



# IoT EZ

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## IoT-EZ Overview for Microsoft IoT Academy



# Presenters



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- Ellen Brockley, VP Microsoft Alliance – [ebrockley@Microshare.io](mailto:ebrockley@Microshare.io)
- Eugene Woo, CTO and Co-founder – [ewoo@e-Magic.ca](mailto:ewoo@e-Magic.ca)

# Microsoft Partners



Microsoft

Azure IoT Services



e-Magic

Azure Digital Twins



# Agenda

- Questions to the audience
- E-Magic Overview
- Microshare Overview
- Kit Overview – video, architecture, LoRa, what's in the box
- IoT-EZ Activity Feedback Demo
- Business Benefits
- Terms of the Deal
- Next Kits – IoT-EZ Air and IoT-EZ Wayfinding
- Microsoft Azure Services – Azure Digital Twins integration
- Q&A

# Questions for the Audience

- What are your greatest challenges when making an IoT solution decision?
- Do you currently have IoT solutions deployed?
- Which use cases are top priority for you (or your customers)?
- What questions do you have for us?

# About e-Magic



e-Magic Inc. specializes in providing expertise and software for design, development and integration of large scale Industrial IoT and Azure Digital Twins solutions globally.



Our solutions run on-premise as well as in the Microsoft Azure Cloud using Azure native services.



Applications include Centralized Operations, Smart Buildings, Facilities, Cities, Countries, Smart Manufacturing, Industrial Production and ML/AI for insights, predictions and optimization.



- Software Developers & System Integrators



Established in 1998



Integrate IoT Systems Worldwide

Headquarters:  
Toronto, ON, Canada



Locations:



**e-Magic**

# The TwinWorX® Solution



Single pane of glass visualization



Real-time and historical data



Monitoring, contextualizing and alarming



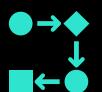
Fault detection & diagnosis



ML and AI for Peak demand management and Insights for energy savings



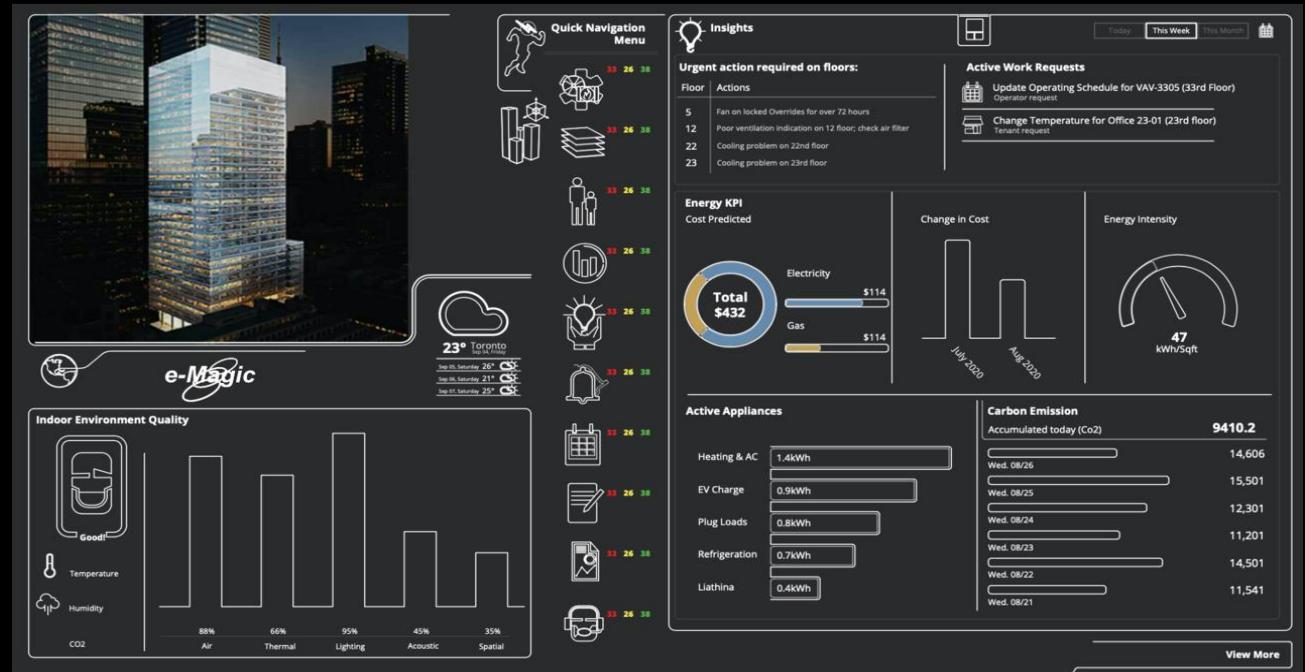
Financial analysis



Workflows and business systems



Scalable, secure, high-availability platform.



Integrate and normalize all telemetry data

# Asset Intensive Industries



## *Smart Buildings:*

Commercial, Industrial, Residential,  
Research, Education



## *Smart Infrastructure:*

Energy, Ports, Telecommunications,  
Utilities, Bridges, Roads, Towns, Cities,  
Countries



## *Smart Manufacturing Facilities:*

Oil & Gas, Mining, Chemical, Cement, Food  
& Beverage, Pulp & Paper, etc.



