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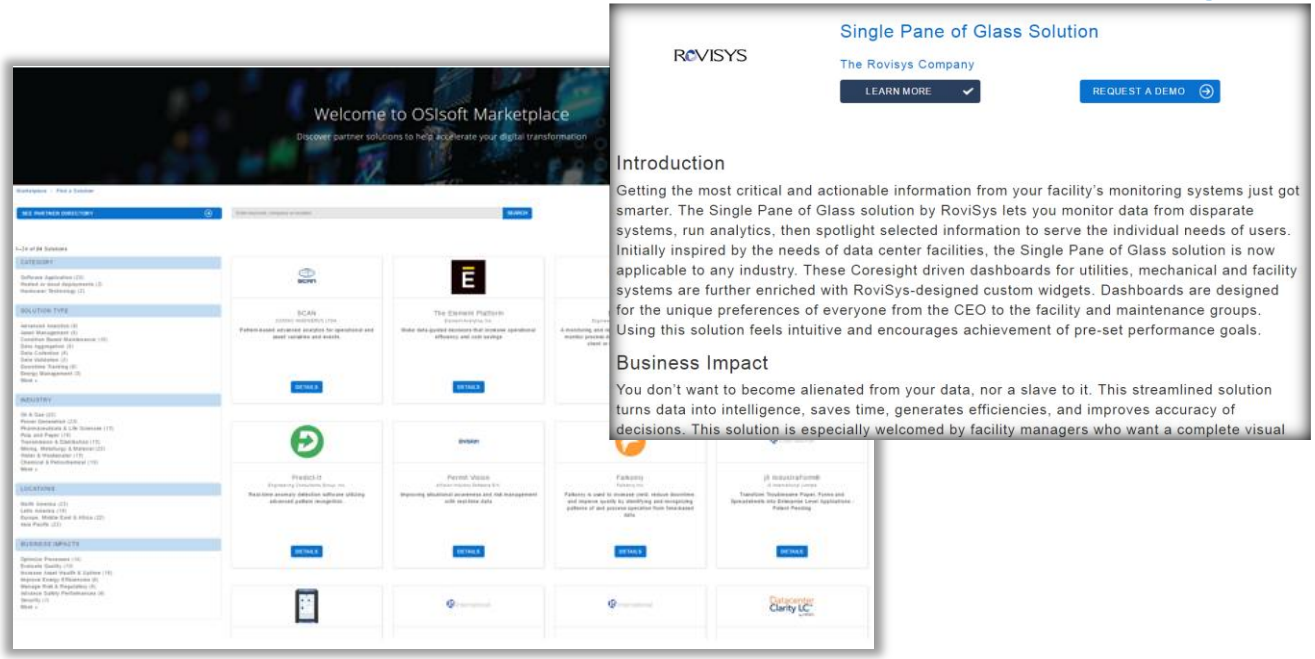

https://partners.osisoft.com/solutions/solution/182/single-pane-of-glass-solution

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Single Pane of Glass Solution

Presented by **Brian Polaski – Facilities Manager**

ROVISYS®
Automation & Information Solutions

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Agenda

- RoviSys Overview
- Data Center Facility Challenges
- Single Pane of Glass Solution Benefits
- Single Pane of Glass Solution Overview
- Demo
- Q&A

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Rovisys

RoviSys provides value-added technical services for process industries

- Business Focus:
  - Process Automation
  - Manufacturing IT & MES
  - Network and Software Development
  - Electrical Engineering Services
  - Software Products
- Growth - repeat business and long term relationships
- Independent – key vendor relationships
- Diversified – Not dependent on a single industry or client
- Client Focused

