



# GROUP ASSIGNMENT

## IMPLEMENTING THE SMART URBAN MANAGEMENT SYSTEM IN METROVILLE CITY

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# METROVILLE CITY'S OVERVIEW

- Founded in 1950
- A hub for technology and innovation due to its strategic location and thriving economy
- The Metroville City Council plays a critical role in overseeing policy implementation across various urban projects



# STAKEHOLDERS



## INTERNAL

- Mayor and City Leadership
- City Council
- Departments Heads and Senior Managers
- Employees and Staffs.



## EXTERNAL

- Residents and Community Groups
- Technology Partners and Vendors
- Regulatory Bodies
- Funding Organizations and Investors

# VISION



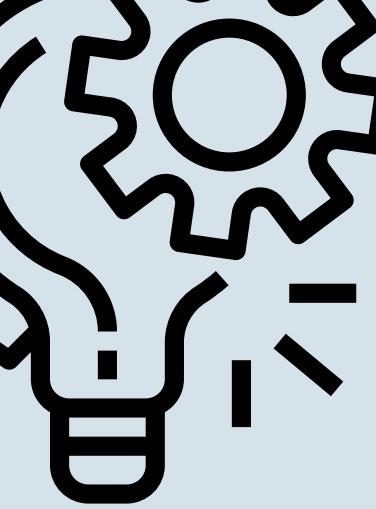
TECHNOLOGICAL  
INNOVATION



SUSTAINABILITY AND  
ENVIRONMENTAL  
STEWARDSHIP



ENHANCED  
QUALITY OF LIFE  
FOR RESIDENTS



# BUSINESS PROBLEMS

LEVEL OF PRIORITY	JUSTIFICATION
HIGH	High-priority problems collectively impact residents, and city departments by diminishing the quality of public services, raising operational costs, and undermining public safety and economic growth
MEDIUM	Problems categorized as medium priority indirectly affect Metroville City's operational efficiency and sustainability.
LOW	Low-priority problems may not immediately disrupt city operations

