

Quality. Migrations. Governance.

Asset Intensive | Retail & Fashion
Data Driven Business Solutions

Enabling Intelligent Operations with Master Data

Mike Jordan
VP, EAM Practice
Utopia

Mark Pyatt
Industry Principal
Accenture

May 7, 2020

©2020 Utopia Global, Inc. All Rights Reserved.



Enabling Intelligent Operations Master Data

Meet Today's Presenters



Mike Jordan
VP, EAM Practice
Utopia Global



Mark Pyatt
Industry Principal
Accenture

Enabling Intelligent Operations Master Data

Agenda



Trends

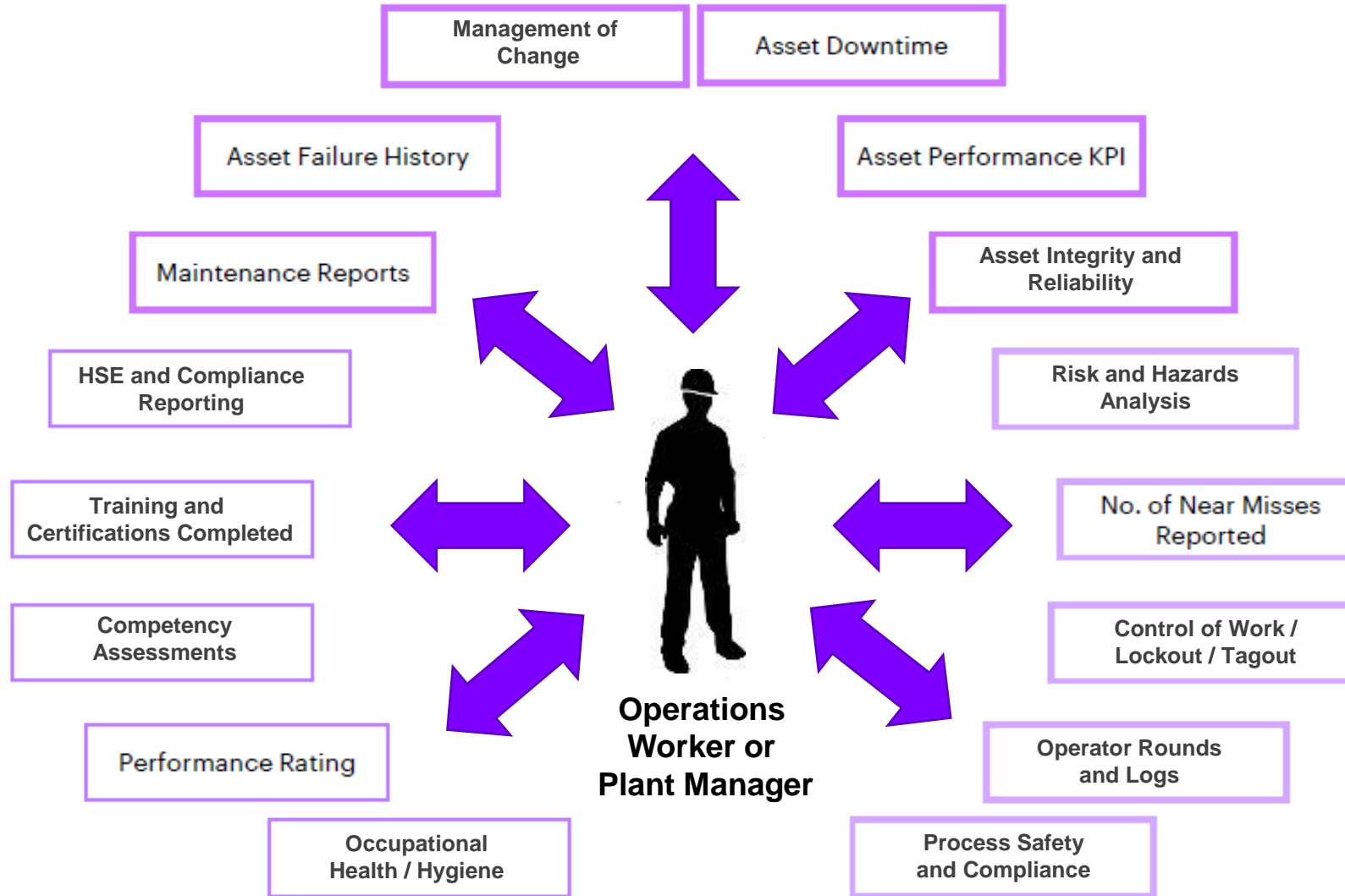
Operating Model

Managing Master Data

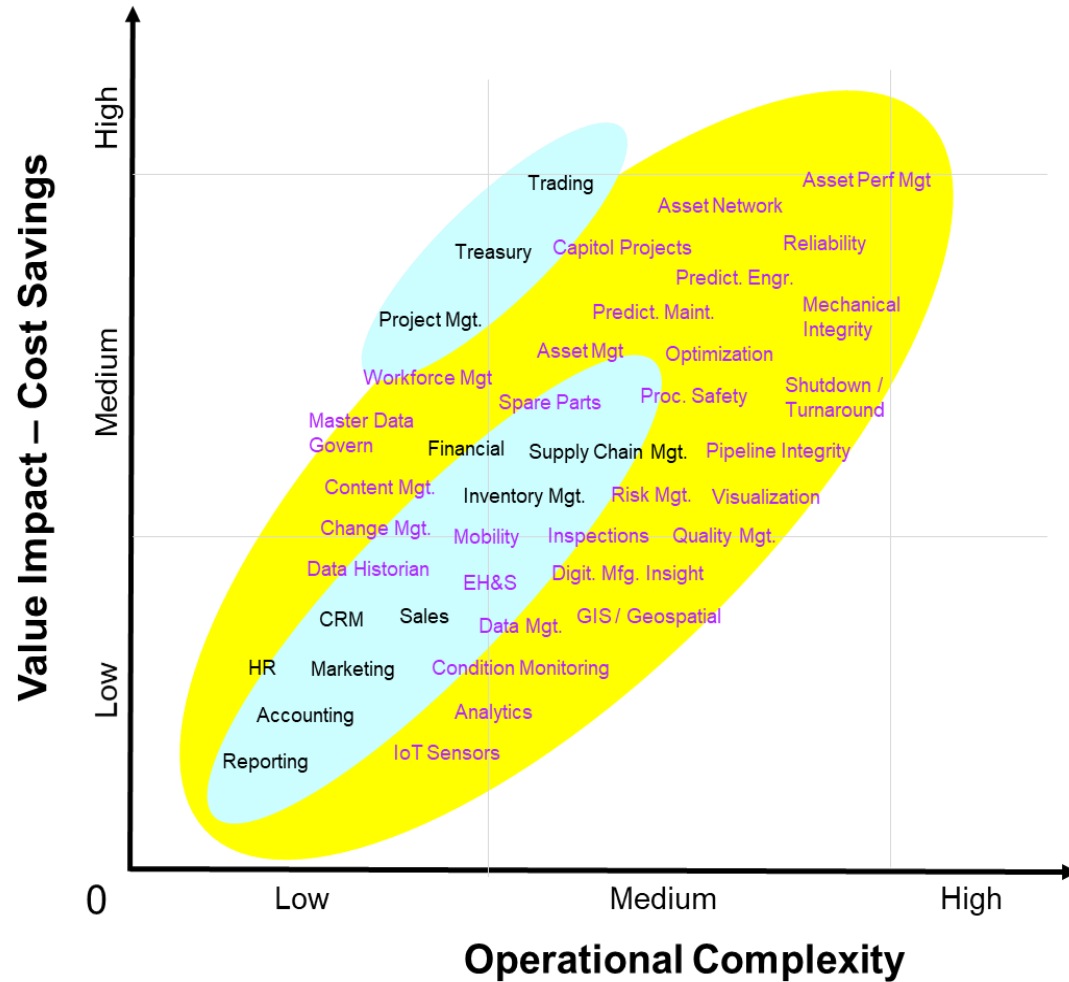
Client Example

Q&A / Next Steps

OPERATIONS USES MANY PROCESSES AND DATA SOURCES; RESULTING IN **OPERATIONAL COMPLEXITY**



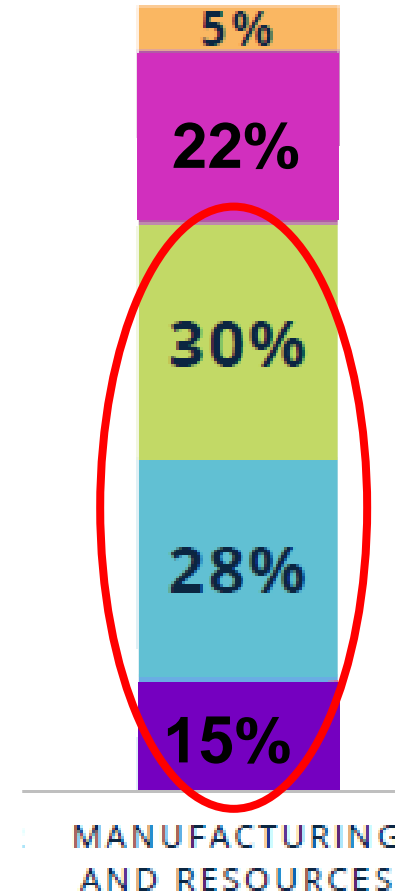
ENTERPRISE TRANSFORMATION PROJECTS FOCUS ON ERP FIRST AND PUSH OPERATIONS TO THE FUTURE...



KEY:

■/□ = ERP ■/□ = OPERATIONS

Source: Accenture Consulting Research, July, 2019



73% of companies do not have a defined plan for operations transformation

Legend:

- First Phase Completed
- Well underway
- Started, but moving slow
- Just beginning
- Done no work



ANALYZ
THE
FUTURE

Source: IDC's Worldwide Semiannual Digital Transformation Spending Guide, H12018
For sales contact csimpson@idc.com or visit www.idc.com/customerinsights

