

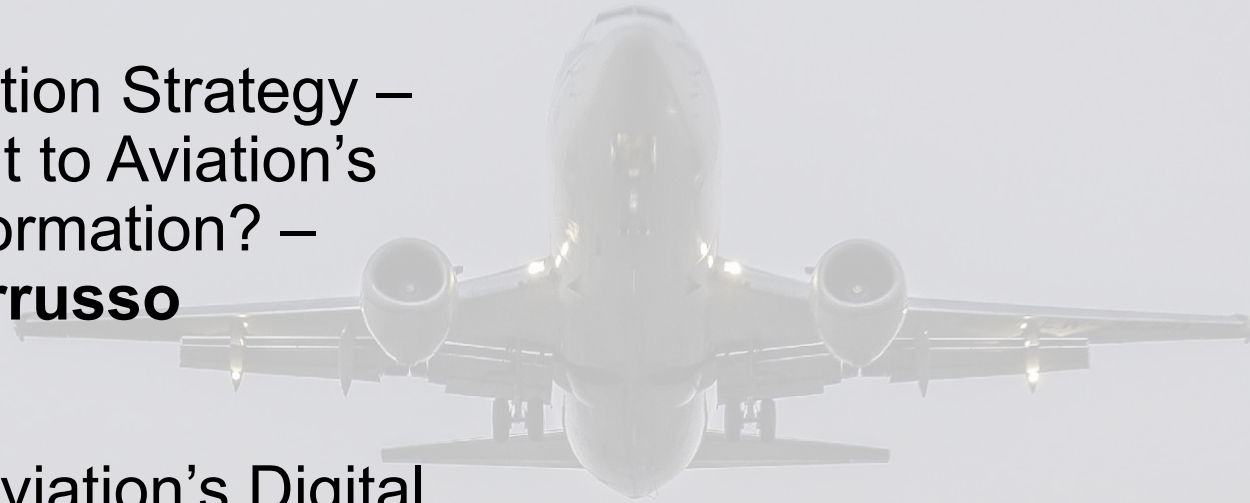
Digital Transformation.... Setting the Foundation

April 25, 2024

Janeane Giarrusso, Sr. Asset Manager/Advisory Solutions– Asset Management
Marin Pastar, Global Principal, Digital Twins

