ELEV8 2023

Canary System Overview

MAKING THE MOST OF YOUR PROCESS DATA

Session Agenda

- Canary Company
- Canary System Overview
- SA Market Development
- Opportunities with Canary

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AGENDA
OBJECTIVES
RATIONALE
HISTORY

Objectives

- Equip you with knowledge to capitalize on new opportunities.
- Become familiar with tools that are available to you right now that can help you make strides in your digital transformation journey.
- Understand the ways that Canary can help you transform and optimize your business.

SESSION AGENDA
OBJECTIVES
RATIONALE
HISTORY

Canary Rationale

We understand that engineers, data scientists, plant managers, and everyone from the shop floor to the C-Suite all just want to use their data.

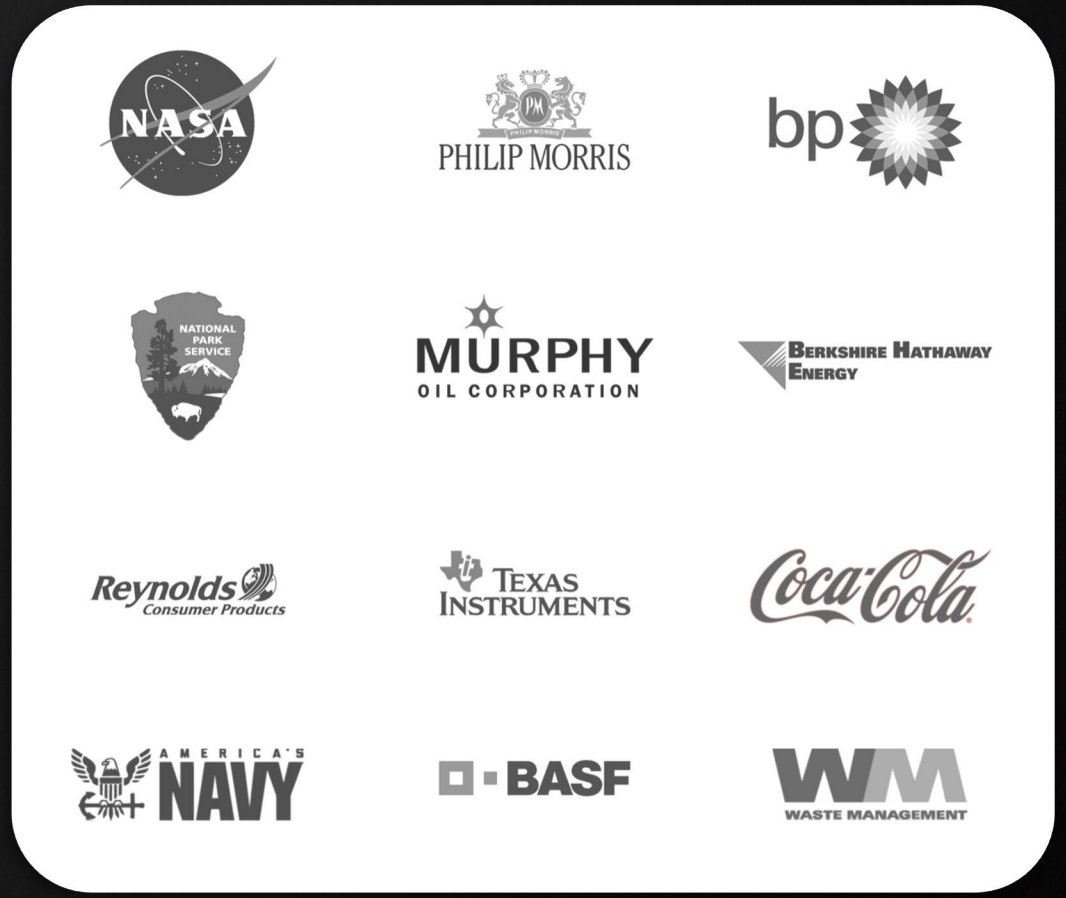
Problems:

- Prohibitive licensing costs
- Underpowered solutions
- IT/OT divide and incongruent priorities
- Limited scalability
- Rigid architectural requirements
- Security
- Deployments, updates, and administration
- Vendor lock in

- The Canary System was designed to address all of these issues and more.