Enabling Intelligent Operations Master Data

Agenda

Trends

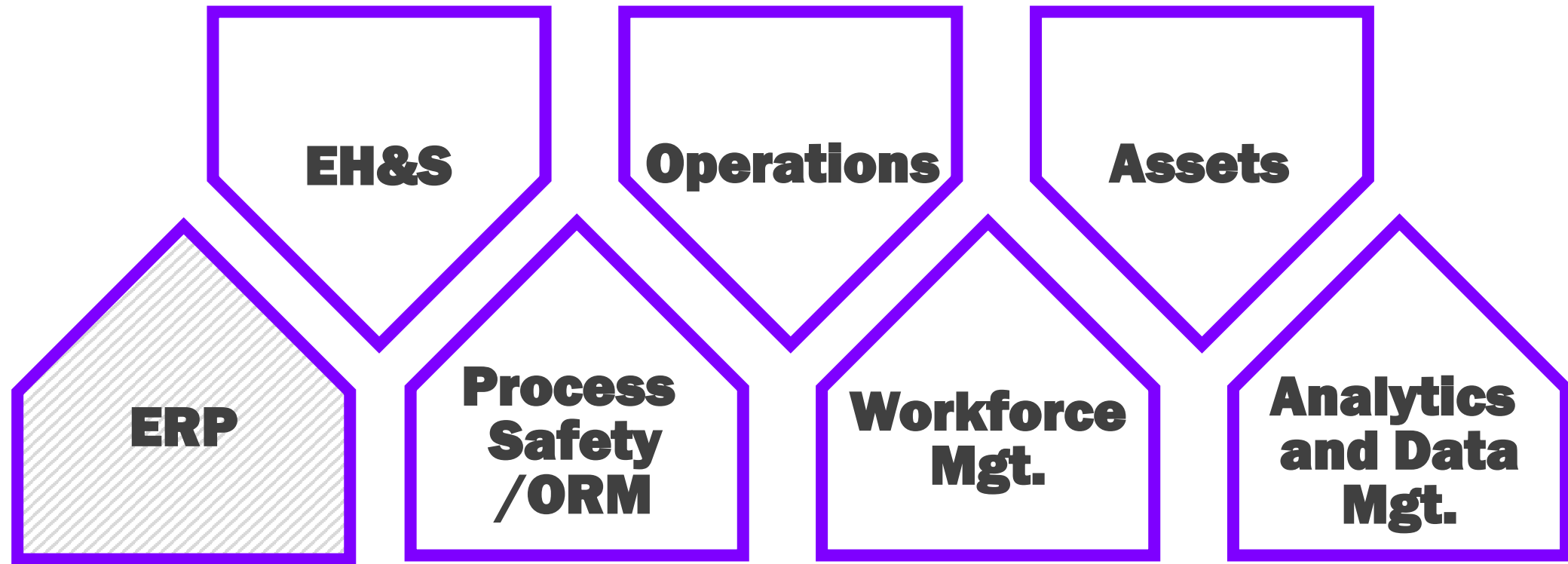
 **Operating Model**

Managing Master Data

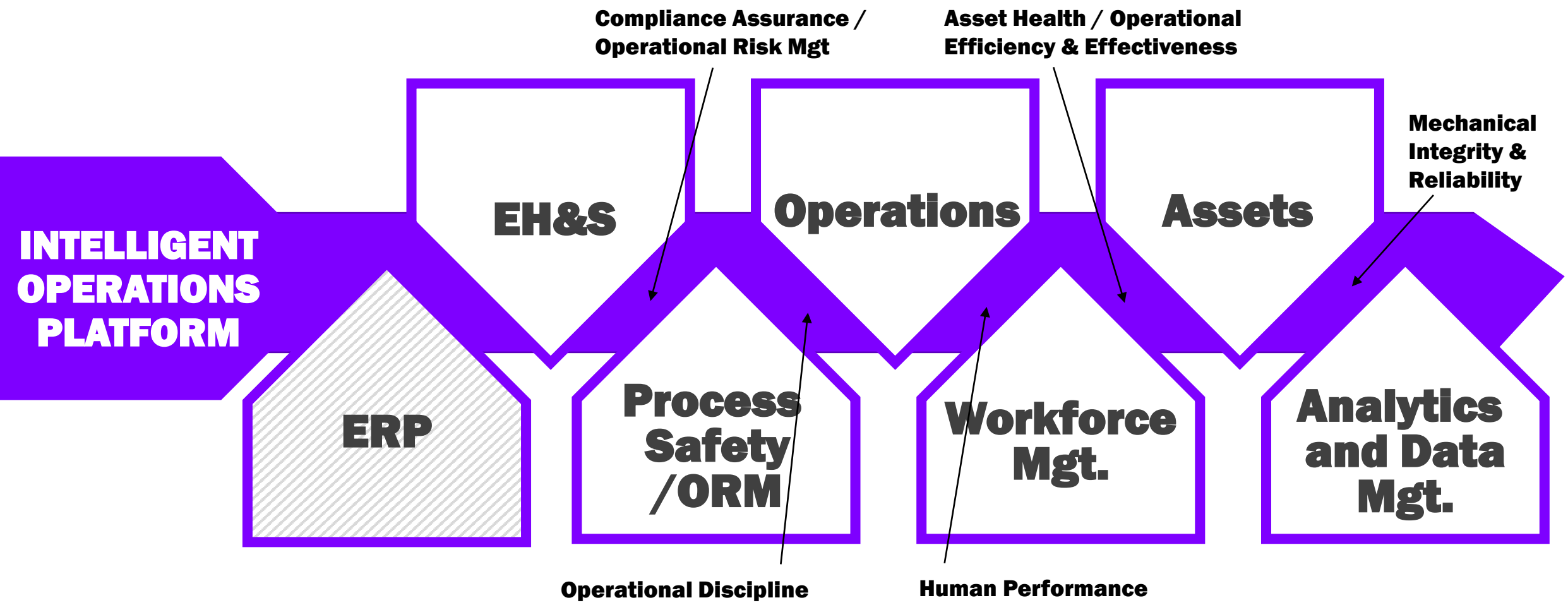
Client Example

Q&A / Next Steps

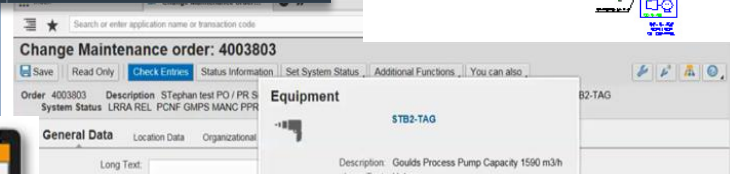
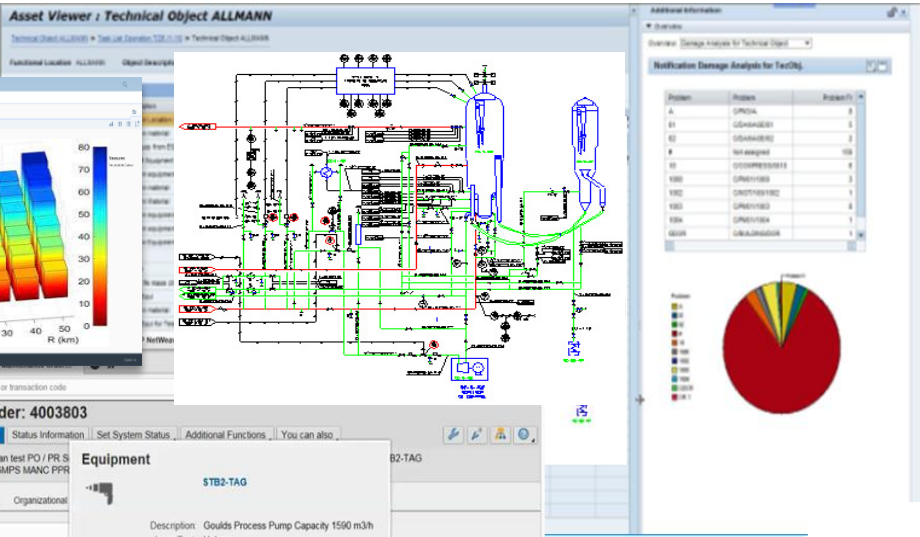
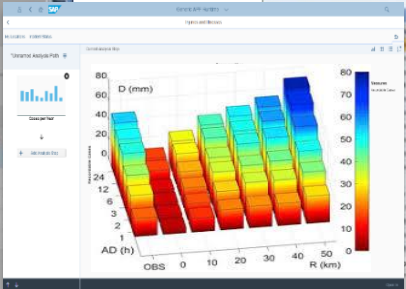
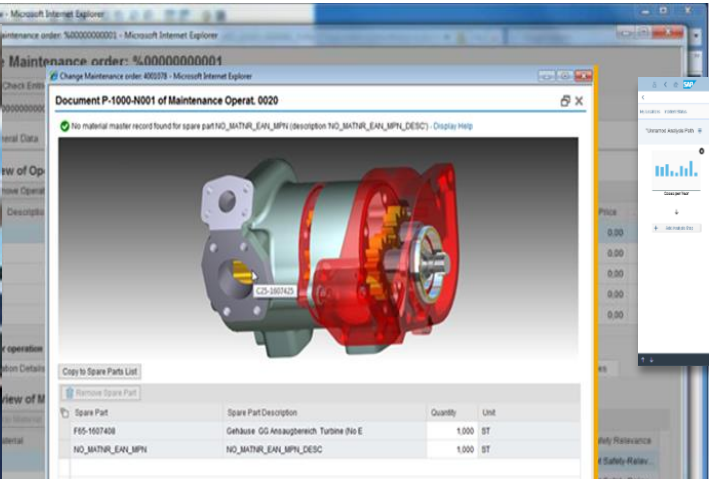
TODAY'S **OPERATIONS ARE** INDEPENDENT, WITH VERY LITTLE AUTOMATION OR PROCESS INTERACTION...



INTELLIGENT OPERATIONS INTEGRATES DATA, SOURCES, AND PROCESSES TO IMPROVE DECISION SUPPORT



INTELLIGENT OPERATIONS INTEGRATES DATA, SOURCES, AND PROCESSES TO IMPROVE DECISION SUPPORT



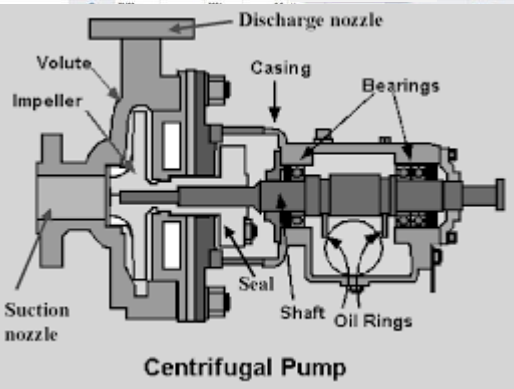
Centrifugal Pump Checklist

Once a Week

- ☐ **Oil Level** Check the oil level on the dipstick with the engine off to see if the oil level is low. If it is low, you will need to refill the oil tank.
- ☐ **Washer Fluid Level** Under the hood of your vehicle is a plastic container that contains the fluid for your windshield wipers. If it isn't full of liquid, you can fill it with a windshield washer solution.
- ☐ **Tire Pressure/Wear** Check tire condition and pressure. Do they look low or are there any visible cracks? You need tires that are in good condition so that you can brake and steer properly.

