



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

Enda Sullivan, Program Manager, Microsoft
Blake Barrow, Architect, Microsoft
Aron Stern, Architect, Microsoft

Session ID #83791

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

Agenda

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

SAP at Microsoft



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

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
Escher Faxing
RealTech
Others

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

MDG

ECC 6.0 EhP7

Master Data Gov: Business Partners

BP

Concur

BPC 11.1 on HANA

Business Planning & Consolidation

BPC

HANA

HANA

BI/BPC

8.1

Business Planning & Consolidation, BI

BPC

BI

OERDSC NW 7.4 9.2

Object Event Repository: Secure Track and Trace Scenario

STT

Add-On: Auto-Infrastructure ID

AIN

SuccessFactors

SuccessFactors

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

Conv. Charging: Direct Billing, Rating

BL

RT

IBP

Integrated Business Planning

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

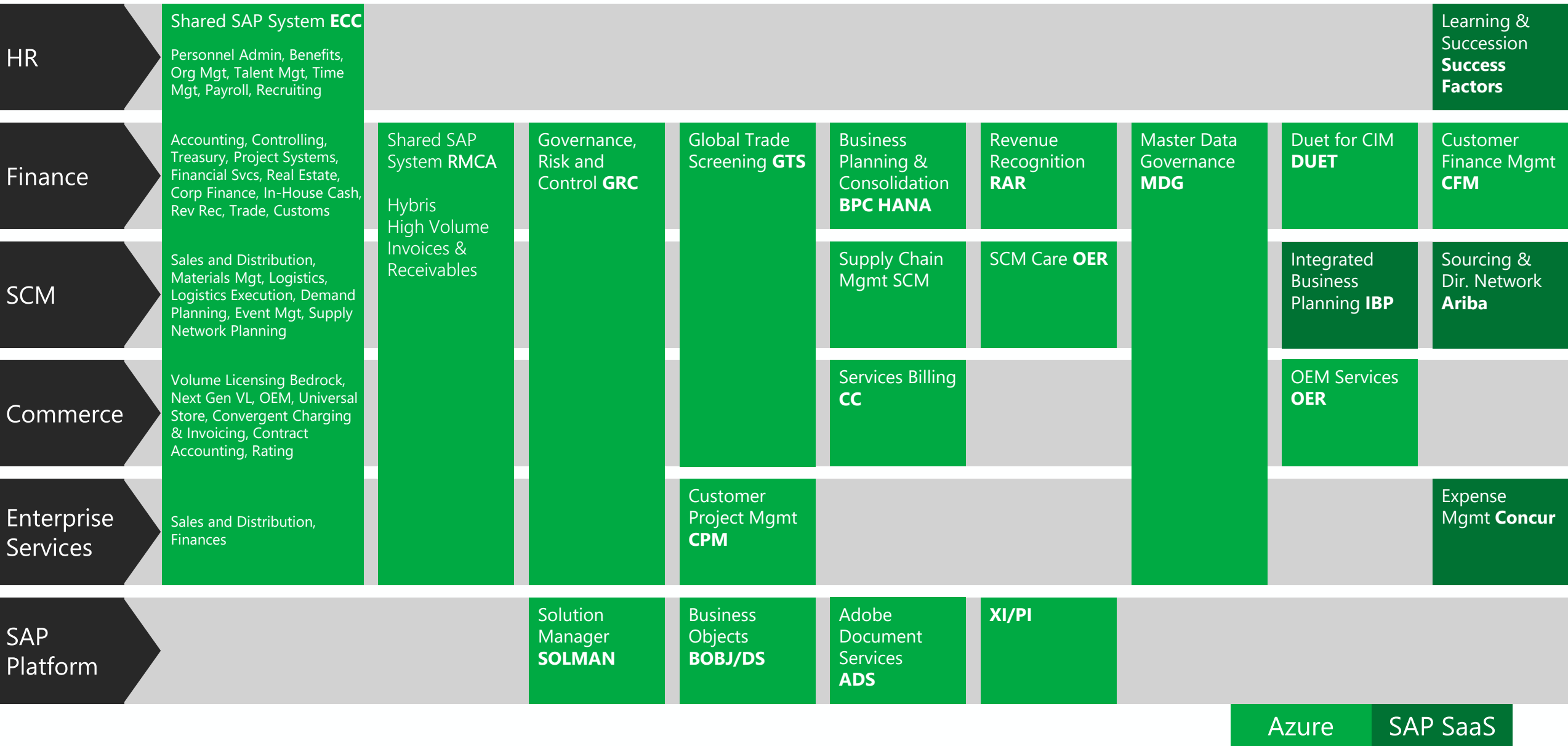
GRC

10.1






Governance, Risk & Compliance

GRC

SAP Applications at Microsoft – Business View



SAP ERP by the Numbers

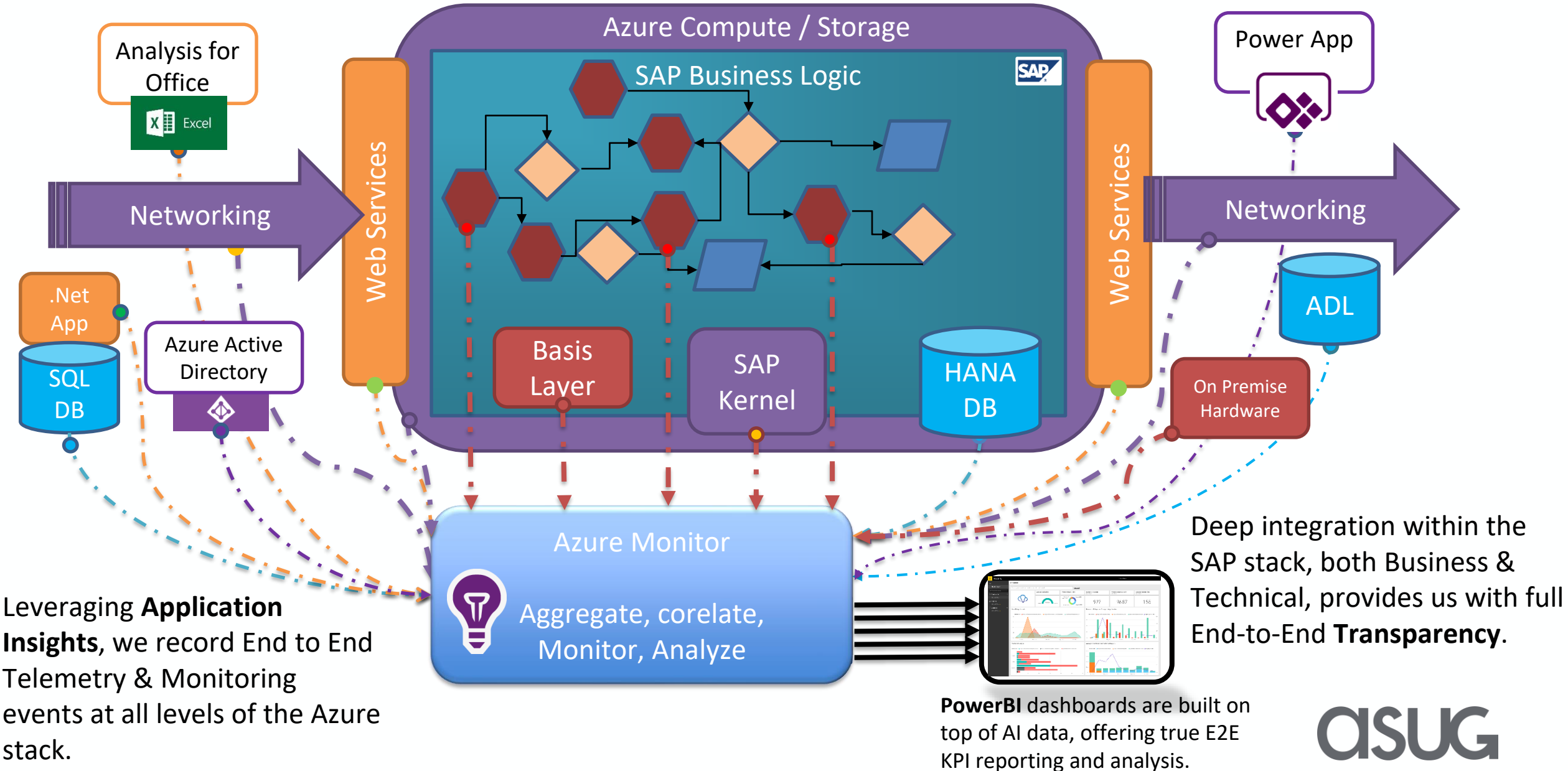
 Deliver Reliant & Agile ERP Platform		 Enable Modern Experiences		 Provide Real Time Processes	
17TB	Highly compressed database	Uncompressed size ≈55TB		9M	Up to Dialog Steps/Day
				300K	Monitored Batch Jobs/Month
				300M	Up to Transaction steps/Month
SAP Surround Strategy		110K	Internal Users (Mostly 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