# BUSINESS PROBLEMS

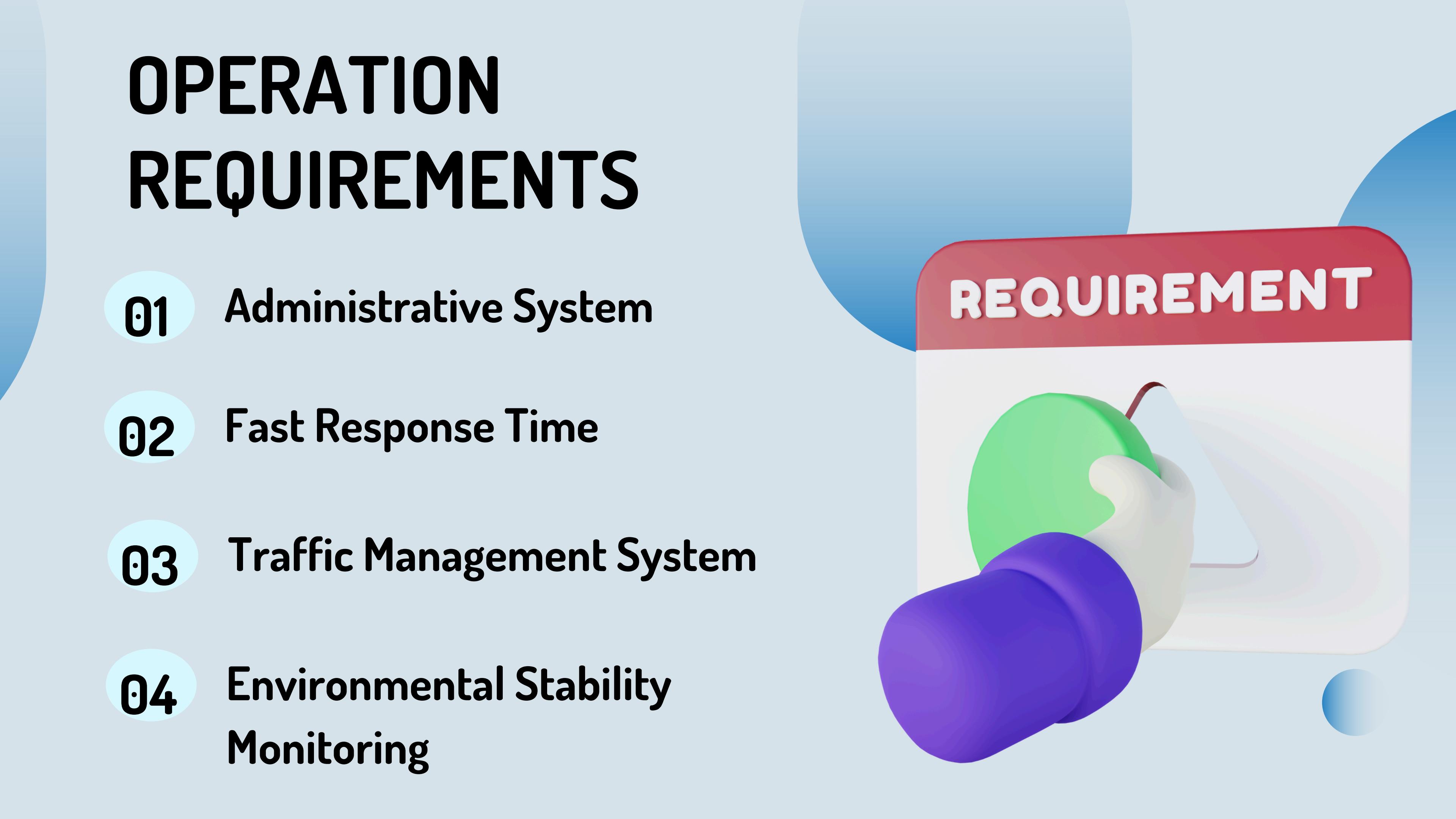
Key Problems	JUSTIFICATION	Priority Level	SUMS Needed
Aging Infrastructure	The outdated infrastructure is critical for public safety and the functioning of basic services.	HIGH	Smart Monitoring Systems Eg: IoT sensor
Data Management and Real-Time Analytics	The absence of real-time data collection and analytics	HIGH	AI-driven analytics and Centralized Data Repository
Traffic Congestion	Traffic congestion directly impacts the quality of life	HIGH	Intelligent Transportation Systems (ITS): real-time data collection and analysis to manage traffic
Fragmented Administrative Operations	The lack of integration across city departments	HIGH	Integrated platform that consolidates data from various city departments into a single system with real-time data and AI-driven analytics

# BUSINESS PROBLEMS

Key Problems	JUSTIFICATION	Priority Level	SUMS Needed
Environmental Monitoring and Resource Management	Environmental issues like pollution and resource depletion are long-term concerns	MEDIUM	Environmental Monitoring System based on IoT sensors: real-time data on air and water quality, waste management, and energy consumption
Regulatory Compliance	Failure to comply with regulations could lead to penalties, delayed projects, and increased scrutiny from regulatory bodies.	MEDIUM	Automating compliance tracking and reporting with real-time data management capabilities
Integration of New Technologies	Metroville's outdated infrastructure is not equipped to support modern technological demands.	MEDIUM	IoT and Cloud Computing enables scalability and enhances city services
Public Engagement and Transparency	Public engagement does not pose an immediate threat to city operations	LOW	IoT and 5G to gather real-time feedback and forecasting the potential impacts of proposed measures

