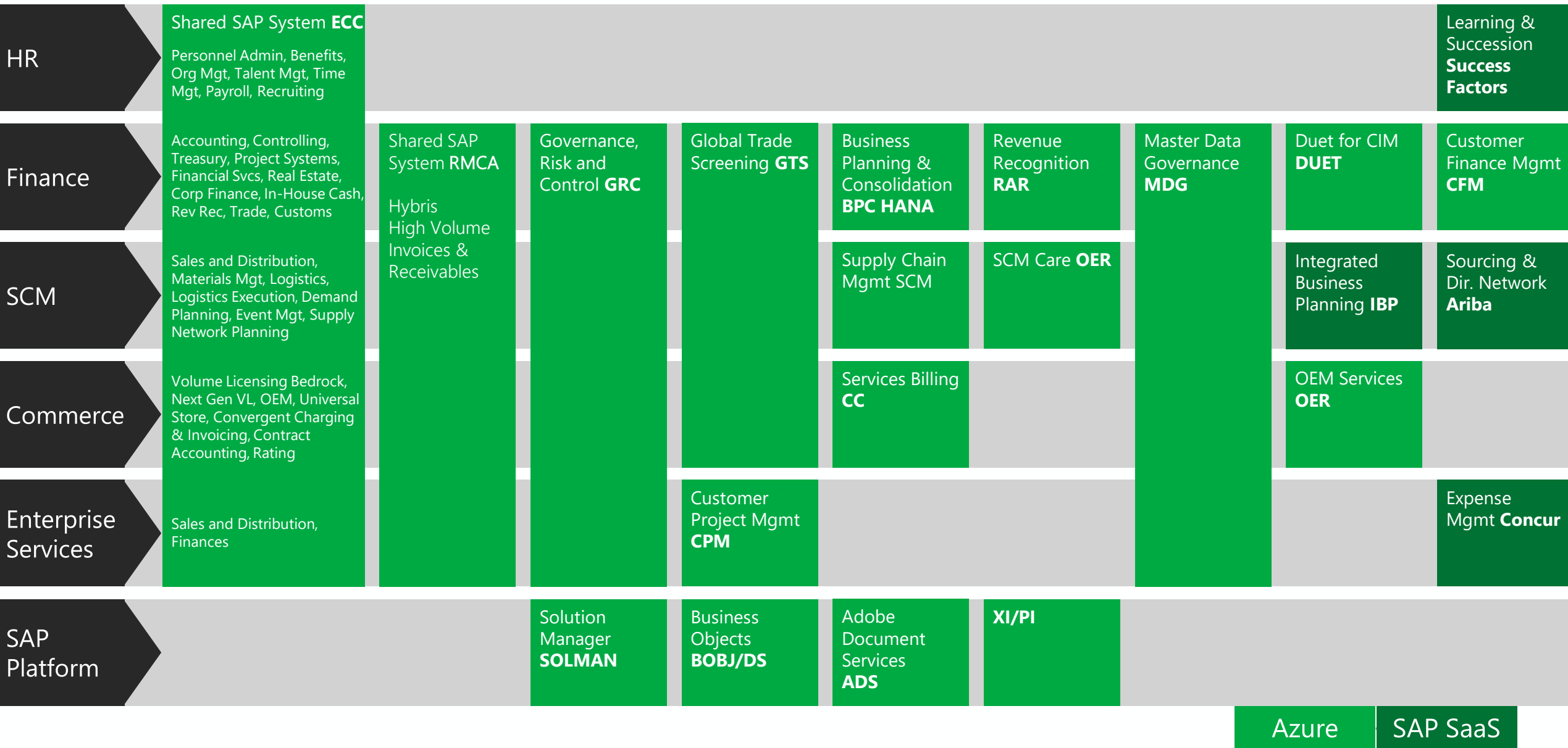
CDM	MAI
	SER

GRC — 10.1

Governance, Risk & Compliance

GRC

Others

BOBJ Data Services 4.2
PI/XI NW 7.3 Process Integration
DUET Enterprise 2.0
Tidal Enterprise Scheduler
BSI Tax Factory

Vertex Sales Tax
Esker Faxing
RealTech
Others

MDG — ECC 6.0 EhP7

Master Data Gov: Business Partners

BP

SAP Applications at Microsoft – Business View

	Shared SAP System **ECC**								
HR	Personnel Admin, Benefits, Org Mgt, Talent Mgt, Time Mgt, Payroll, Recruiting								Learning & Succession **Success Factors**
Finance	Accounting, Controlling, Treasury, Project Systems, Financial Svcs, Real Estate, Corp Finance, In-House Cash, Rev Rec, Trade, Customs	Shared SAP System **RMCA**	Governance, Risk and Control **GRC**	Global Trade Screening **GTS**	Business Planning & Consolidation **BPC HANA**	Revenue Recognition **RAR**	Master Data Governance **MDG**	Duet for CIM **DUET**	Customer Finance Mgmt **CFM**
SCM	Sales and Distribution, Materials Mgt, Logistics, Logistics Execution, Demand Planning, Event Mgt, Supply Network Planning	Hybris High Volume Invoices & Receivables			Supply Chain Mgmt SCM	SCM Care **OER**		Integrated Business Planning **IBP**	Sourcing & Dir. Network **Ariba**
Commerce	Volume Licensing Bedrock, Next Gen VL, OEM, Universal Store, Convergent Charging & Invoicing, Contract Accounting, Rating				Services Billing **CC**			OEM Services **OER**	
Enterprise Services	Sales and Distribution, Finances			Customer Project Mgmt **CPM**					Expense Mgmt **Concur**
SAP Platform			Solution Manager **SOLMAN**	Business Objects **BOBJ/DS**	Adobe Document Services **ADS**	**XI/PI**			

Azure	SAP SaaS

SAP ERP by the Numbers

Deliver Reliant & Agile ERP Platform	Enable Modern Experiences	Provide Real Time Processes	

