



The 23rd International Asset Facility and Maintenance Management Conference

A Blueprint for Digital Twin Adoption in FM – from Strategy to Execution

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1-hr Workshop: what you will take away



Focus

A clear definition of “Digital Twin in FM” that is useful for decision-making (not a 3D conversation).



Readiness

A readiness lens: what must be true before investing in pilots at scale.



Roadmap

A stage-gated adoption roadmap (strategy to execution) that reduces risk and accelerates value.



Next 30 Days

A practical next-30-days checklist to move from intent to momentum.

Would you construct your next building without a blueprint?

A digital twin is no different — it needs a clear business blueprint to turn strategy into reality.

Why most Digital Twin programs stall in Facilities Management



Execution fails when “truth +
evidence” are not governed
across owners, operators,
and vendors.

The FM operating cycle: where value is won or lost

Digital Twin adoption succeeds when it strengthens the chain: Request → Work → Evidence → Performance.



Performance

Request



Common failure modes

- Disputed KPIs and timestamps
- Weak work-order evidence
- Fragmented asset identity
- Slow response and rework



Evidence

Work



From Campuses to Giga Projects Every Sector Benefits



Smart Campuses
(Education, Healthcare)
Asset mapping, infection control,
predictive maintenance.

Industrial & Utilities
IIoT-driven condition monitoring,
energy optimization.

Transportation & Infrastructure
UAV/GPR for underground utility
mapping, emergency response.



Commercial Real Estate
Tenant comfort, energy analytics,
sustainability reporting.

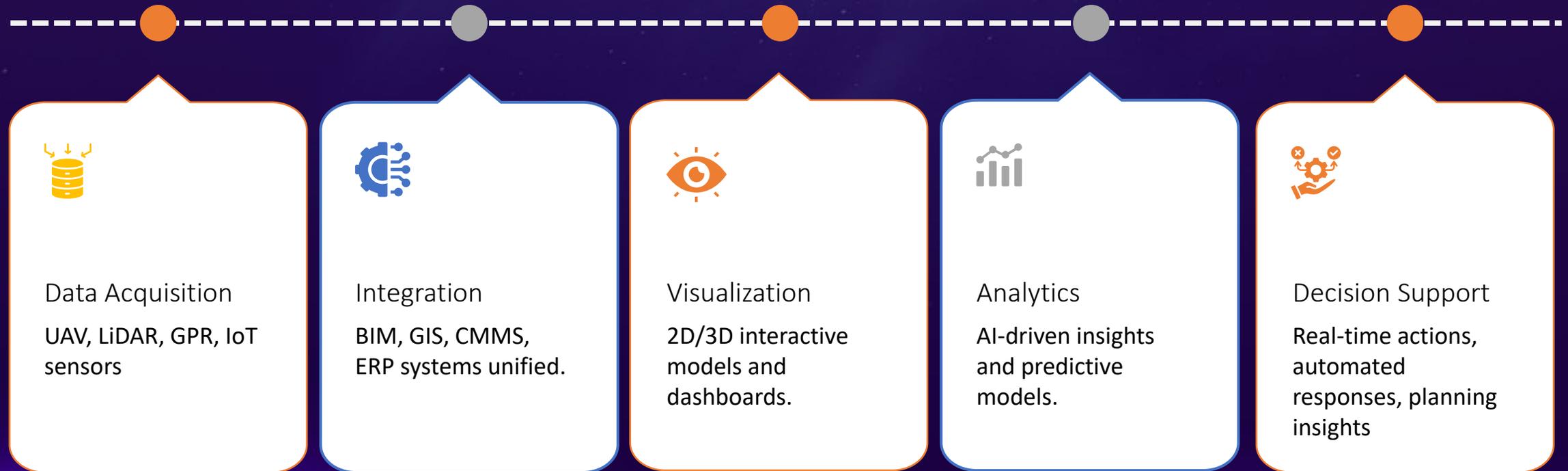
Mixed-Use & Giga Projects
Integrated portfolios for centralized
command and control.

Military & Secure Facilities
Controlled-access visualization, live
operational coordination.