Once a Month

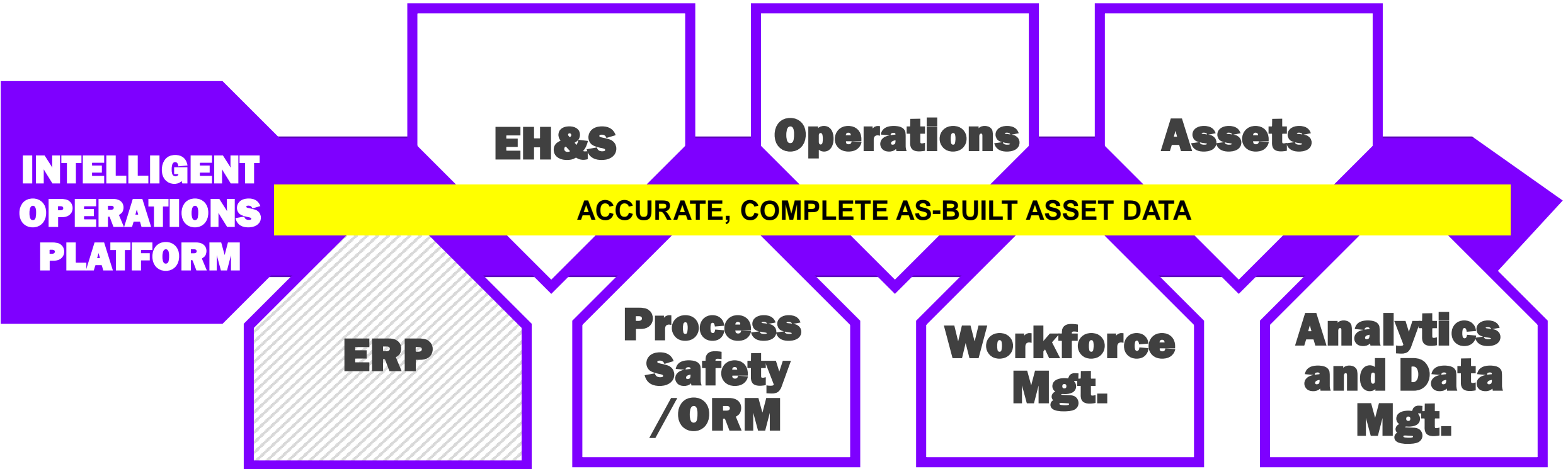
- ☐ **Automatic Transmission Fluid** If your vehicle hesitates when your automatic transmission shifts gears, get the transmission fluid level checked. Replacing your transmission fluid helps preserve the life of the transmission and maintains the warranty.
- ☐ **Brake Fluid** Keep the brake fluid in the master cylinder at the proper level. It's important to be proactive, but if you think your vehicle leaking brake fluid, don't drive it, tow it!



Failure Analysis for Pump EF23

Contribution %	Description	
15.16	Pump Impeller	
13.25	Pump Thrust Bearing	
13.18	Pump Discharge Pressure	
3.94	Pump Discharge Flow	
2.72	Pump Seal Differential Pressure	
2.57	Phase 2 Motor Winding Temperature	
2.13	Phase 3 Motor Winding Temperature	
1.50	Motor RPM's	

INTELLIGENT OPERATIONS INTEGRATES DATA, SOURCES, AND PROCESSES TO IMPROVE DECISION SUPPORT



WHAT ARE THE IMPACTS OF BAD DATA?

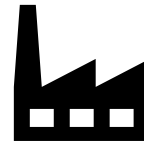
Ensuring accurate, complete asset master data can have a direct impact on reducing environmental, health & safety risks, improving operational performance and maintaining regulatory compliance.

Maintenance Inefficiency



- Reduced maintenance 'wrench-time'
- Inadequate preventive maintenance
- Poor visibility into asset lifecycle

Operational Inefficiency



- Increased downtime from equipment failure
- Increased mean-time-to-repair
- Raw material shrinkage

Excessive MRO Supply Chain Costs



- Inability to accurately predict spares needs
- Unidentified obsolete inventories
- Excessive expedited procurement

Increased EH&S Risks



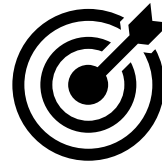
- Safety risks for maintenance staff and operators
- Inadequate risk management & quality assurance

Lack of Auditability



- Poor financial accountability
- Regulatory compliance risk
- Product liability risks from quality

Inability to Achieve Operational Excellence



- Inability to achieve top quartile performance through advanced maintenance techniques such as reliability-centered-maintenance, risk-based inspection, performance analytics