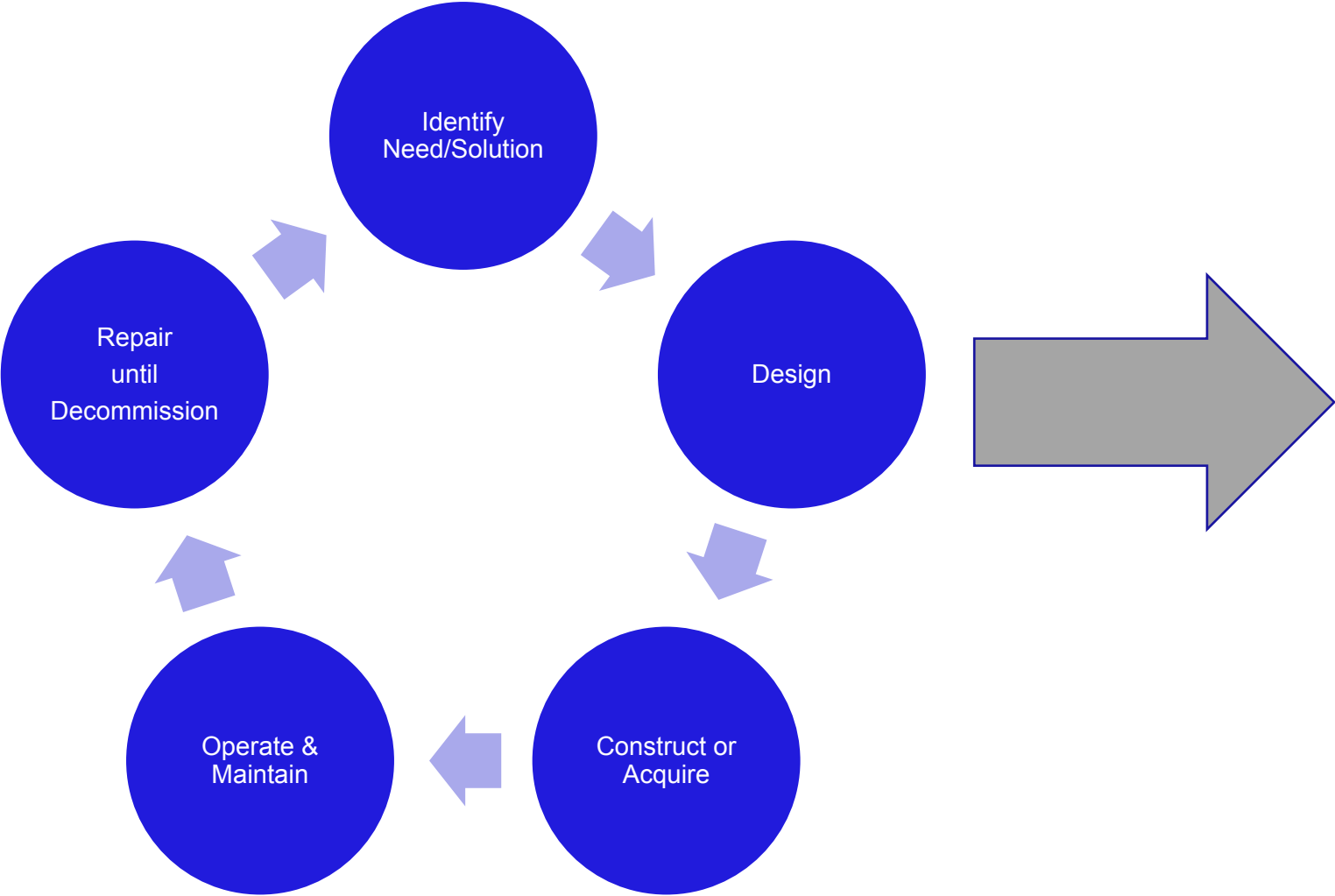
Agenda

- I. Asset Information Strategy –
Why Important to Aviation’s
Digital Transformation? –
Janeane Giarrusso
- II. Formula for Aviation’s Digital
Transformation – **Marin Pastar**

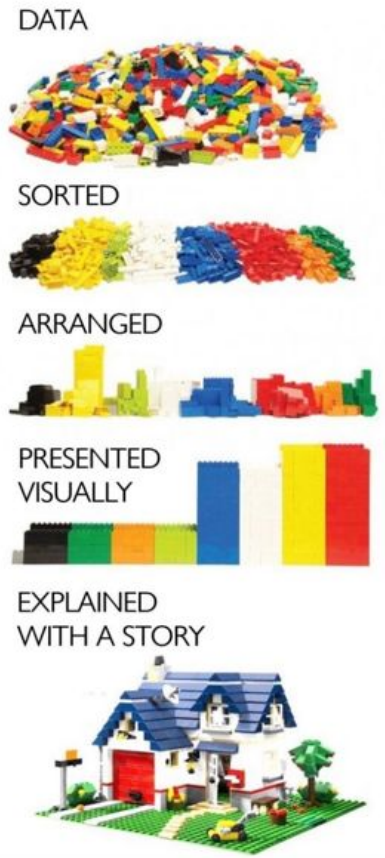


Asset Information Strategy – Why is it Important to Aviation’s Digital Transformation?

Asset data & information is developed at all stages of the asset lifecycle.