Company History

- Founded in 1985
- Over 20,000 installations
- Over 70 Countries
- Used in every major industry
- Global network of Distributors and SI Partners
- Canary is owned and operated by the original founders and their families with no outside investment or controlling interest.



Company Strategy

- Go to market through Certified Partners
- Focus company on product development and support
- Maintain 100% control and ownership of company with HQ in Central PA
- Canary is committed to staying platform agnostic.

Enterprise Applications

- Murphy Oil
- 1.8 million tags – AWS Cloud instance with more than 40 asset models

- Aera Energy
- OSIsoft replacement, 1.5 million tags and over 100k calculations

- Colonial Pipeline
- 40 site historians and enterprise historian

- Kinder Morgan
- 70+ Sites with Enterprise Historians

- US Navy
- Systems on more than 200 vessels including all nuclear subs and carriers

- Boardwalk Pipeline
- Enterprise servers and regional data centers totaling over 500k tags

The Canary System

- Proprietary NoSQL Time Series Historian Database built for industrial automation.

- Canary makes it easy to use your process data.

- We guide our customers to success along the following three steps:

- Collect and Store
- Assign Context
- Maximize Your Operation

Step 1: Collect and Store

- **Securely collect process data from edge and IIoT Devices.**
  - Store and Forward
- Log millions of tags
  - Log Millions of Tags...Over 2 million per Historian, or tens of millions when clustered.
- With loss less compression
  - Forget interpolated, averaged, or dropped data... Canary preserves the original values forever.
- And incredibly fast performance
  - Write 1.5 million & read 2.5 million updates per second with unchanging performance as you grow.

Step 2: Assign Context

- Transform your complex data into clear easy to understand information.
- Views
  - Build virtual data models of the Historian.
- Asset Modeling
  - Change tag names, organize tags based on equipment, filter by condition, and make templates for visualization.
- Calculation Server
  - Don’t waste time in SCADA or PLCs… write expression that apply to all asset instances including backfilled data.
- Event monitoring
  - Create rules to monitor for condition-based asset events.

Maximize your Operation

- Analyze your operational health on any device and make better decisions.
- Visualization
  - Build dashboards, trends, reports, and much more.
- Excel Add In
- Data Connectors
  - Integrate the data with your favorite applications and platforms.

CALCS
EVENTS
DATA
COLLECTORS
STORE &
FORWARD
CANARY
HISTORIAN
VIEWS
DATA
FEEDS
AXIOM

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The Canary Module For Ignition

- Log Data Natively
- Ignition Tag History Provider
- Performance that Scales
- Free to download from Ignitions Module Showcase

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Public\Demo\AssetModel

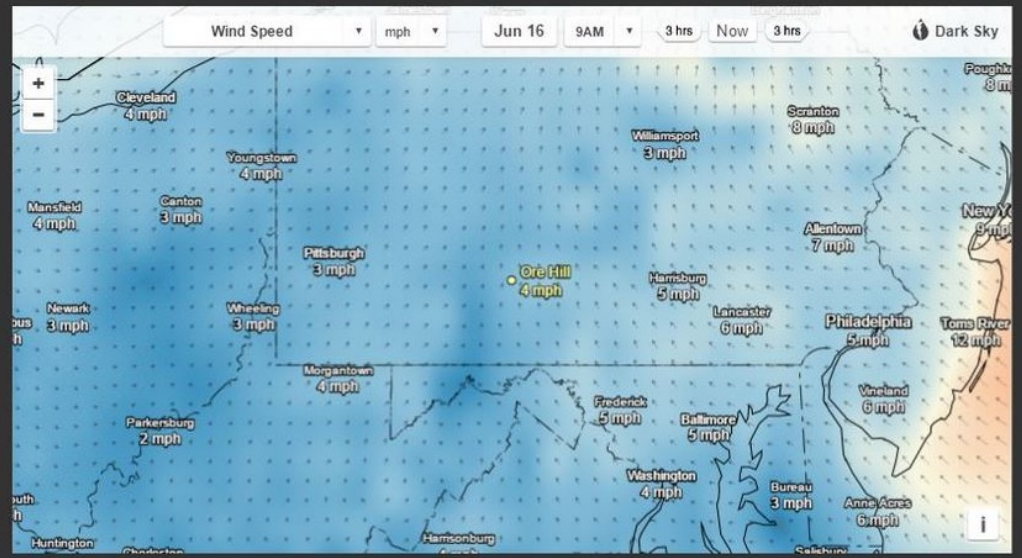
WindFarm | PlantView | Influent | FullTrend | WebCams | QuadTrend