17TB Highly compressed database	Uncompressed size ≈55TB	**9M** Up to Dialog Steps/Day	**300K** Monitored Batch Jobs/Month	**300M** Up to Transaction steps/Month
SAP Surround Strategy	**110K** Internal Users (Mostly Indirect Access to SAP)	**8K** Named User Accounts	**96%** Non-SAPGUI users	Major First & Best Program
	0.4 Seconds user response time	Business Process Expertise		**99.998%** Raw SQL/Win Uptime
2x System growth in past 2 years	**2x** Transaction volume ever 18-24 months	**≈600** Servers (100% virtual)	**250TB** Compression Storage Savings	**15-30% yearly** Incident Ticket Reduction

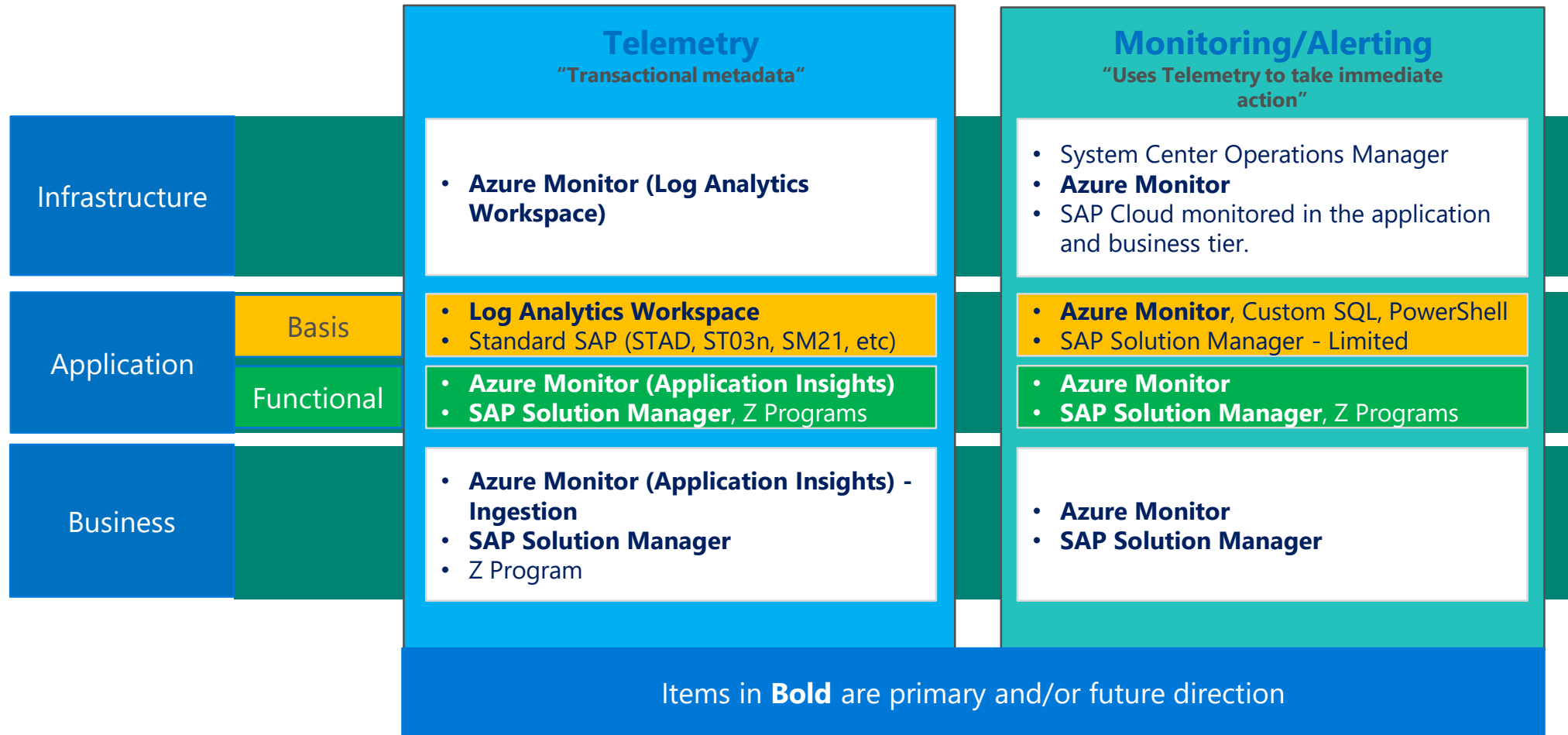# High Quality Enterprise Service Offerings via SAP

Key challenges we needed to solve

- A lack of understanding of SAP - considered a 'black box' at Microsoft

- Talk the same language when measuring End to End Business Process health

- Modernize our SAP Telemetry & Monitoring

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Evolving SAP on Azure – Telemetry & Monitoring