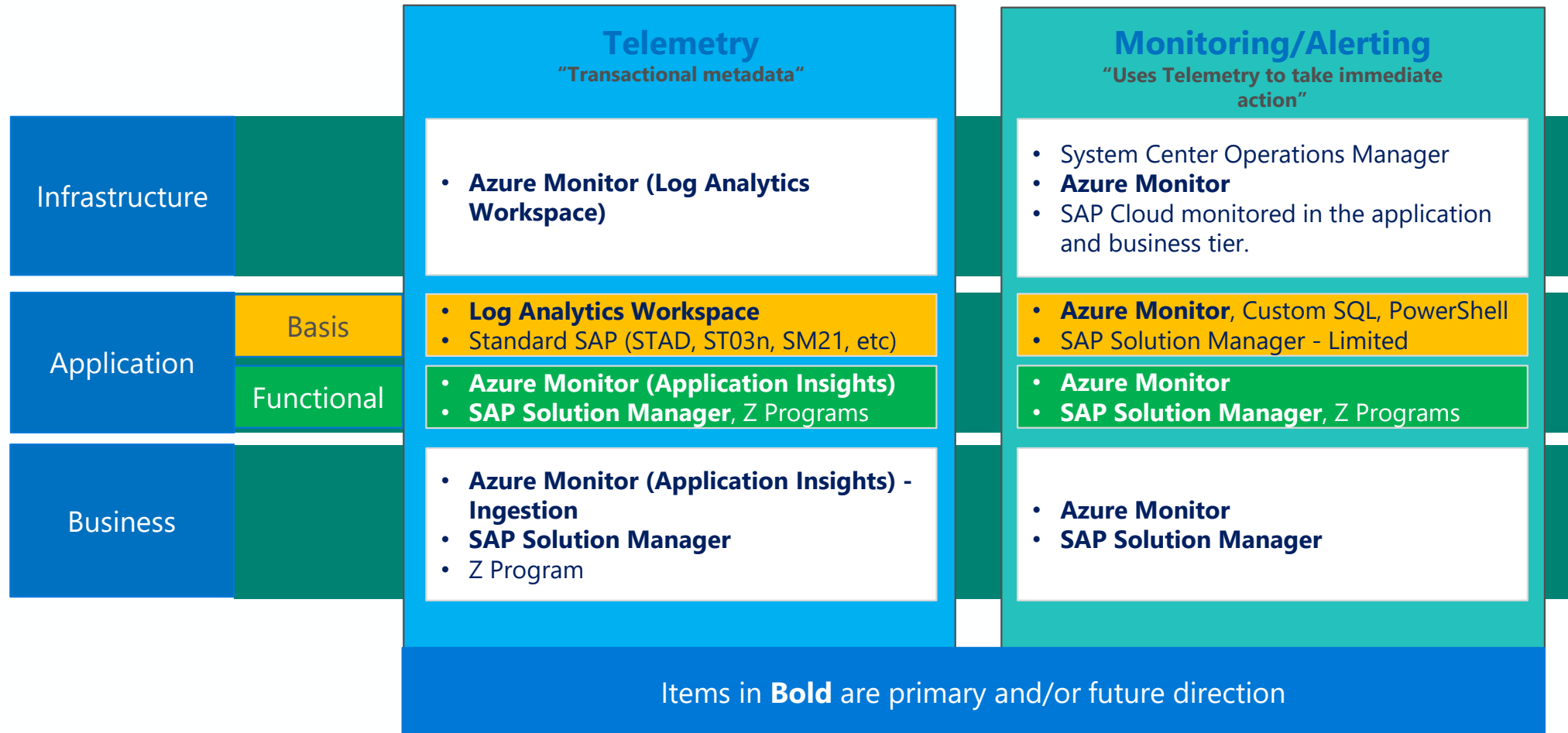
Key challenges we needed to solve

- 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

Evolving SAP on Azure – Telemetry & Monitoring



SAP Telemetry and Monitoring Approach

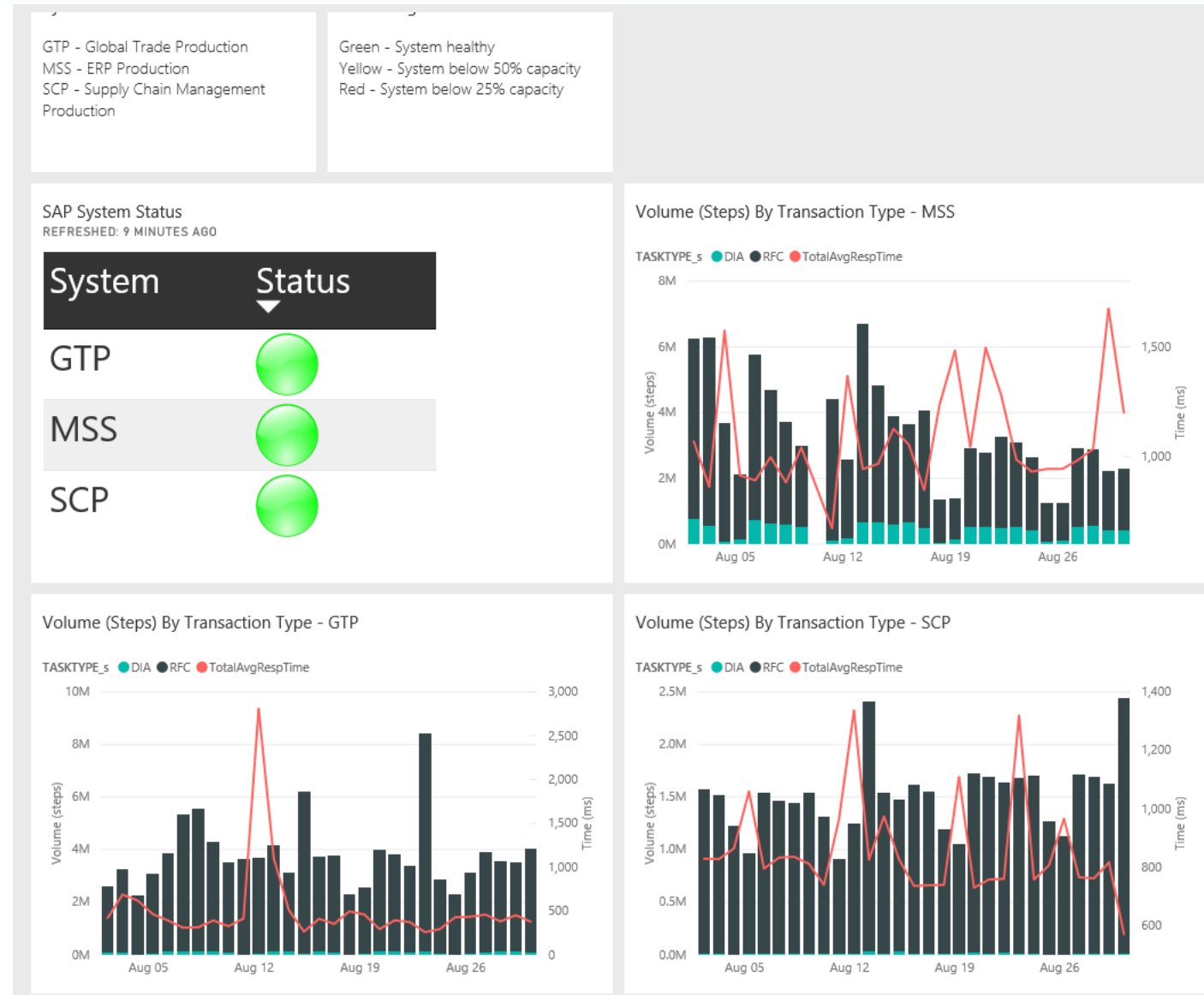


SAP Platform System Health Dashboard (PowerBI)

