

2024 APPA Conference
**Bringing Digitization to Higher
Education Facilities**

4.16.2024

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Questions to specific materials, methods or services will be addressed at the conclusion of this presentation.



Course Description

Digitization

is optimizing our daily life and industries all around us.


Stanford University, University of Florida and University of Washington are institutions pioneering the digitalization movement in higher education by investing in its own digital architecture over the past several years. Their success includes the following: Energy savings, CapEx and OpEx savings and higher comfort scores. They will share strategies and best practices that other institutions could follow.

Learning Objectives

- 1. Understand** and articulate the vision for digitization
- 2. Learn** about drivers for the digitization movement
- 3. Discover** the building blocks necessary to move towards digitization
- 4. Comprehend** the importance of culture in maximizing the potential benefits of digitization



Agenda

- Introductions
 - What does digital transformation mean to you?
 - What are the use cases / benefits/consequences?
 - How are you preparing for Digitization?
 - Questions and Answers
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Introduction – Stanford University



Introduction – University of Florida

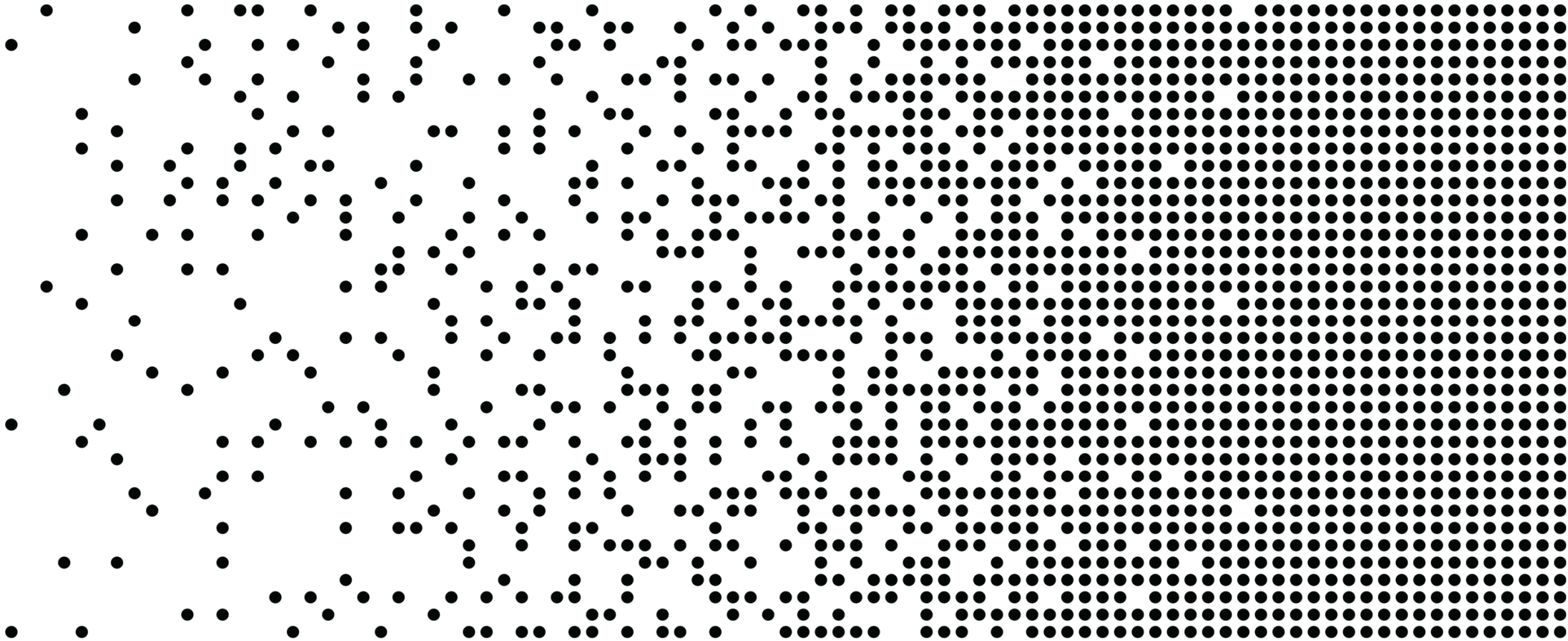


Introduction – University of Washington



Question

What does digital transformation mean to you?



Stanford University

What does digital transformation mean to you?