Analysis for Office
Excel
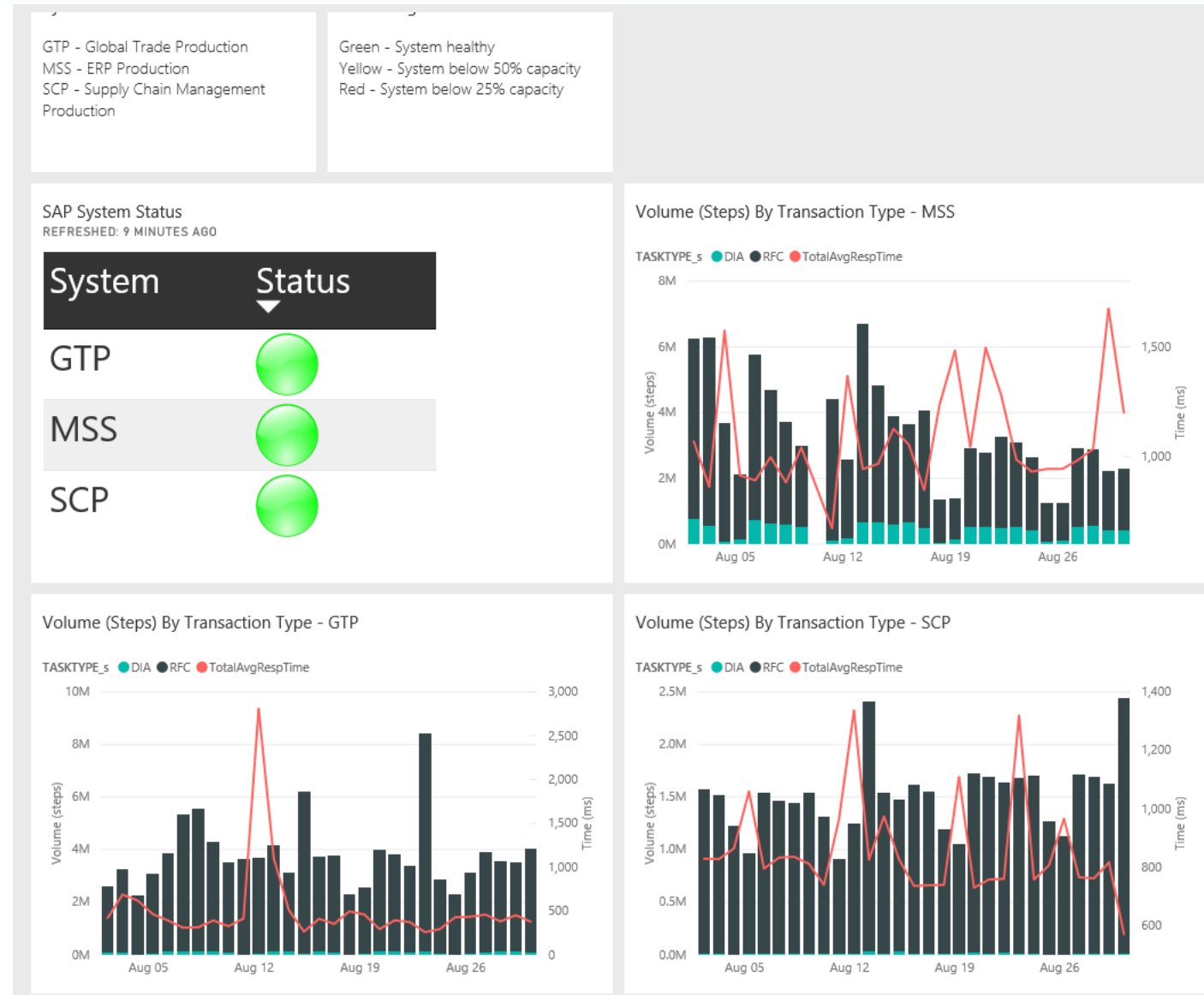
Networking

Azure Compute / Storage

SAP

SAP Business Logic

Web Services

Basis Laver

SAP Kernel

HANA DB

Web Services

Networking

Power App

ADL

.Net App

SQL DB

Azure Active Directory

On Premise Hardware

Azure Monitor

Aggregate, corelate, Monitor, Analyze

Leveraging **Application Insights**, we record End to End Telemetry & Monitoring events at all levels of the Azure stack.

Deep integration within the SAP stack, both Business & Technical, provides us with full End-to-End **Transparency**.

PowerBI dashboards are built on top of AI data, offering true E2E KPI reporting and analysis.

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SAP Telemetry and Monitoring Approach

		Telemetry "Transactional metadata"	**Monitoring/Alerting** "Uses Telemetry to take immediate action"
Infrastructure		• **Azure Monitor (Log Analytics Workspace)**	• System Center Operations Manager • **Azure Monitor** • SAP Cloud monitored in the application and business tier.
Application	Basis	• **Log Analytics Workspace** • Standard SAP (STAD, ST03n, SM21, etc)	• **Azure Monitor**, Custom SQL, PowerShell • SAP Solution Manager - Limited
	Functional	• **Azure Monitor (Application Insights)** • **SAP Solution Manager**, Z Programs	• **Azure Monitor** • **SAP Solution Manager**, Z Programs
Business		• **Azure Monitor (Application Insights) - Ingestion** • **SAP Solution Manager** • Z Program	• **Azure Monitor** • **SAP Solution Manager**

Items in **Bold** are primary and/or future direction

SAP Platform System Health Dashboard (PowerBI)

Simple Platform health checks

Also shows system load trends by work load type

Early MVP

GTP - Global Trade Production
MSS - ERP Production
SCP - Supply Chain Management
Production

Green - System healthy
Yellow - System below 50% capacity
Red - System below 25% capacity

SAP System Status
REFRESHED: 9 MINUTES AGO

System	Status
GTP	🟢
MSS	🟢
SCP	🟢

Volume (Steps) By Transaction Type - MSS

TASKTYPE_s ●DIA ●RFC ●TotalAvgRespTime

Volume (Steps) By Transaction Type - GTP

TASKTYPE_s ●DIA ●RFC ●TotalAvgRespTime

Volume (Steps) By Transaction Type - SCP

TASKTYPE_s ●DIA ●RFC ●TotalAvgRespTime

Azure Monitor Logs for HANA

Current State

Allows combining different types of telemetry/events into a single location

Visibility across different HANA instances and technologies

Future Ideas

Ability to leverage machine learning for deeper insights into your HANA platform and SAP Systems