Digital Twin in FM: From Facilities to Living Systems

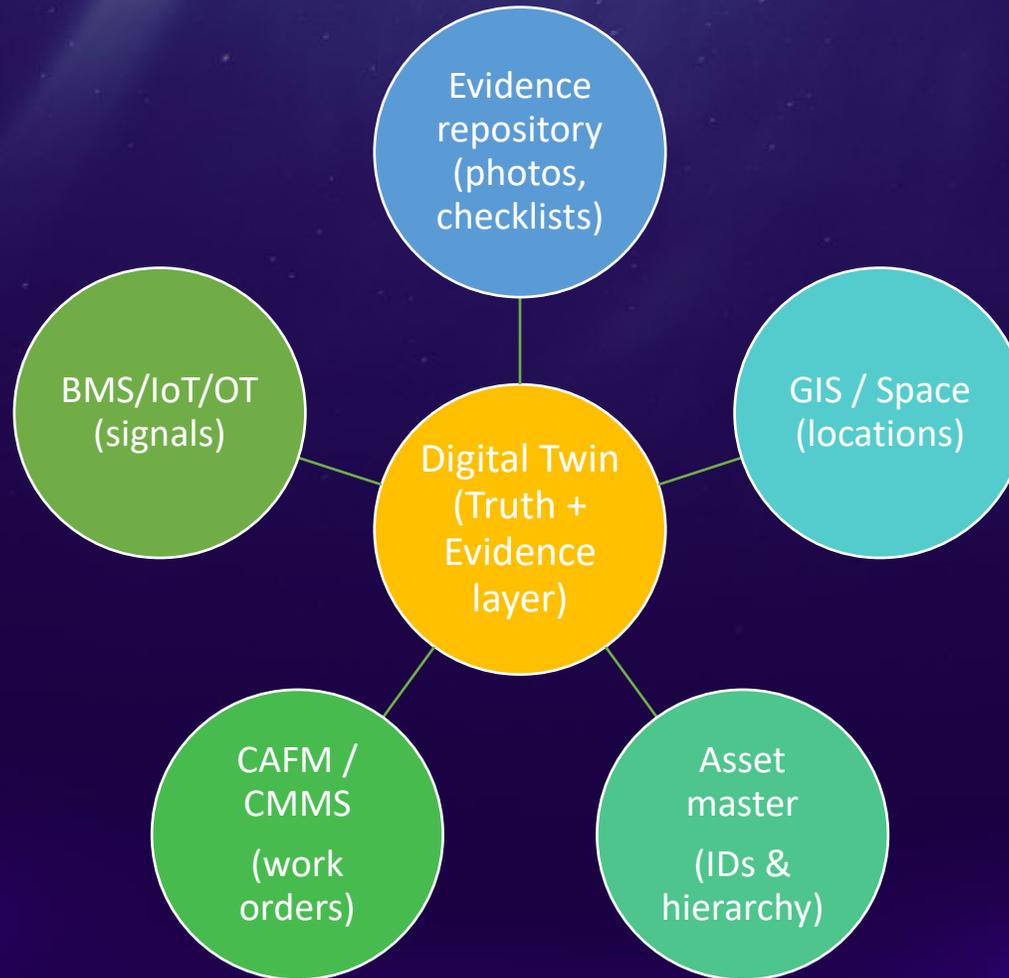


A Digital Twin is a living digital representation of a facility that continuously mirrors its physical counterpart through integrated data.



FEDERATED TWIN: GOVERNED TRUTH WITHOUT DUPLICATION

Vendor-agnostic pattern: the twin links systems of record and makes execution evidence consumable.



Digital Twin in FM: what it is — and what it is not

Positioning is critical: treat this as an execution capability, not a visualization project.



NOT



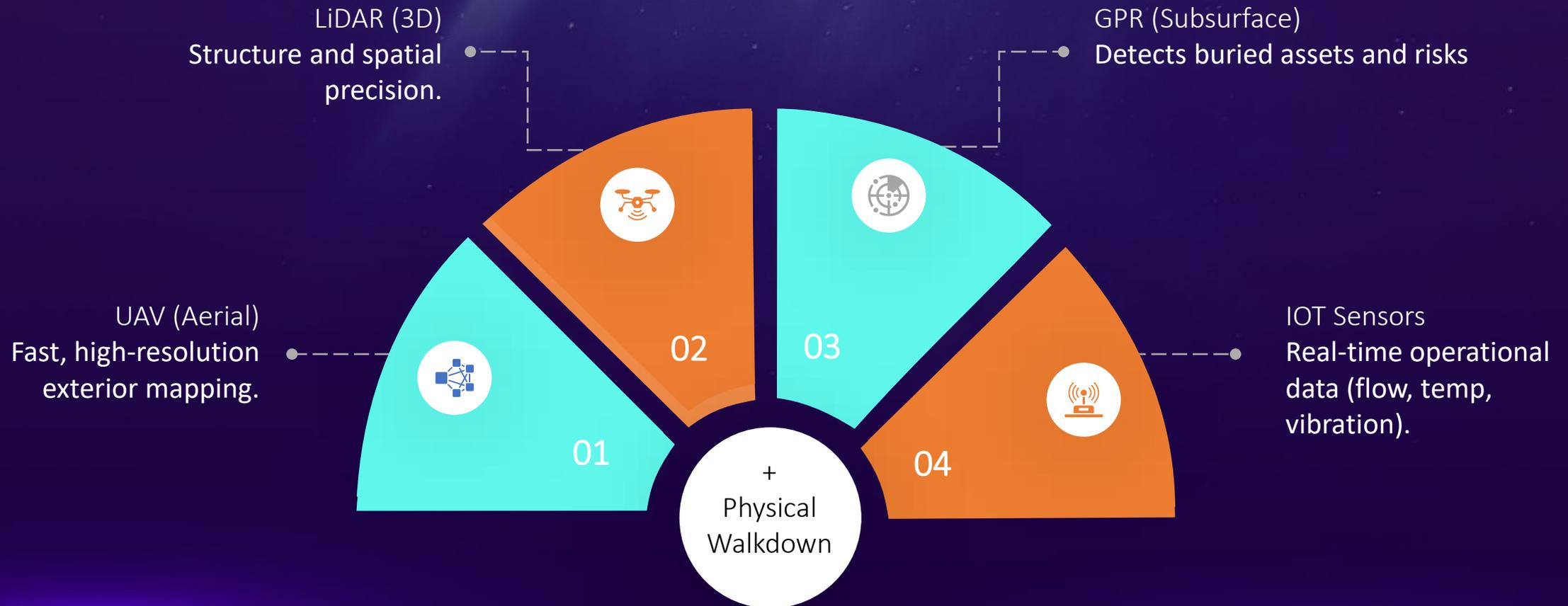
- A 3D model project
- A platform replacement program
- A dashboard/reporting exercise
- A 'big bang' data cleanse

