Mapping the Way Forward

Aligning Natiaonl Geospatial Sector and Urban Development through Technology

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FGIC establishment and Objectives

Being convinced with the importance of the geospatial sector for the country , the legislator issued the law no 5 in 2019 for the establishment of the FGIC.

FGIC conducted a study of the current situation of the sector covering around 100 entities in the country and drew a strategic plan for 2023-2026 to organize , develop, and sustain the geospatial sector.

Create and issue policies, legislations, and laws necessary to govern the geospatial sector in United Arab Emirates.

Design and create a national geospatial shared data platform to ease access to geospatial data and information in accordance with international standards. Achieve official national reference of geographical names, official maps, and unified national addressing system

Increase spatial awareness and knowledge in United Arab Emirates through building national technical capabilities and raise spatial awareness in government and private entities and society.
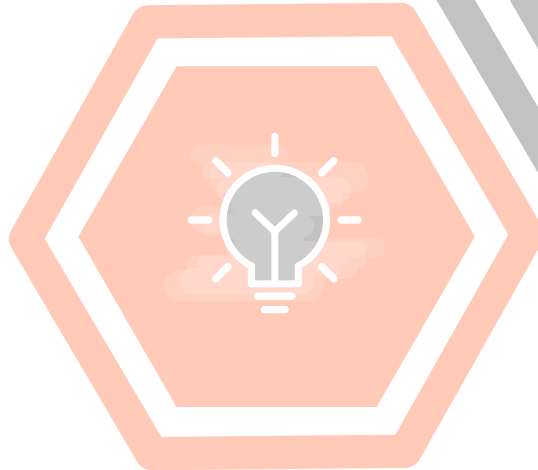
FGIC Strategic Goals

Geospatial Regulatory Environment

Develop the Geospatial Regulatory Environment in the U.A.E.