Using Application Insights for SAP Telemetry
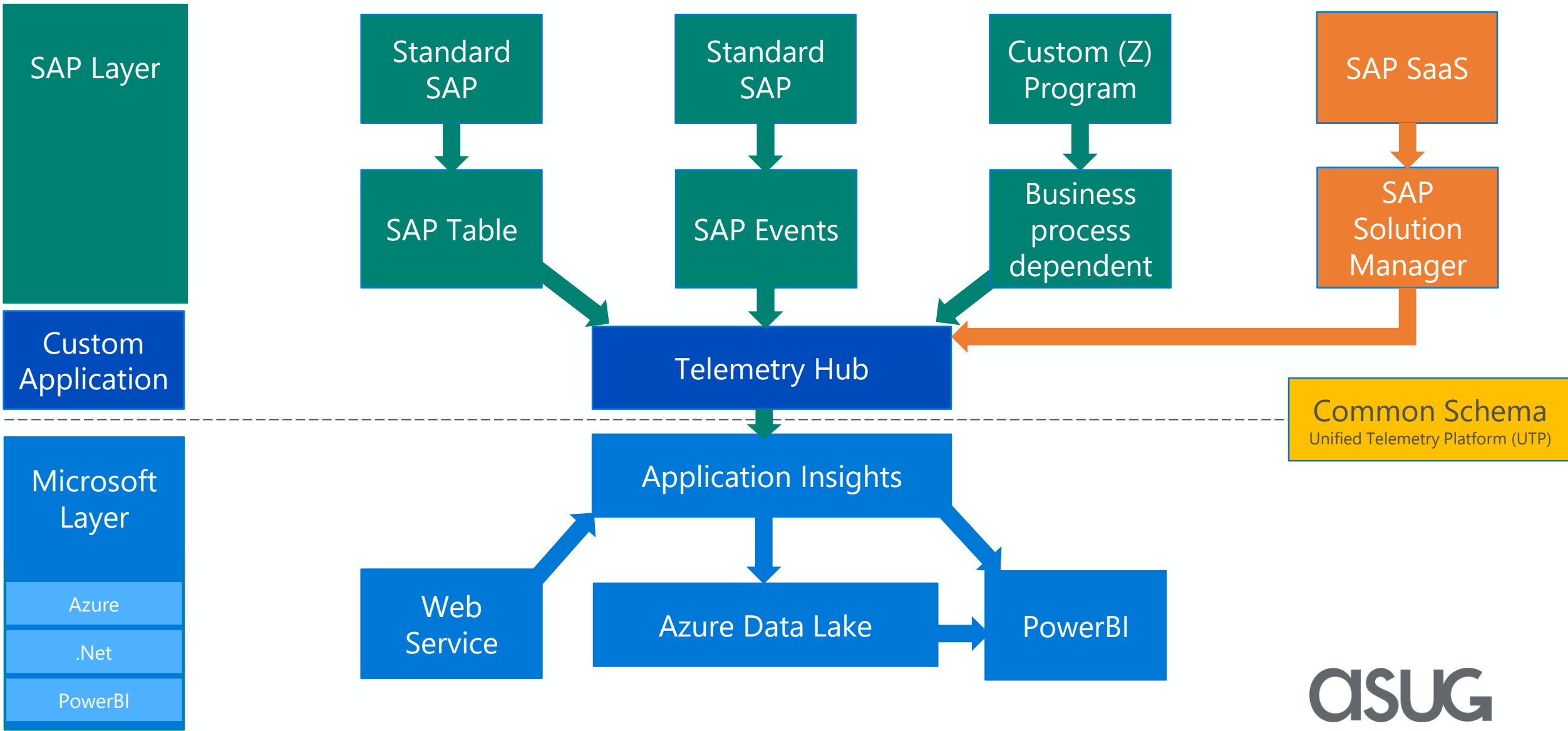
The Microsoft SAP Telemetry Pipeline
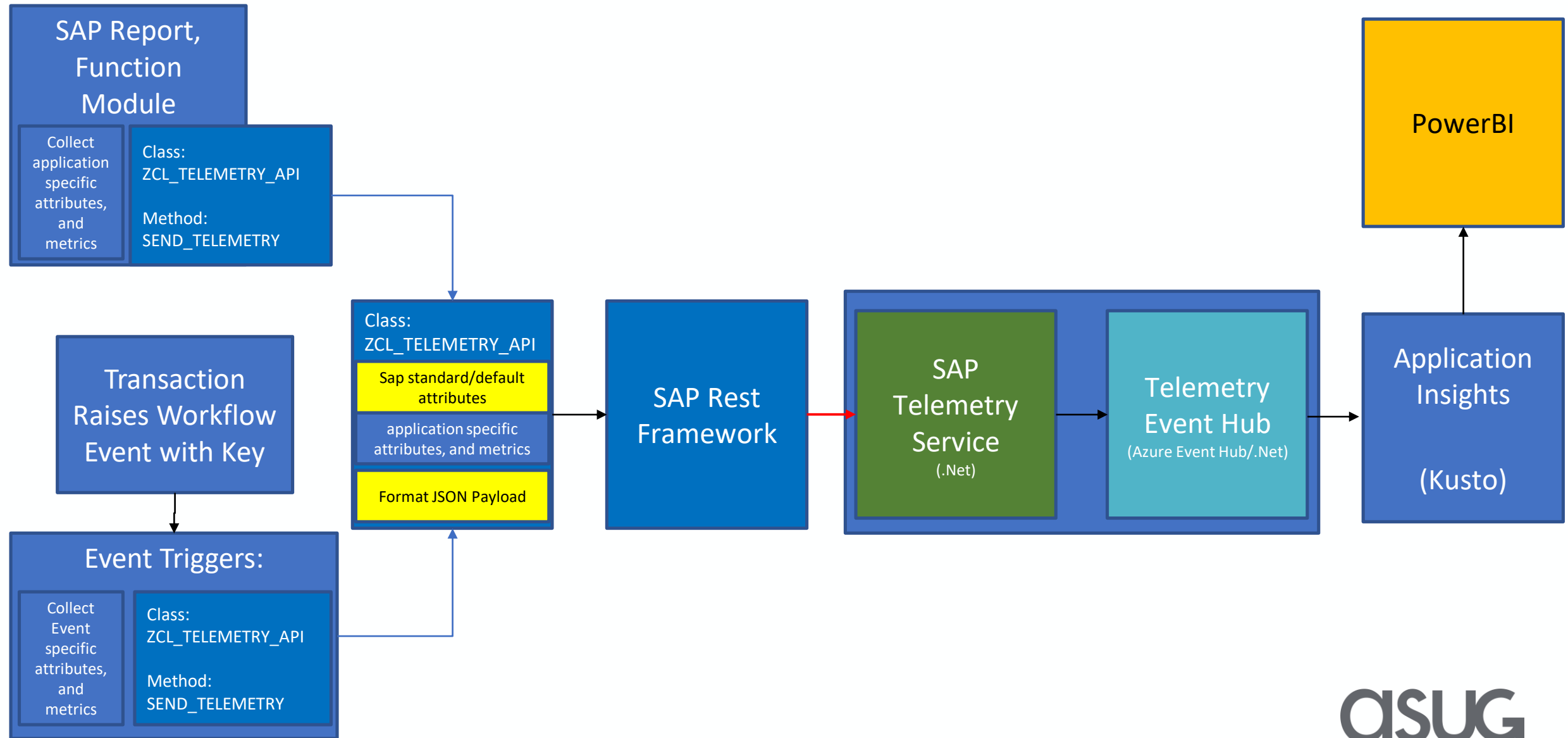
Enabling Enterprise Business Process Telemetry

What is Business Process Telemetry?