IS



- A governed 'truth + evidence' layer for FM execution
- A way to standardize work closure evidence
- A federated integration pattern across systems of record
- A portfolio of use cases delivered in waves

The Data Foundation: Acquisition Techniques



North Star Outcomes

If a use case does not **measurably** improve one of these, it is not Wave-1 eligible.



Cycle-time compression
KPI example:
Response/MTTR

Higher first-time-fix
KPI example:
Reduced rework

Less firefighting
KPI example:
Planned vs reactive
ratio

Fewer disputes
KPI example:
Dispute rate & closure
time

Lower compliance
exposure
KPI example:
Safety/compliance
incidents

Trusted performance
reporting
KPI example:
Audit trail
completeness

Minimum Truth Layer for Scalable FM Adoption

Start with the minimum viable foundation – then expand by evidence



Governed asset identity for critical classes (ID, hierarchy, status)

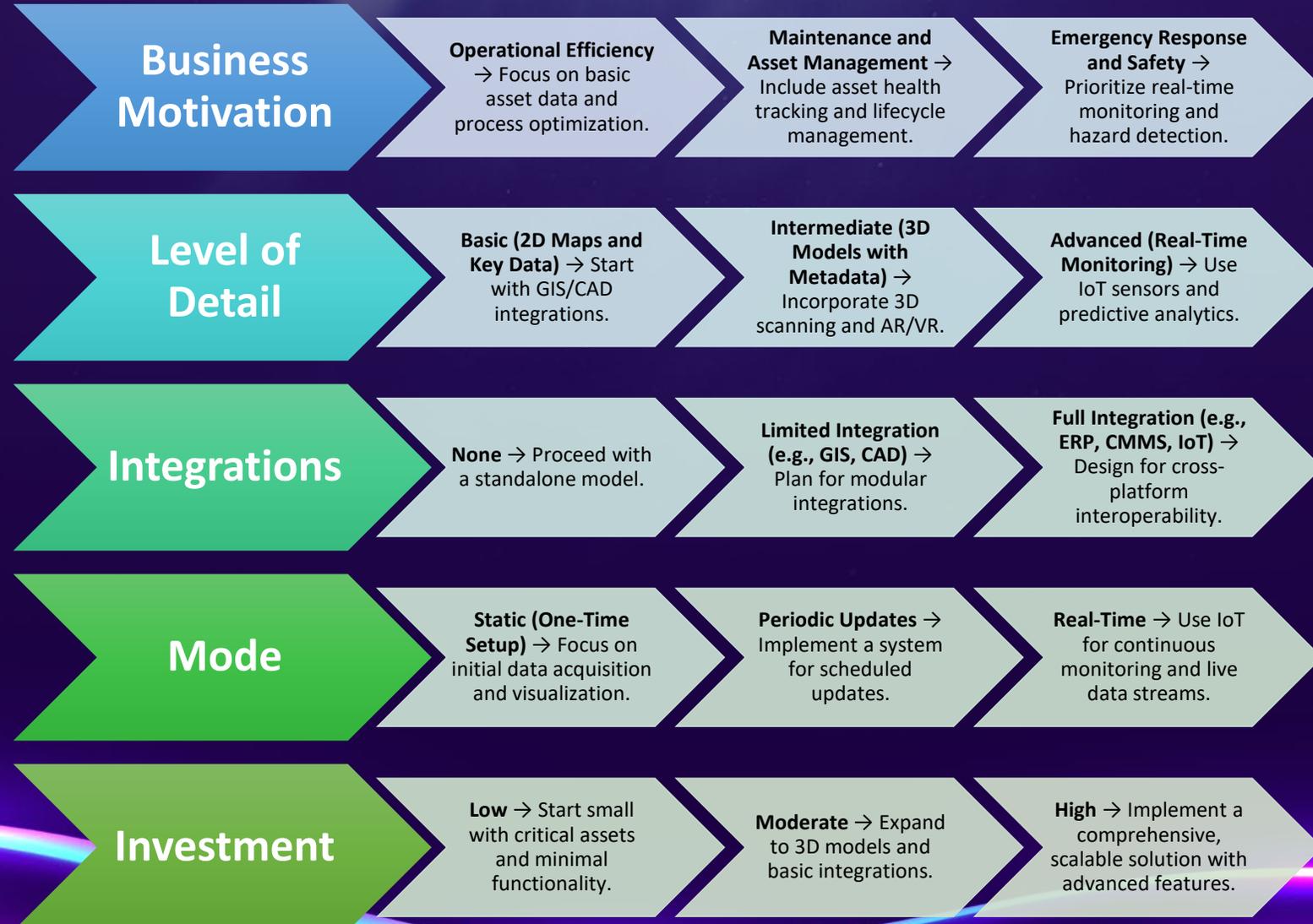
Validated location / space structure (site–building–floor–space)