Enabling Intelligent Operations Master Data

Agenda

Trends

Operating Model

▶ **Managing Master Data**

Client Example

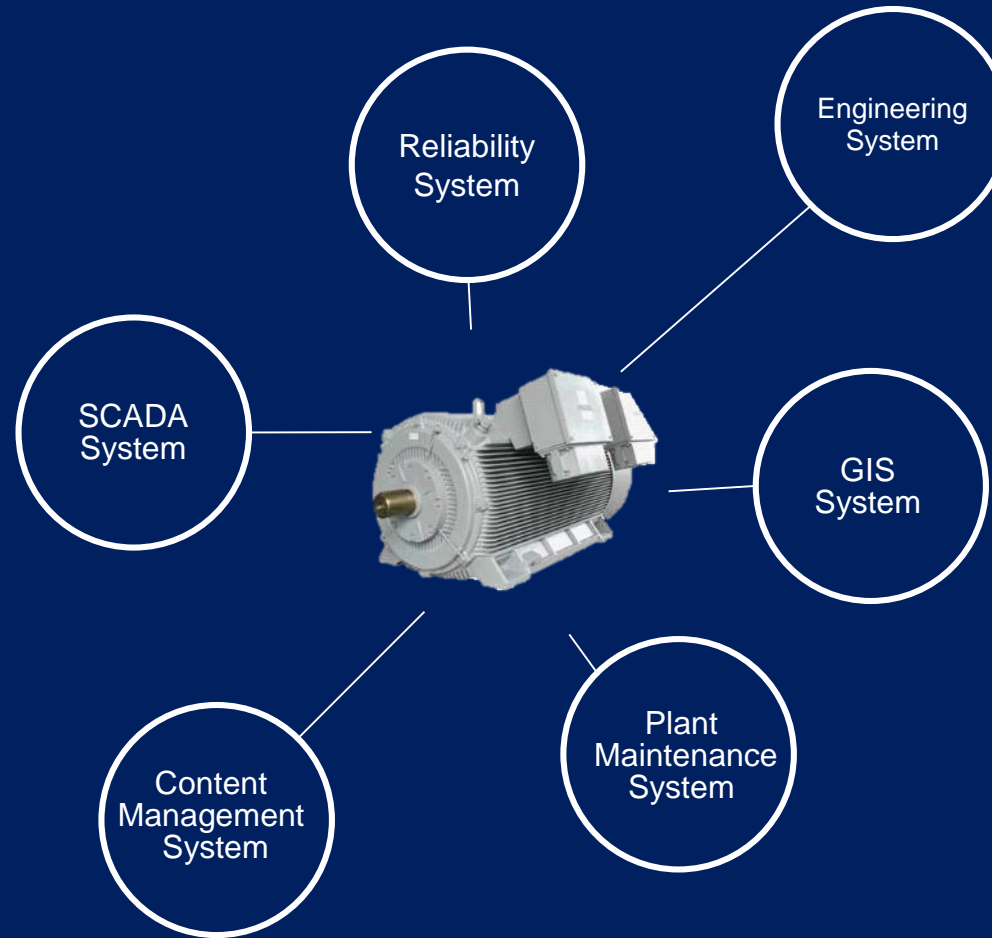
Q&A / Next Steps

WHAT CONSTITUTES 'GOOD DATA' FOR SUCCESSFUL OPERATIONS?

THE CHALLENGES

- The **Digital Twin** includes unstructured data (operating manuals, repair manuals, task lists, warranties)
- **Assets are continuously changing** (maintenance, shutdowns/ turnarounds, capital projects)
- **The Digital Twin is distributed** among multiple systems of record in varying formats

THE DISTRIBUTED DIGITAL TWIN

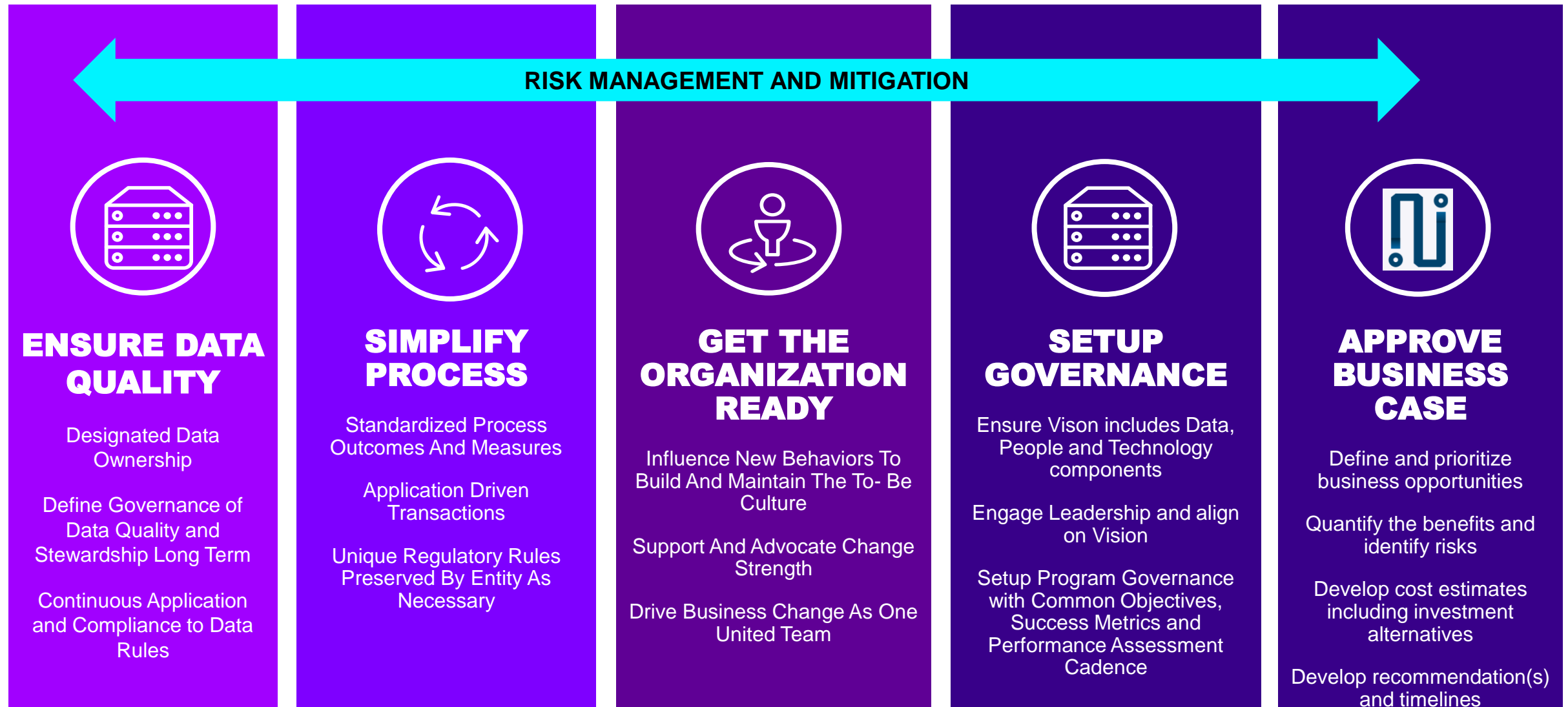


THE OPPORTUNITIES

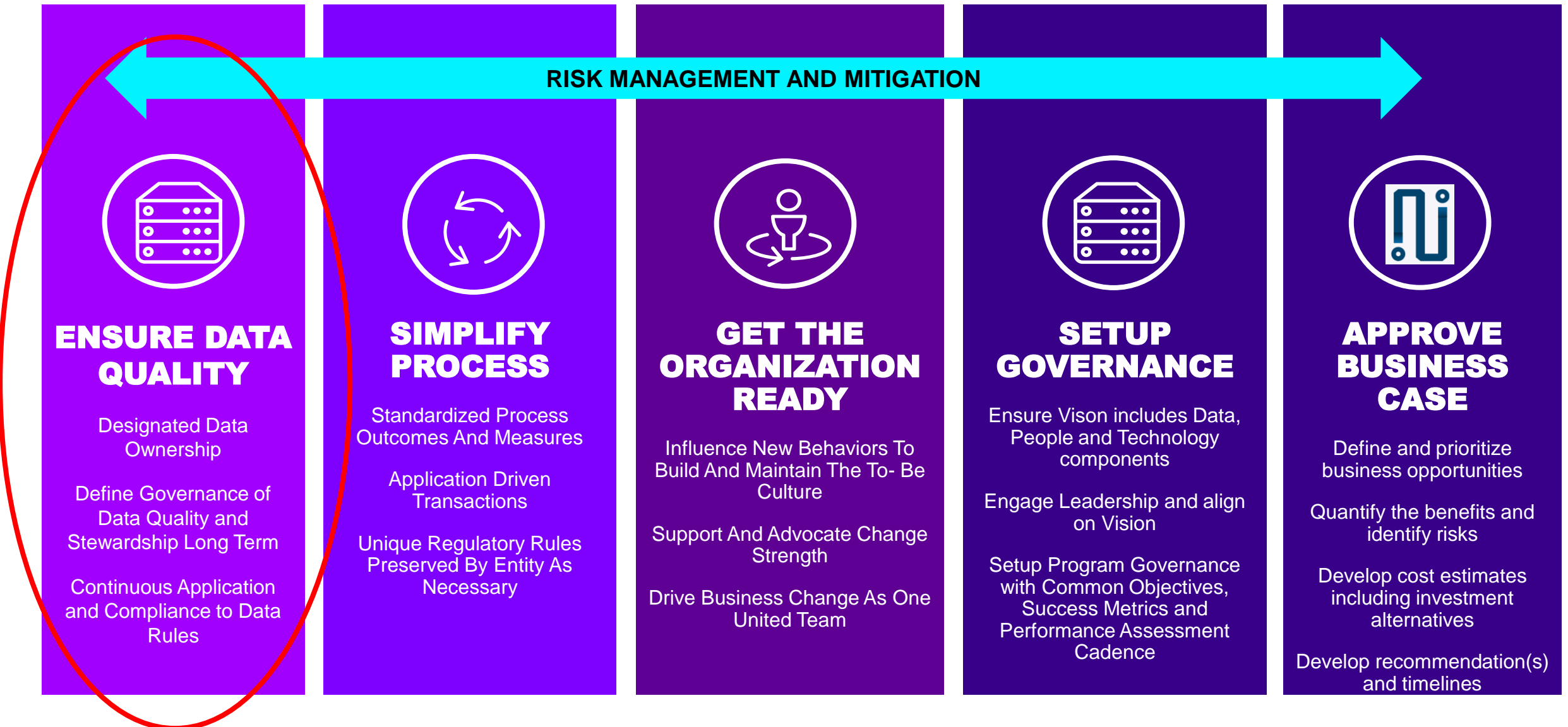
Maintaining an accurate, complete Digital Twin in the system of record has a direct impact on:

- ✓ Increasing worker productivity
- ✓ Reducing downtime and maintenance re-work
- ✓ Improving process safety, while mitigating risks
- ✓ Improving project and operational performance

THE PROCESS FOR MANAGING OPERATIONS MASTER DATA



THE PROCESS FOR MANAGING OPERATIONS MASTER DATA



Enabling Intelligent Operations Master Data

Agenda

Trends

Operating Model

Managing Master Data

 **Client Example**

Q&A / Next Steps



Digitalization Opportunity

At a Fortune 50 Company

Problem Statement (client):

- We're struggling to source critical spare parts due to Supply Chain disruptions.
- We may have other spares at other facilities or warehouses within our company, just described differently.
- We may be able to use something functionally equivalent, if we knew what those were.
- We want to use our internal/external networks to attempt to source quickly.

What we are thinking (client):

- We grab all the spare parts related data from our SAP and other systems of record across all of our locations (potentially hundreds of sites).
- Utopia cleans up that data, maps the now-described-the-same spares across those sites, as well as identifies potential functional equivalents.
- That allows searching across all sites and sources, both internal and external.
- Utopia hosts this data, provides easy access/searching, as well as resources to assist in rapid sourcing.

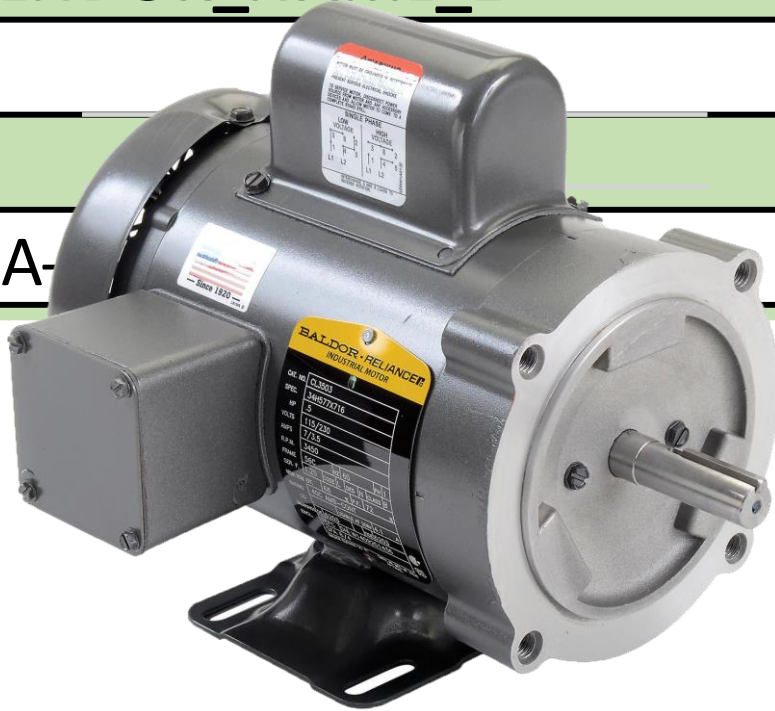
A Real-World Test Case

MFR/VENDOR_NAME_1

SICK

P/N_1

A3M60A-



Here is the data we were given



The Utopia Response within 24 hours

From Automated Enrichment

Search item		
		MFR/VENDOR_NAME_1
		SICK
		P/N_1
		A3M60A-BEPB014x17
		MFR/VENDOR_NAME_2
		SICK
		P/N_2
		1053332
		PORT SUNLIGHT
CLASS	CHARACTERISTICS NAME	CHARACTERISTIC VALUE
ENCODER	TYPE	ABSOLUTE
ENCODER	INPUT RATING	10 TO 32 VDC
ENCODER	OUTPUT RATING	
ENCODER	PULSE PER REVOLUTION	16384 PPR
ENCODER	ACTUATION TYPE	
ENCODER	TORQUE	1 NM
ENCODER	ROTATION LIFE CYCLE	
ENCODER	TERMINAL TYPE	5-PIN M12 MALE X FEMALE
ENCODER	OUTPUT CONFIGURATION	
ENCODER	SIZE	12 MM SHAFT
ENCODER	MATERIAL	STAINLESS STEEL SHAFT,ALUMINUM HOUS
ENCODER	IP RATING	IP64,IP67 SHAFT,IP67 HOUSING
ENCODER	TEMPERATURE RATING	-30 TO 80 DEG C
ENCODER	MOUNTING TYPE	FLANGE
ENCODER	CERTIFICATION/STANDARD	CE,CULUS
ENCODER	ADDITIONAL FEATURES	A3M60 PROFIBUS,RS485 PROFIBUS INTE
ENCODER	URL	https://www.sick.com/ag/en/encoders/a
ENCODER	COMMENTS	ACTIVE

Here is a better description of the needed spare part



From Automated Search of Data Previously Enriched by Utopia

P/N_2	P/N_2	P/N_2
CHARACTERISTIC VALUE	CHARACTERISTIC VALUE	CHARACTERISTIC VALUE
ABSOLUTE	ABSOLUTE	ABSOLUTE
10 TO 32 VDC	10 TO 32 VDC	10 TO 32 VDC
16384 PPR	8192 PPR	16384 PPR
12 MM	12 MM	12 MM
STAINLESS STEEL SHAFT,ALUMIN	STAINLESS STEEL SHAFT,ALUMIN	STAINLESS STEEL SHAFT,ALUMIN
IP67	IP67	IP67
-40 °C TO +80 °C	-40 °C TO +80 °C	-40 °C TO +80 °C
HOLLOW SHAFT FLANGE	HOLLOW SHAFT FLANGE	HOLLOW SHAFT FLANGE
BUS INTERFACE		
https://uk.rs-online.com/web/	https://uk.rs-online.com/web/	https://uk.rs-online.com/web/
RS Components	RS Components	RS Components
03457 201 201	03457 201 201	03457 201 201