## *Smart Healthcare:*

Hospitals, Clinics

## DRIVERS



REDUCE COSTS



HEALTH & SAFETY



COMPLIANCE



ESG INITIATIVES



EXTEND ASSET LIFE



PATIENT  
ENGAGEMENT



OPTIMIZE  
RESOURCES



SITUATIONAL  
AWARENESS



CARE  
DELIVERY

## CHALLENGES

No Data Strategy

Many Data Silos

Disparate Systems

High Risk Environments

Unplanned Disruptions

Cybersecurity, Privacy

Legal and Regulatory

Numerous Stakeholders

# Value of TwinWorX® Potential ROI



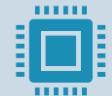
Energy savings +20%



Maintenance costs +15%



Operating costs due to  
Single Pane of Glass +15%

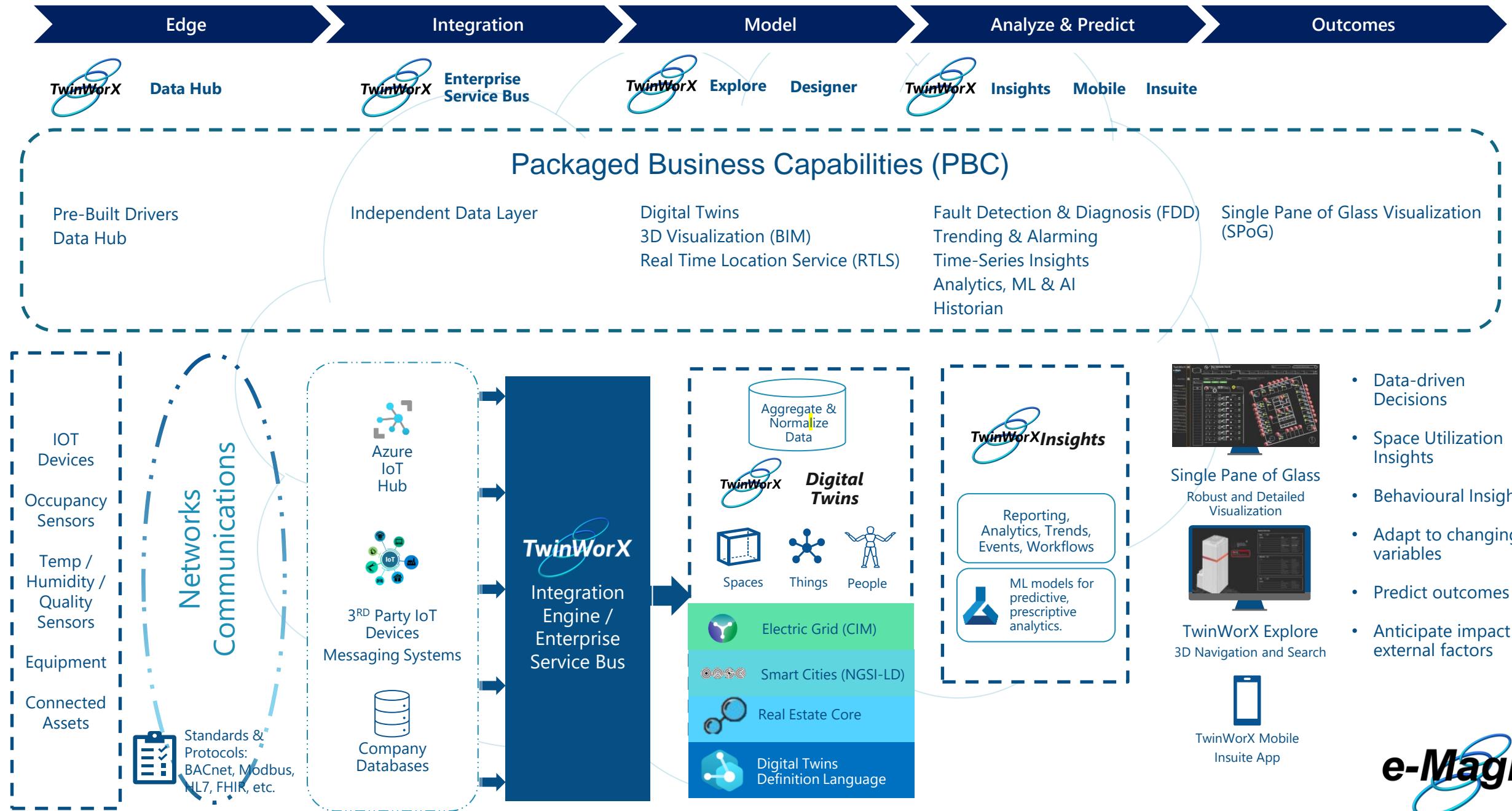


IT/OT capital



Downtime from unplanned  
maintenance, disruptions

# TwinWorX Solution



# Microshare: Sensing-as-a-Service

*We handle the complexity of IoT device management, data generation  
and contextual annotation ...so you don't have to!*