- Getting more value out of networked OT systems
- Simplification
- Tangible benefits for stakeholders
- How to acquire, normalize, and share data

50% - 80%

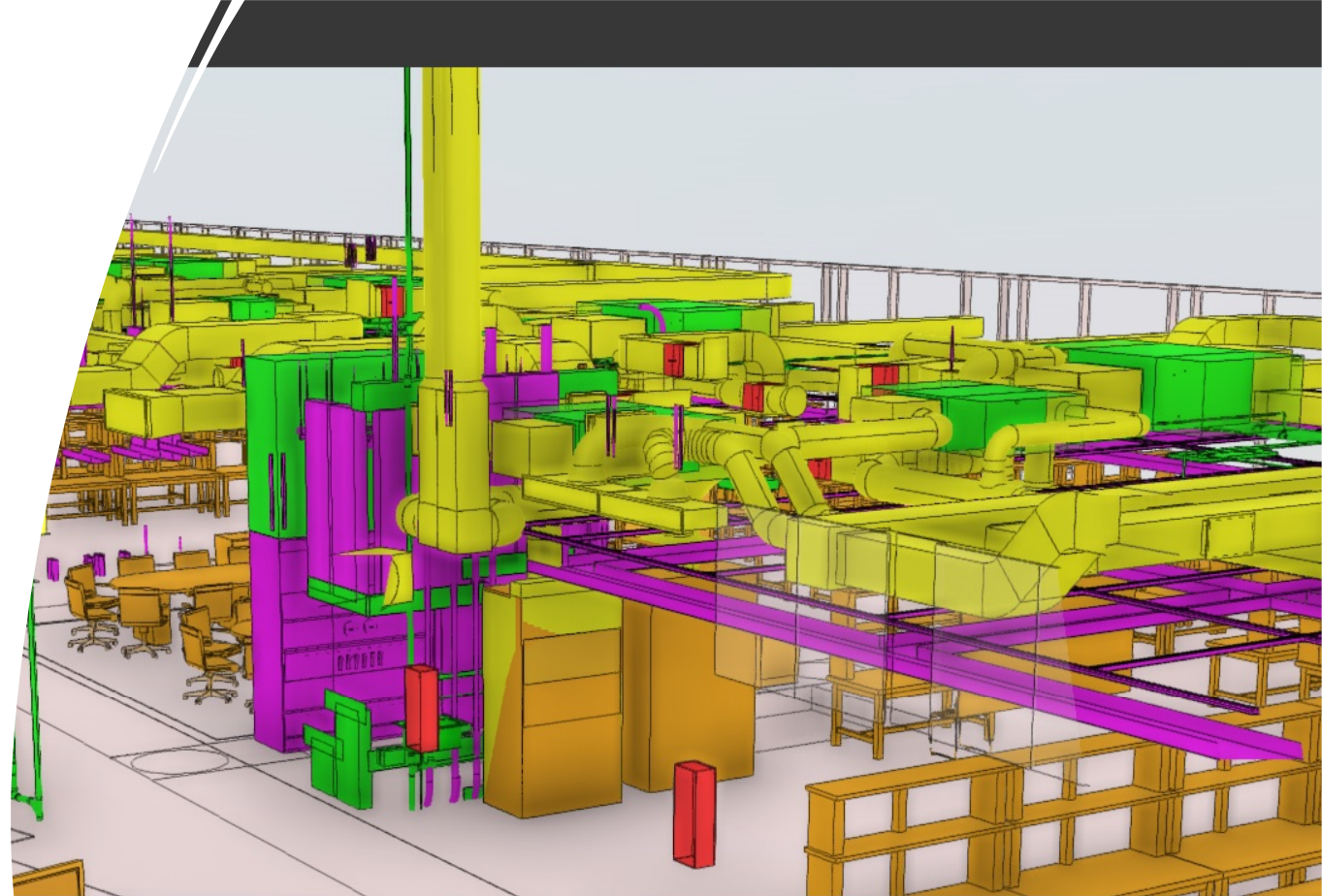
OF THE WORK
IN DATA SCIENCE IS DATA PREPARATION



University of Florida

What does digital transformation mean to you?

- **Operational Processes:** Improving internal processes by leveraging digitization and automation.
- **New Resources:** Replacing old, obsolete tools and processes with new technologies and software applications to enhance work.
- **Leveraging platforms:** CMMS, BIM360, BAS, SkySpark, Ecodomus, Tandem, and other applications.