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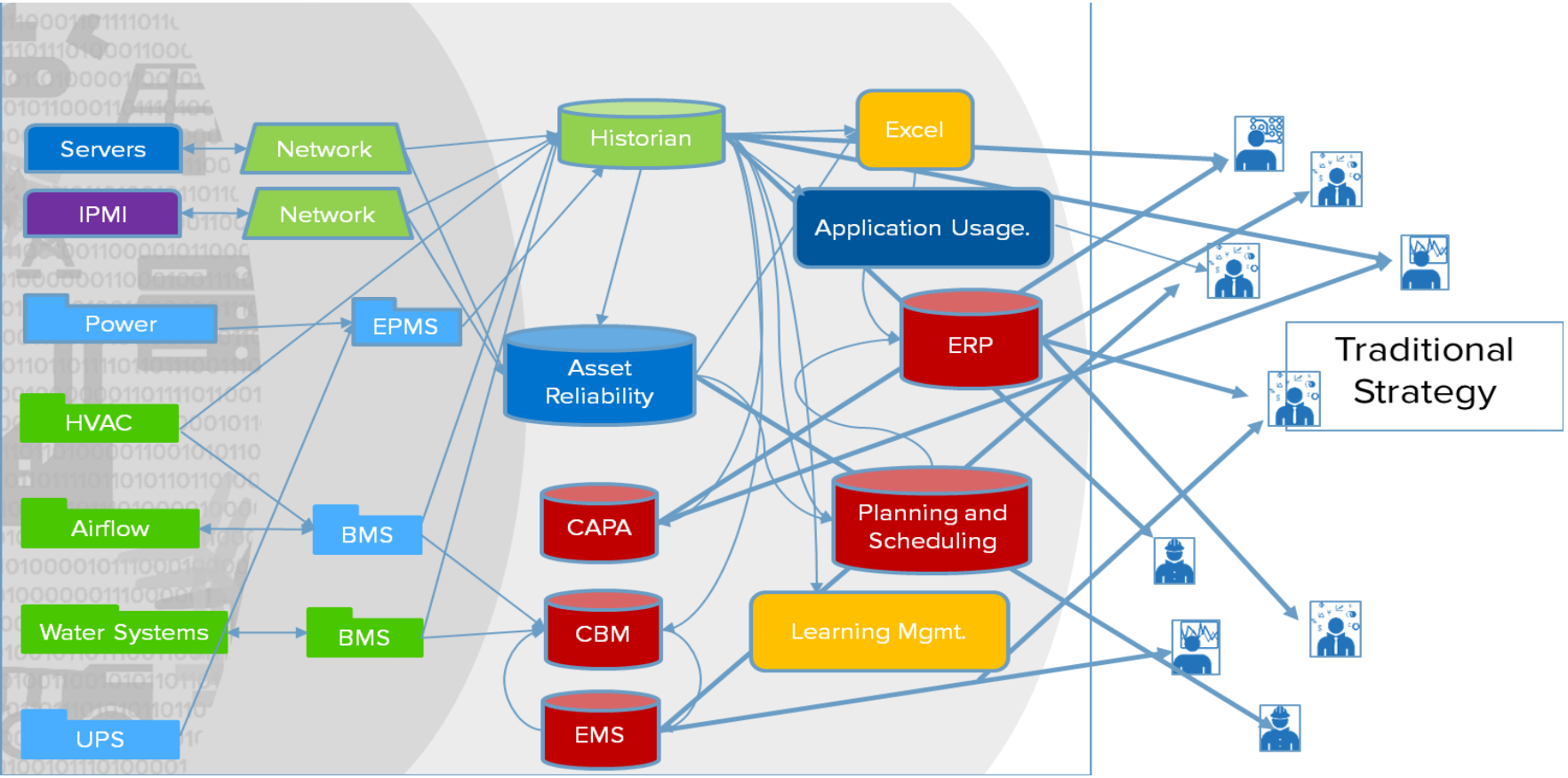
The Realities of Data Silos in a Data Center Facility