- 1 – Occupant wellness and safety
- 2 – Productivity, cost saving, compliance
- 3 – ESG resilience and sustainability
- 4 – Location of people and assets

- Built for Scale
- Single platform sources IoT data for multiple Smart Building use cases
- LoRaWAN experts and a LoRa Alliance member / influencer
- Disruptively inexpensive - No need for capital investment
- Infinitely scalable in multiple dimensions



*Expand your Smart Building deployment  
throughout your organization to achieve your  
IoT Vision – at your own pace*

# An IoT Day in the Life of Microshare CEO, Ron Rock

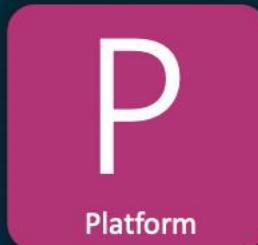
# Our stack has your back: Security, analytics, actionable insights



## Sensing Network



## Multi-tenant Platform



# What's in the Box?

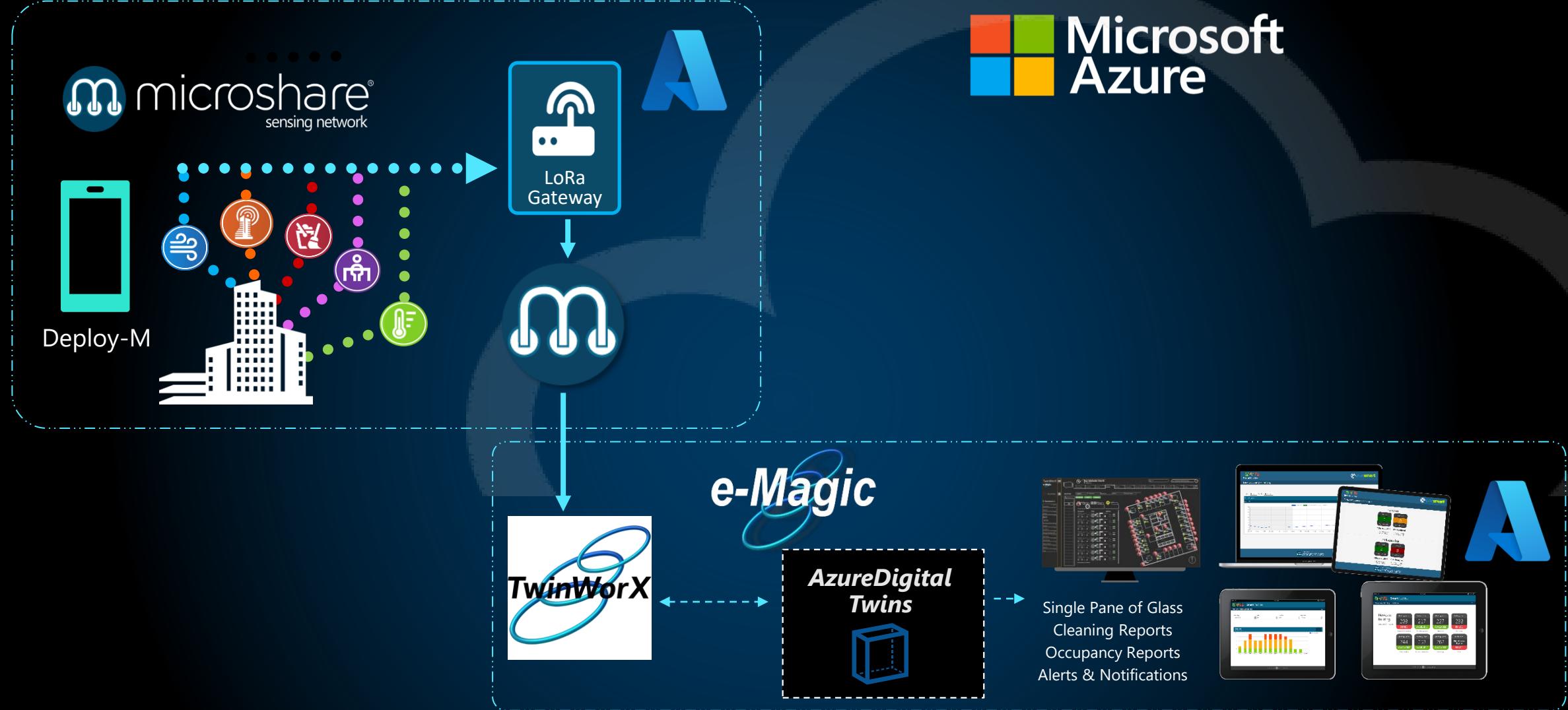
- 1 LoRaWAN gateway (a)
- Devices for monitoring 2 restrooms
  - 2 feedback sensors (1 per restroom) (b)
  - 2 over-door activity sensors (1 per restroom) (c)
  - 1 magnet (d)
- Devices for monitoring 2 meeting rooms
  - 2 room activity sensors (1 per meeting room) (e)
- Deployment instructions
- Product description sheets