Geospatial Infrastructure System

Establish and develop the geospatial infrastructure system

Geospatial Awareness

Raise Geospatial awareness and knowledge

The Importance of Digital Twin in Geospatial Sector

› Predictive Analytics and & Assessment

02

› Improved Planning & Design
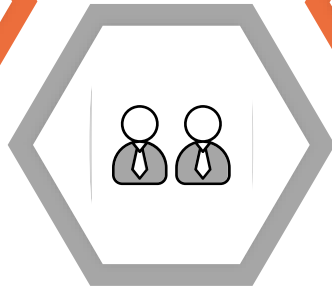
04

› Cost and Time Efficiency

06

› Real-Time Monitoring & Analysis

01

› Collaboration & Data Sharing

03

› Enhanced Spatial Understanding

05

› Sustainable Resource Management

07

The Benefits of Digital Twin

Data Visualization & Analysis

01

Enhanced Asset Management

07

Planning & Simulation

02

Cost & Time Efficiency

06

03

Monitoring & Predictive Analytics

Collaboration & Communication

05

04

Risk Mitigation & Resilience
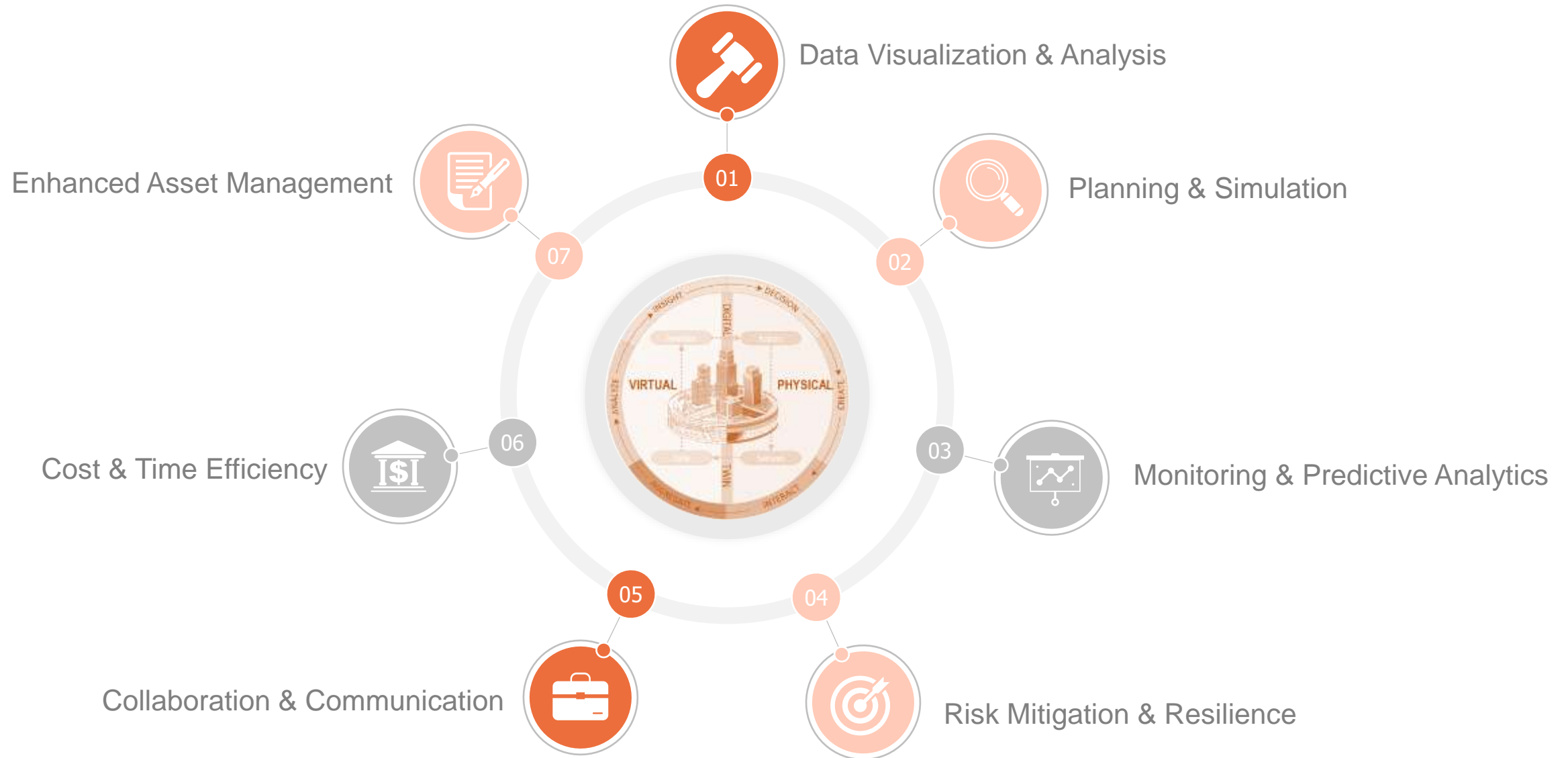
City Planning & Digital Twin

1. Data-Driven Decision Making

› integrate real-time data from various sources
› Enables informed decision-making
› Resource allocation

2. Visualization & Simulation

› Visualize and simulate different planning scenarios
› Provide a virtual environment to test design and evaluate impact.
› Understand the implications of urban development

3. Urban Design & Land Use Planning

› Facilitate by creating 3D models of the city
› Asses the impact of proposed developments
› Efficient sustainable land use, improved infrastructure planning, and optimized use of resources.

7. Long-Term Sustainability

› Analyse the environmental impact
› Assess energy consumption
› Evaluate emissions
› Optimize resource management