# OPERATION REQUIREMENTS

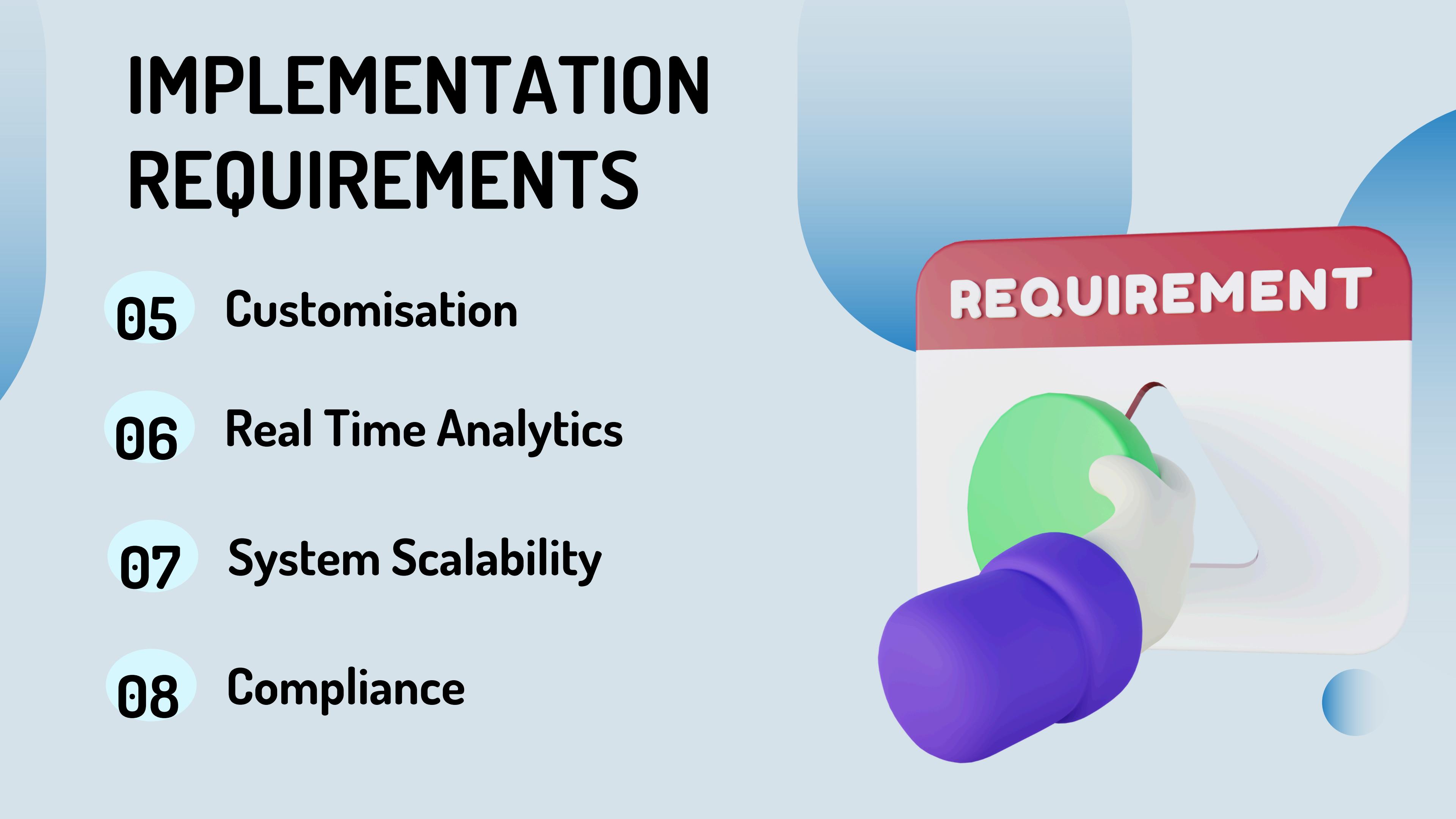
- 01 Administrative System
- 02 Fast Response Time
- 03 Traffic Management System
- 04 Environmental Stability Monitoring



**REQUIREMENT**

# IMPLEMENTATION REQUIREMENTS

- 05 Customisation
- 06 Real Time Analytics
- 07 System Scalability
- 08 Compliance