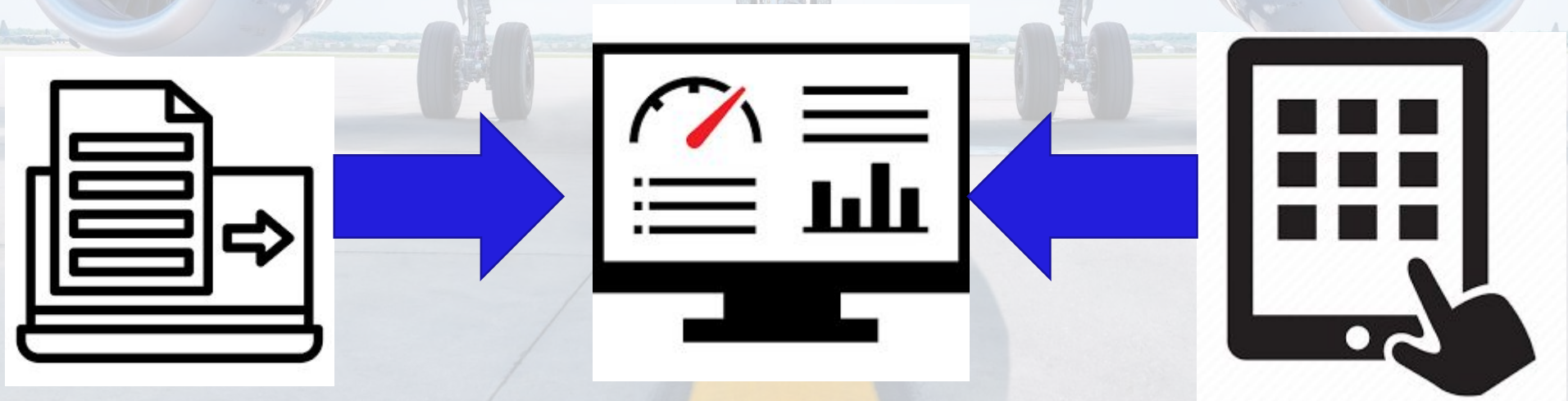


What we want...



Asset Information Strategy – Benefits to Aviation’s Digital Transformation

A well-defined asset hierarchy and data standards supports asset onboarding and data collection.



Well managed and compiled data supports tracking LOS performance and providing metrics for analytics to different end user groups.

Asset Information Strategy – What is it Comprised Of?

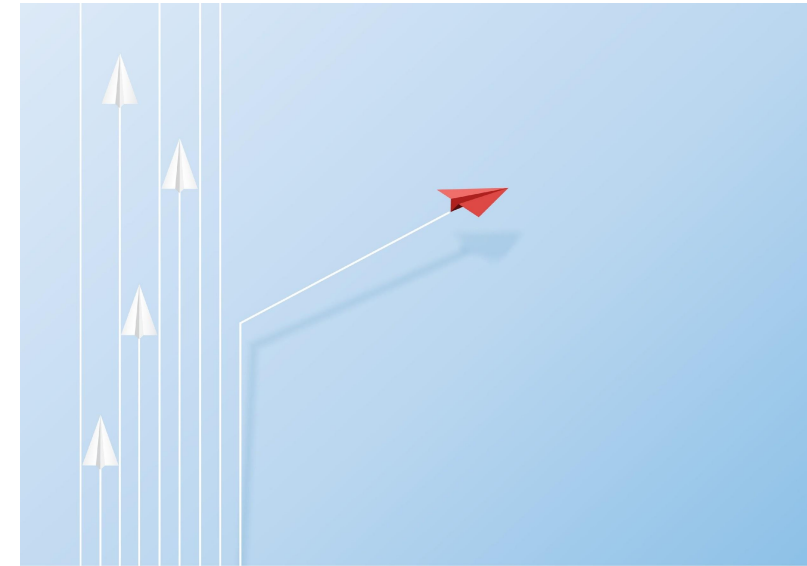
- ✓ Identifying data needed;
- ✓ Setting standards for how you organize it;
- ✓ Managing the data to ensure integrity;
- ✓ Maximizing use of technology to collect and report the data.