Standard work types + priority + SLA rules (shared semantics)

Timestamp rules for KPI integrity (start/stop/hold definitions)

Evidence pack templates enforced at work closure

Digital Twin Adoption Pathways



Digital Twin – from Strategy to Execution

Take an Intentional Path to Digital Twin Adoption.



Do we have a sound digital twin strategy that is focused on the right things?

Is it aligned with the business strategy?

What parts of the business should digital twin focus on that will bring the most value?

What do we need to be ready from a people, process, data, application, and asset perspective?

Where can we standardize and streamline across assets, sites, and applications?

What are the top digital twin business priorities to invest in?

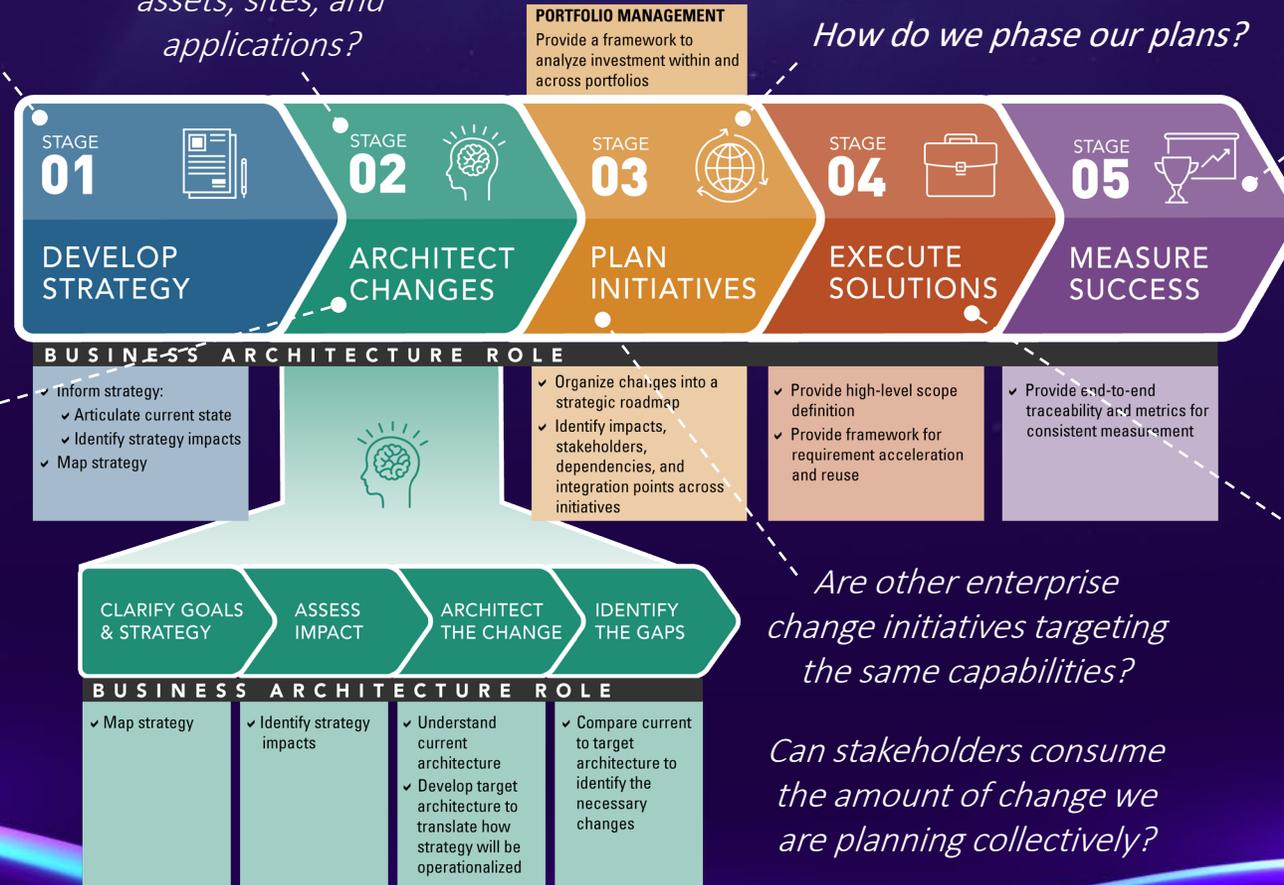
How do we phase our plans?