Here are the potential functionally equivalent parts that you have in other regional facilities

The Utopia Response within 24 hours

From Automated Search of Utopia and OEM AIN Libraries

Other potential functionally equivalent parts

PORT SUNLIGHT			Potential Functional Equivalent				
CLASS	CHARACTERISTICS NAME	CHARACTERISTIC VALUE	CHARACTERISTIC VALUE	CHARACTERISTIC VALUE	CHARACTERISTIC VALUE	CHARACTERISTIC VALUE	CHARACTERISTIC VALUE
ENCODER	TYPE	ABSOLUTE	MULTI-TURN ABSOLUTE	ABSOLUTE	INCREMENTAL	ABSOLUTE	ABSOLUTE
ENCODER	INPUT RATING	10 TO 32 VDC	10 TO 30 VDC	4.75 TO 26.4 VDC	10 TO 30 VDC	9 TO 36 VDC	10 TO 32 VDC
ENCODER	OUTPUT RATING						
ENCODER	PULSE PER REVOLUTION	16384 PPR	65536 PPR	4096 PPR	360 PPR	4096 PPR	8192 PPR
ENCODER	ACTUATION TYPE						
ENCODER	TORQUE	1 NM	1 NM		1NM AT 20 DEG C	1 NM	
ENCODER	ROTATION LIFE CYCLE						
ENCODER	TERMINAL TYPE	5-PIN M12 MALE X FEMALE	M12 SOCKET X PLUG	M12 CONNECTOR	M18 CONNECTOR	M12 CONNECTOR	M12 CONNECTOR
ENCODER	OUTPUT CONFIGURATION						
ENCODER	SIZE	12 MM SHAFT	10 X 20 MM SHAFT	3/8 IN SHAFT	12 MM SHAFT	58 DIA X 83 LG MM	12 MM SHAFT
ENCODER	MATERIAL	STAINLESS STEEL SHAFT,ALUMINUM HOUSING	STAINLESS STEEL SHAFT,HOUSING	STAINLESS STEEL SHAFT	ALUMINUM HOUSING	ALUMINUM HOUSING	DIE-CAST ALUMINUM HOUSING
ENCODER	IP RATING	IP64,IP67 SHAFT,IP67 HOUSING	IP64,IP67 SHAFT,IP67 HOUSING	IP67 HOUSING	IP64 SHAFT,IP67 HOUSING	IP66/IP67/IP69K HOUSING	IP67 HOUSING
ENCODER	TEMPERATURE RATING	-30 TO 80 DEG C	-40 TO 85 DEG C	-40 TO 85 DEG C	-40 TO 100 DEG C	-40 TO 85 DEG C	-20 TO 80 DEG C
ENCODER	MOUNTING TYPE	FLANGE	CLAMPED FLANGE	SERVO/SQUARE FLANGE		CLAMPED FLANGE	FACE MOUNT
ENCODER	CERTIFICATION/STANDARD	CE,CULUS					CE,CULUS
ENCODER	ADDITIONAL FEATURES	A3M60 PROFIBUS,RS485 PROFIBUS	RADIAL EXIT POSITION,BINARY OUTPUT	VITON SEAL,DURACODER,SSI	MULTITURN,BINARY END CONNECTOR	+/-0.2%,2-BYTE CONTROL,BINARY	ATM60-D4H13X13,26 BIT
ENCODER	URL	https://www.sick.com/ag/en/encoders/ab	https://files.pepperl-fuchs.com/w	https://www.amci.com/files/1	https://www.ifm.com/restserv	http://www.twk.de/data/pdf/1	https://www.mysick.com/sac
ENCODER	COMMENTS	ACTIVE	ACTIVE	ACTIVE-MODEL AVAILABLE NOT	NO LONGER AVAILABLE - ARCHI	ACTIVE	ACTIVE
						Delivery time approx. 8 weeks	
						€	\$931.00



accenture



The Utopia Response within 24 hours

From Automated Search of OEM AIN Libraries and Web Sources

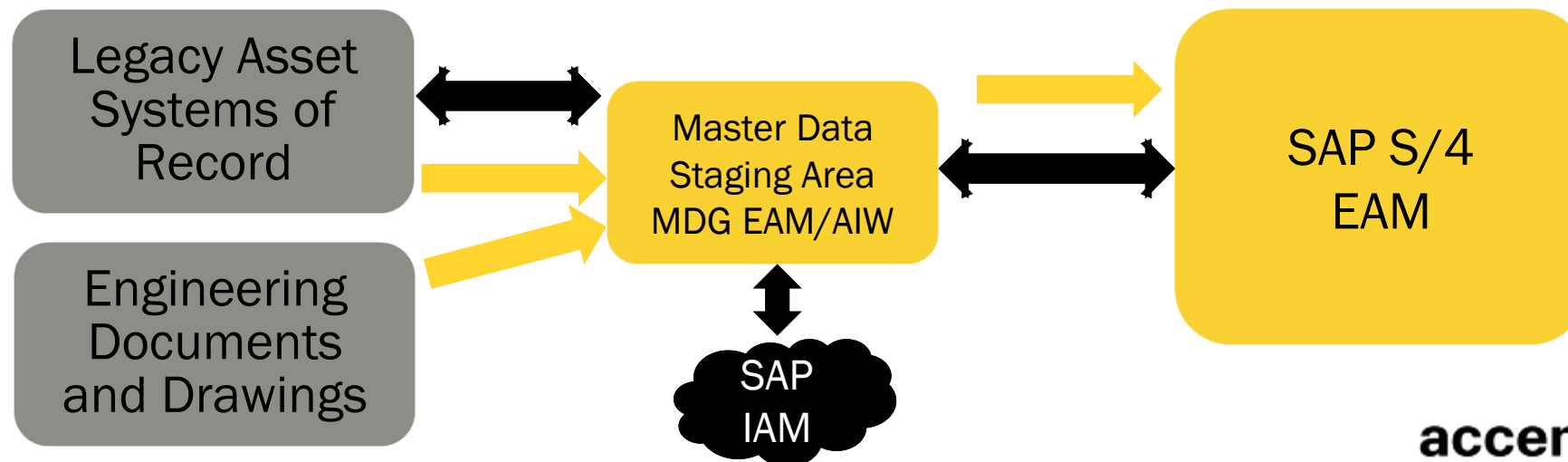
AVAILABLE_UK_REGION_WEBLINK	https://www.kempstoncontrols.co.uk/A3M60A-BEPB014X17/Sick/sku/884937	https://uk.vision-supplies.com/sick-a3m60a-bepb014x17	https://www.ebay.co.uk/itm/1053331-A3M60A-BDPB014X171053332-A3M60A-BEPB014X17-/233426168717	https://eltra-trade.com/products/sick-a3m60a-bepb014x17
AVAILABLE_UK_REGION_VENDOR	Kempston Controls	VISION-SUPPLIES	eBay	ELTRA TRADE
TELEPHONE	01933 656290	+44 (0) 1926 611745		+421 552 601 099
LEAD_TIME_TO_DELIVER	STANDARD DELIVERY WITH IN 1 - 2 DAYS			