Big Pine

	Turbine 1	Turbine 2	Turbine 3	Turbine 4	Turbine 5
Vibration	3.15	9.00	2.79	5.61	3.03
Engine RPM	1,785	2,525	1,340	1,776	1,337
Pump RPM	1,720	3,023	1,610	1,850	1,744
Blender Dis Press	75.6	87.7	60.2	66.5	79.3
Pump Dis Press	73.3	60.1	68.2	60.8	69.0

Weather Station

Wind Direction	Yaw Angle	Pitch Angle	Wind Speed	Power
104.2 °	106.9 °	6.3 °	13.0 mph	8.0 kW



Turbine 1

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Canary Power

Elm.Station 1: 102	Elm.Station 2: 98	Elm.Station 3: 101
Maple.Station 1: 108	Maple.Station 2: 103	Oak.Station 1: 99
Oak.Station 2: 101	Oak.Station 3: 97	Poplar.Station 1: 95
Poplar.Station 2: 104	Walnut.Station 1: 98	Walnut.Station 2: 100
Walnut.Station 3: 105		

All: Winding Temp

11/17/2021 5:30:32 AM | 04:00:00 | 11/17/2021 9:30:32 AM

Elm.Station 1.PT.WTI | 125.85 Elm.Station 2.PT.WTI | 107.87 Elm.Station 3.PT.WTI | 97.63
Maple.Station 1.PT.WTI | 101.34 Maple.Station 2.PT.WTI | 104.81 Oak.Station 1.PT.WTI | 91.19
Oak.Station 2.PT.WTI | 87.57 Oak.Station 3.PT.WTI | 78.35 Poplar.Station 1.PT.WTI | 88.34
Poplar.Station 2.PT.WTI | 92.38 Walnut.Station 1.PT.WTI | 80.44 Walnut.Station 2.PT.WTI | 95.83
Walnut.Station 3.PT.WTI | 101.04

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Asset	Exterior Temp	Interior Temp
Elm.Station 3	83.28	103.01
Maple.Station 2	78.69	93.62

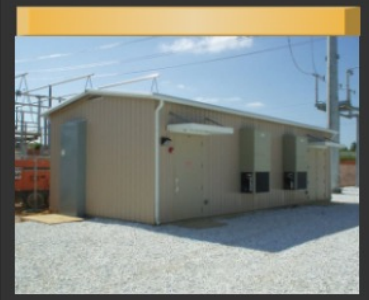
SUB STATION

Search

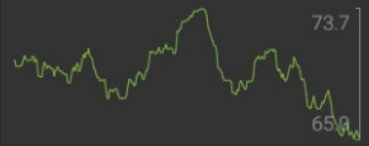
- Elm.Station 1
- Elm.Station 2
- Elm.Station 3
- Maple.Station 1
- Maple.Station 2
- Oak.Station 1
- Oak.Station 2
- Oak.Station 3
- Poplar.Station 1
- Poplar.Station 2
- Walnut.Station 1
- Walnut.Station 2
- Walnut.Station 3