Business Process Telemetry captures the critical events of a business transaction as it flows across the application landscape.

Why enable Business Process Telemetry?   Automated Measurements, Statistics, Alerting and Monitoring

Key Personas
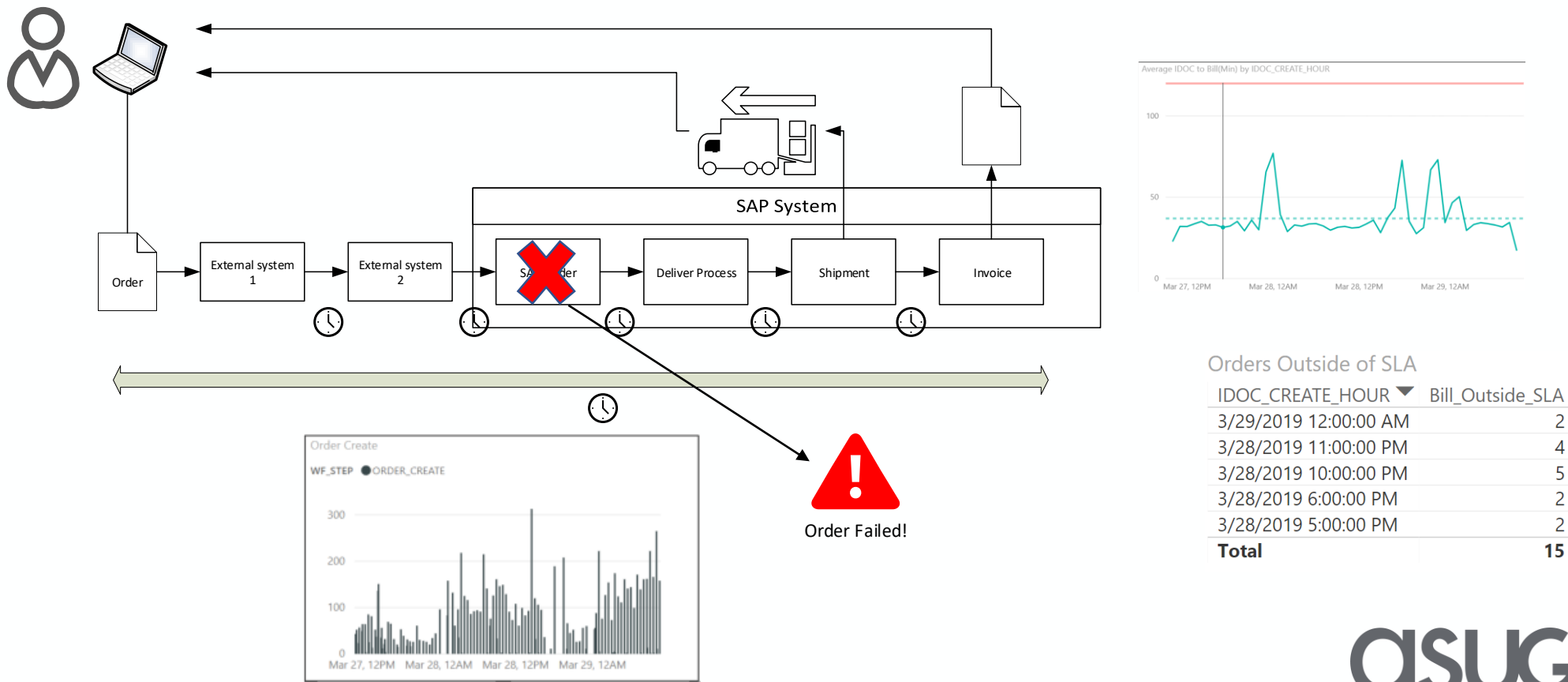
Role	What I Need	Value I will get
Business User	I need visibility to the status of my business transactions as they flow through the MS/SAP ecosystem.	I will no longer need to create service tickets to get the status of my SAP transaction flow.
Engineering Team	We want to know business process issues before it impacts business operations and leads to customer satisfaction issues. We need end to end visibility of business transactions through SAP telemetry data in a common consumption format (UTP) with shared keys.	We no longer need to check multiple SAP transactions to investigate business process issues. to identify which step the business process has failed/stuck. We will improve the Mean Time-To-Detect (MTTD) and Mean-Time-To-Resolve (MTTR) with the right telemetry data and avoid business disruption for our customers.
Executives	As an executive I need to ensure our business processes are flowing smoothly. If there are critical failures, I need to know before my customers or partners.	I will have trust that my business process executes seamlessly all the time and errors get proactively address with no impact to customers or partners.