**REQUIREMENT**



# Vendor Selection Criteria for SUMS Implementation

01

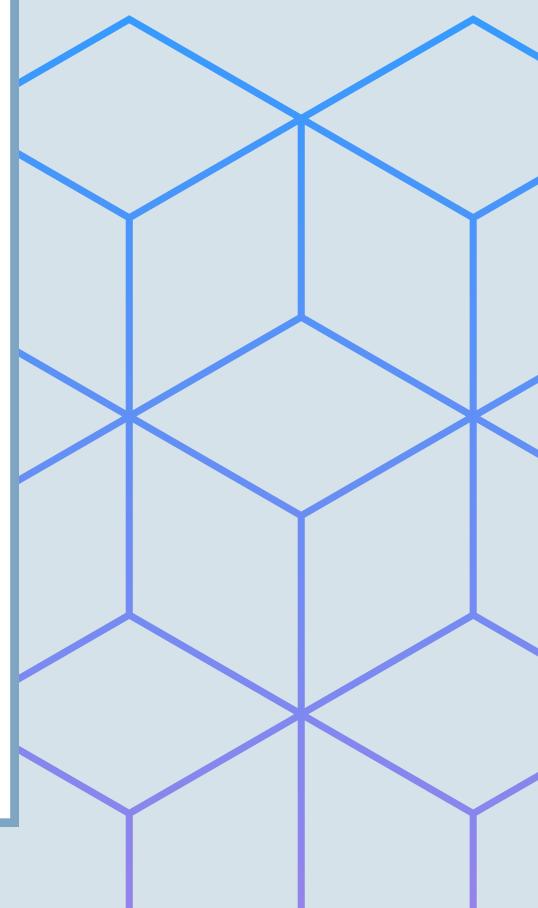
## Customisation & Flexibility

- Addressing Specific Urban Challenges
- Adapting to Technological Advancements
- Enhancing User Experience

02

## Scalability

- Helps Metroville integrate:
- Additional IoT devices
  - AI systems
  - Data analytics tools





# Vendor Selection Criteria for Technical Requirements & Long-Term Viability

01

## Data Integration Capabilities

- Centralise data
- Enable better decision-making using real-time analytics

02

## Cybersecurity & Compliance

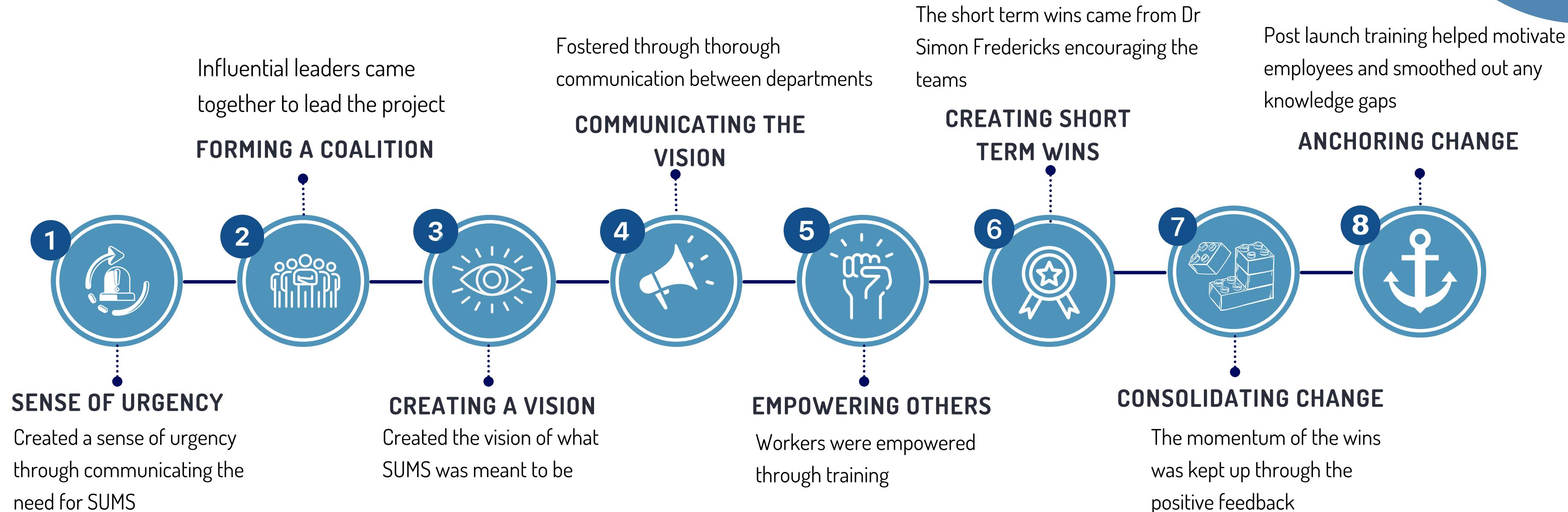
- Offer strong security, threat detection
- Compliance with data privacy regulations to handle sensitive data