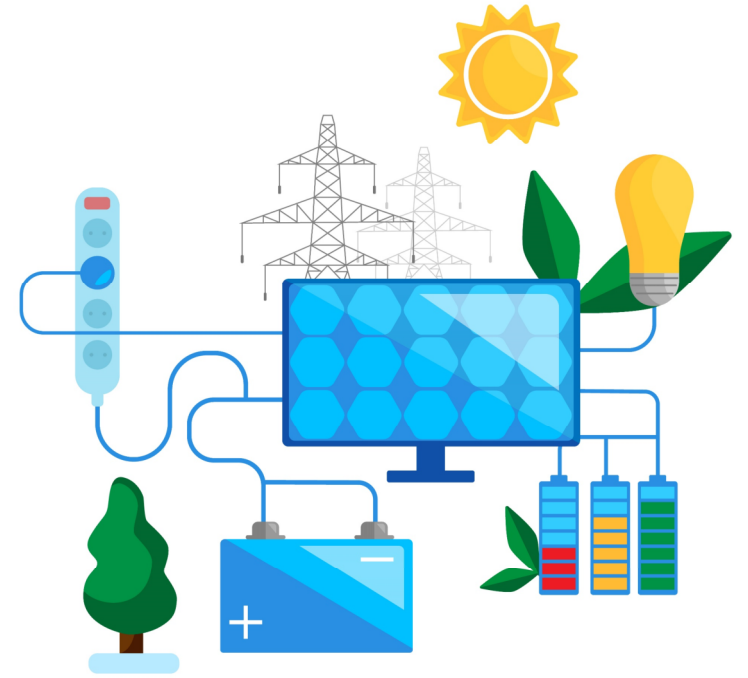


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University of Washington

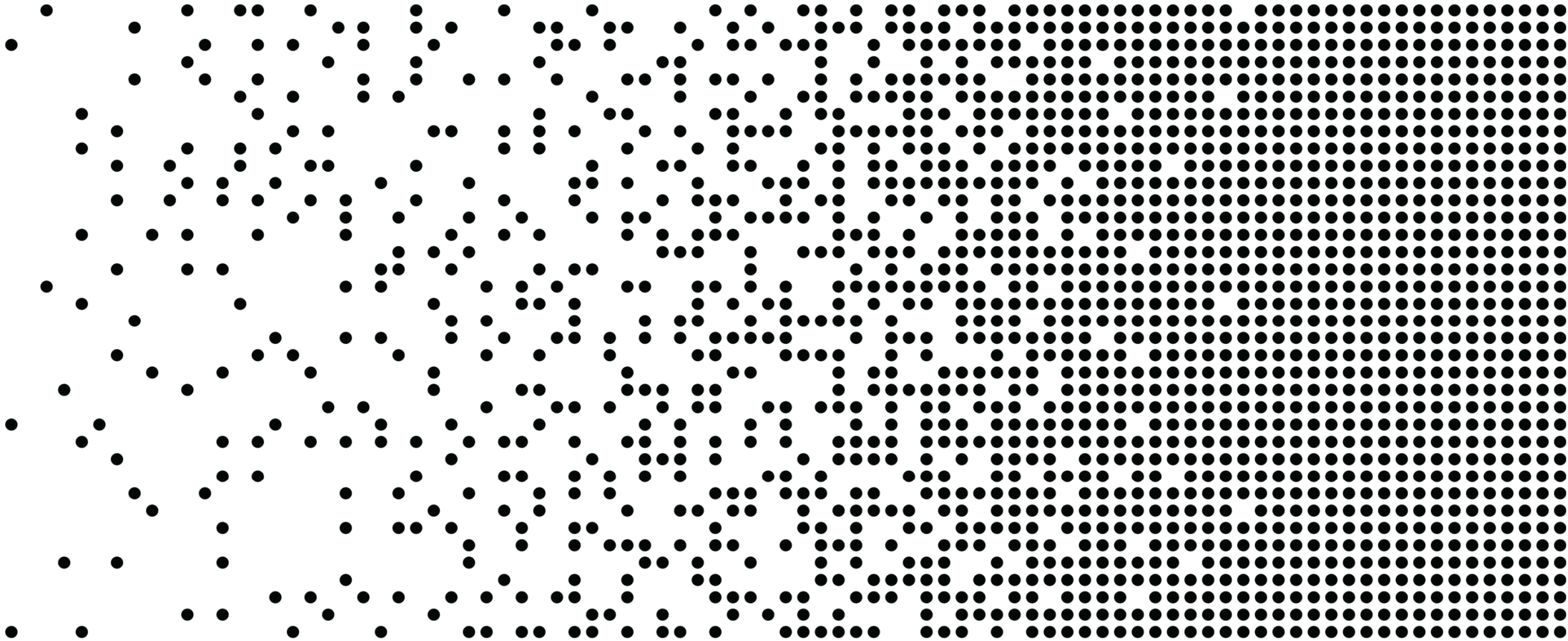
What does digital transformation mean to you?