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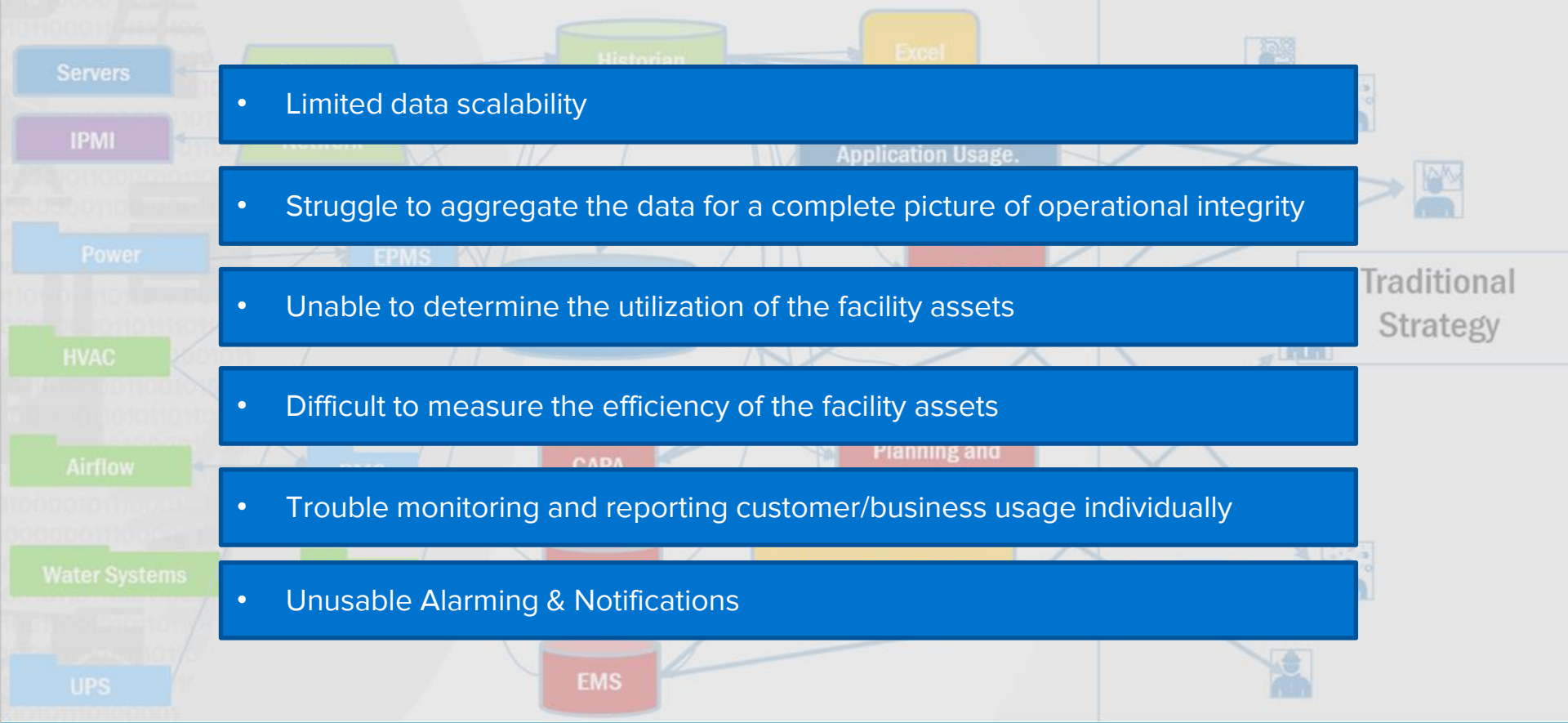
The Business Challenges



- Limited data scalability
- Struggle to aggregate the data for a complete picture of operational integrity
- Unable to determine the utilization of the facility assets
- Difficult to measure the efficiency of the facility assets
- Trouble monitoring and reporting customer/business usage individually
- Unusable Alarming & Notifications