<https://theiam.org/knowledge-library/subjects-22-23-and-25-asset-information-strategy-standards-and-data-management/>



Asset Information Strategy - Challenges For Aviation

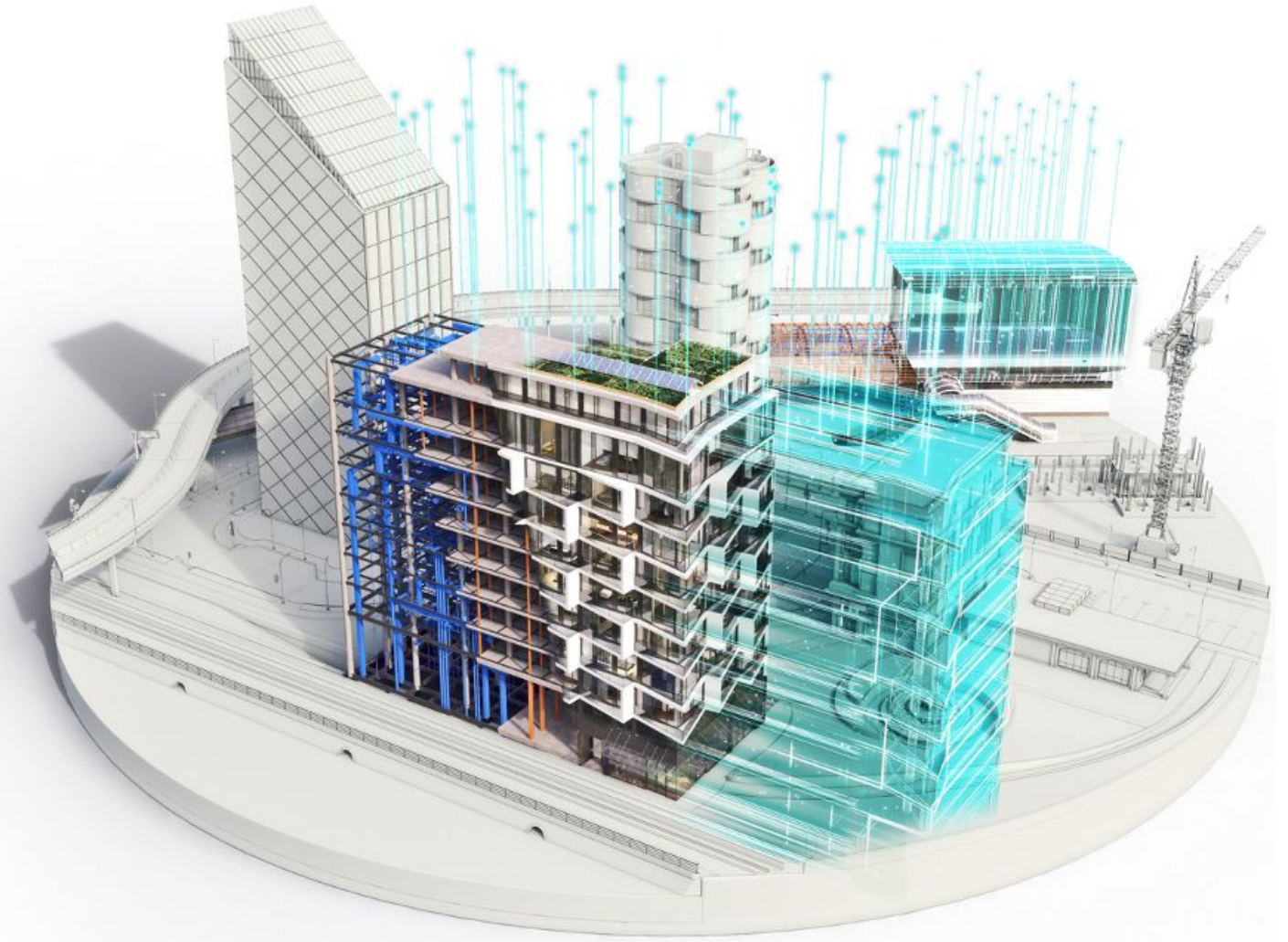
- ✓ **Data Attributes** – *identifying the “right” data that informs asset management decision-making and making it easy and cost effective to collect data for calculating metrics.*
- ✓ **Data Analytics** – *understanding how to combine and analyze the data to tell a data-driven story.*
- ✓ **Data Organization/Management** – *defining roles and responsibilities for managing data.*
- ✓ **Asset Onboarding** – *getting the data and information in the right format from contractors.*