PREV NEXT

Internal Humidity



65.1 %



Winding Temperature

125.85 F

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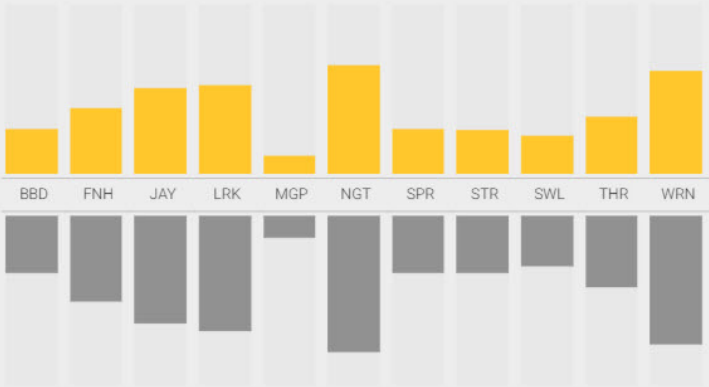
Production

8210

Today

5241513

Accumulated



Reports

REGION VIEW
SITE VOLUME
LOW VOLUME
SITE ALARMS
TANK ALARMS
PUMP ALARMS

Site Alarms

BLACKBIRD.SITE 1
BLACKBIRD.SITE 2
BLACKBIRD.SITE 4
BLACKBIRD.SITE 5
BLACKBIRD.SITE 6
FINCH.SITE 1
FINCH.SITE 3
FINCH.SITE 5
FINCH.SITE 6
FINCH.SITE 8

50 of 50

Tank Alarms

JAY.SITE 1.TANK A
SWALLOW.SITE 3.TANK A

2 of 2

Pump Alarms

JAY.SITE 12.PUMP B
SWALLOW.SITE 1.PUMP A
WREN.SITE 5.PUMP A

Region Overview

[Health Score]>0 sortby [Health Score] desc

BLACKBIRD

Now	3
8h Ago	3
24h Ago	3

	Count	Alarms	%
Sites	8	5	63 %
Pumps	32	0	0 %
Tanks	16	0	0 %

MAGPIE

Now	3
8h Ago	3
24h Ago	3

	Count	Alarms	%
Sites	3	2	67 %
Pumps	6	0	0 %
Tanks	3	0	0 %

STARLING

Now	3
8h Ago	3
24h Ago	3

	Count	Alarms	%
Sites	8	5	63 %
Pumps	18	0	0 %
Tanks	8	0	0 %

Site Performance

sortby [Projected Volume]

	Projected Volume	Yesterday	Today vs 14d
STARLING.SITE 6	43.6	41.70	70.8 %
THRUSH.SITE 7	51.0	19.65	69.8 %
WREN.SITE 6	51.2	19.26	11.5 %
BLACKBIRD.SITE 6	53.6	20.27	29.7 %
LARK.SITE 16	55.0	41.29	56.0 %
THRUSH.SITE 8	55.2	85.04	206.3 %
WREN.SITE 2	55.4	18.16	97.1 %
SWALLOW.SITE 7	55.9	0.09	105.3 %
FINCH.SITE 3	56.5	14.78	61.5 %
JAY.SITE 2	56.6	60.52	127.1 %
WREN.SITE 9	57.4	69.14	54.9 %
WREN.SITE 13	58.7	59.27	121.5 %
BLACKBIRD.SITE 8	58.7	2.41	140.5 %
LARK.SITE 9	59.1	81.08	84.1 %
FINCH.SITE 1	59.4	10.36	22.7 %
WREN.SITE 3	59.4	18.02	3.8 %
NIGHTINGALE.SITE 12	59.5	38.71	164.5 %
SPARROW.SITE 4	59.7	34.36	165.5 %
LARK.SITE 6	60.1	21.76	88.8 %
SWALLOW.SITE 3	60.3	91.13	68.6 %
JAY.SITE 9	60.3	60.71	125.5 %
FINCH.SITE 9	60.4	14.02	65.8 %
NIGHTINGALE.SITE 10	60.5	1.43	68.0 %
LARK.SITE 4	60.9	92.74	147.5 %
FINCH.SITE 11	61.1	51.60	193.1 %
NIGHTINGALE.SITE 14	61.4	37.54	88.8 %
LARK.SITE 3	61.8	98.28	182.0 %
STARLING.SITE 1	61.9	3.26	78.0 %
JAY.SITE 8	62.0	69.57	59.2 %
SPARROW.SITE 2	62.2	69.11	40.8 %
LARK.SITE 5	62.5	22.80	140.2 %
NIGHTINGALE.SITE 13	62.6	19.21	100.7 %
NIGHTINGALE.SITE 6	63.1	0.88	105.2 %