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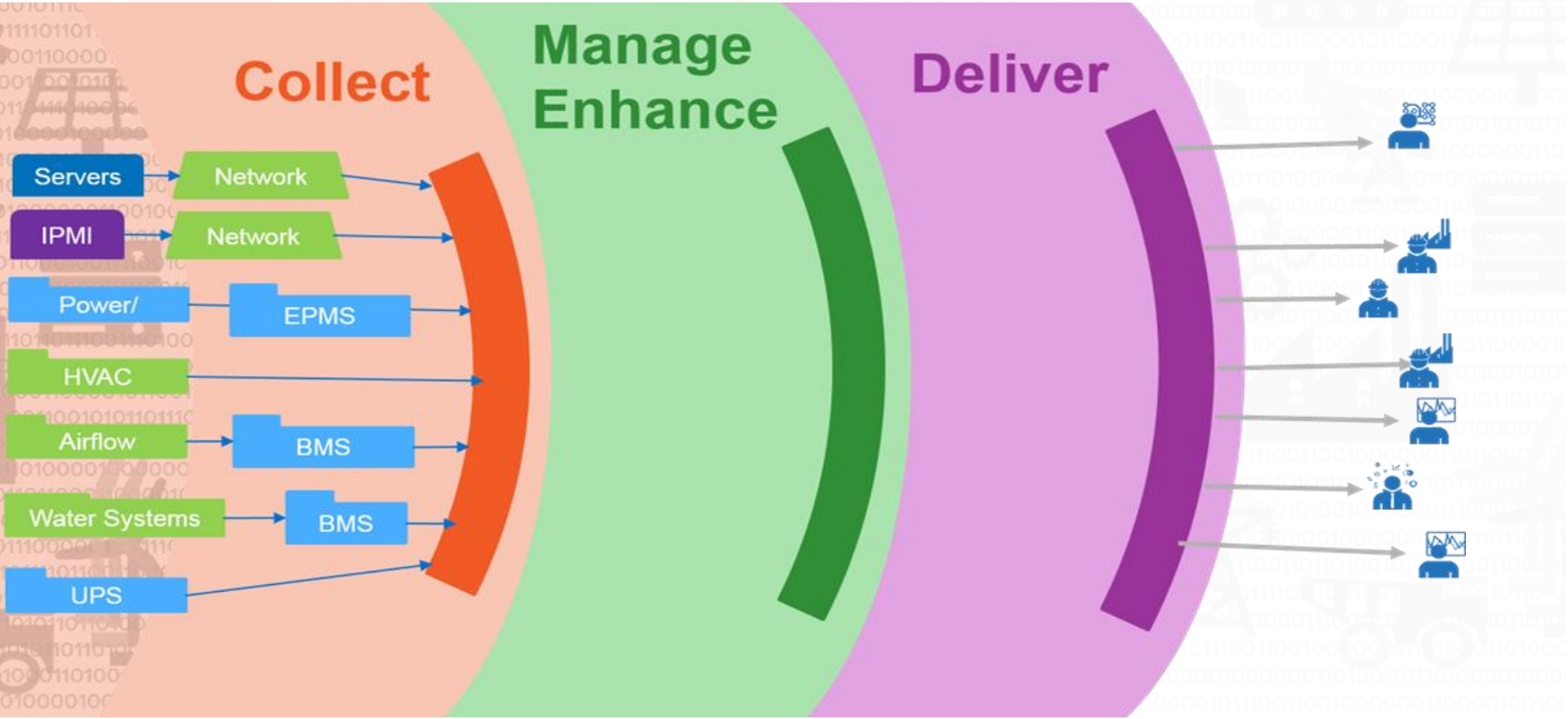
Silos to Standards / Complexity to Simplicity



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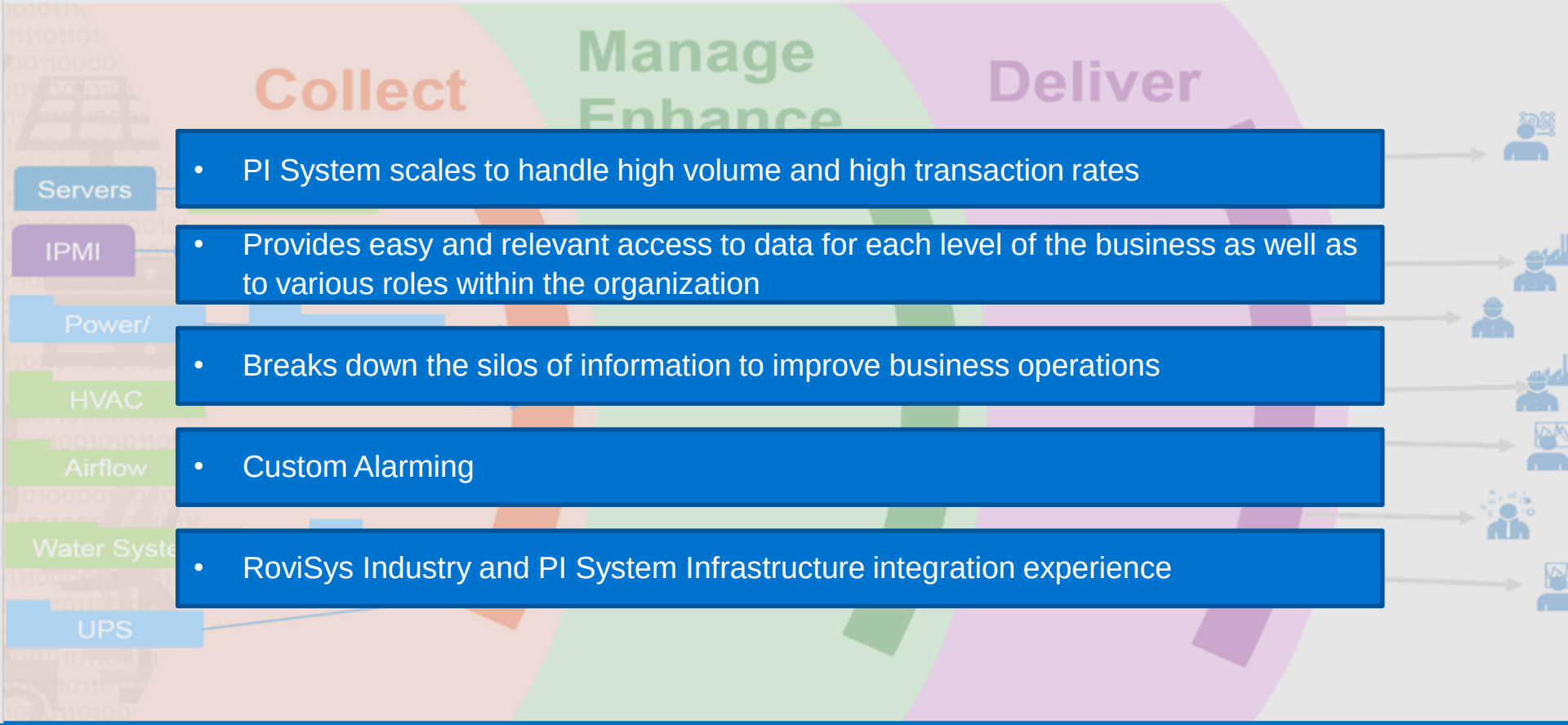
Enabler of the “Single Pane of Glass”