Simple Platform
health checks

Also shows
system load
trends by work
load type

Early MVP



Azure Monitor Logs for HANA

Current State

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

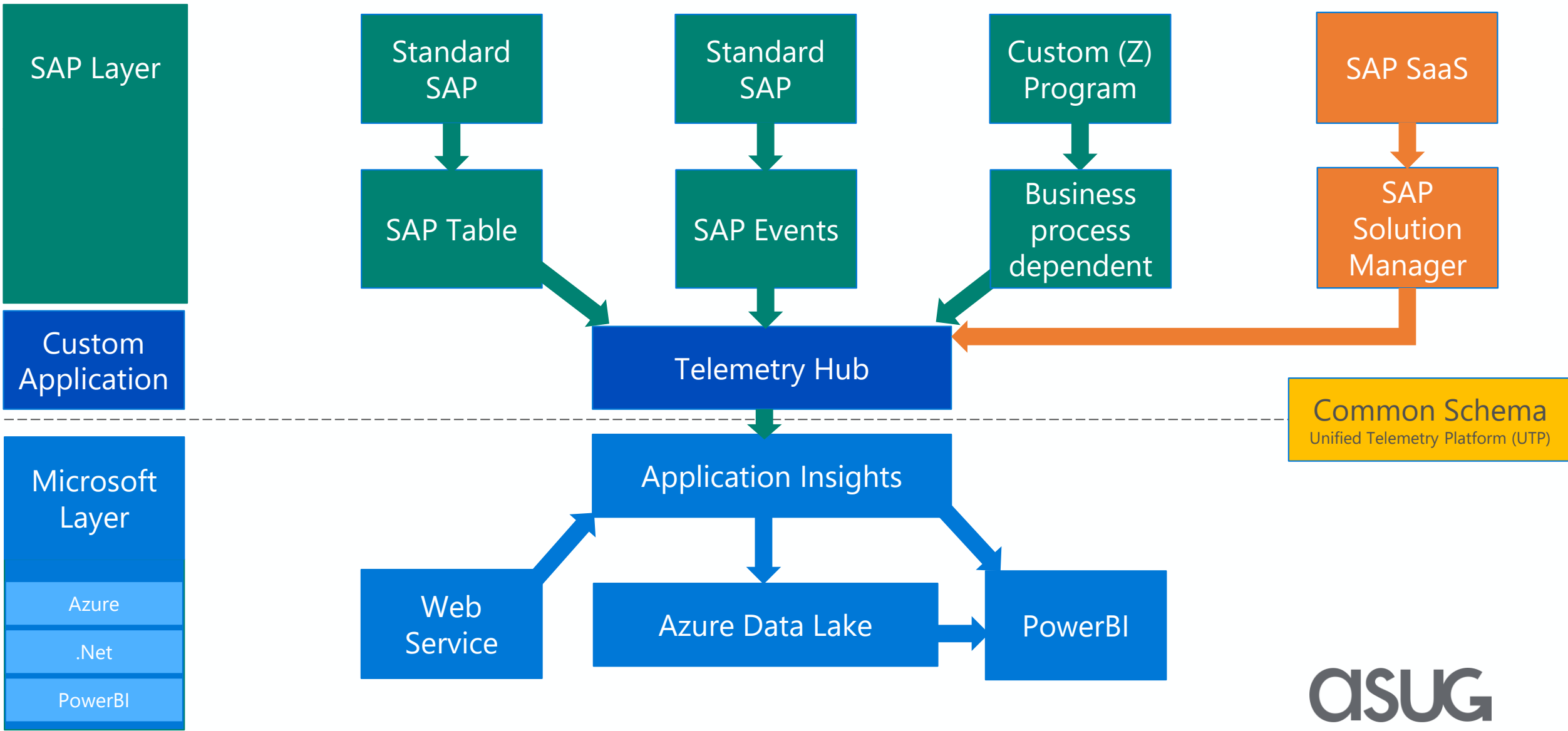
Visibility across different HANA instances and technologies