- "Active Energy Management"
- Better tools and processes for energy management
- Better commissioning to operations results (achieve EUI targets)
- More effective troubleshooting
- Making O&M more efficient
- Transitioning data from one specific purpose to 'enterprise sharing'



Question

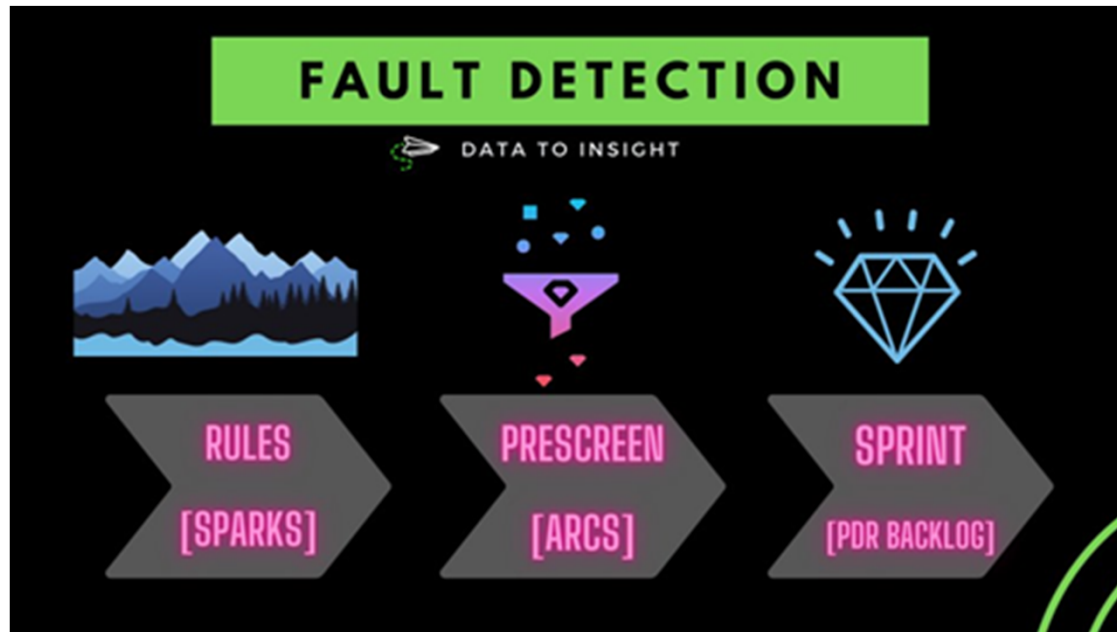
What are the use cases / benefits/consequences?



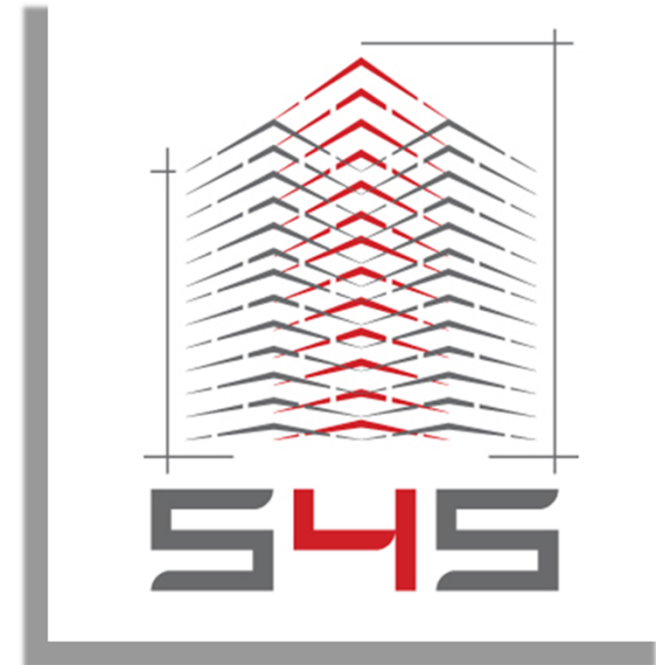
Stanford University

What are the use cases / benefits/consequences?

- Analytics for new building and retrofit commissioning
- Apply room-level "smarts".



