



# Building Smart: Developing for the future is now

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# Technology is Changing, Fast

Innauguration of Pope Benedict XVI, 2005

**SIEMENS**  
*Ingenuity for life*





# Technology is Changing, Fast

Innauguration of Pope Francis, 2013

**SIEMENS**

*Ingenuity for life*



# Perfect Places to Work – Smart Building Management

## Personalized comfort

Delivers optimal energy performance mitigated by effects of operational and seasonal changes



## Flexible workspaces

Space utilization and easy reorganization

## Space booking and collaboration

Via space booking app, IT integration and 3<sup>rd</sup> Party services integration



## Colleague and wayfinder

Find my colleague in a flexible office setup

## Optimal performance

Achieved through connectivity and advanced data analytics



## Seamless safety & security

Mobile access for employees and visitors





“I want high revenues and  
ensure optimal building value.”

– Owner/Investor

**SIEMENS**  
*Ingenuity for life*

Up to ...

**17%**

higher building value

Up to ...

**35%**

higher rent

Up to ...

**18%**

higher occupancy rate

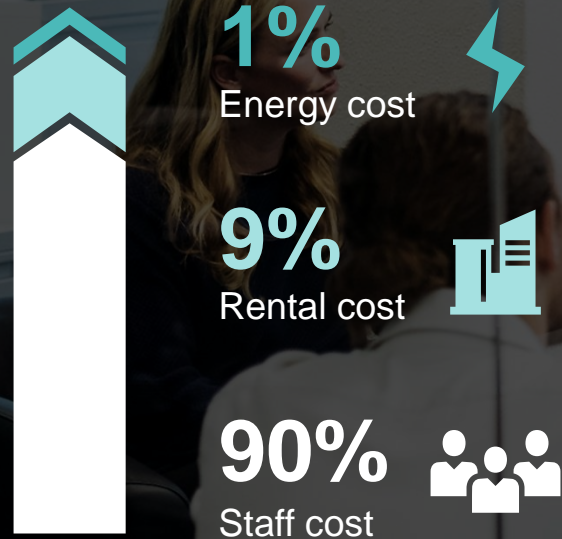
Source : JLL – Are smart buildings smart for  
business white paper 2016



# Tenant

## Business outcomes for corporate real estate

### Typical business operating costs<sup>1</sup>



Energy efficiency and sustainability



Efficient facility management – lower OPEX



Business growth



Increased productivity of employees, including health and well-being



Demonstrate image of uniqueness and corporate social responsibility – attract and retain talent



Safe and secure workplace

<sup>1</sup> A 10% variation applied equally to each cost has an impact that is far from equal  
Source: World Green Building Council – Health, well-being & productivity in Offices, 2014