Did our digital twin investments deliver on our original business objectives?

Are other enterprise change initiatives targeting the same capabilities?

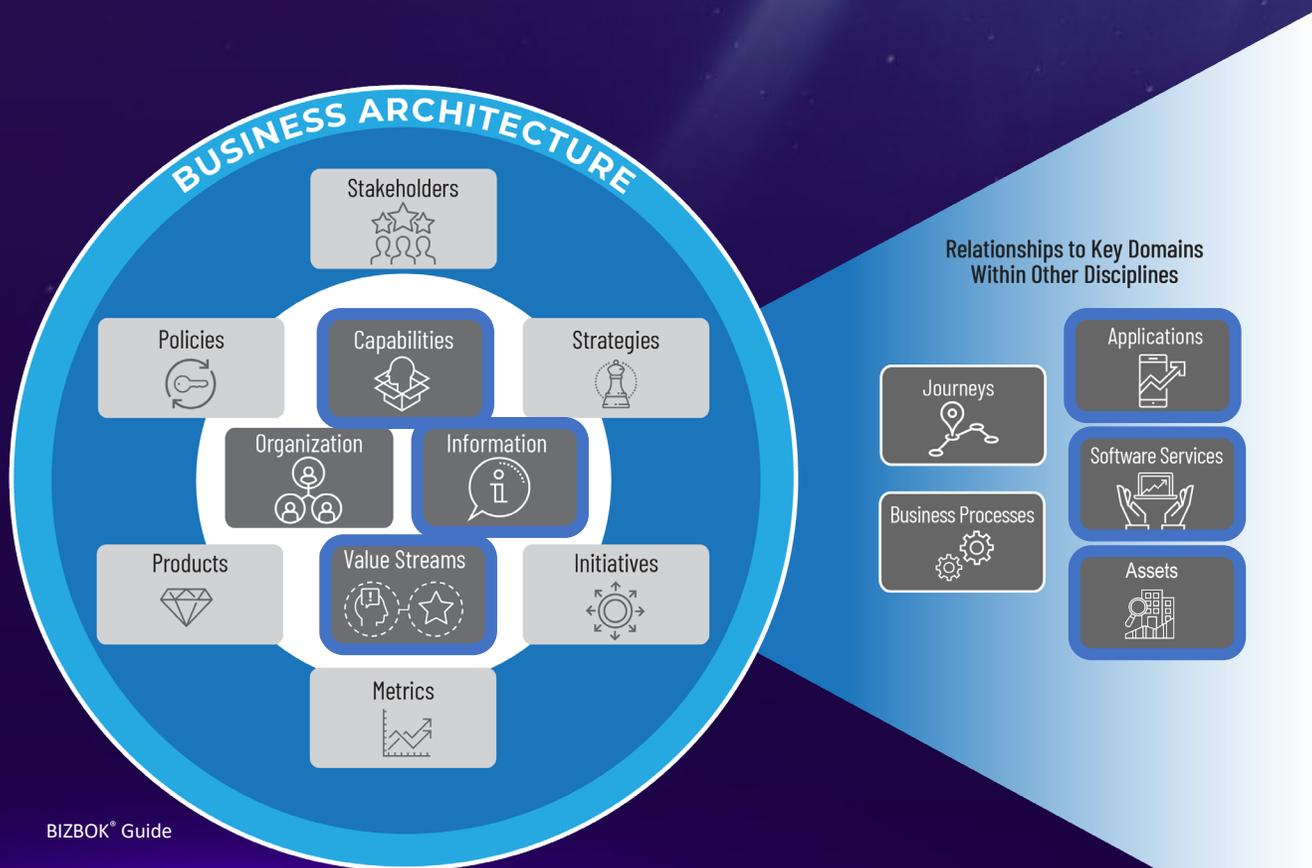
If our priorities shift, what should we stop doing?