03

## Post-Implementation Support

- Provide extensive post-implementation services
- Eg: regular software updates and feature installations

# Change Management



# RISKS MATRIX

	Insignificant 1	Minor 2	Significant 3	Major 4	Severe 5
5 Almost Certain	Medium 5	High 10	Very high 15	Extreme 20	Extreme 25
4 Likely	Medium 4	Medium 8	High 12	Very high 16	Extreme 20
3 Moderate	Low 3	Medium 6	Medium 9	High 12	Very high 15
2 Unlikely	Very low 2	Low 4	Medium 6	Medium 8	High 10
1 Rare	Very low 1	Very low 2	Low 3	Medium 4	Medium 5

Figure 1: Risk matrix table

## EXTREME RISKS IN PRE GO-LIVE PHASE

- Lack of top management support
- Data loss or corruption during migration

## EXTREME RISKS IN POST GO-LIVE PHASE

- Resistance to change among users
- Cybersecurity threats

# CONTINGENCY PLAN

## PRE GO-LIVE



### TOP MANAGEMENT ENGAGEMENT STRATEGIES

1. Provide incentives to boost engagement



3. Form a steering committee to distribute responsibility



2. Replace disengaged leaders with more committed executives



### DATA BACKUP AND RECOVERY PLAN

2. Backup system data before migration



1. Develop a rollback plan



3. Conduct mock data migrations

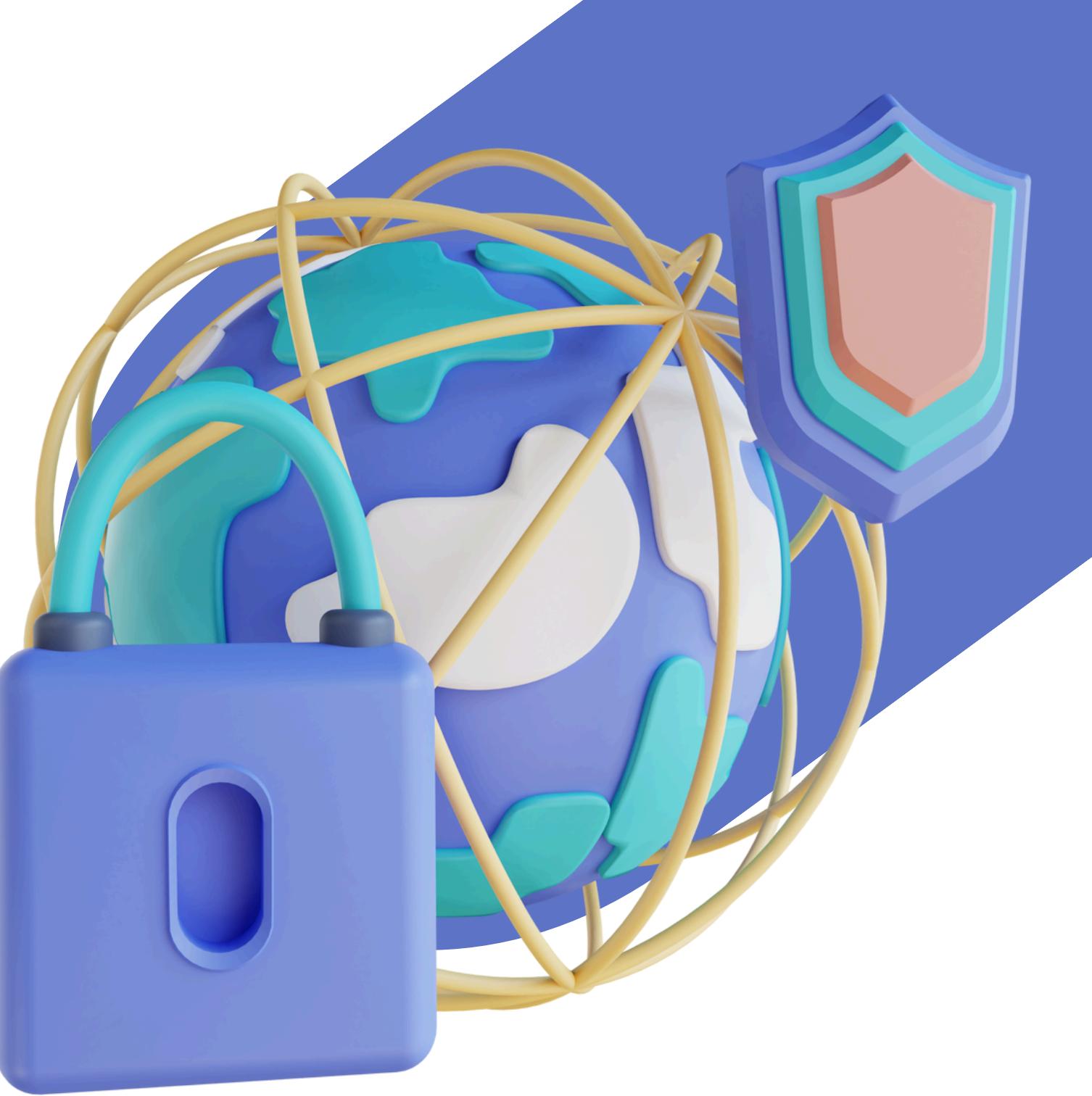


# CONTINGENCY PLAN

## POST GO-LIVE

### CYBERSECURITY MEASURES

- 1 Create an Incident Response Plan (IRP)
- 2 Perform vulnerability assessments regularly
- 3 Develop a comprehensive disaster recovery plan



### USER FEEDBACK AND CHANGE MANAGEMENT PLAN

- 1 Create a feedback loop that allows users to report issues
- 2 Establish specialised team for monitoring and revising feedbacks