# Development of the Future

Planning and building proper infrastructure

**“Edge Devices”  
(short life)**

**Sensors, edge computing, beacons, IoT devices**

**Data Analytics**

**Cloud hosting, data storage, data ownership, data analytics**

**System Layer  
(medium life)**

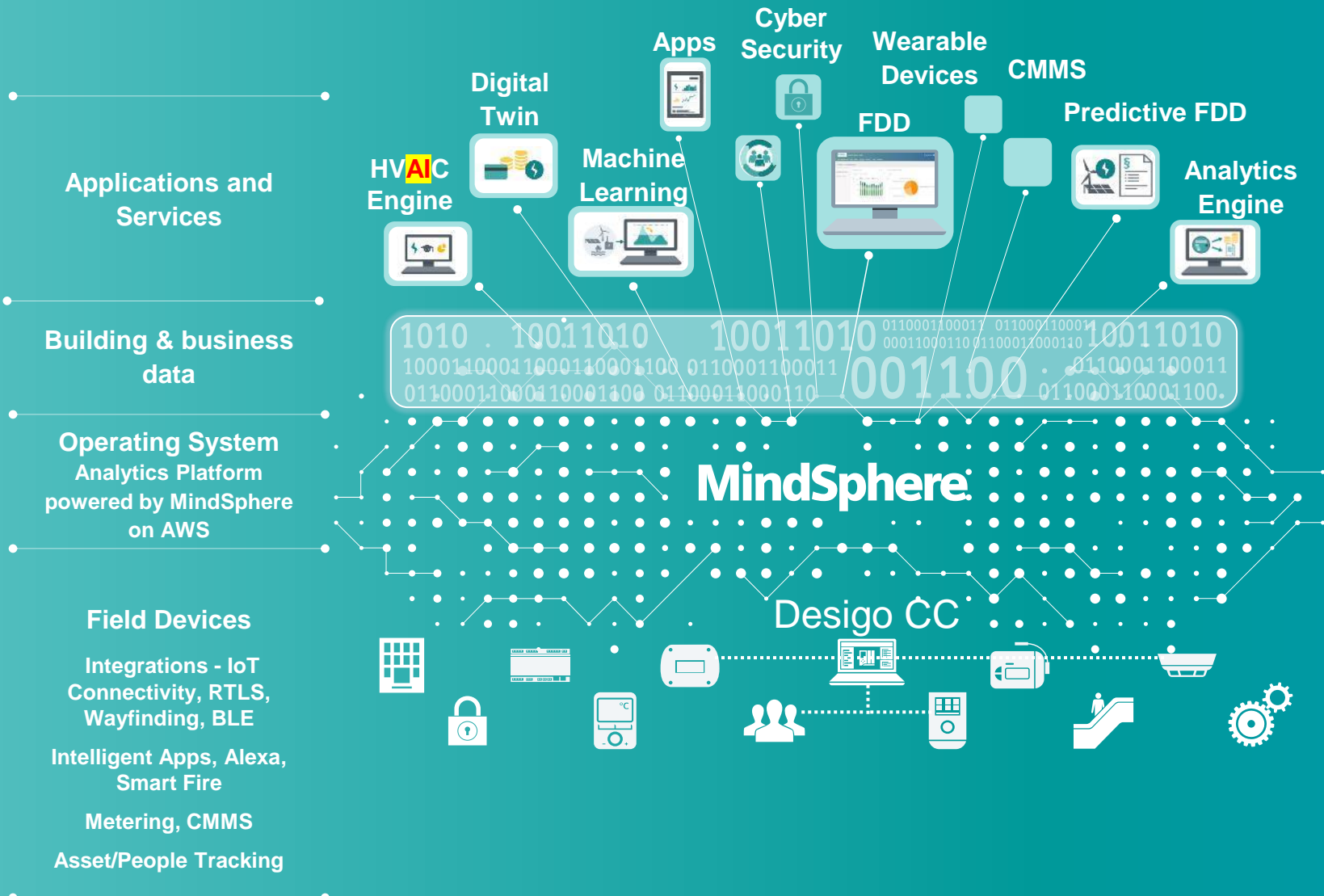
**Traffic mgt, parking, metering, building systems, fire life-safety,  
security and mass notification...**