Future Ideas

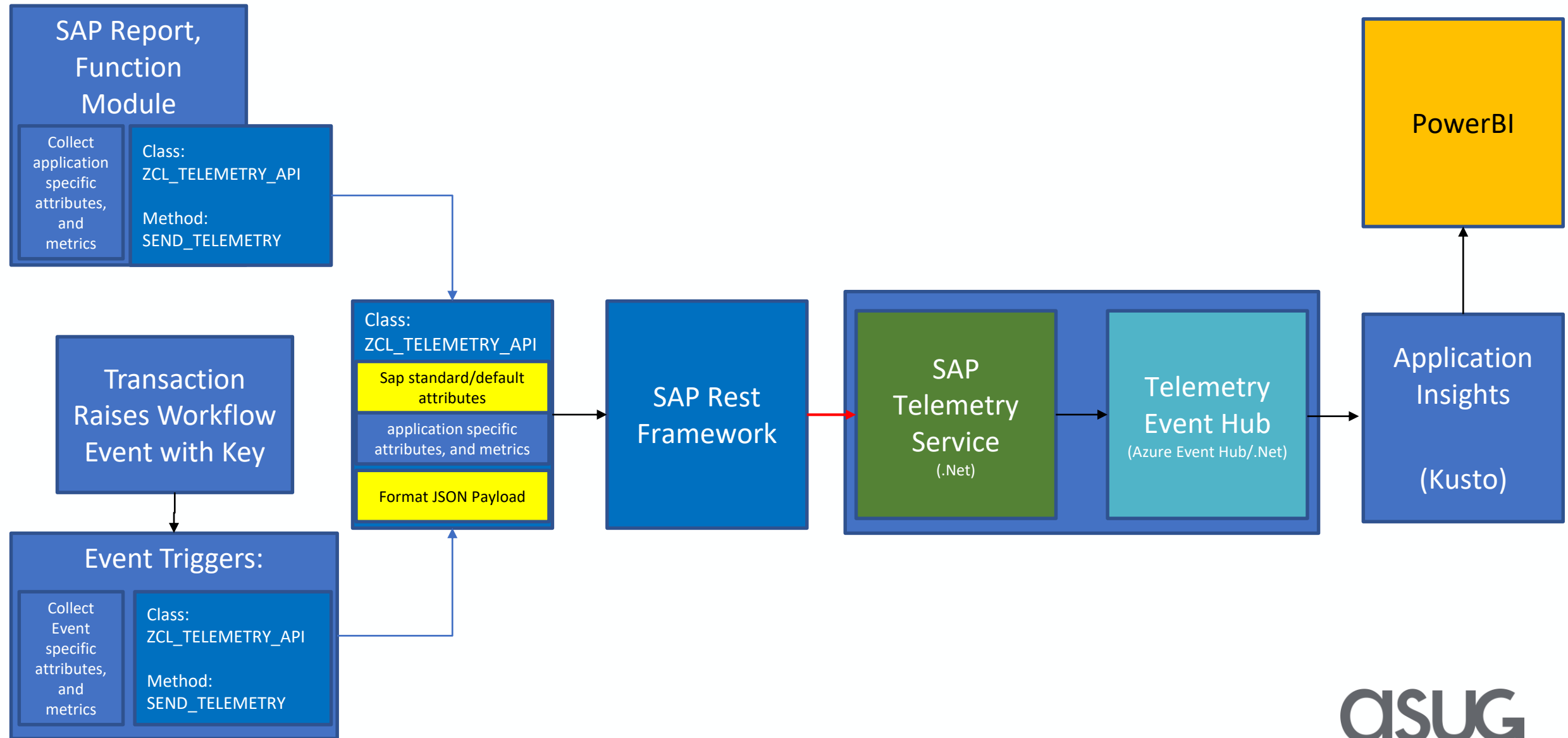
Ability to leverage machine learning for deeper insights into your HANA platform and SAP Systems



Using Application Insights for SAP Telemetry



The Microsoft SAP Telemetry Pipeline

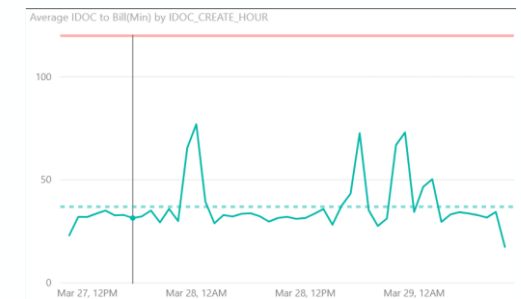
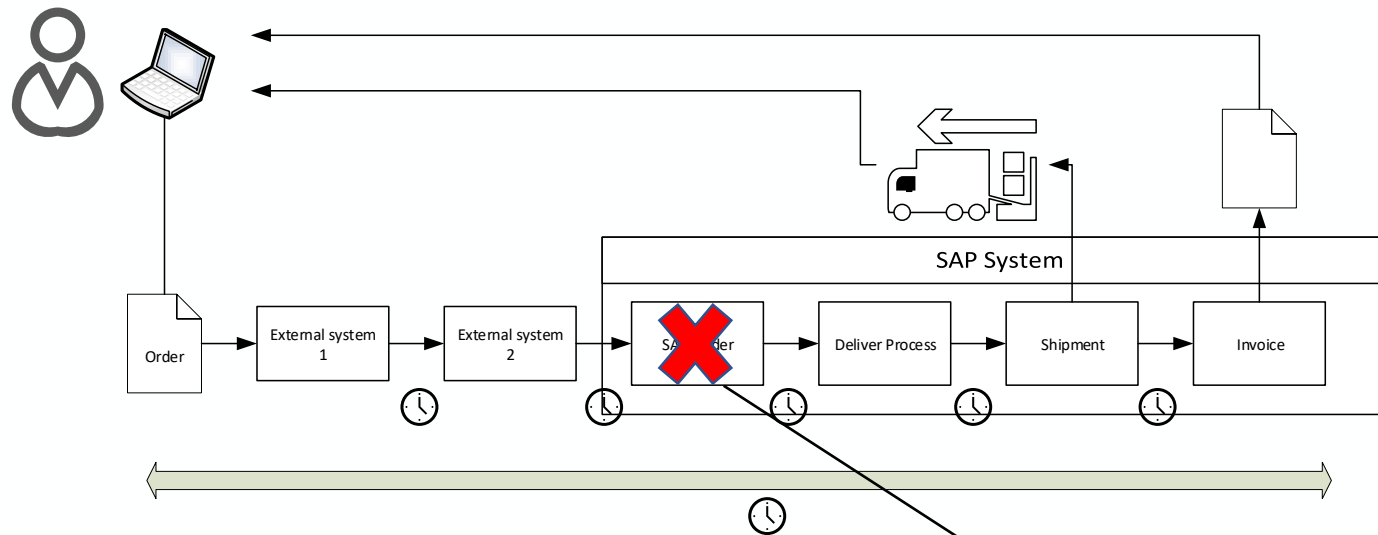