## What else is included?



- Fully managed Azure service
- IoT-EZ dashboards and analytics
- IoT Gateway & Management Software
- Technical Support for deployment assistance, device health and on-going questions
- Business analysis support to identify and solve business problems
- All technical configuration, and setup for gateway, devices
- Fully costed proposal for on-going live solution roadmap to achieve your IoT vision



1

Microshare Sensing Network collects data packets and annotates with context

2

E-Magic TwinWorx ingests contextual data and presents through Azure Digital Twins

3

Real-time dashboards and trending analytics inform immediate and long-term business decisions

# Why Microshare Sensing Network uses LoRaWAN®

## Long Range Wireless



Up to 15km

No interference with other wireless

## Secure Network



Separate from other networks

End-to-end authentication

## Long Battery life



Several years from batteries

Easy to install, no wiring

## Global Open Standard



500+ members in LoRa Alliance

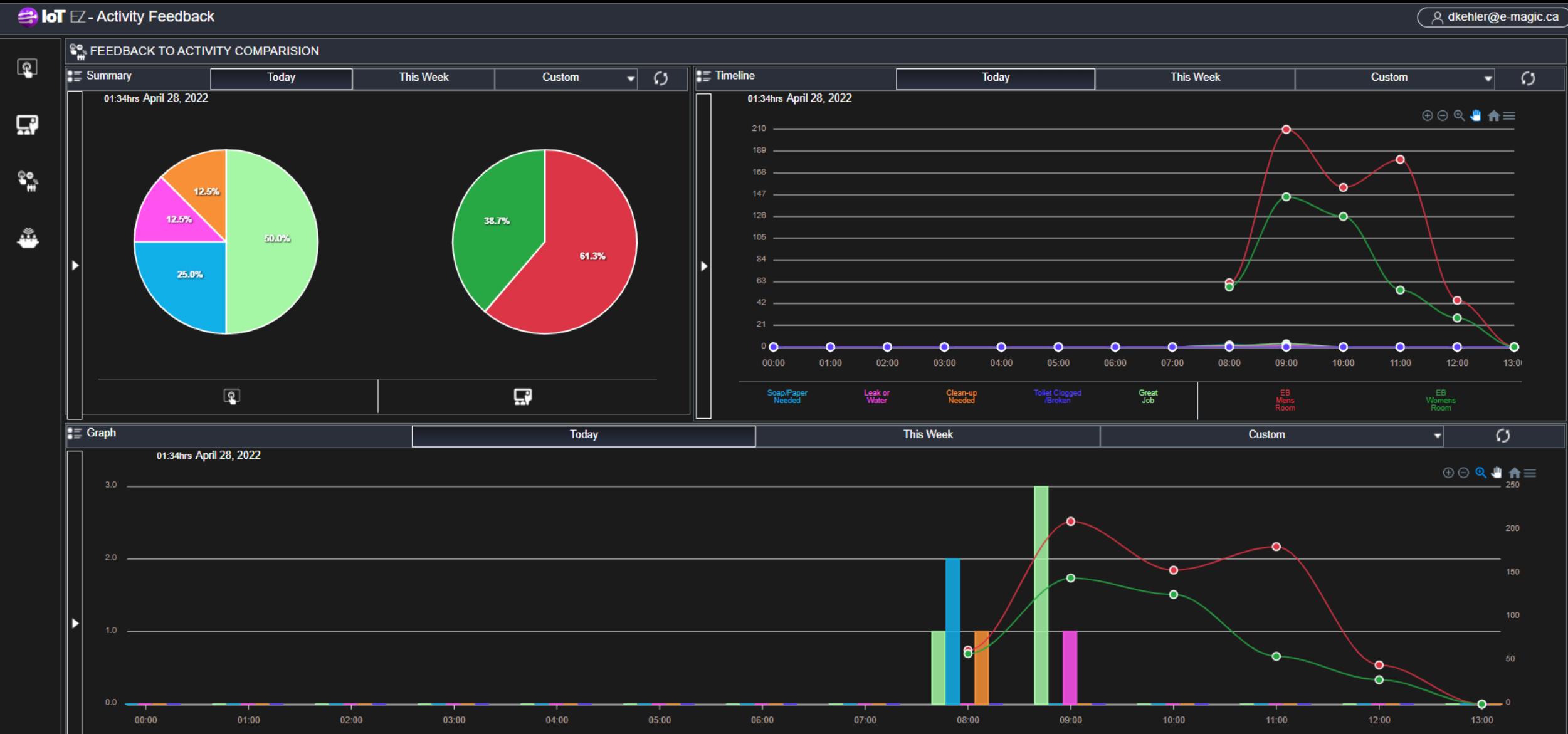