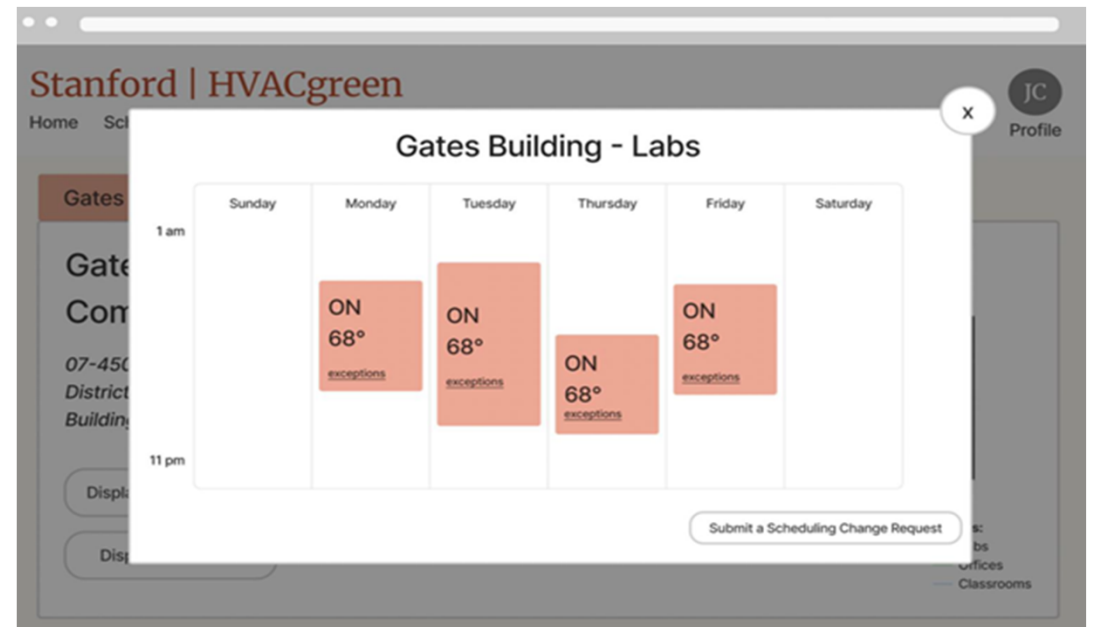
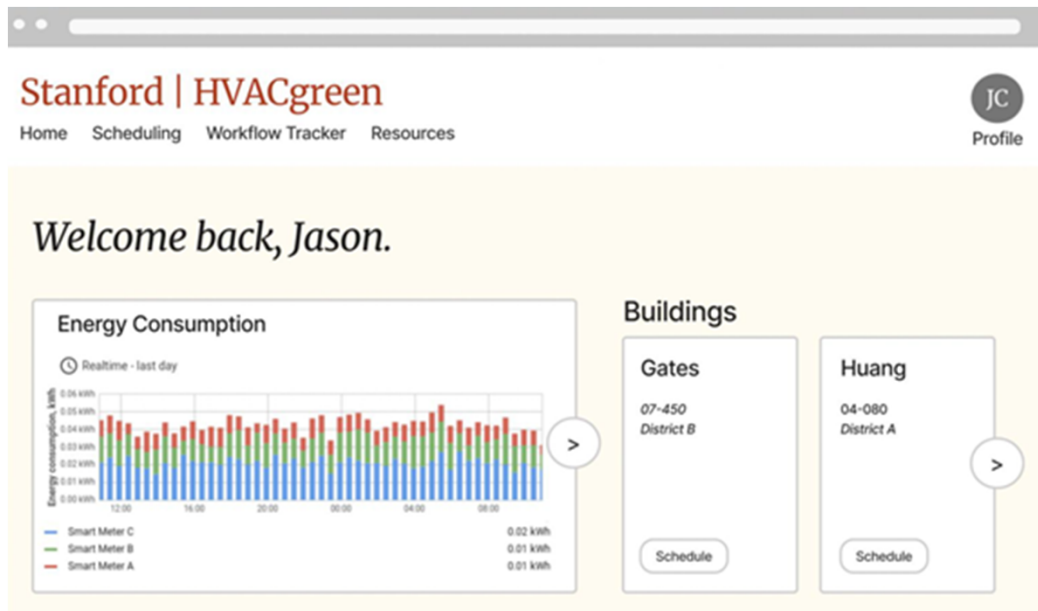
Classic HVAC Data Analytics