Enabling Enterprise Business Process Telemetry

What is Business Process Telemetry?

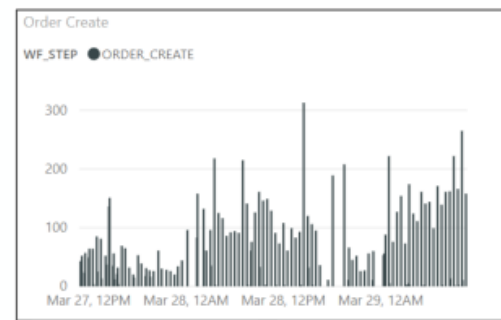
Business Process Telemetry captures the critical events of a business transaction as it flows across the application landscape.

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



Orders Outside of SLA

IDOC_CREATE_HOUR ▼	Bill_Outside_SLA
3/29/2019 12:00:00 AM	2
3/28/2019 11:00:00 PM	4
3/28/2019 10:00:00 PM	5
3/28/2019 6:00:00 PM	2
3/28/2019 5:00:00 PM	2
Total	15



Key Personas



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.

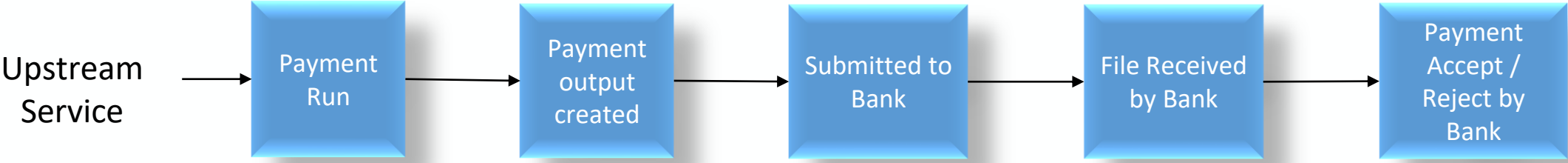


Executives

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.

Finance (Payments) – PowerBI Dashboard



Payments Service UTP data - MSS Payments

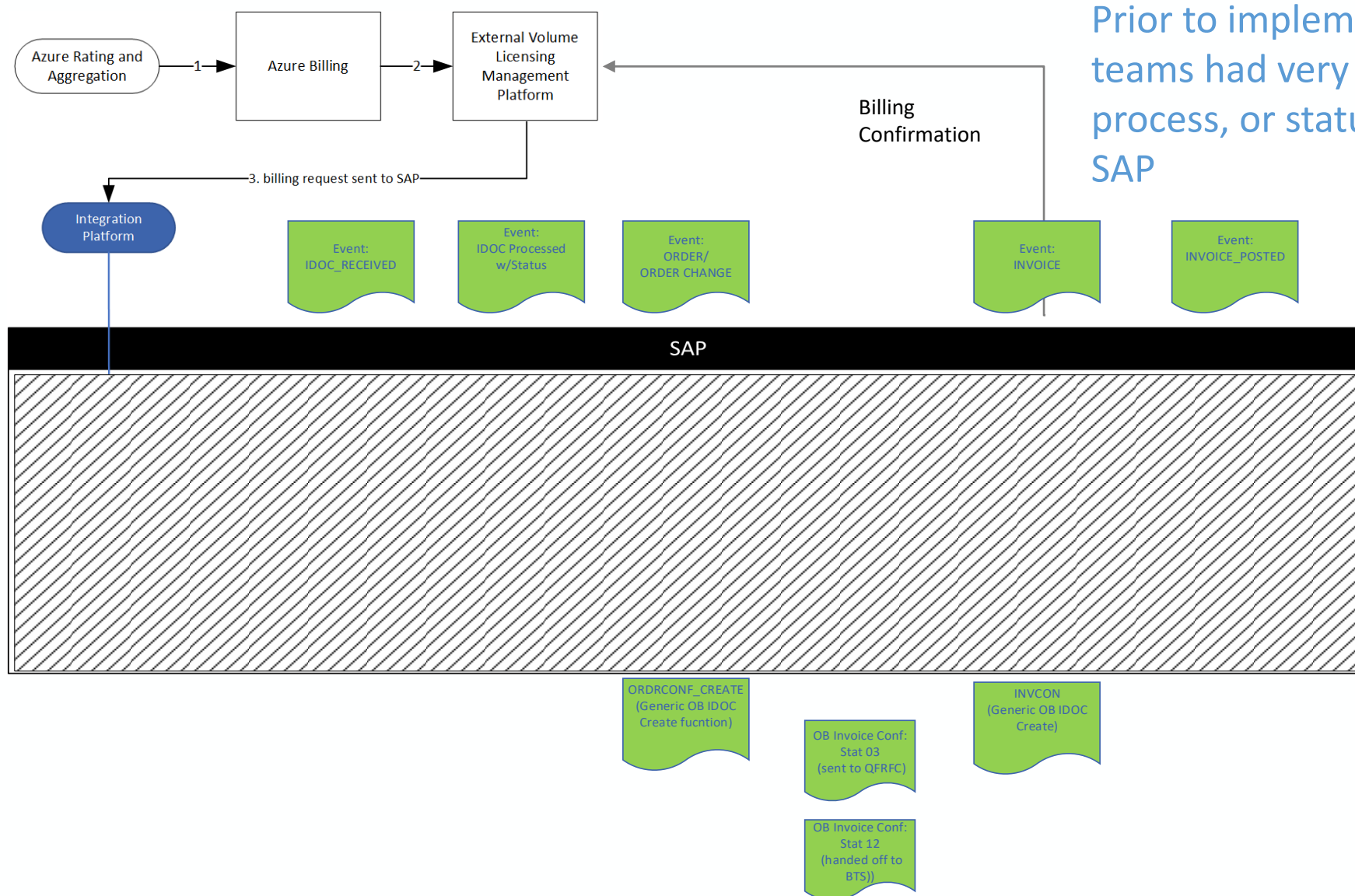
Date Range		# Payment Runs	# Payment Runs Completed	# PAIN001 Created	# Pay Medium Created	# Received by Pay Network
2/19/2019 3/26/2019		420	420	374	374	324