**Infrastructure  
Layer (long life)**

**Water/sewer, natural gas piping, electrical grid, street/trail lighting,  
communications (fiber optics)...**

# Smart Office Building Vision

*Operational Efficiency + Occupant Experience = Smart Building*



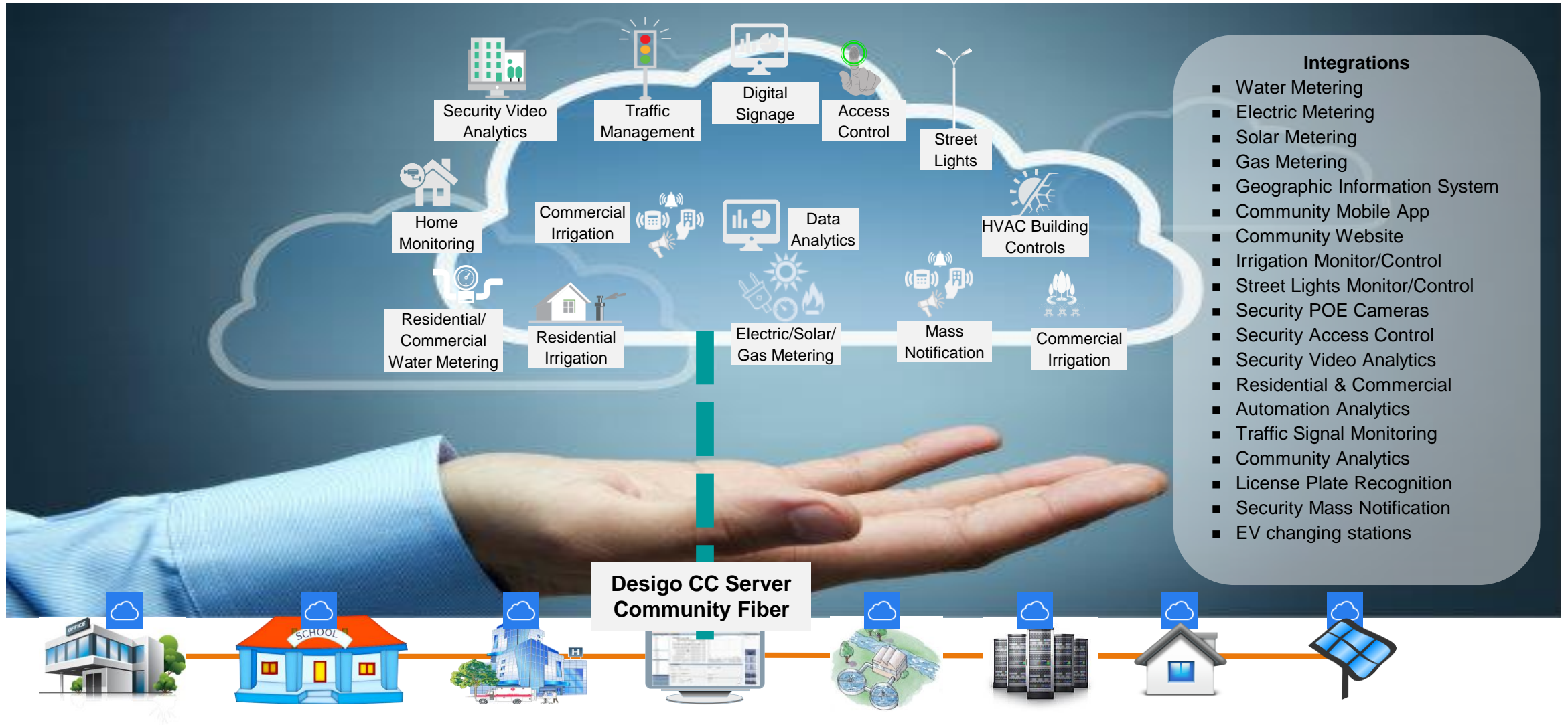
## Simplified Use Cases:

- Improve Workplace Productivity
- Improve Staff Efficiency
- Frictionless Entrance / Egress / Visitor Management
- Frictionless A/V Experience
- Provide Well Environment
- Attract New Talent – Retain Top Talent
- Improve Community Connection
- Enhanced Situational Awareness for Employee and Operations
- Ensure Motor Uptime – Eliminate Failure
- Reduce Maintenance Cost.
- Reduce Energy Cost
- Reduce Operational Cost
- HVAIC - Chiller Plant / AHU / VAV / DOAS Optimization Using Artificial Intelligence
- Reduce Construction Cost, Complexity, Time – Factory Direct
- Improve Commissioning Effectiveness / Continuous Application