New room level scheduling

Stanford University

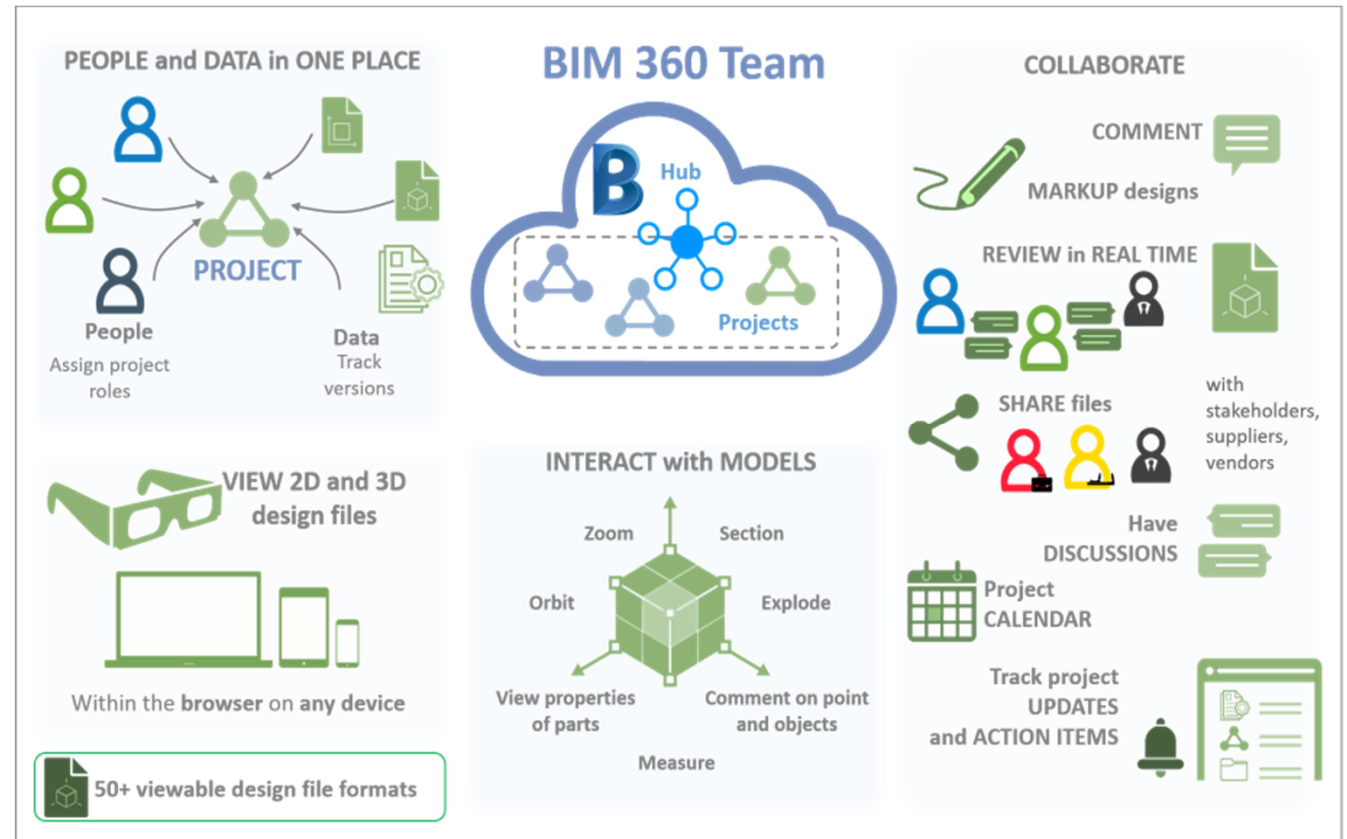
- Create new room level scheduling occupant engagement tool.
- Dynamically manage room occupancy mode.
- Create campus-wide room level demand management algorithms and ability to reliably push bulk HVAC changes.



University of Florida

What are the use cases / benefits/consequences?

- Streamlined process between Design/Construction and Operations.
- Ensuring clean, less problematic data.
- Cross-talk between applications which eliminates inefficiencies and redundancies
- Digital twin has better scale on efficiency and operational management
- Technological incompatibilities
- User resistance and lack of buy-in