6. Citizen Engagement & Participation

› Provide a platform for collaboration and participation
› Fosters transparency, inclusivity, and empowers citizens.
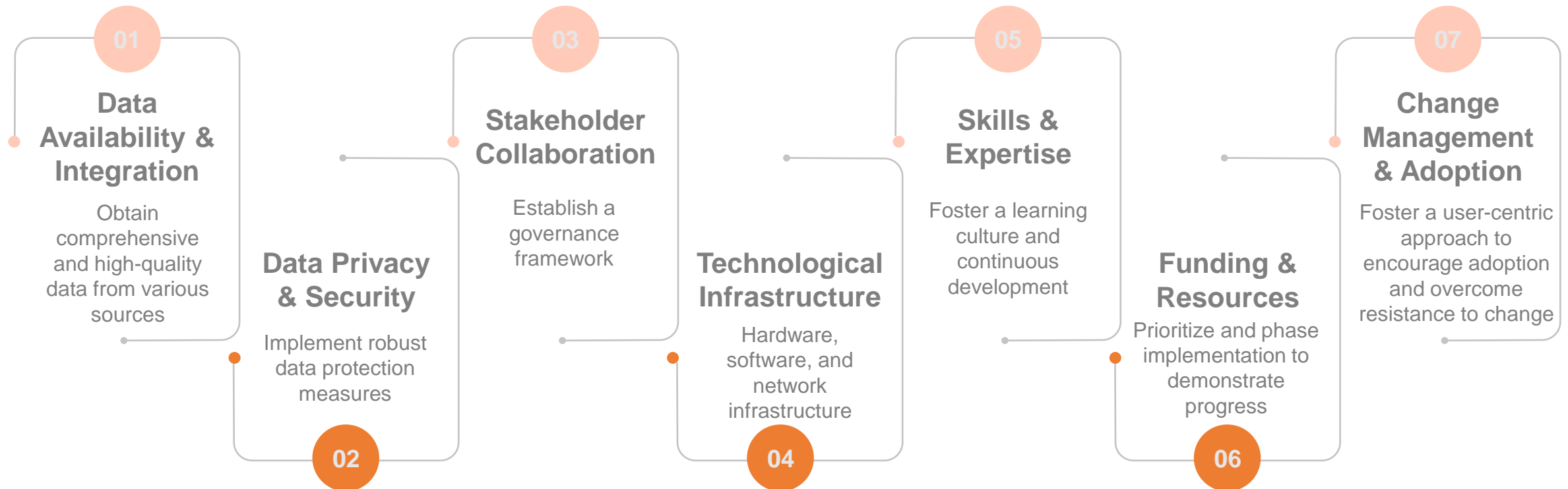
5. Resilience & Risk Management

› Simulate and evaluate the city's response to risks and hazards.
› Identify vulnerabilities, developing contingency plans, and enhance the city's resilience.

4. Infrastructure Optimization

› Monitor and analyze the performance of infrastructure systems in real-time, identify bottlenecks, and optimize operations
› Include all infrastructure components.

Challenges on City-State Level

01

Data Availability & Integration

Obtain comprehensive and high-quality data from various sources

02

Data Privacy & Security

Implement robust data protection measures

03

Stakeholder Collaboration

Establish a governance framework

04

Technological Infrastructure

Hardware, software, and network infrastructure

05

Skills & Expertise

Foster a learning culture and continuous development

06

Funding & Resources

Prioritize and phase implementation to demonstrate progress

07

Change Management & Adoption

Foster a user-centric approach to encourage adoption and overcome resistance to change

How to Overcome Digital Twin Challenges?

Clear Vision & Objectives
- Establish a clear vision and define specific objectives.
- A guiding framework for decision-making.
- Prioritize efforts and resources.

Technology & Infrastructure
- Evaluate and select appropriate technologies.
- Collaborate with technology providers and leverage existing infrastructure.