No vendor lock-in



**S**

Sensing Network

# Demo



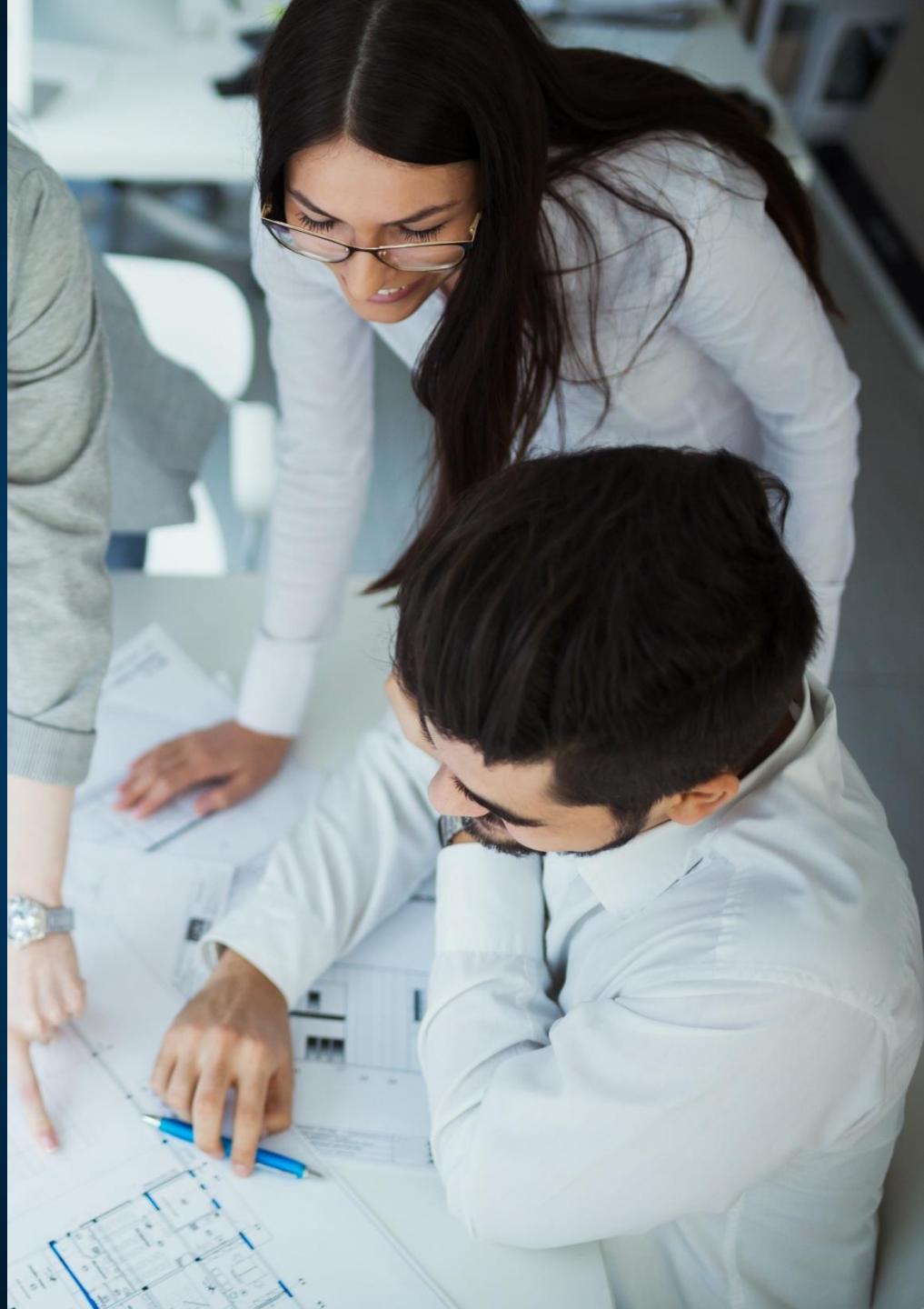
# Business Benefits

**What management decisions can I make with this data?**

- Lease optimization
- Operations optimization
- Health and wellness

**What are the benefits for the people using the space?**

- Cleanliness provides reassurance of safety and well-being
- Adapting the space to reflect its actual usage improves the workspace experience
- Higher levels of service



# Terms of the Deal



- 90-day trial
- \$5000 includes devices, network, Azure services, technical support, business support
- \$45 shipping and handling
- \$1000 deposit – refunded at end of trial if you return the devices or expand your installation

## How to buy

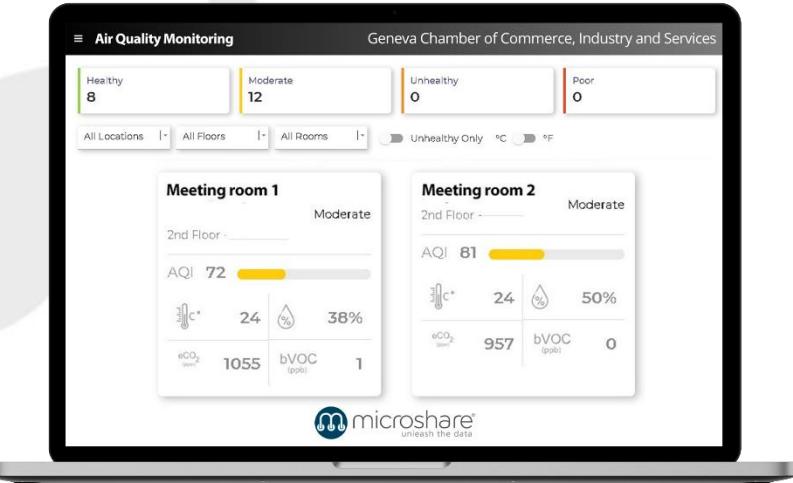
<https://iotezkits.com/>

# EverSmart Air

**EverSmart Air** measures CO<sup>2</sup> levels, humidity, temperature and other variables that have direct bearing on safety and productivity. Data that proves air quality is good reassures staff, tenants, and customers and is a valuable ESG metric.