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# Finance (Payments) – PowerBI Dashboard

Upstream Service → Payment Run → Payment output created → Submitted to Bank → File Received by Bank → Payment Accept / Reject by Bank
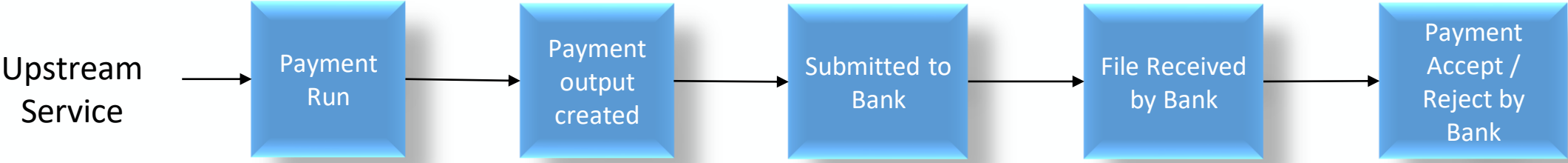
Payments Service UTP data - MSS Payments

Date Range: 2/19/2019 — 3/26/2019

# Payment Runs	# Payment Runs Completed	# PAIN001 Created	# Pay Medium Created	# Received by Pay Network
420	420	374	374	324

XCV

Search

- 20190313-ZTUR1
- 20190315-Z1614
- 20190315-ZMSC4
- 20190318-Z1038
- 20190318-Z1180
- 20190318-Z318A
- 20190318-Z4201

Payment Runs

XCV	Payment Run Started	Payment Run Completed	PAIN001 Created	Payment Medium Created	Submitted to Bank	Received by Payment Ne...
20190313-ZTUR1	Completed	Completed	Completed	Completed		Completed
20190315-Z1614						Completed
20190315-ZMSC4			Completed	Completed		
20190318-Z1038	Completed	Completed	Completed	Completed		Completed
20190318-Z1180	Completed	Completed	Completed	Completed		Completed
20190318-Z318A	Completed	Completed	Completed	Completed		Completed
20190318-Z4201	Completed	Completed	Completed	Completed		Completed
20190318-ZAPSL	Completed	Completed	Completed	Completed		Completed

Company Code

Search

- 1010
- 1021
- 1029
- 1032
- 1033
- 1038
- 1046
- 1047

Payment Details

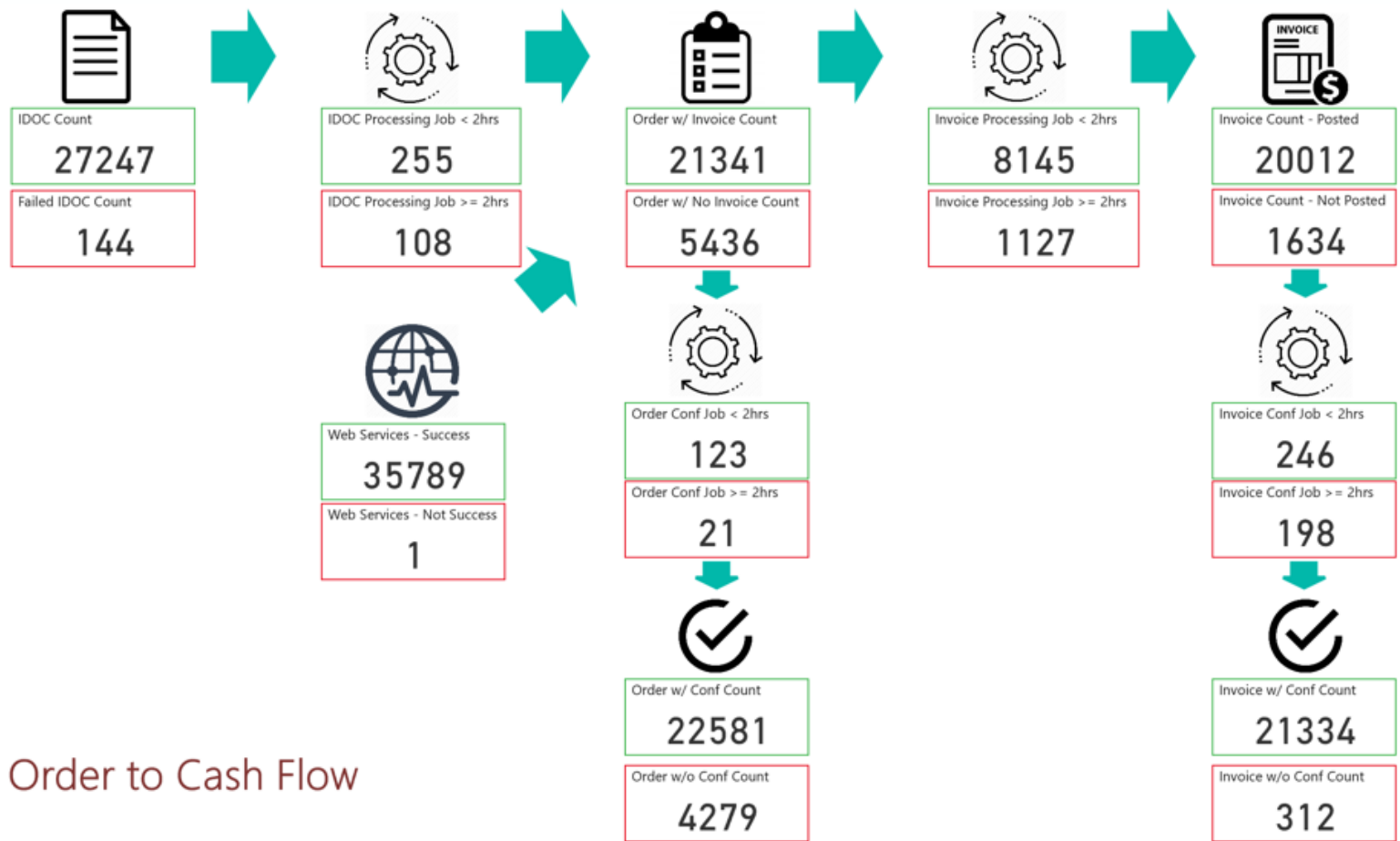| End to End ID	Batch Number	Batch Created	Accept/Reject by Bank	Reject after Accept	Reject/Reversal Update
15000150191639	90373	Completed	Completed	Completed	Completed
15000619461548	90709	Completed	Completed	Completed	Completed
15001637671429	90166	Completed	Completed	Completed	Completed
15002072971078	90097	Completed	Completed	Completed	Completed
15002074211078	90634	Completed	Completed	Completed	Completed
15002074701078	90634	Completed	Completed	Completed	Completed
15002528371290	90602	Completed	Completed	Completed	Completed