Knowing these potential challenges exist, supports developing a successful “approach” to paving the way for digital transformation.

The Problem: Underutilized Design, Construction & Asset Data

95.5%
of all **data goes unused** in
engineering & construction¹

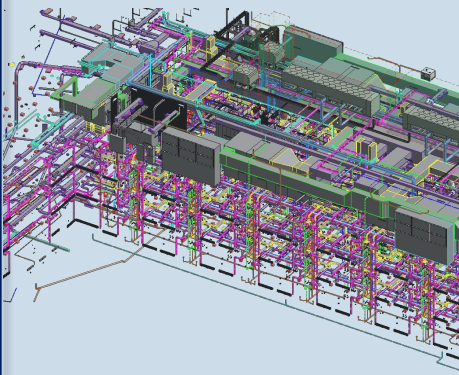


¹ Source: *Big Data = Big Questions for the Engineering and Construction Industry*, FMI Report

Connecting multiple data sources to provide maximum facility insights

geometric
geospatial data

3D BIM



Accurate As-Built
Geometric Models

static tabular
data &
documents

AEC DATA

A screenshot of a data table with multiple columns and rows, representing static design and construction data. The table has a light blue header and alternating row colors (yellow and white).

Static Design &
Construction Data

dynamic use &
performance data

O&M CMMS

A screenshot of an O&M CMMS interface. On the left is a table with columns for 'Name', 'Type', 'Family', 'Category', 'M&I - GPM MAX - Solid', 'M&I - Equipment Number', 'Phase Created', 'Worklist', 'Type ID', 'M&I - Heating Entering Water Temp - Solid', 'System Name', and 'M&I - Water Pressure Drop - Solid'. On the right is a 3D model of a piece of equipment.

Boolean	False
Value	78755
Name	VIG-4000DF
Type	VIG-4000DF
Family	VIG-4000DF_MFA_2013_0207
Category	Mechanical Equipment
M&I - GPM MAX - Solid	0.00 GPM
M&I - Heating Entering Water Temp - Solid	-80.0 F
M&I - Equipment Number	1
M&I - GPM MAX - Solid	0.00 GPM
Phase Created	Phase "New Construction" - #3
Worklist	M&I - Equip - FC
Type ID	FamilySymbol "VIG-4000DF" #2020172
M&I - Heating Entering Water Temp - Solid	-80.0 F
System Name	EA 11 HWB 30A 12 HWB 3
M&I - Water Pressure Drop - Solid	0

Current Operations
& Maintenance Data

live, real-time
sensor data

BAS & IoT



Real-time
Performance Sensor
Data

Single Federated Platform with numerous potential

Numerous Use cases from a Single Platform!