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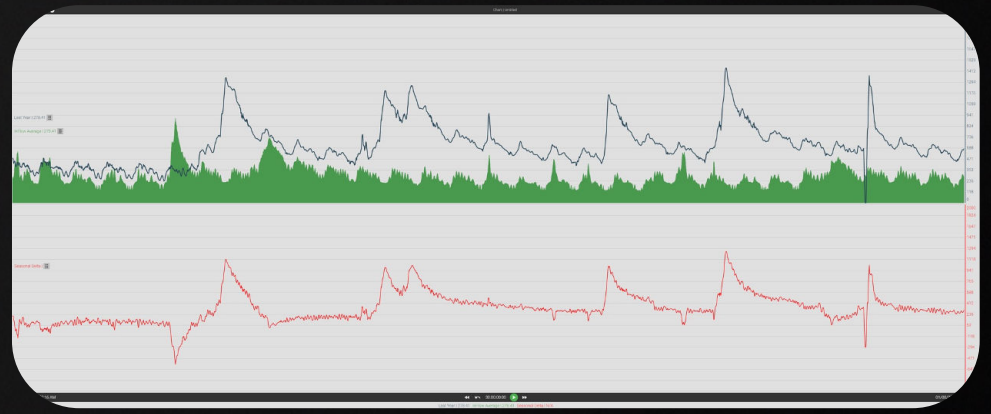
South Africa Install Base

- 6 Years
- 43 Deployments
- Mining, Metals, & Materials
- Food and Beverage
- Water, Wastewater, and Utilities
-
- And more

INSTALL BASE
THE STAKES
VALUES MATTER
OPPORTUNITES
GOING FORWARD
INDUSTRY OUTLOOK
COMPANY OUTLOOK
NEXT STEPS
FOR END USERS
FOR PARTNERS
DIGITAL MATURITY



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Digital Transformation Considerations

- Varying degrees of digital maturity
- Greenfield vs. Brownfield
- Highly performant, reliable, and scalable solutions
- Interoperability
- Deployment complexity and downtime
- Long term support
- Licensing changes
- Vendor stability
- Future innovation

INSTALL BASE
THE STAKES
VALUES MATTER
OPPORTUNITES
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INDUSTRY OUTLOOK
COMPANY OUTLOOK
NEXT STEPS
FOR END USERS
FOR PARTNERS
DIGITAL MATURITY

The Values That Drive Innovation

- Open, Secure, Adaptable
- Democratization of Data
- Technical Debt Avoidance
- Licensing to meet your needs

INSTALL BASE
VALUES MATTER
PARTNER OPPORTUNITES
GOING FORWARD
INDUSTRY OUTLOOK
COMPANY OUTLOOK
NEXT STEPS
FOR END USERS
FOR PARTNERS
DIGITAL MATURITY

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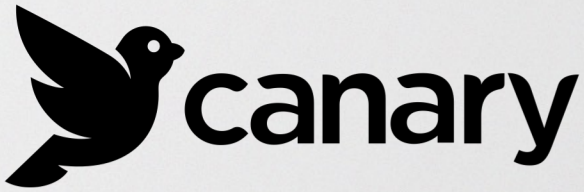