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Order to Cash Business Process (Volume Licensing)
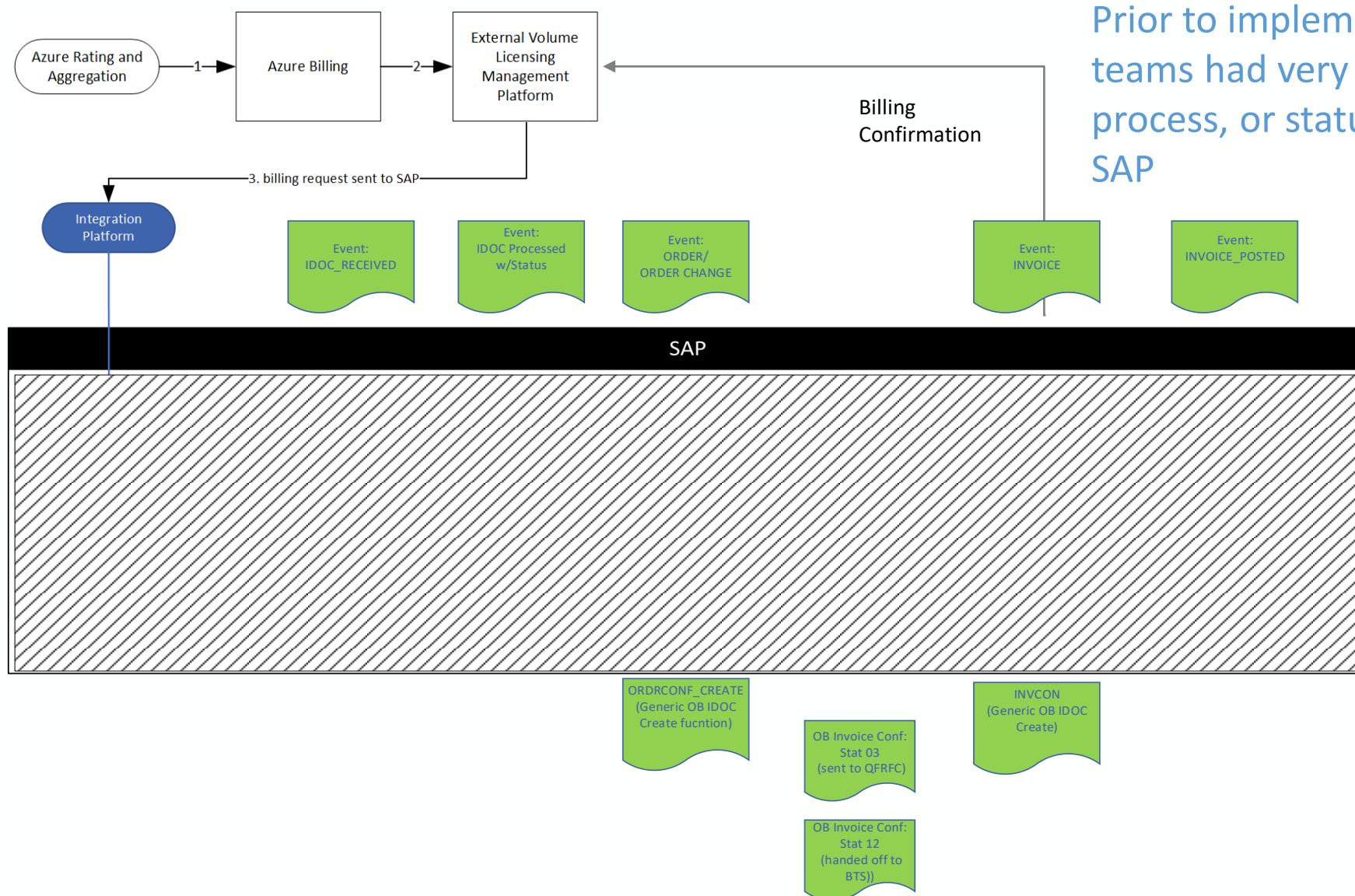
Prior to implementing Telemetry, our partner teams had very little visibility to the business process, or status of their billing requests in SAP

- Now, our partner teams can access detailed tracking of all their transactions as they flow across the eco system.
- Internally, we can now automatically detect failures and service level breaches in near real time; as well as track volumes and performance.

Volume Licensing – PowerBI Dashboard

IDOC Count
27247

Failed IDOC Count
144

IDOC Processing Job < 2hrs
255

IDOC Processing Job >= 2hrs
108

Web Services - Success
35789

Web Services - Not Success
1

Order w/ Invoice Count
21341

Order w/ No Invoice Count
5436

Order Conf Job < 2hrs
123

Order Conf Job >= 2hrs
21

Order w/ Conf Count
22581

Order w/o Conf Count
4279

Invoice Processing Job < 2hrs
8145

Invoice Processing Job >= 2hrs
1127

Invoice Count - Posted
20012

Invoice Count - Not Posted
1634

Invoice Conf Job < 2hrs
246

Invoice Conf Job >= 2hrs
198

Invoice w/ Conf Count
21334

Invoice w/o Conf Count
312

VL Order to Cash Flow

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SAP SaaS – Enabling IBP Monitoring via SolMan

Instance Group

View: [Standard View] | Print Version | Export | Detail | Assign | Create Notification | Create Incident | Guided Procedures | Alert Inbox

	Technical C...	Subcategory	Message	User	Status	Event Timestamp
	SAP_IBP~ZX9	/IBP/XLSAD	SQL execution error	CB8980000388	🔴	01.05.2018 11:56:37
	SAP_IBP~ZX9	/IBP/FND	Planning session invalid. Log off and log on again.	CB8980000388	🔴	01.05.2018 11:56:10
	SAP_IBP~ZX9	/IBP/XLSAD	Please wait and try again	CB8980000351	🔴	01.05.2018 11:32:45
	SAP_IBP~ZX9	/IBP/XLSAD	Locked transaction ID: fdac4e696f0845999d501977cabc12a3 MSCCME __PLAN	CB8980000351	🔴	01.05.2018 11:32:45
	SAP_IBP~ZX9	/IBP/XLSAD	Last change of data you want to retrieve is still ongoing	CB8980000351	🔴	01.05.2018 11:32:45

- Exception Monitoring Cockpit with IBP Exceptions.