SIMULATION



Accurate Digital Representation of the Physical World

DIGITAL ACCESS



Mobile Access to Real-time data & AI Assistance

O&M



Predictive Maintenance & Work Order Automation

PERFORMANCE



Building Performance & Resource Optimization:
Resilience + Sustainability

SENSORS



Monitoring performance via IoT & supplying data for Machine Learning

DATA ANALYSIS



Anomaly Prediction/Detection & data-derived insights

AWARENESS



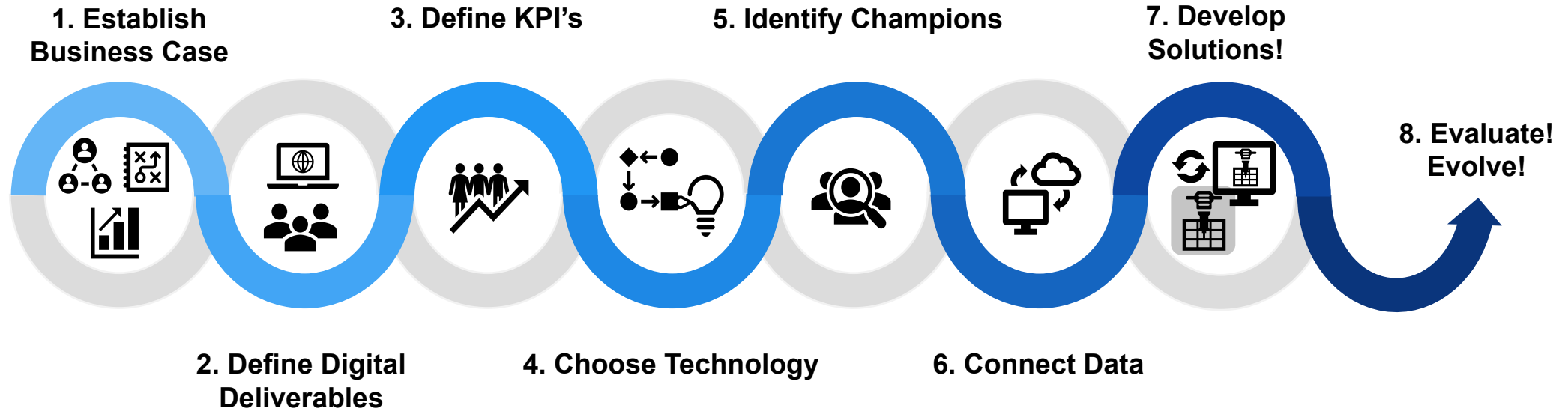
Asset Tracking, Mobile Wayfinding & Situational Awareness

AUGMENT



Enable numerous End-User experiences & use cases

Digital Transformation Journey

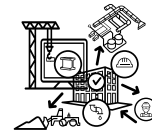


70%

of all
Digital Transformation
efforts Fail!