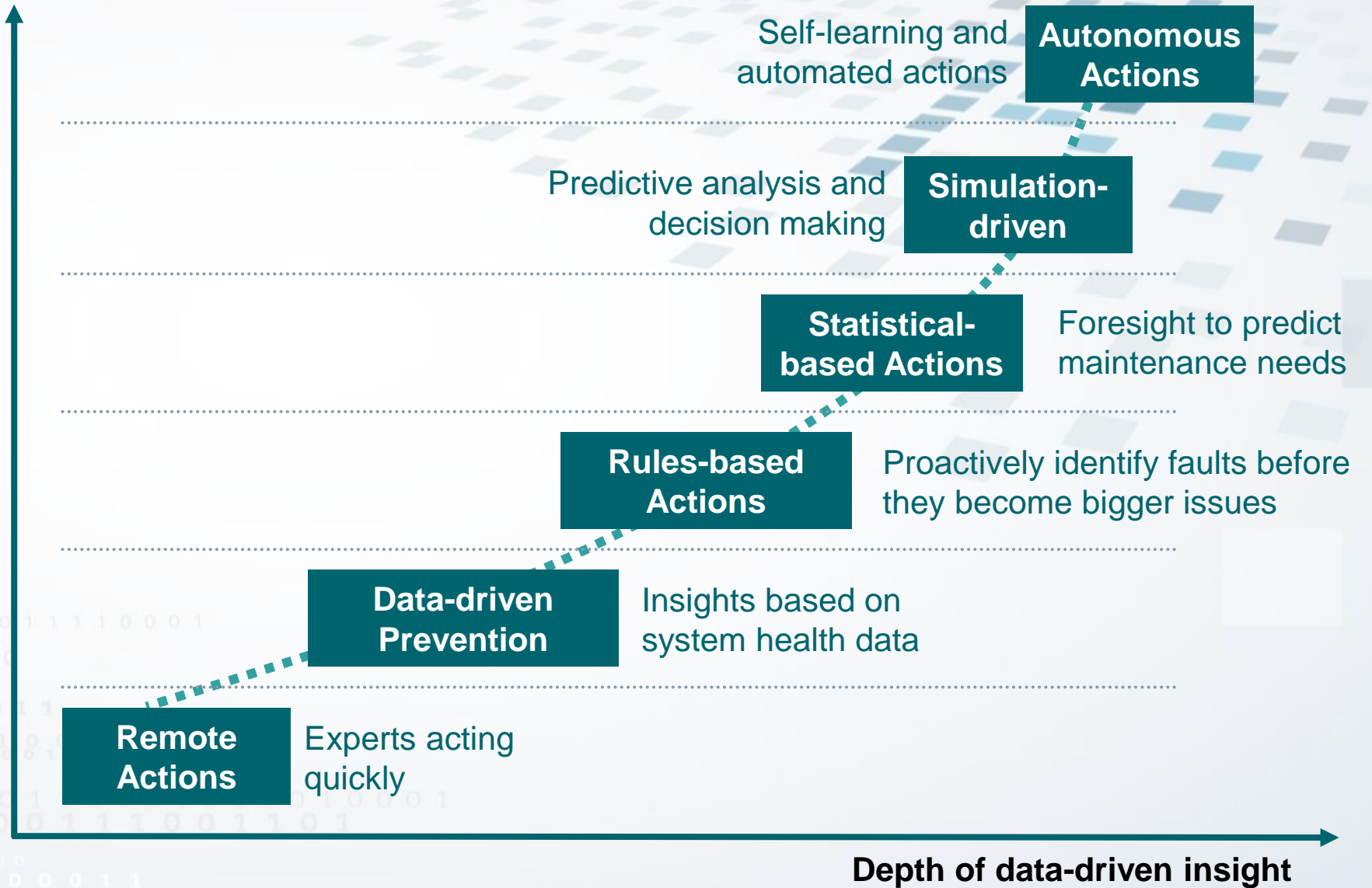
# Development of the Future

Digital framework

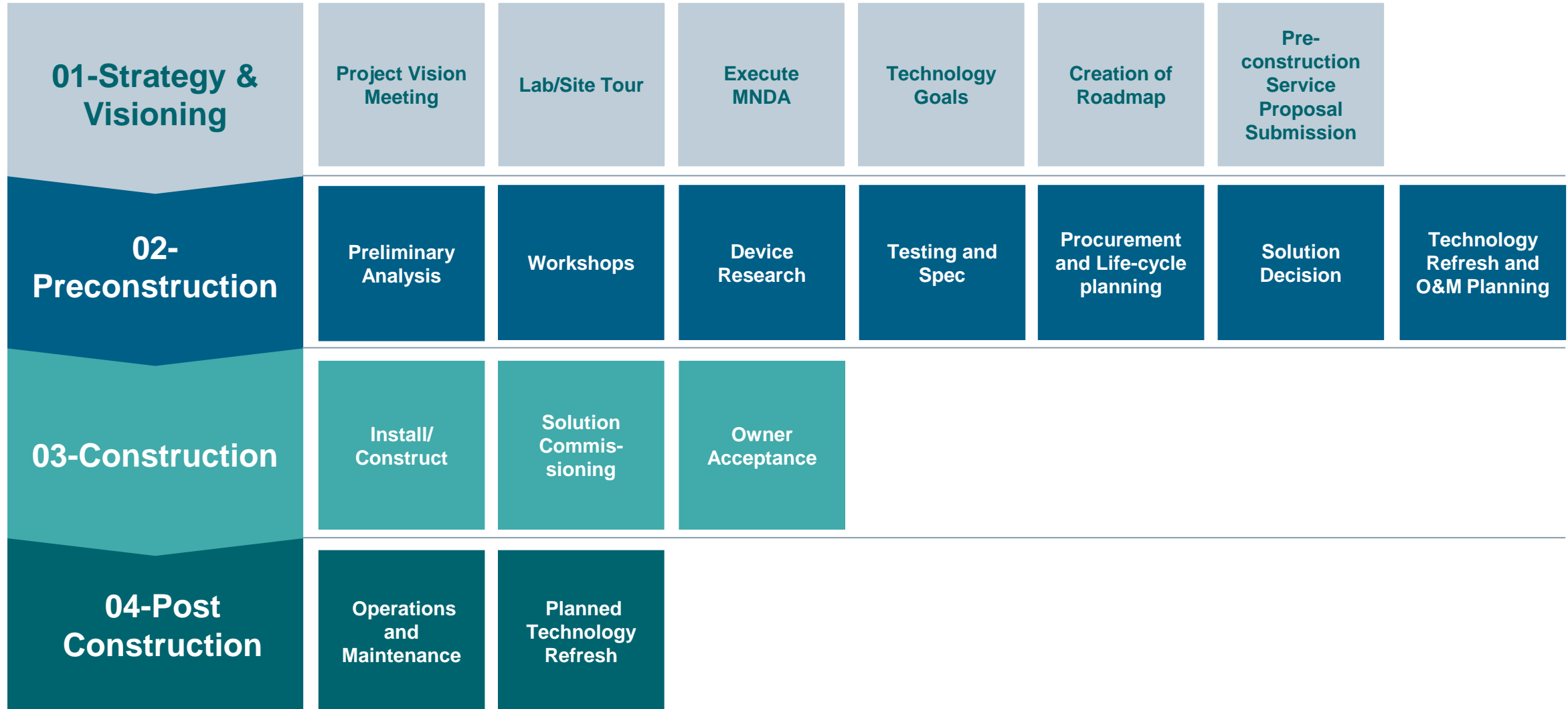


# Using Data & Smart Services

**Value**  
Decreased Cost  
Faster response  
Increased Performance



# Whole Building Integrated Design Approach





# Thank You

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