- PI System scales to handle high volume and high transaction rates
- Provides easy and relevant access to data for each level of the business as well as to various roles within the organization
- Breaks down the silos of information to improve business operations
- Custom Alarming
- RoviSys Industry and PI System Infrastructure integration experience

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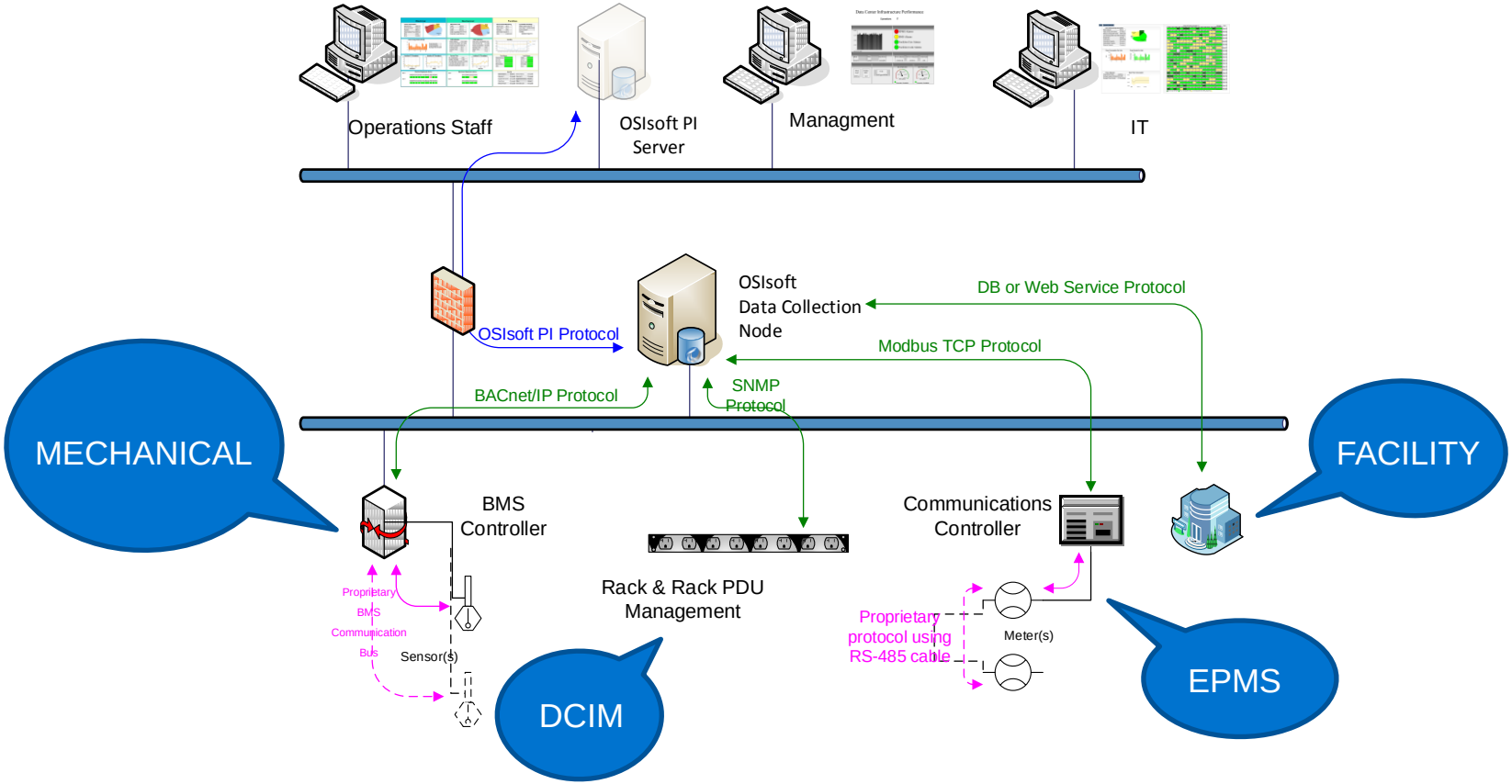
Solution Architecture