Lack of Stakeholder Support



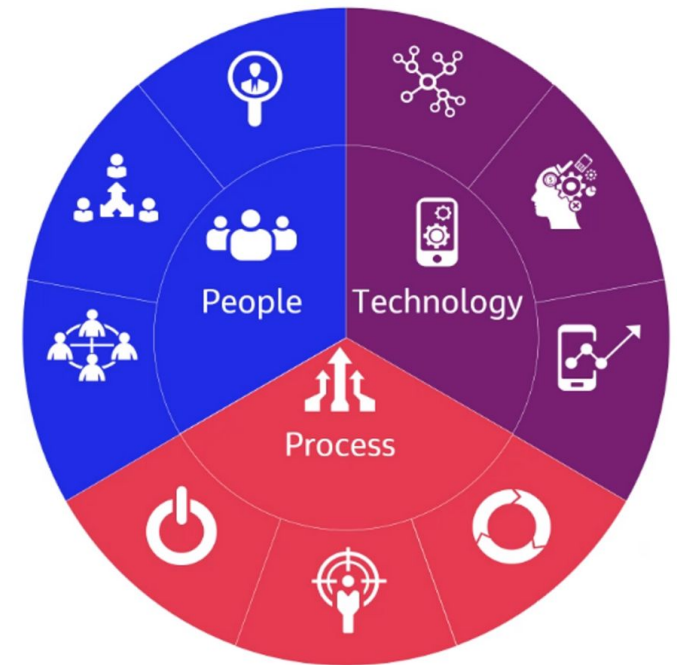
Too Much, Too Fast



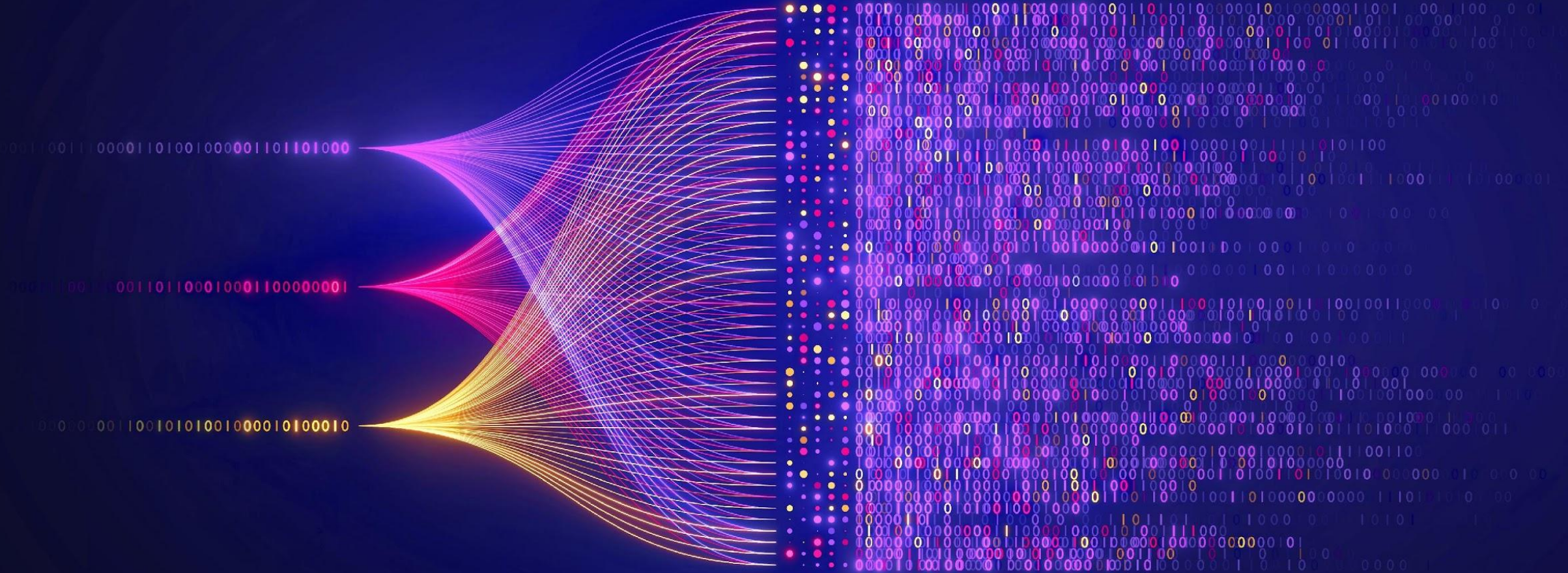
Focus on Technology First

Foundational Elements for Realizing Digital Transformation

- Digital Strategy & Roadmap
- Asset Management Strategy & Standards
- Lifecycle Execution Plan & Digital Standards
- Vendor Contractual Requirements that align with expectations
- Sustainment & OCM Plans



Thank You!



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**Challenging today.
Reinventing tomorrow.**

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Important considerations while getting started:

- **Digital Strategy & Roadmap** (desired outcomes, functional requirements, end-user personas, implementation timeline)
- **Enterprise Asset Management (EAM) Strategy** (FM procedures, KPIs, technology stack)
- **Asset Information Standards** (asset hierarchy, parameters, naming conventions, RACI)
- **BIM Standards & Requirements** (delivery tools, deliverable requirements)
- **Lifecycle BIM Execution Plan** (design + construction + handover process requirements, delivery workflows)
- **Procurement Contract Language** (A/E/C roles + responsibilities, data validation + timing)
- **Long-Term Sustainment Plan** (change management procedures, data upkeep workflows)
- **Organizational Change Management (OCM)** (training, mitigating people/process disruption, managing change)