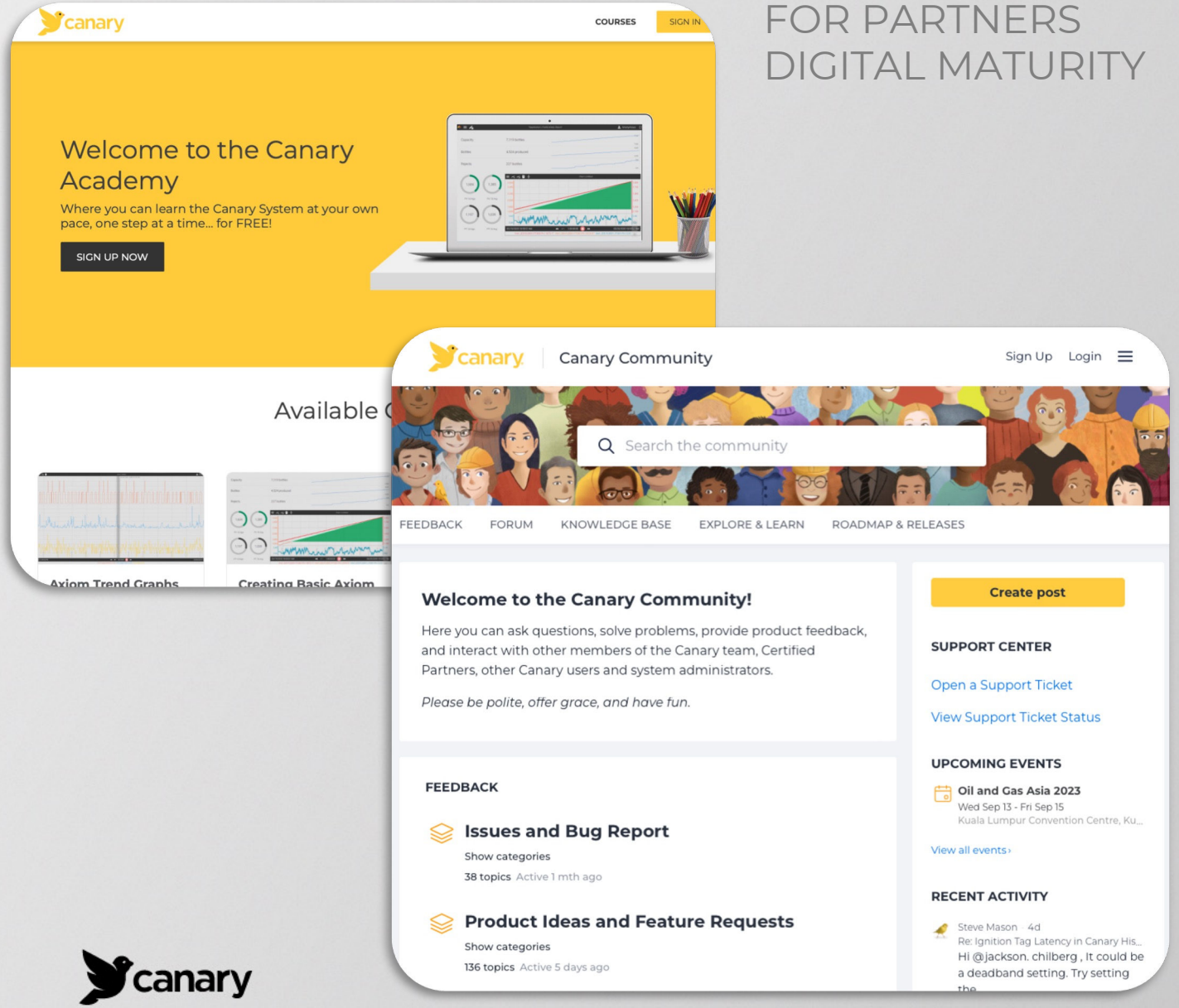
Strategic Partnerships & End User Opportunities

Outlook & Strategy

COMPANY OUTLOOK
NEXT STEPS
FOR END USERS
FOR PARTNERS
DIGITAL MATURITY

For End Users

- Canary for End Users
  - Free Demo Licenses
  - Free proof of concept
  - Canary Academy training



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NEXT STEPS
FOR END USERS
FOR PARTNERS
TRY CANARY

For Partners

- Canary for System Integrators

- Partner Program Resources
- Training
- Discounts
- Integration Services

Try the Canary System for Free

Try the Canary Module for Ignition for Free

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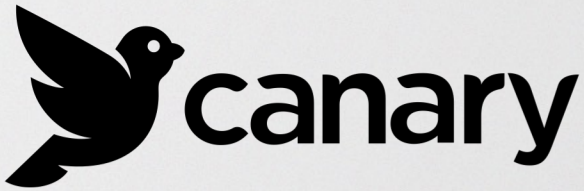

Thanks For Joining!
Q&A

Canary Labs | Industrial Database Technology