**RESPONSIVE REASSURANCE:** Realtime data reassures occupants and spurs corrective action to address issued detected.

**RETURN-TO-WORK MUST-HAVE:** The quality of indoor air is a major concern of returning staff, customers and tenants as the pandemic continues.



**PRODUCTIVITY GAINS:** Research shows CO<sub>2</sub> build-up leads to a 25% loss in productivity as occupants grow groggy.

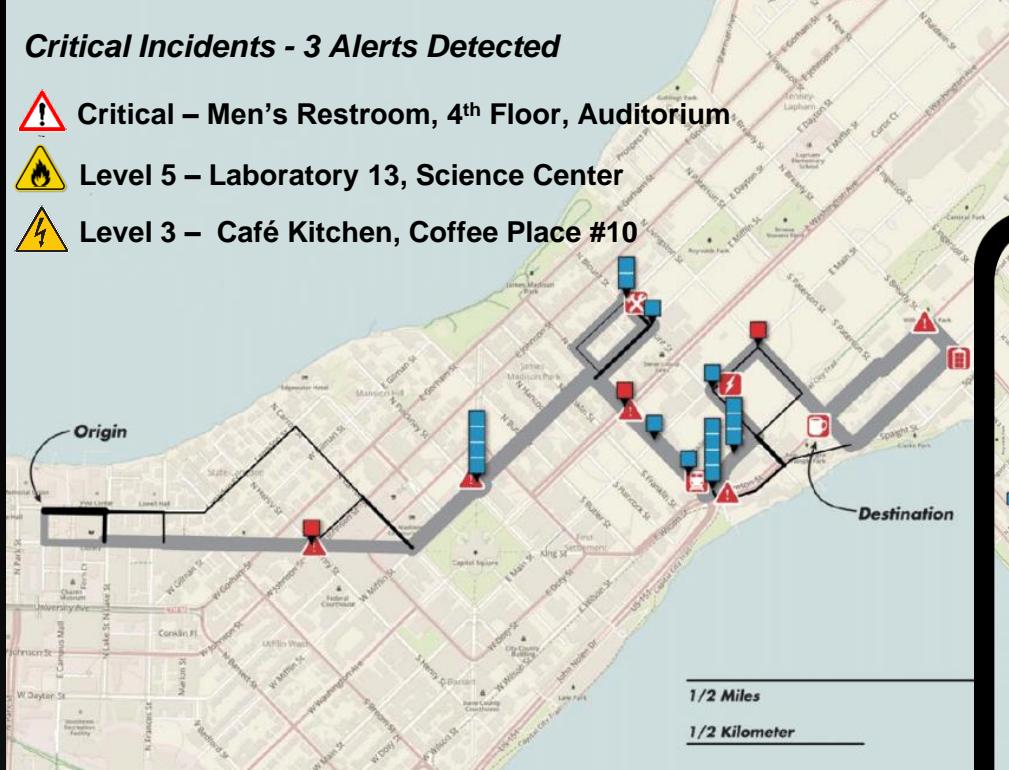
**RISK MITIGATION:** Complaints, illness and lawsuits often result.

**LOWERS ABSENTEEISM:** The CDC notes that miscalibrated humidity levels accelerate the spread of viral agents like flu and COVID.

**SUSTAINABILITY/ESG METRICS:** EverSmart Air produces on demand proof of your company's embrace of 'duty-of-care' principles.