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Templates w/ Analytics

Device / System Examples:

RPP
- Breaker Utilization
- PUE

UPS
- UPS Efficiency

PDU Strip
- Outlet Utilization
- Stranded Capacity

Rack
- Power Density
- Capacity

Electrical
- Power Consumption
- PUE
- DCiE

Utility Totalizers
- Power Meter
- Gas Meter
- Water Meter

Mechanical
- Daily total – cooling tower make-up water
- Chiller plant total thermal load – KW & tons
- Server floor air temperature & RH – average

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Transforming Data into The Single Pane of Glass

COLLECT *Data Sources* → **ENHANCE & MANAGE** *Heat Exchanger Data* → **CALCULATE** *Performance* → **DELIVER** *The Right People*

PDU Strip

Real-time data:

Parameters
Strip Total Current
Strip Total Power
Strip Voltage
Power / Outlet
Current / Outlet
Voltage / Outlet

Asset Data:

Server Info
Server Name
Max Power
Idle Power
Serial Number

DCIM
Database
Excel

Analytics

PDU Strip
Outlet % Utilization

Rack
Power Density
Avg. Capacity Utilization
Rack Temperature

Rack Grouping
Avg. Power Density
Avg. Capacity Utilization
Rack Temperature

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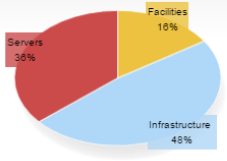
Visualization (HTML5)

Home | IT Dashboard

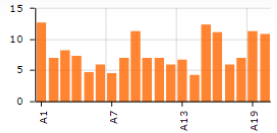
Electrical

Power Consumption

Infrastructure	3091 kw
General Servers	2268 kw
Facilities	996 kw
Total Building Power	6355 kw
PUE	2.802
DCiE	35.69%

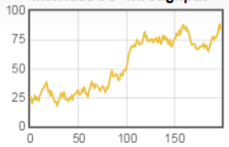


Aisle Average Power Density



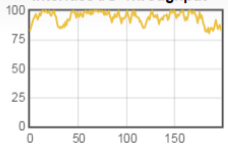
Total Aisles	20
Total Racks	300
Average PD	7.56 kw/R

Interface I/O Throughput



MODBUS

Interface I/O Throughput



SNMP

Electrical Equipment Alarms

Side A

MSB	RPP	ATS	GEN	DC Plant	Battery	UPS	PDU	MBC

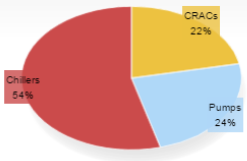
Side B

MSB	RPP	ATS	GEN	DC Plant	Battery	UPS	PDU	MBC
	1						1	

Mechanical

Mechanical Load

CRAC	350 kw
Pumps	386 kw
Chiller	872 kw
Chiller Capability	2973.5 BTU/hr
Total Mech Load	1609 kw