Other potential sources of spares in your region

The Best Practice for Asset Master Data Transformation

No Regrets Steps

- Asset data extraction, cleansing, enrichment from legacy systems, documents & drawings
 - With first MRO Spare Parts as first priority
- Establish Master Data Staging Area and load with cleansed, enriched ISO 14224 compliant asset data
 - SAP Master Data Governance – Materials
 - SAP Master Data Governance – Enterprise Asset Management
 - SAP Asset information Workbench
 - OpenText xECM for Engineering
 - SAP Asset Intelligence Network
- Maintain currency of legacy asset data until SAP S/4 deployment
- Load accurate, complete asset master data upon SAP S/4 deployment
- Maintain accuracy of S/4 master data during ongoing plant modifications



Enabling Intelligent Operations Master Data

Agenda

Trends

Operating Model

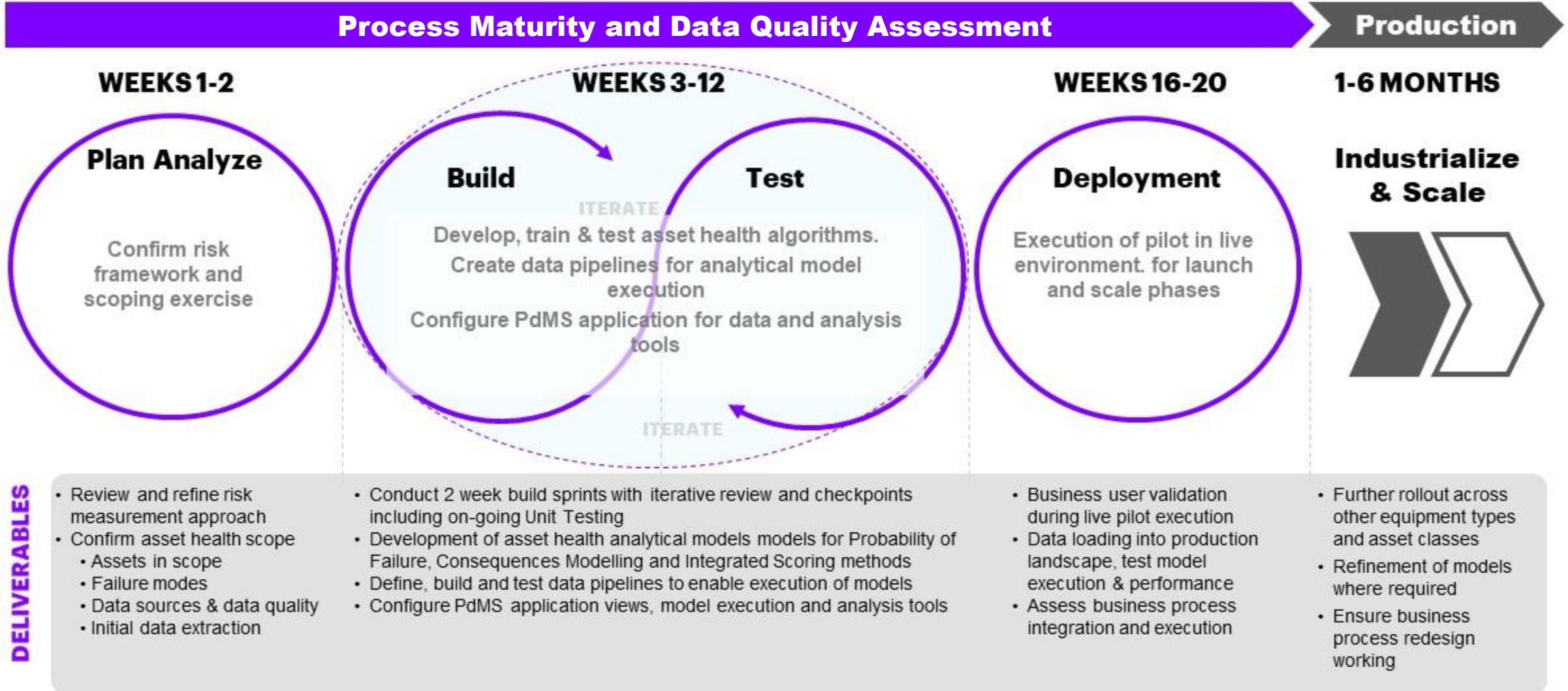
Managing Master Data

Client Example

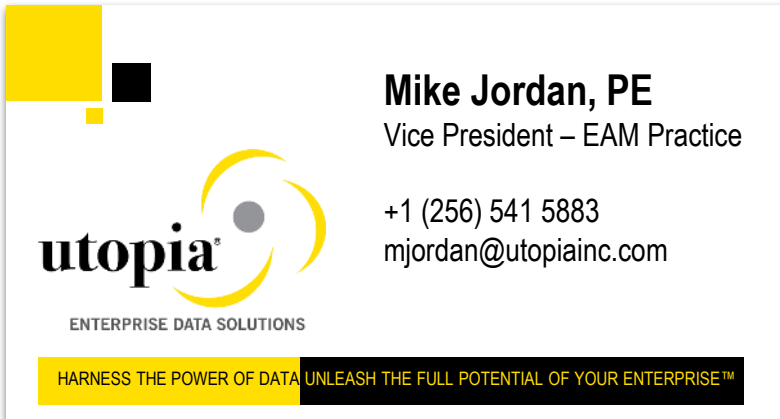
 **Q&A / Next Steps**

NEXT STEPS – **DISCOVERY WORKSHOP** TO DEFINE PLAN

INITIATE PROCESS AND DATA QUALITY ASSESSMENT TO DETERMINE MATURITY OF OPERATIONAL SYSTEMS; TO DEVELOP PRIORITIZED AND COMPREHENSIVE PLAN FOR TRANSFORMATION



QUESTIONS?



Mike Jordan, PE
Vice President – EAM Practice

+1 (256) 541 5883
mjordan@utopiainc.com



Mark Pyatt
Industry Principal

+1 (469) 855 7127
mark.pyatt@accenture.com

1:1 FOLLOW UP DISCUSSIONS ARE TAKING PLACE TODAY, TOMORROW AND THROUGHOUT NEXT WEEK

TO SCHEDULE: [HTTPS://BIT.LY/ULIVE2](https://bit.ly/ulive2)

OR EMAIL: SWEISENBERGER@UTOPIAINC.COM

TO VIEW PRIOR UTOPIALIVE'S VISIT: [UTOPIAINC.COM/LIVE](https://utopiainc.com/live)