- Enable Alerting – Email notifications for failures.

- Interface Channel Monitoring.

S/4HANA (Future)

- S/4HANA will leverage our current solution for business process monitoring

- Adapt business processes for S/4HANA greenfield
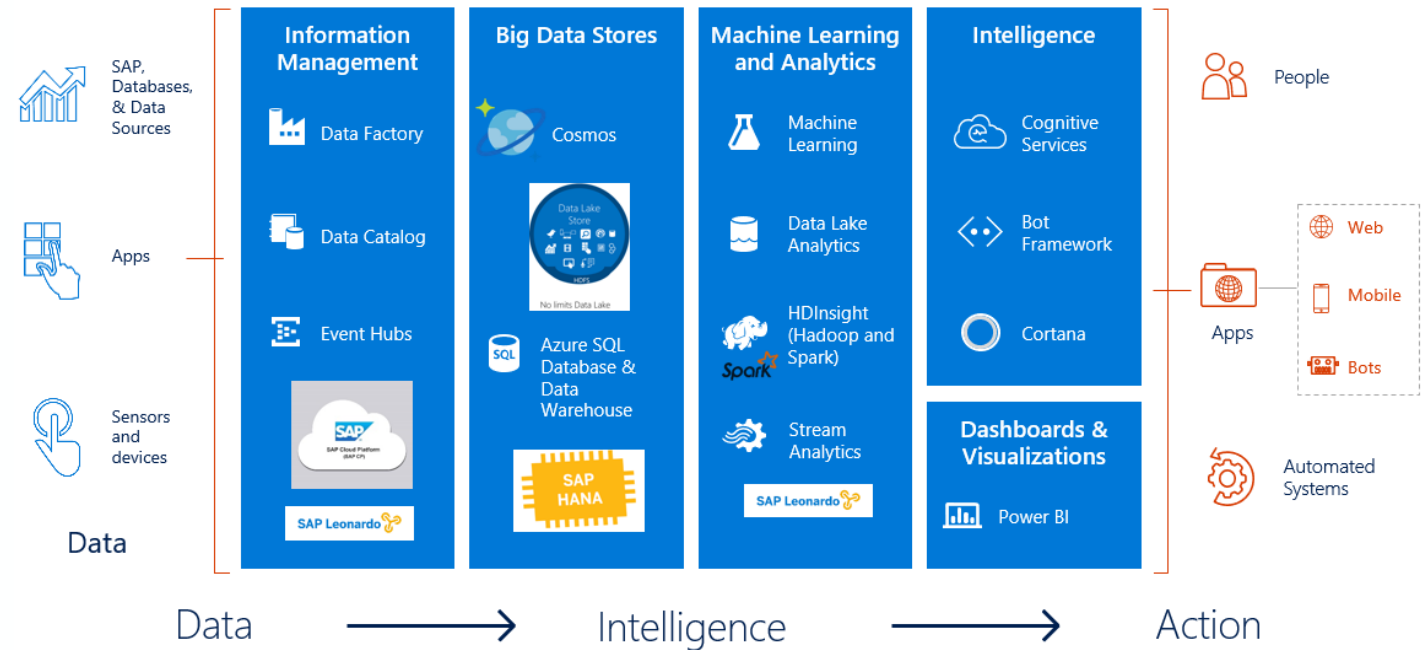
SAP Telemetry and Monitoring – What next?

- Machine Learning for Predictive Analytics

- End to End Alerting

- Telemetry based automation

Stream Analytics

Machine Learning

Azure Data Lake

Logic Apps

Azure Event Hub

SAP on Azure Links and Information

Come and see our Telemetry & Monitoring demo at the Microsoft booth!

SAP on Azure: Your trusted path to innovation in the cloud

How Microsoft moved its SAP workload to the cloud

Managing Microsoft Azure Express Route

Strategies for Migrating SAP systems to Microsoft Azure

Right-Sizing And Tight-Sizing SAP For Azure

Running SAP Workloads On Azure (Incl. HANA)

Running SAP Apps On The Microsoft Platform

Channel 9 SAP on Azure

SAP HANA on Azure

Channel 9 SAP HANA on Azure

About the Speakers

Enda Sullivan

SAP Program Manager, Microsoft

Enda has worked at Microsoft for over 15 years. He is currently focused on enabling Microsoft's digital transformation with SAP on Azure for the 'SAP at Microsoft' internal implementation. He focuses on enabling Go-To-Market (GTM) scenarios and showcasing customer scenarios from the 'SAP at Microsoft' implementation, as well as leading the strategic rhythm of business with SAP AG and Microsoft executive teams. Prior to Microsoft Enda spent 12 years in various SAP lead roles across Europe and the US.

Blake Barrow

SAP Architect, Microsoft

Blake started working with SAP as an Analyst and Programmer for a major medical company in 1995 and has been at Microsoft for the last 13 years. At Microsoft, Blake has had various analyst and architecture roles supporting our Order to Cash and procurement processes for Supply Chain and Volume licensing.

He is currently the architect for the MS-SAP Telemetry solution, and Business Analytics.

Aron Stern

SAP Architect, Microsoft

Aron has over 14 years of experience working with SAP at Microsoft in technical roles. He was the lead architect for Microsoft's internal SAP migration to Azure and continues to get involved in all things Azure related.

Take the Session Survey.

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Presentation Materials

Access the slides from 2019 ASUG Annual Conference here:
http://info.asug.com/2019-ac-slides

Q&A

For questions after this session, contact us at endas@microsoft.com, bbarrow@microsoft.com and aronst@microsoft.com