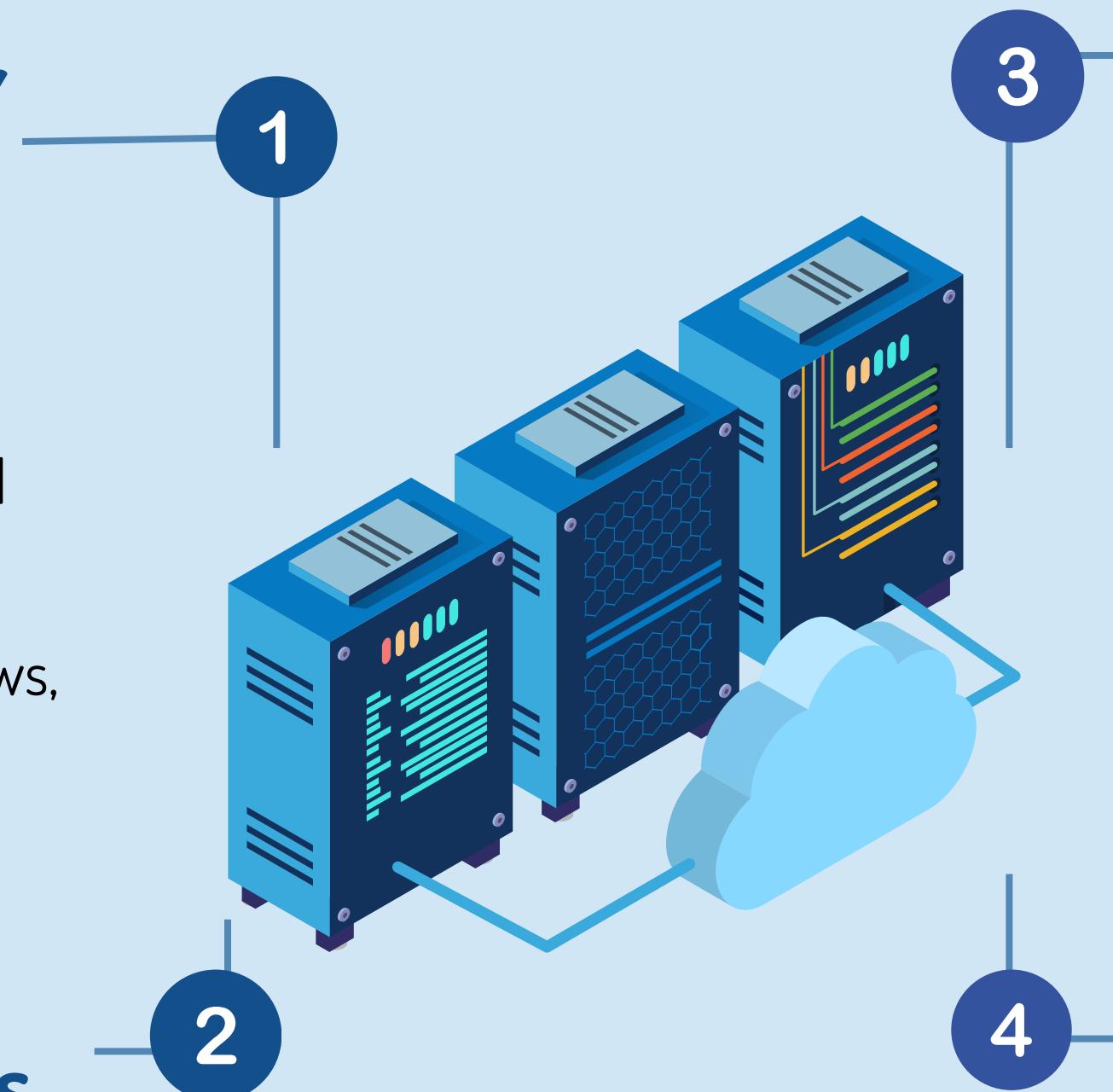
# VALUE REALISATION

## TRAFFIC AND PUBLIC SAFETY MANAGEMENT

- Integrates traffic data and allows speed data entry
- Real-time alerts for congestion and accidents (Oracle, 2022)
- Supports compliance with traffic laws, safety standards and reporting requirements (NetSuite, 2023)

## ENVIRONMENTAL SUSTAINABILITY INITIATIVES

- Monitors pollution levels, energy use and sustainability goals in real time (Almomen, 2016)
- Supports compliance with environmental regulations and sustainability standards



## INFRASTRUCTURE UPGRADES AND MAINTAINANCE

- Utilises IoT devices for real-time infrastructure conditions (De bari, 2024)
- Predicts and automates maintenance for timely repairs (Hakimi et al., 2023)
- Ensures compliance with standards and safety codes

## CRISIS RESPONSE AND MANAGEMENT

- Tracks crisis in real-time, enabling rapid response (Oracle, 2022)
- Integrated data from multiple sources to support decision making (Oracle, 2022)

# THE SUITABILITY OF SAP S4/HANA FOR METROVILLE'S PROBLEMS

## CAPABILITIES

- SCALABILITY
- REAL-TIME COMPLIANCE
- REPORTING AND TRACKING
- TRAFFIC MANAGEMENT
- ENVIRONMENT/SUSTAINABILITY