Courtesy of Autodesk



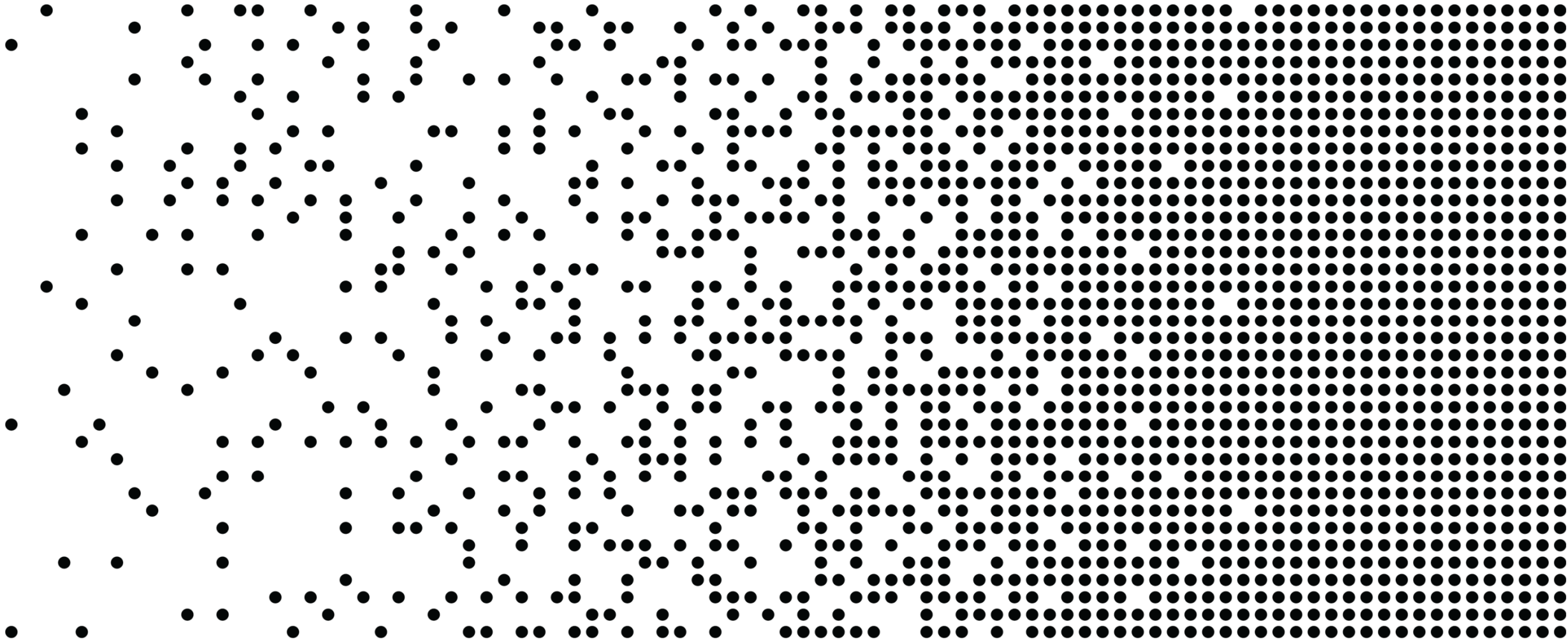
University of Washington

What are the use cases / benefits/consequences?

- Applying learnings from previous experience from UBC
- New building Cx tools
- New Energy conservation tools
- Measurement and verification of initiatives
- Making energy data -> enterprise data
- Same data / multiple purposes

Question

How are you preparing for Digitization?





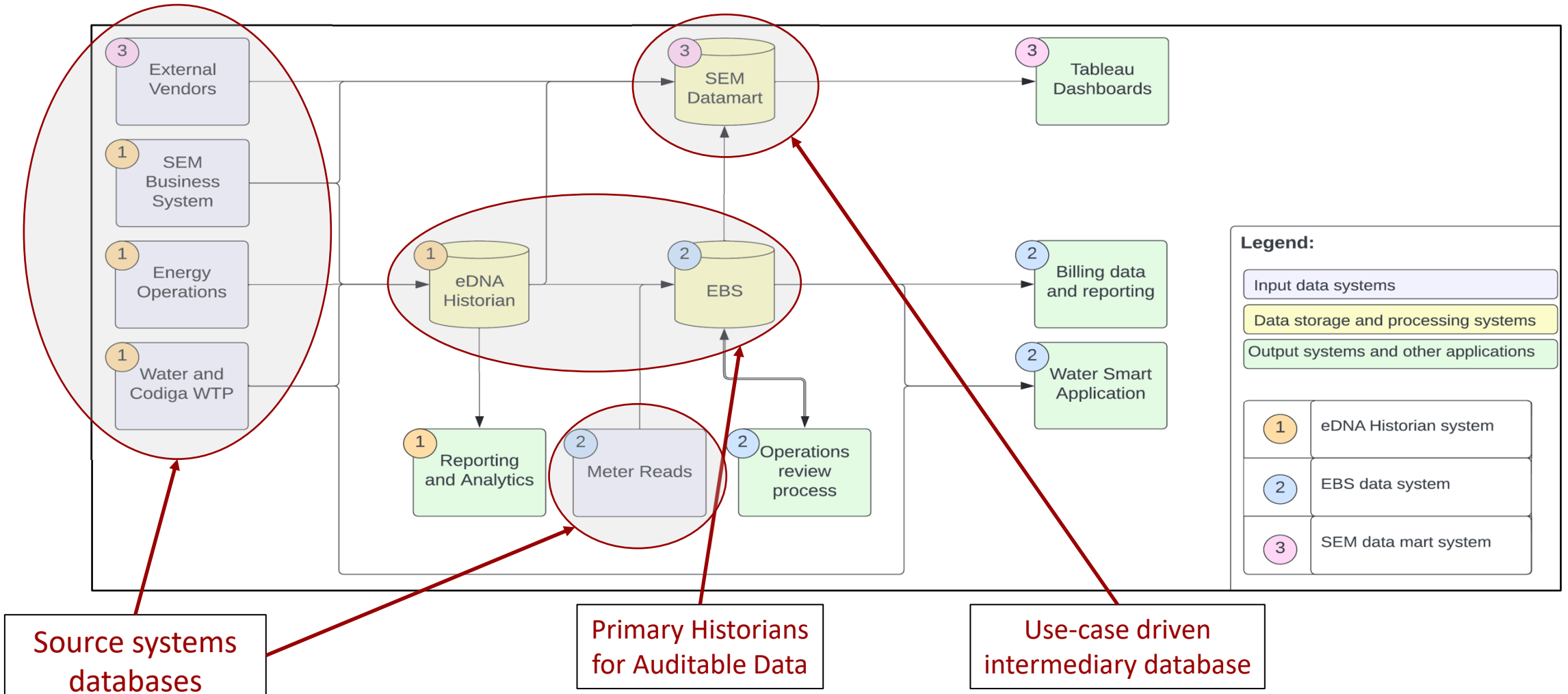
Stanford University

How are you preparing for Digitization?