# Wayfinding for Facilities Operations and Management

Starter Kit: Air Quality IoT Sensors plus *Beaconless* Wayfinding



... available on any screen



**IoT devices:** View the location and live temperature/humidity data from IoT sensors



**Wayfinding:** Send precise wayfinding guidance to service technicians



**Improve service levels and environmental conditions**

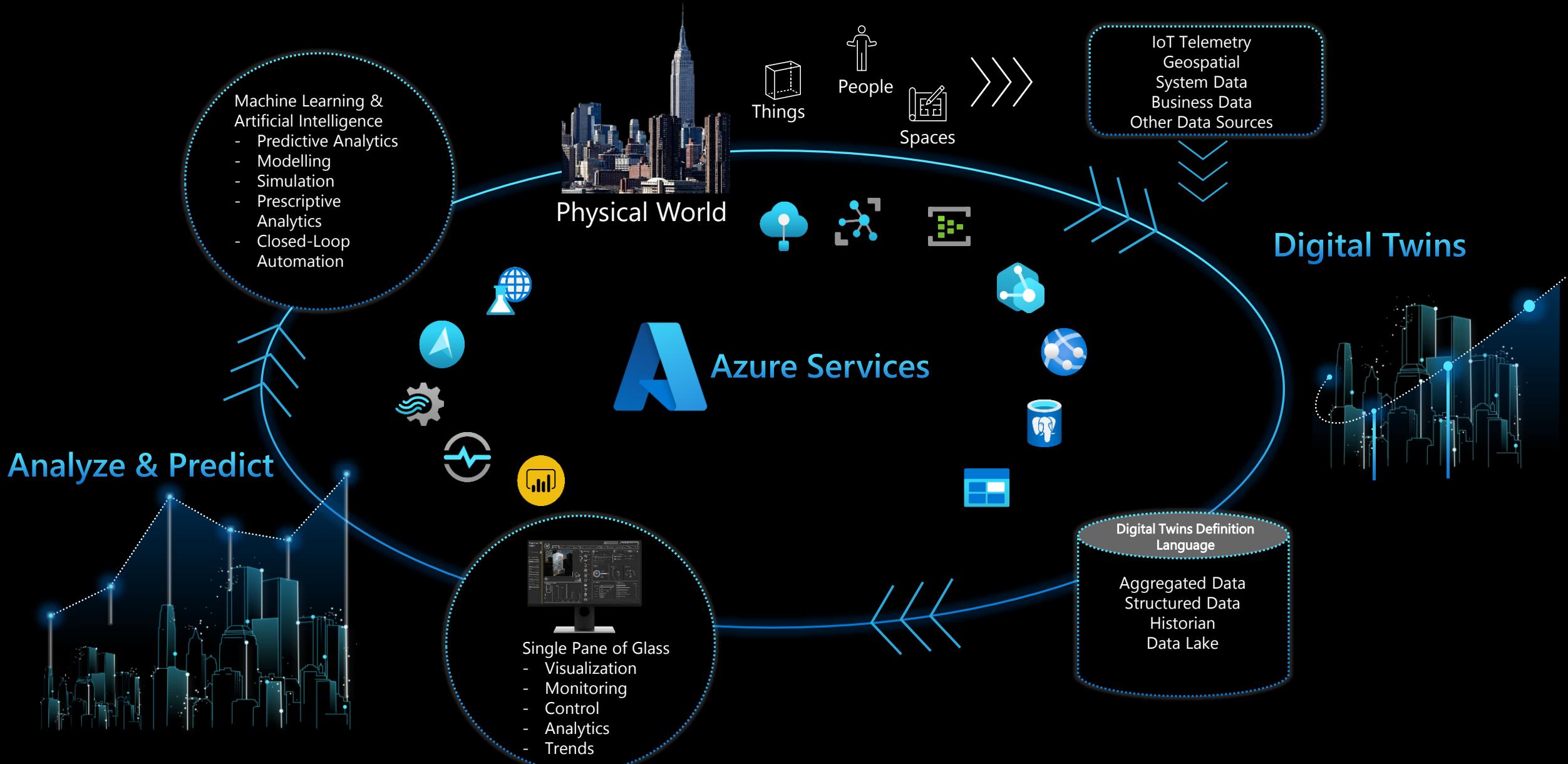


**Improve service response and resolution times**

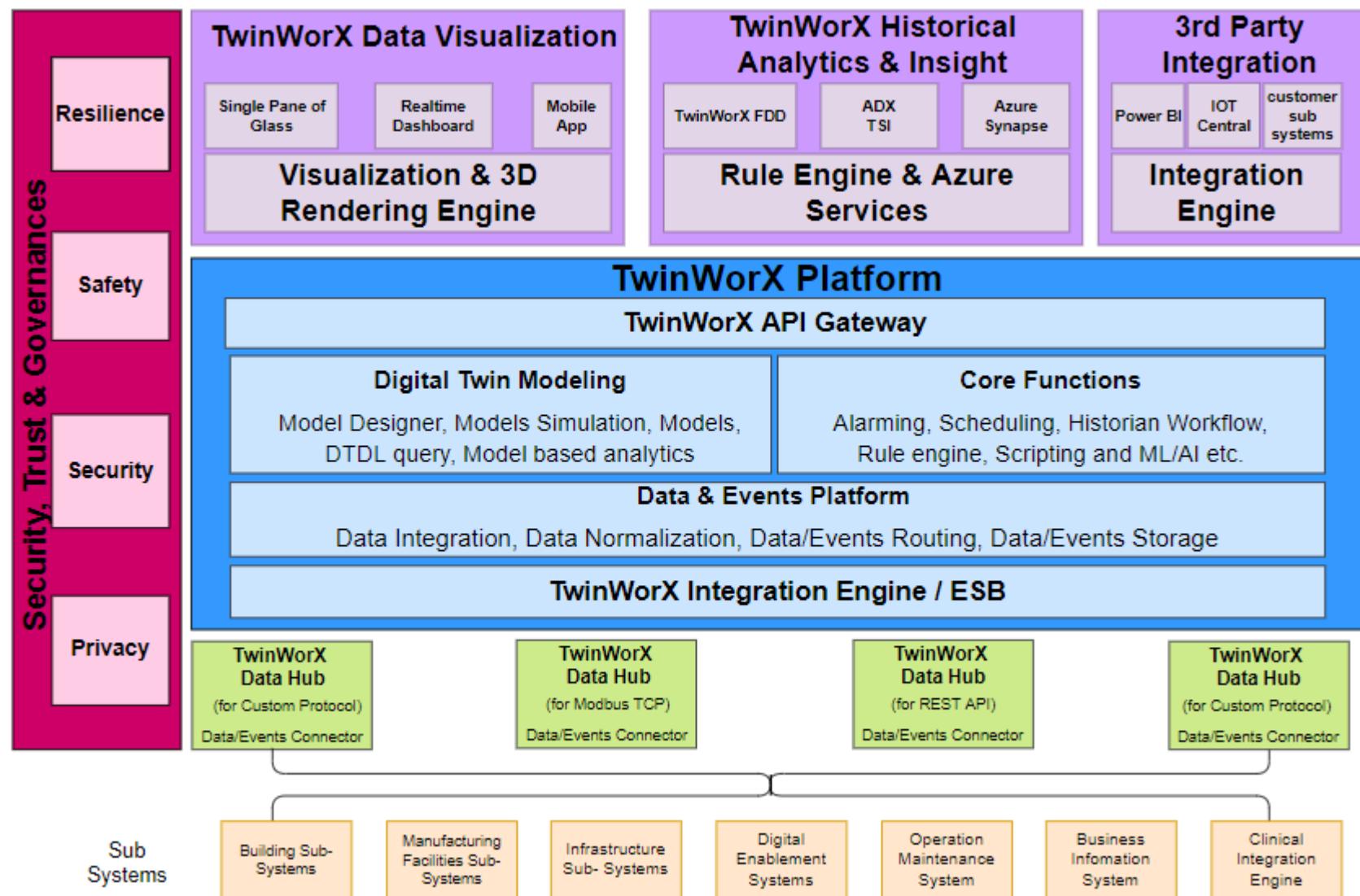


**Save time and money**

# TwinWorX® Digital Twins



# Behind IoT EZ



# TwinWorX Solution

Edge

Integration

Model

Analyze & Predict

Outcomes



Data Hub



Enterprise Service Bus



Explore Designer



Insights Mobile Insuite

## Packaged Business Capabilities (PBC)

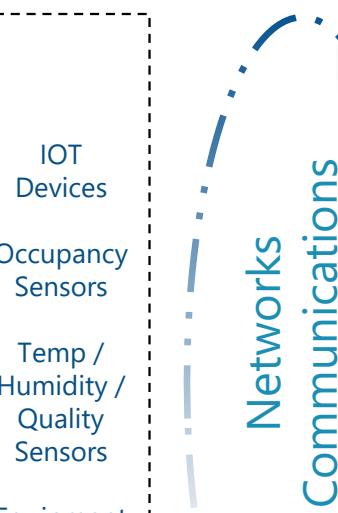
Pre-Built Drivers  
Data Hub

Independent Data Layer

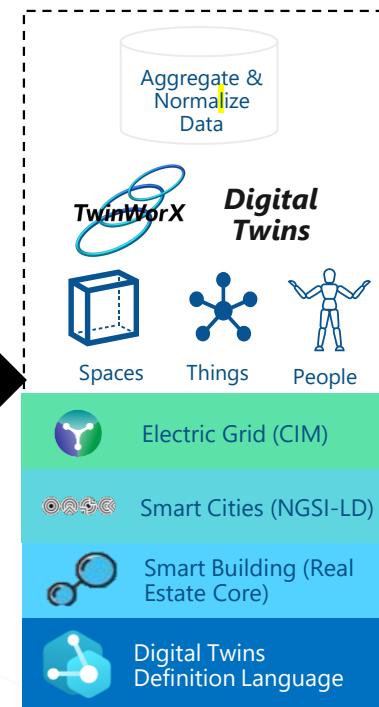
Digital Twins  
3D Visualization (BIM)  
RTLS

Fault Detection & Diagnosis  
Historian  
Trending & Alarming  
Time-Series Insights  
Analytics, ML & AI

Single Pane of Glass Visualization



### Networks Communications



- Data-driven Decisions
- Space Utilization Insights
- Behavioural Insights
- Adapt to changing variables
- Predict outcomes
- Anticipate impact of external factors

e-Magic

## Advantage of adopting Azure Digital Twins

- Allow to model real-word space, thing, people and business process
- A central repository for IoT Data, Meta data and any other information for the twin
- Triggers Workflow not just based on IoT Data alone
- Powerful query language Digital Twin Definition Language (DTDL)
- Standard Ontologies – Share & Reuse

# IoT-EZ – Kick start your IoT Vision



*Once you see the data your imagination will generate questions and new ideas for improving your business and the comfort of the people in your space.*

*But you can't analyze data you don't have. Build the infrastructure and start collecting data now for future analysis that will ultimately inform decisions that will make your space healthy and productive.*



## Contact Us



- Dale Kehler, VP Business Dev – [dkehler@e-Magic.ca](mailto:dkehler@e-Magic.ca)
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How to buy

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