Can stakeholders consume the amount of change we are planning collectively?



ENTERPRISE READINESS: DATA, TECHN, APPs, AND BUSINESS ARCHITECTURE

Business Architecture Provides a Shared Business Context.

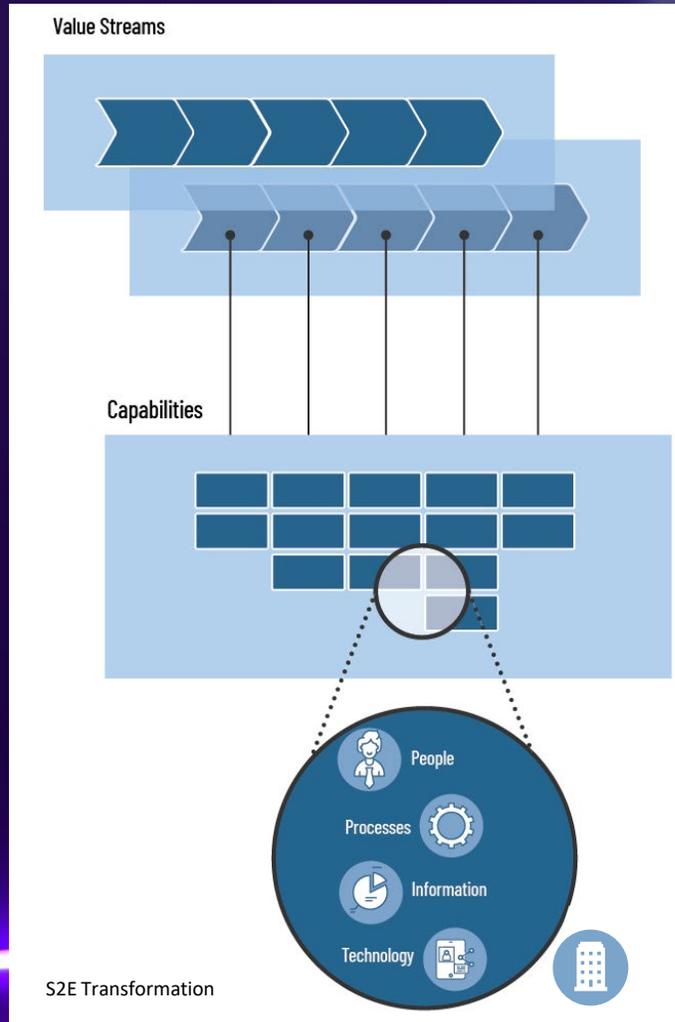


Business architecture is...

- ✓ A shared mental model, unified across organizational structures and products
- ✓ Business-focused and business-owned
- ✓ High-level in detail
- ✓ Reusable
- ✓ The scaffolding that connects everything in the business and technology environments
- ✓ A set of information and views as well as a mindset for everyone

ENTERPRISE READINESS: DATA, TECHN, APPs, AND BUSINESS ARCHITECTURE

Business Architecture Frames Technology, Data, and Assets.



- Strategy requires capabilities
- Capabilities are enabled by people, processes, information, technology, and assets
- Capabilities require information
- Capabilities are automated by apps and services
- Capabilities are enabled by physical assets
- Initiatives deliver enhancements to capabilities

Capabilities are an essential business lens for prioritization and scoping of data, application, AI, and asset investments.

ENTERPRISE READINESS: DATA, TECHN, APPs, AND BUSINESS ARCHITECTURE

A Blueprint Helps to Analyze and Target Business Performance.



DIGITAL TWIN ADOPTION – FROM STRATEGY TO EXECUTION

Capabilities Frame Digital Twin Investments Around Capabilities.