Payment Runs						
XCV	Payment Run Started	Payment Run Completed	PAIN001 Created	Payment Medium Created	Submitted to Bank	Received by Payment Network
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

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	



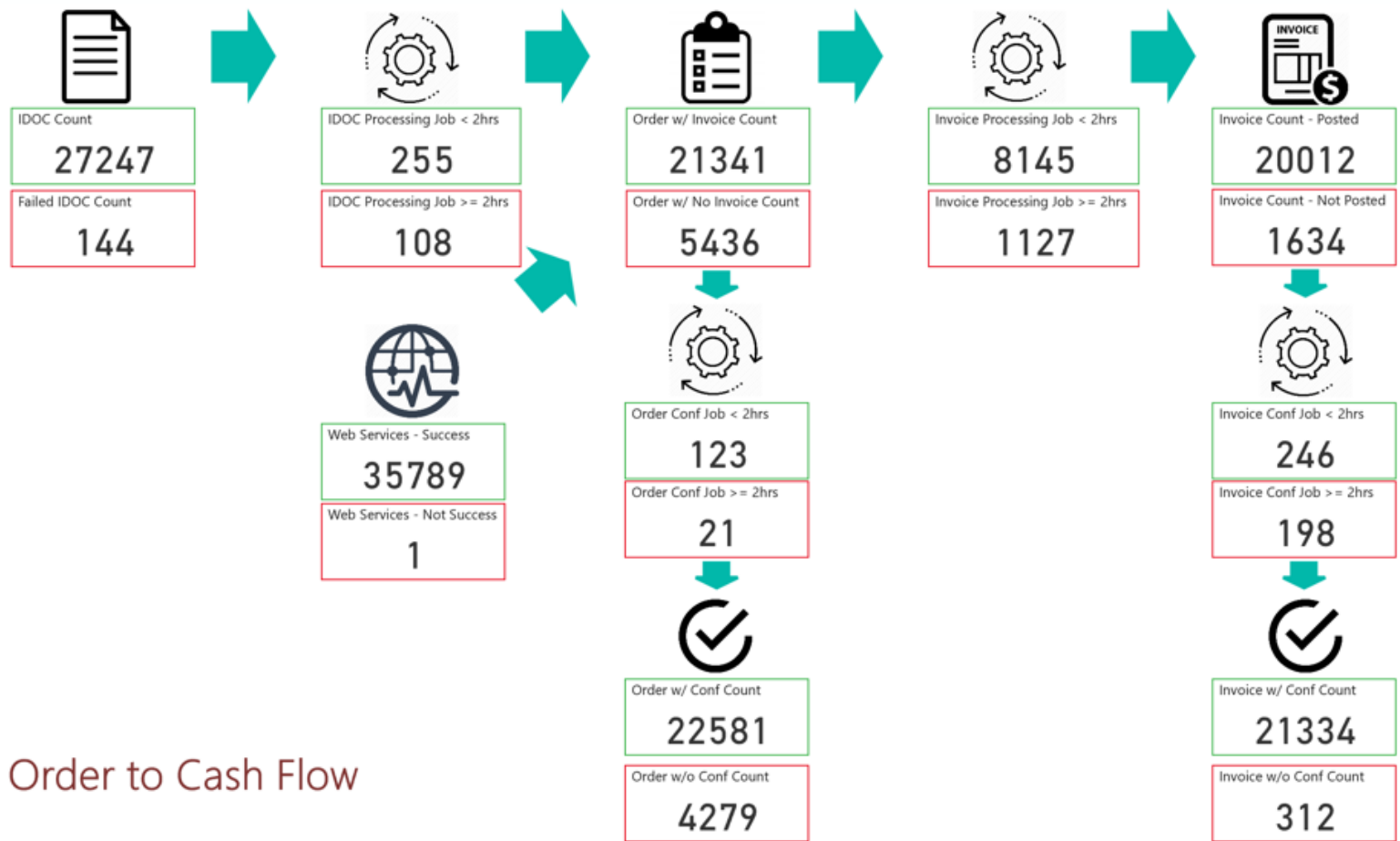
Order to Cash Business Process (Volume Licensing)



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



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: fdac4e696f0845999d501977cab012a3 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

SAP System and Application Monitoring - Interface Monitoring

Last Update : 5/1/18, 4:06 PM

OVERVIEW TOPOLOGY MONITORING ANALYTICS WEB SERVICES

Channels Status Overview



Scenarios

2 Alerts

IBP_Scenario

1 Error 0 Warning 0 Success 0 Undefined

All Alerts



- High Number of Exceptions in SAP IBP**
IBP Channel(CLOUD):SAP_IBP~ZX9->SAP_IBP~ZX9
51 minutes ago
- Critical Exceptions in SAP IBP**
IBP Channel(CLOUD):SAP_IBP~ZX9->SAP_IBP~ZX9
Yesterday

- Exception Monitoring Cockpit with IBP Exceptions.
- Enable Alerting – Email notifications for failures.
- Interface Channel Monitoring.

ASUG

Batch Job Telemetry

Batch Job
Start

Batch Job Name, and Number,
start time, and delay

Step
Start

Batch Job Name, and Number, Job
Step, Program, Variant, start time

Step
Finish

Batch Job Name, and Number, Job Step,
Program, Variant, Finish Time, and Status

Batch Job
Finish

Batch Job Name, and Number,
Finish Time, and Status



Job Runs < 1 second

Jobname	status	Year	Quart	Month	D	ay	cancellations
ZHCLER_MSCORP0505191915	cancelled	2019	Qtr 2	May	1	83	
ZHCLER_MSCORP0505190458	cancelled	2019	Qtr 2	May	1	35	
ZHCLER_MSCORP0505190159	cancelled	2019	Qtr 2	May	1	33	
ZHCLER_MSCORP0505192230	cancelled	2019	Qtr 2	May	1	16	
ZFVAR01=XID	cancelled	2019	Qtr 2	May	1	10	
ZFLR032_INBOUND_DOC=XSM	cancelled	2019	Qtr 2	May	1	9	
ZAMEX_API_CALL_RETRY=XOSM	cancelled	2019	Qtr 2	May	1	8	
Z_SQ_ORD_OISC_REP	cancelled	2019	Qtr 2	May	1	8	
Z_MM_PEM_CREATE_SKU-0000462586	cancelled	2019	Qtr 2	May	1	8	
Z_MM_PEM_CREATE_SKU-0000462583	cancelled	2019	Qtr 2	May	1	8	
Z_MM_PEM_CREATE_SKU-0000462578	cancelled	2019	Qtr 2	May	1	8	
Z_MM_PEM_CREATE_SKU-0000462573	cancelled	2019	Qtr 2	May	1	8	
Z_MM_PEM_CREATE_SKU-0000462572	cancelled	2019	Qtr 2	May	1	8	
Z_FL_SAPTORISA_PAYLOAD=XOSM	cancelled	2019	Qtr 2	May	1	8	
Z_FL_R01015_F13_AUTO CLR	cancelled	2019	Qtr 2	May	1	8	