- Cultural Transformation
- Getting IT and OT to work together
- Recruiting from data science fields

Stanford University

Ex: Data Architecture – Stanford Utility Data





Stanford University

- Maintains integrity of source systems
- Distinguishes high quality data applications from others
- Addresses unique data “normalization” steps required to support specific applications.

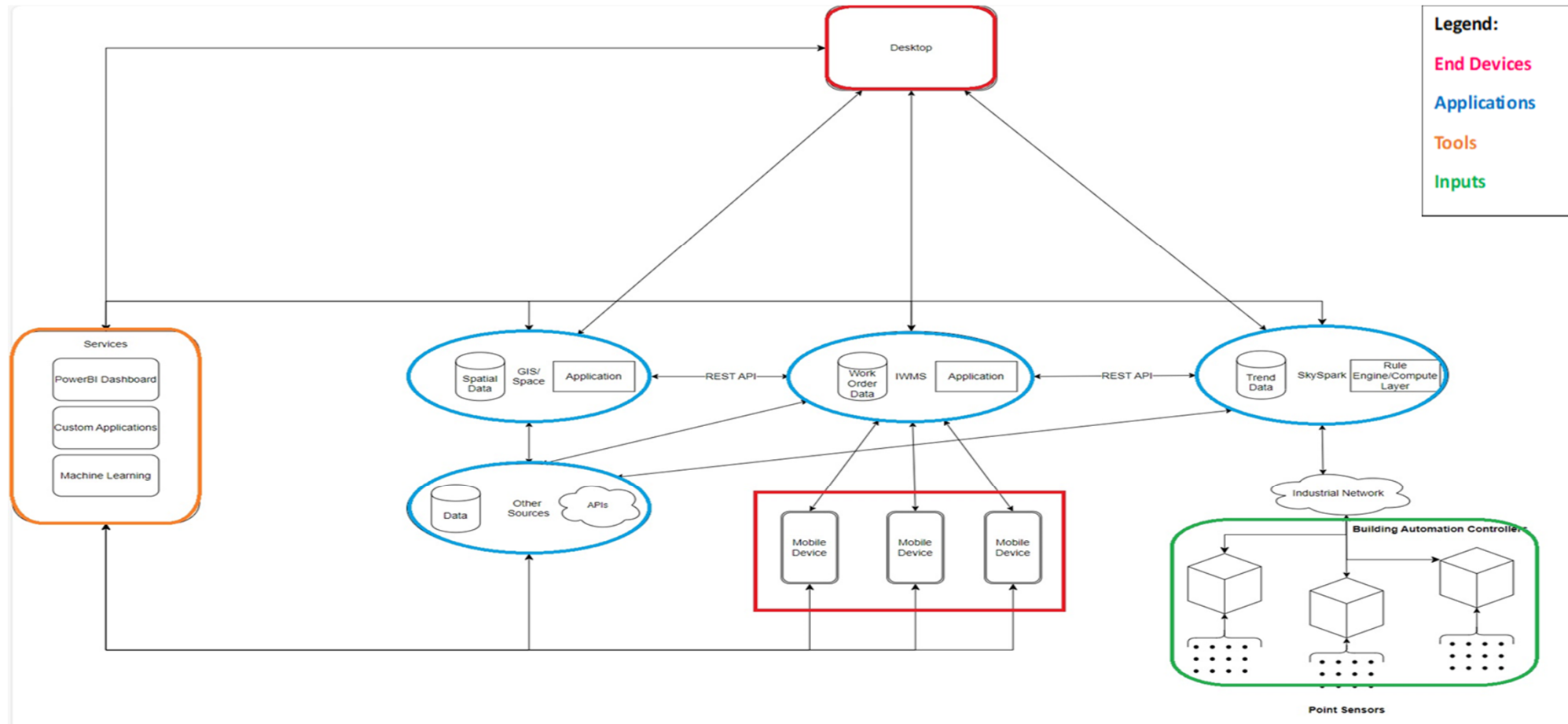


University of Florida

How are you preparing for Digitization?

- Be open minded – change is imminent
- Align vision and goals with business strategies and objectives
- Engaging colleagues before implementing – explain the why and have them part of conversation
- Defining new lanes – Digitization has broader implications and involves multiple stakeholders
- Standing up a separate team within Facilities to support the efforts

University of Florida



Data Architecture for UF Trade Maintenance and Operations




University of Washington

How are you preparing for Digitization?

- Co-locating disparate functional groups to increase effectiveness
- Re-evaluating the collection of data (frequency and which points)
- Looking for data science recruits
- Focusing on culture



3 Takeaways

- 1. Have a vision**
 - 2. Collect and store your data now! Data ontology is critical**
 - 3. Cultural change should go hand in hand with digitization**
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**This concludes The American
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