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Balady
by NHC Innovation

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GM Balady

AI-Driven Smart Cities & Compliance: Balady & Aaseya's Journey in Inspections, CRM, and Urban Transformation

Pega World 2025 | Las Vegas

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Vision

Excellence To enhance daily life by seamlessly connecting people and organizations with essential and lifestyle services

Mission

Improving Drive innovation, support local communities and SMEs, improve accessibility and convenience, and create a dynamic ecosystem that enhances quality of life and fosters economic growth

Balady's Strategic Focus

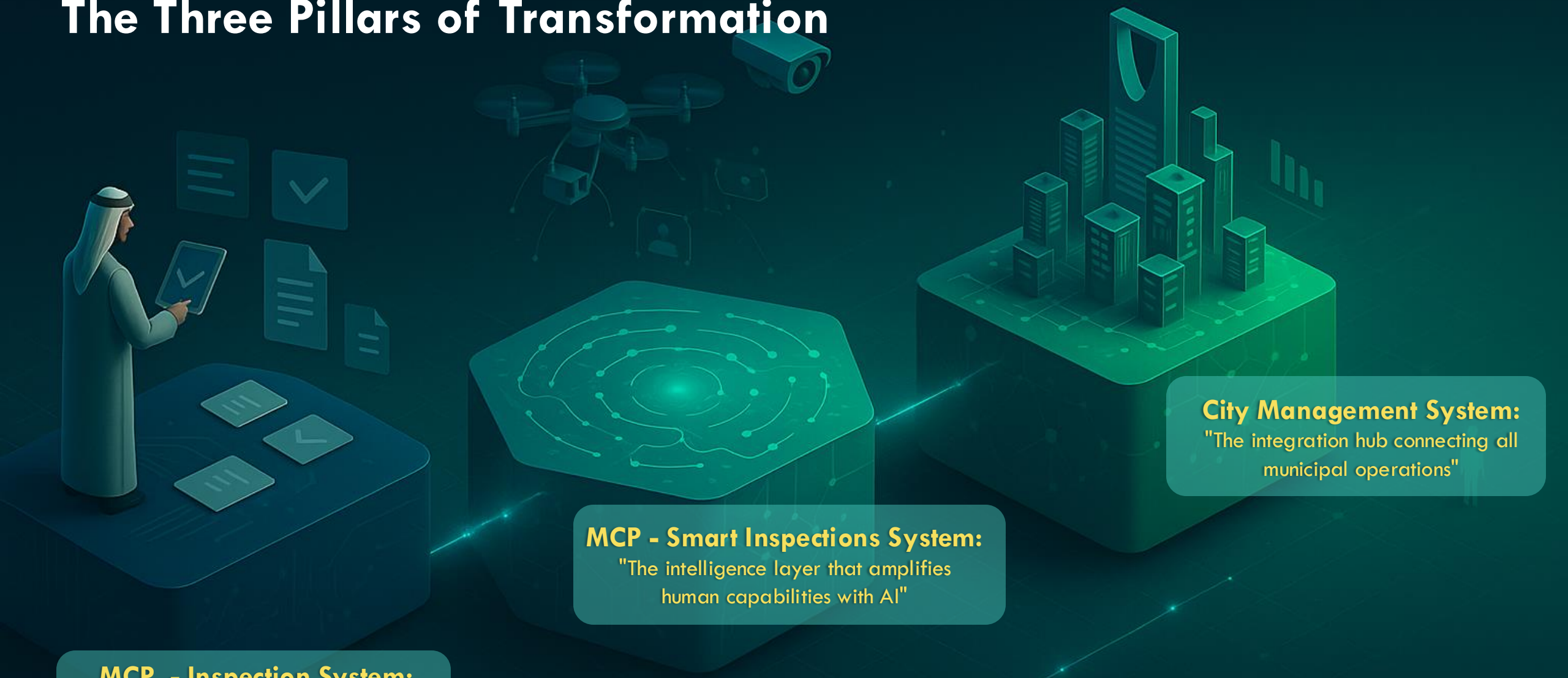
Growth	Optimization	Satisfaction	Sustainability

Expected Impact

Enhance the quality of service	Foster a culture of innovation	Elevate customer satisfaction	Improve organizational efficiency

Section 1: Celebration of Success – Recap of 2021-2024

The Three Pillars of Transformation



MCP - Inspection System:
"The foundation that digitized inspection processes across the Kingdom"