CHW Indicators

Water Makeup	10.2 GPM
Nominal Flow Rate	510 GPM
Power Consumption	900 kw
Entering Temp	92 °F
Leaving Temp	52 °F
EER	10.9

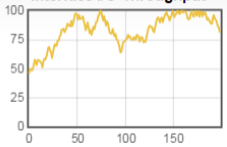
CRAH Indicators

Total units in operation	6 of 8
Total thermal load	110 kw
Power Consumption	619 kw
Entering Temp	90 °F
Mixed Temp	71 °F
EER	10.9

Server Floor

Air Temperature	68 °F
Relative Humidity	45%
Air Differential Pressure	510 GPM
Cold Aisle Temperature	68 °F
Hot Aisle Temperature	95 °F

Interface I/O Throughput



BACnet

Mechanical Equipment Alarms

Side A

AHU's	Chillers	CRAC's	Pumps
		2	

Side B

AHU's	Chillers	CRAC's	Pumps
	1		

Facilities

Environmental Monitoring

Server Room	86 °F
Data Center	69 °F
Humidity	45%
AVG Water Temp	30 °F
CUE	2.853 CO_2

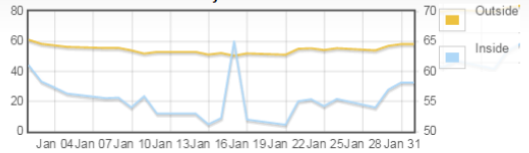
Cycle Meter Readings

Water Usage	8,922 scf
Gas Usage	304.06 Therm
Cycle Number	4

Outside

Outside Temp	71 °F

Humidity



Fire Alarms

Equipment Room	
Data Hall	
Data Room	
Network Room	
Office	

Leak Alarms

Chillers	
CRACS	
Boiler Room	
Fuel Leaks	
Glycol	

Security

Server Room 1	Vacant	Server Room 2	Occupied
Data Hall 1	Occupied	Data Hall 2	Occupied
Equipment Room 1	Occupied	Equipment Room 2	Vacant
Data Room	Occupied	Office	Vacant
Network Room	Occupied	Generator Yard	Occupied

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Visualization (PI Vision) and Alarms

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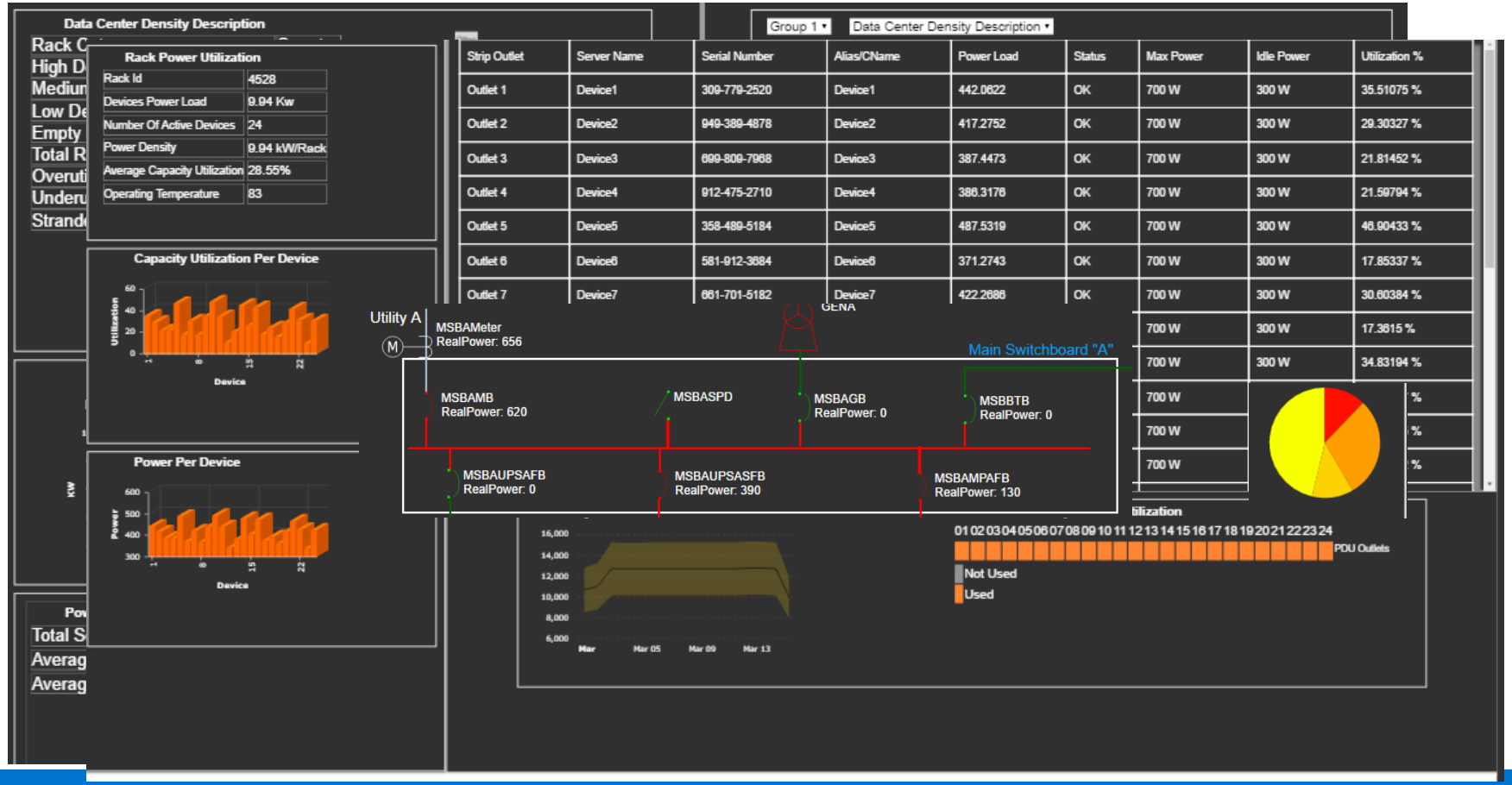
RoviSys PI Vision Widgets