- MONITORING
- FLEXIBLE CUSTOMIZATION
- REAL-TIME DATA AVAILABILITY
- FAST RESPONSE TIME
- CENTRALIZED DATA MANAGEMENT

## WEAKNESS

- HIGH COST AND TIME CONSUMING
- COMPLEX CONFIGURATION
- THIRD-PARTY INVOLVED
- INTEGRATION WITH AVAILABLE TRAFFIC INFRASTRUCTURE NEEDED
- COMPLEX DATA INTEGRATION
- HIGH LEVEL INFRASTRUCTURE NEEDED



# RECOMMENDATIONS

# **FOR BUSINESS REQUIREMENT**

- Upgrade SAP S4/HANA focusing on cloud capabilities
  - Upgrade compliance management tools
  - Integrate SAP with IoT-enabled traffic management
  - Implement SAP's EHS solutions
  - Use SAP's Flexible Architecture
  - Use SAP HANA's in-memory computing
  - Use SAP Data Hub
  - Use SAP Workflow Management



# FOR MAJOR CHALLENGES

- Upgrade SAP S4/HANA solution with scalability
  - Apply real-time analytics features
  - Use traffic management systems
  - Upgrade integration capabilities
  - Use Environmental monitoring applications
  - Use compliance features
  - Use a flexible implementation strategy
  - Use a citizen engagement module

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THANKS FOR  
LISTENING!

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**Any Question?**