STRATEGY	GOAL	OBJECTIVE	METRIC	COURSE OF ACTION	VALUE STREAM IMPACTS	CAPABILITIES IMPACTS	INITIATIVE
Sustainability 2030	Reduce GHG Emissions	Reduce Facility-Related GHG Emissions by 30% by 2030	Total Carbon Dioxide Emissions (Tons Per Year)	Enhance monitoring and analytics for emissions tracking	<ul style="list-style-type: none"> Establish Facility Maintain Facility Perform Preventative Maintenance 	<ul style="list-style-type: none"> Facility Mgt. Asset Mgt. Energy Mgt. ... 	<ul style="list-style-type: none"> Facility Emissions Digital Twin Initiative
		

SUMMARY OF CHANGE	PEOPLE	PROCESS	INFORMATION	TECHNOLOGY	ASSET
Implement advanced emissions tracking and analytical tools using a digital twin to enhance monitoring and insight	<ul style="list-style-type: none"> Build associate skills in digital twin data analysis and sustainability analytics Introduce data-driven decision-making and cross-functional collaboration across facility management, IT, and sustainability teams 	<ul style="list-style-type: none"> Establish regular reviews of emissions performance by asset type Align maintenance schedules with emissions reduction goals 	<ul style="list-style-type: none"> Standardize asset data around energy use and emissions factors 	<ul style="list-style-type: none"> Deploy Inframappa and model to simulate and optimize asset-level emissions 	<ul style="list-style-type: none"> Equip major energy-consuming systems with sensors and smart meters to capture real-time energy usage and emissions

DIGITAL TWIN ADOPTION – FROM STRATEGY TO EXECUTION

Capabilities Coordinate Change, Investment, and Ownership.



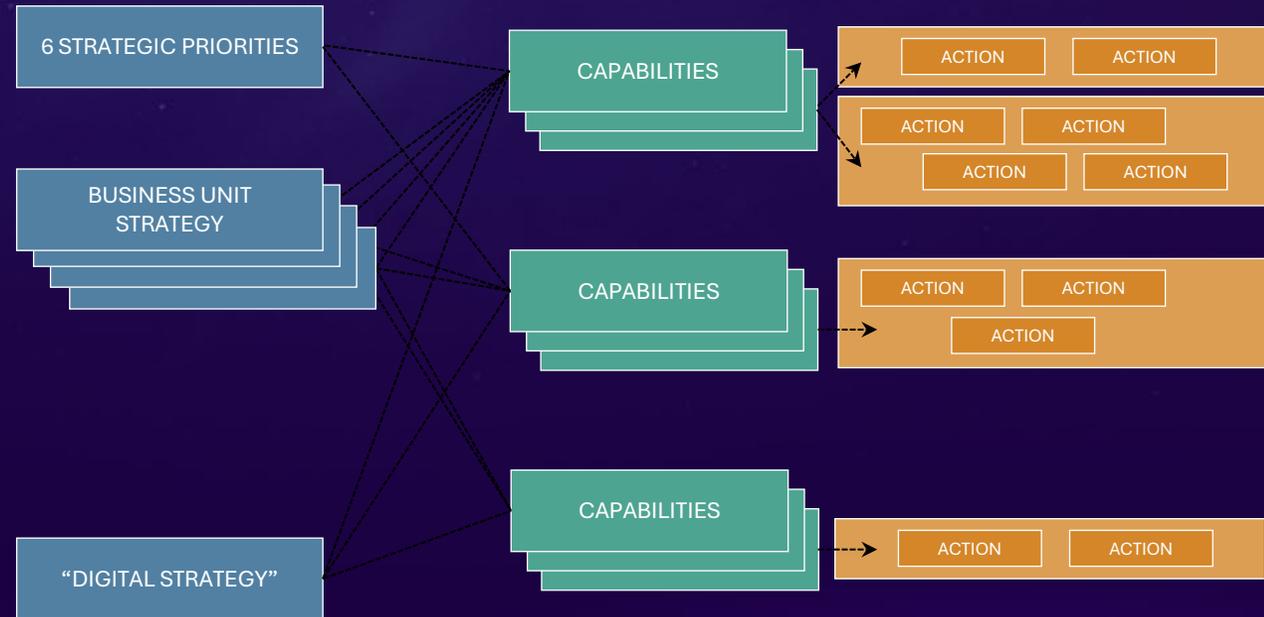
WITHOUT CAPABILITIES

Strategies translate directly to actions.