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PI Coresight

New Display | Polaski, Brian

Display: Executive Dashboard Asset: ACME USA+

Ad Hoc Display

ROVISYS

Operation Dashboard | IT Dashboard | Oneline | Energy Overview | Utility Cost | Energy Report

System Alarms

- 3 EPMS Alarms
- 0 BMS Alarms
- 0 Leak Detection Alarms
- 0 Fire Detection Alarms

ATS Readiness

ATS A	ATS B
Utility / Gen	Utility / Gen
Primary Available	Primary Available
Secondary Available	Secondary Available
Lock Out Alarm	Lock Out Alarm

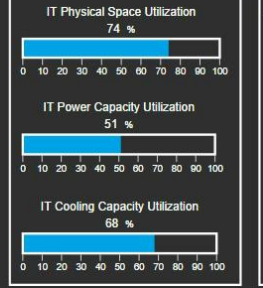
UPS Readiness

UPSA	UPSB
Power Source Utility	Power Source Utility
Summary Alarm	Summary Alarm

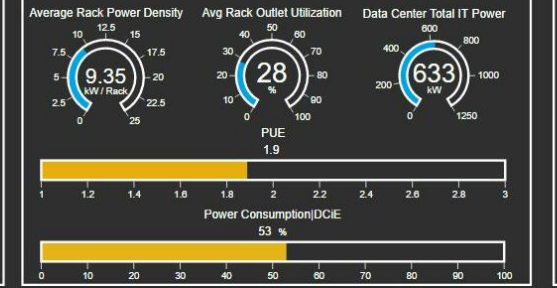
Generator Readiness

GEN A	Gen B
Engine Available	Engine Available
Generator in Auto	Generator in Auto

Data Center Capacity

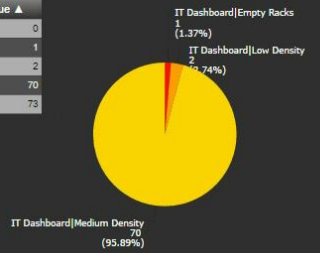


Rack Density Metrics



Rack Density Breakdown

Name	Value ▲
IT Dashboard|High Density	0
IT Dashboard|Empty Racks	1
IT Dashboard|Low Density	2
IT Dashboard|Medium Density	70
IT Dashboard|Total Racks	73



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Questions

Please wait for the **microphone** before asking your questions

State your **name & company**

Please remember to…

Complete the Online Survey for this session

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谢谢

Danke

Gracias

Merci

Thank You

ありがとう

Спасибо

Obrigado

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