Frequently Cancelled Jobs

Jobname	status	Year	Quart	Month	D	ay	cancellations
CORP_LOAD_AUTOMATION=XISM	cancelled	2019	Qtr 2	May	1	83	
RITEMAP	cancelled	2019	Qtr 2	May	1	35	
ZDOELRPT	cancelled	2019	Qtr 2	May	1	33	
CORP_LOAD_AUTOMATION=XISM	cancelled	2019	Qtr 2	May	1	16	
TR_LOAD_POST_EBS=X10M_ADHOC	cancelled	2019	Qtr 2	May	1	10	
EPULSE_SUB_PROCESS	cancelled	2019	Qtr 2	May	1	9	
Z_FL_R01015_F13_AUTO CLR	cancelled	2019	Qtr 2	May	1	8	
SIRIUS_BR_TR_LOAD_POST_EBS=X10M	cancelled	2019	Qtr 2	May	1	8	
ZFL_INTRAEBSCURR_EXTR=MO2HADHOC	cancelled	2019	Qtr 2	May	1	8	
ZMM_FL_RECEIPT_REPROCESSING=XID	cancelled	2019	Qtr 2	May	1	8	
EPITDOL_MDET_POEXCEPT=MO2H	cancelled	2019	Qtr 2	May	1	7	
ONERAYROLL_MARITAL STATUS	cancelled	2019	Qtr 2	May	1	7	
ONERAYROLL_NEW HIRE	cancelled	2019	Qtr 2	May	1	7	

Frequently Running Jobs (per Hour)

Jobname	avgStartsPerHr
EPULSE_SUB_PROCESS	133.13
Z_MPL_PUBLISH	34.71
CHV_CDAC_CA_EVAL_SHORTDUMP	25.00
ZQIASAR_COST_ELEMENT_REPORT	25.00
SWWCHEX	19.20
ONERAYROLL_ADDRESS TITLE	17.00
ONERAYROLL_MARITAL STATUS	17.00
ONERAYROLL_NEW HIRE	17.00
ONERAYROLL_TERMINATION	17.00
ONERAYROLL_ADDRESS	16.00
ONERAYROLL_DOC	16.00
ONERAYROLL_IT1415	16.00
ONERAYROLL_LOA	16.00
ONERAYROLL_NAME	16.00
ONERAYROLL_STANDARD TITLE	16.00
TR_BR_PUBTRC01001_DOC=XOSM	15.54

Job Runs > 2 hours

Jobname	avgDur
ROYALMAIL_OUTPUT_2300=XID	8
ARV_CQJTBAL_WRI20190501170048	7
ARV_IDOC_WRI20190501232109	7
ARV_IDOC_WRI20190501232142	7
ARV_IDOC_WRI20190501232209	7
ARV_IDOC_WRI20190501232229	7
ARV_IDOC_WRI20190501232325	7
RAR_REVENUE_SCHEDULE_REPORT=XID	7
MSRTL_BM_NRT=MISM	6
ZFLAR_ZHICLR_REFERENCE=XID	6
CIF_GEN_ACT_MRP_AREA_IMODEL=XID	5
IN_TRANSIT_RPT=MD	5
SO_BCEB_NEW_JF_XML=MD	5
SO_CONTRACT_CHANGES_NEW_OEM=MD	5
WARRANTY_ACCRUAL_PROCESSING=XID	5
ARV_FL_DOCUMENT_WRI20190501172433	4
BSEG_SGTXT_1099_1942=JND=MD	4
CACTUS_INV_RPT_WST_4790_N790=MD	4

Jobs with >10 Steps (30 day average)

Jobname	sapinst	avgSteps
INV_ACC_PUSH_MEND=MM	MSS	457.09
TR_CLEAR_F13E=MD	MSS	297.63
ZPOC_CLOSE=MM	MSS	263.00
FLSOX_VENDOR_REPORT=MD	MSS	188.83
ZPOC_CLOSE=MSUN	MSS	186.00
ZSELT_PR_20190405_V-LUROG	MSS	162.00
DART_LITL_MONTHLY_P9_2019_1	MSS	159.00
DART_BIG_EXTRACT_P9_2019_1	MSS	158.00
ZSELT_PR_20190404_V-LUROG	MSS	155.43
DART_1010_EXTRACT_P9_2019_1	MSS	152.00
ZSELT_PR_20190401_V-LUROG	MSS	136.99
ZSELT_PR_20190402_V-LUROG	MSS	134.64
ZPRMIO_POPULATION=XID	MSS	128.10
ZSELT_PR_20190405_V-LOANDE	MSS	128.00
ECCS_NVA_CONSOLIDATION_A_1100=XM	MSS	118.36
ZSELT_PR_20190419_V-LOANDE	MSS	116.35
ECCS_CONSOLIDATION_E_3_1105=XM	MSS	114.00
ECCS_NVA_CONSOLIDATION_A_1940=XM	MSS	112.27
ECCS_CONSOLIDATION_E_2_1945=XM	MSS	111.00

Long Running Open Transactions (3/8/2019)

BatchJob	MaxDurationHours	NumberOfItemsCaptured
ZFL_TEO_TAXVARIANCE_REPORT	38.62	1521
RFBK30-EL BANK STMT	23.58	399
ZFL_AUTO_SOA_NAZ_MONTHLY=XM	20.38	213
FLDATA_CONSISTENCY_CHECK=MM	12.87	134
REP_MID_PLANE_DELTA=XID	21.18	128
FARR_RAI2_1510111803231400003	44.79	64
FARR_RAI2_2110061802211400001	37.32	69
ARV_FL_DOCUMENT_CON20180608101246	28.70	52
HIERARCHY_LOAD=MD_PART1	4.94	48
ARV_FL_DOCUMENT_CON20180516221637	24.55	44
FARR_RAI2_1010111804171400002	24.81	44
ZFL_AUTO_SOA_NAZ_WEEKLY=XMON	4.48	44
ARV_MM_ACCITT_CON_CONV_SET23_2	24.03	43
NGMM_STATUS_ACL_1000=XID	8.99	43
FLSARICH_CONVERT_TO_JAM_1=XID	21.71	38
HIERARCHY_LOAD=MD_PART2	4.46	38
ARV_MM_ACCITT_CON_CONV_SET25	23.35	37
ARV_FL_DOCUMENT_CON20180614108417	25.85	36