Funding & Sustainability
- Secure funding from various sources.
- Develop a sustainable business model.
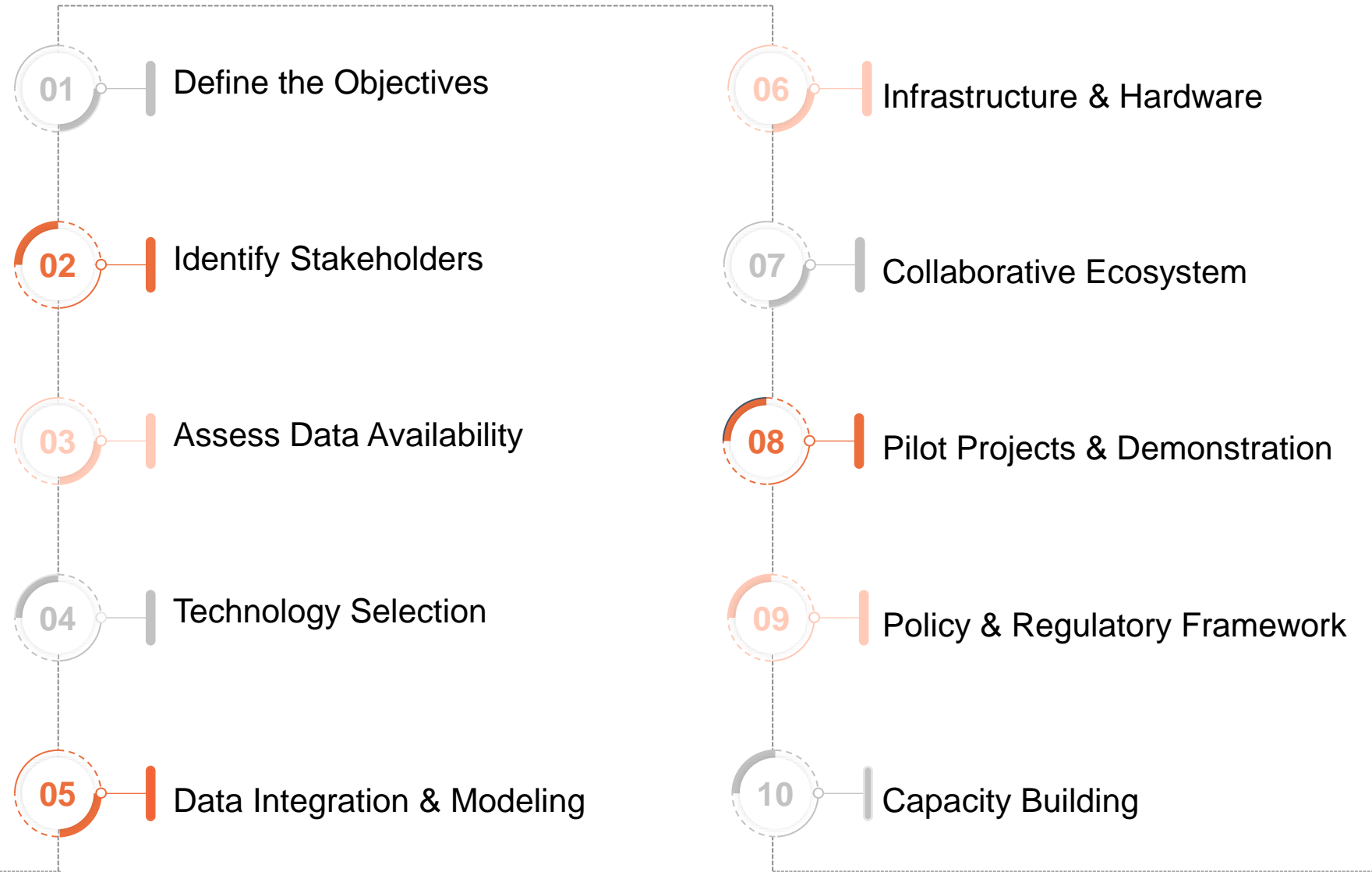- . Highlight the potential ROI.

Stakeholder Engagement
- Foster a collaborative environment.
- Identify stakeholders

Skilled Workforce
- Invest in building a skilled workforce.
- Provide training and capacity-building programs.
- Foster a culture of continuous learning and innovation.

Change Management
- Implement effective change management strategies.
- Communicate the value proposition and benefits.

Robust Data Management
- Address data challenges by implementing effective data management strategies
- Develop data governance policies.
- Invest in data infrastructure.

Pilot Projects & Phased Approach
- Start with small-scale pilot projects.
- Adopt a phased approach to gradually expand the scope and scale
- Adjust based on feedback and results

Knowledge Sharing
- Foster collaboration and knowledge sharing.
- Establish partnerships
- Encourage cross-sector collaboration.

How to Start?

01 Define the Objectives

02 Identify Stakeholders

03 Assess Data Availability

04 Technology Selection

05 Data Integration & Modeling

06 Infrastructure & Hardware

07 Collaborative Ecosystem

08 Pilot Projects & Demonstration

09 Policy & Regulatory Framework

10 Capacity Building

Thank you

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