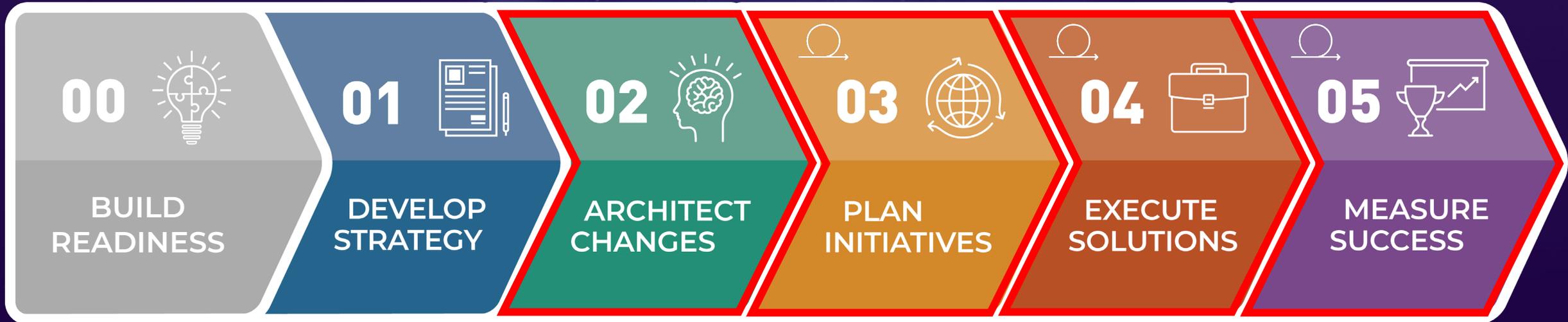
WITH CAPABILITIES

Strategies are translated through capabilities into a coordinated, prioritized, and sequenced set of actions.



DIGITAL TWIN ADOPTION – FROM STRATEGY TO EXECUTION

Digital Twin Maturity Journey



- Build Awareness
- Build Business Blueprint
- Build Capacity
- Establish Governance

- Define Digital Twin Strategy and Objectives

- Assess readiness and define business change (*people, process, information, technology, and asset investments by capability*)

- Define proof of value
- Develop digital twin adoption roadmap

- Upskill team
- Enhance processes
- Deploy tool
- Acquire data
- Perform application integrations

- Perform value realization analysis

Global FM Use Cases

Poven Value Across Operational Dimensions



Use Case	Outcome
Predictive Maintenance	+25% uptime, reduced downtime.
Asset Lifecycle Optimization	+15% cost efficiency.
Energy Management	Up to 30% energy savings.
Safety & Emergency Response	Real-time situational awareness.
ESG Reporting	Automated sustainability data collection.
Space Optimization	Better occupancy and comfort.
Capital Planning	Scenario modeling for smarter investment.

Use Case Selection: From Ideas to Investible Wave 1 Pilots
Rule: every Wave-1 use case must strengthen at least one link in the FM operating cycle



Scoring (example weights):
Impact 30% | Readiness 20% | Feasibility 15%
Reusability 15% | Policy dependency 10%
Interoperability dependency 5% | Ecosystem complexity 5%

Adoption roadmap: 3 horizons with decision gates
A pragmatic blueprint that balances speed, risk, and scalability.



Horizon 1 — 0–6 months: foundations + visible value



Horizon 2 — 6–12 months: scale with an onboarding factory



Horizon 3 — 12–24 months: optimize and expand the portfolio



Principle: scale only when the previous gate is evidence-complete.

Decision checkpoints: what 'good evidence' looks like
Scale only when evidence is repeatable — not when enthusiasm is high.



Gate 0: Scope, owners, success metrics agreed

Gate 1: Readiness baseline completed (people/process/data/tech/assets)

Gate 2: Pilot proves measurable outcome + evidence discipline

Gate 3: Onboarding factory defined (repeatable deployment)

Gate 4: Portfolio governance in place + continuous improvement

DIGITAL TWIN ADOPTION – FROM STRATEGY TO EXECUTION

Digital Twin Journey Takes a Village



Department	Stage 01	Stage 02	Stage 03	Stage 04	Stage 05
Executive Team	High	High	High	High	Medium
Facilities Management	High	High	High	High	High
EHS	Medium	High	Medium	High	Medium
ESG	Medium	High	Medium	High	Medium
IT	Medium	High	High	High	Medium
Project Management	High	Low	Medium	High	High
Change Management	Medium	High	High	High	Medium
And many more...	High	High	High	High	High

Governance with operational teeth (generic, no acronyms)
Digital Twin adoption in FM is a multi-party program: governance is the execution engine.



Governance forum	Cadence	Primary focus
Operational performance review	Weekly	SLA performance, evidence compliance, dispute closure
Data governance forum	Bi-weekly / Monthly	Data quality, taxonomies, asset/location identity rules
Architecture & integration review	Monthly	Interoperability guardrails, systems-of-record alignment
Executive steering committee	Monthly / Quarterly	Funding decisions, scaling approvals, risk escalation

Next 30 days checklist

If you can do these, you can start Wave-1 with confidence.



- ✓ Select two pilot sites and one critical asset class (start small, learn fast).
- ✓ Confirm intake channels and standardize triage rules (priority, SLA, escalation).
- ✓ Define evidence packs for the top 10 work types (closure checklists + media).
- ✓ Baseline asset ID and location structure quality for the pilot scope.
- ✓ Define KPI timestamp rules (what starts/stops the clock; what pauses it).
- ✓ Stand up governance cadence: weekly operational review + monthly steering.
- ✓ Define Gate-0 and Gate-1 entry criteria and owners (decision discipline).



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THANK YOU!



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