Business Process Telemetry Adoption

3 Production Systems 3 more this month All SAP production by end of June

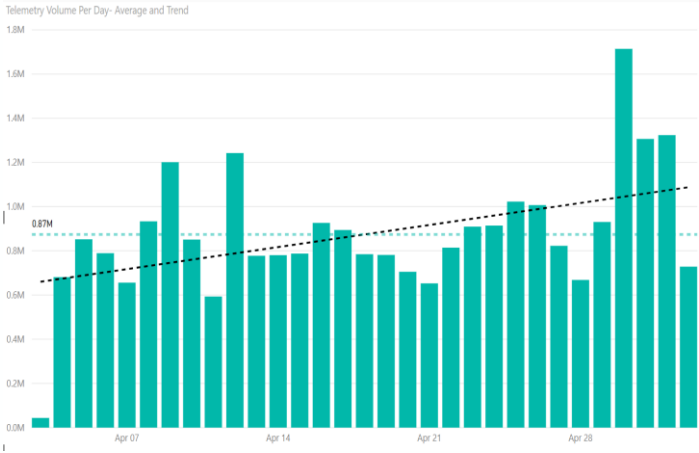
14 E2E Business Processes

End to End Capability
Ariba MDG Integration
Bank Statement Telemetry
Batch_Job_Telemetry
Care (Phisucal Goods Repair and Refurb Process)
Consume2Cash
Master Data Distribution
MDG_ECC_MAT_BOM_EXCHANGE
MS Expenses
OrderToCash
Partner Payments BCM
PO_MSG_EXTRACT_ECC
PS Order To Cash
Sku on Demand
Vendor BCM Payments
Vendor Check Payments

93 Unique Events and Metrics

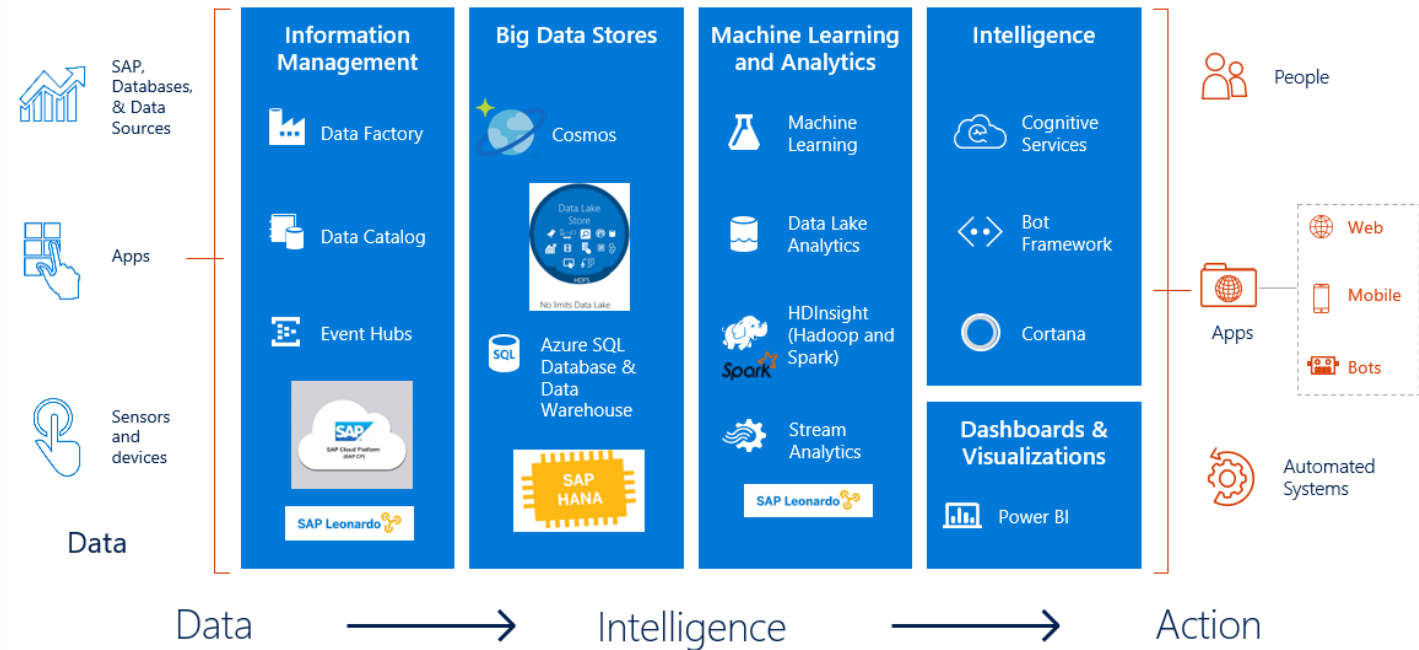
Bank Statement Telemetry	Event	4
Batch_Job_Telemetry	Event	8
Care	Event	11
MDG_ECC_MAT_BOM_EXCHANGE	Event	2
MS Expenses	Event	4
OrderToCash	Event	14
PO_MSG_EXTRACT_ECC	Event	1
PS Order To Cash	Event	4
Partner Payments BCM	Event	3
Vendor BCM Payments	Event	12
Vendor Check Payments	Event	2
Consume2Cash	Event	1
Consume2Cash	Metrics	13
Partner Payments BCM	Event	6
MDG_ECC_MAT_BOM_EXCHANGE	Event	2
ONEPDM_MDG_ARIBA	Event	5
PRODUCT_PFAM_SERVICE_BUS	Event	1

Average of 870K
Unique Events and
Metrics per day...



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

Come and see us at the Microsoft booth!



Stream Analytics



Machine Learning



Azure Data Lake



Logic Apps



Azure Event Hub



SAP on Azure Links and Information



[Microsoft internal SAP workload gets a telemetry boost with Azure](#)

[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.

We want to hear from you! Be sure to complete the session evaluation on the SAPPHIRE NOW and ASUG Annual Conference mobile app.



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

Let's Be Social.

Stay connected. Share your SAP experiences anytime, anywhere.

Join the ASUG conversation on social media: **@ASUG365 #ASUG**