MCP - Smart Inspections System:
"The intelligence layer that amplifies human capabilities with AI"

City Management System:
"The integration hub connecting all municipal operations"

Transformation Impact – By the Numbers

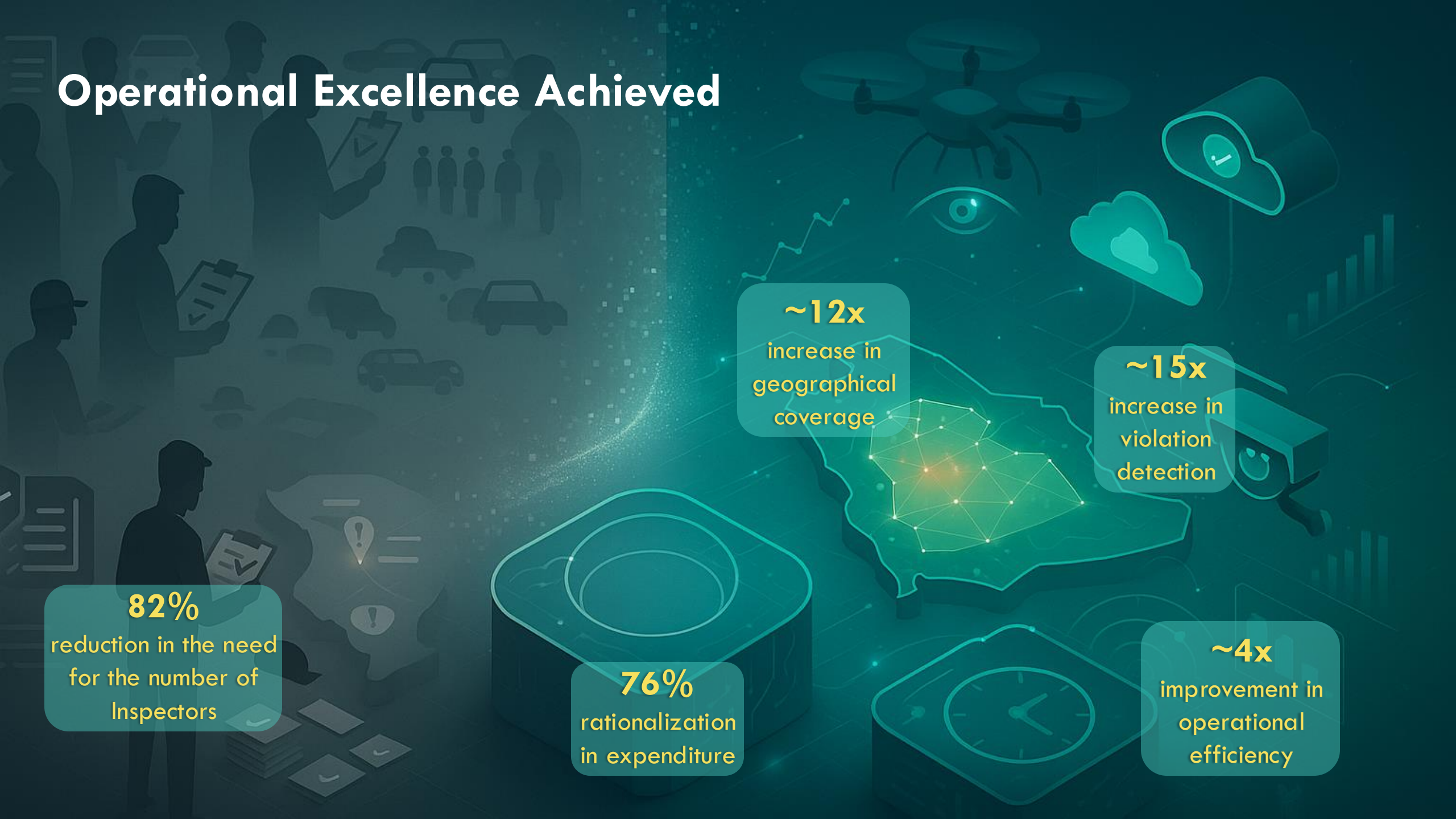
2+ Billion SAR
in revenue generated since 2021

6000+
users across the Kingdom

17 municipalities &
269 sub-municipalities
transformed

67%
reduction in processing time

Operational Excellence Achieved



~12x
increase in geographical coverage

~15x
increase in violation detection

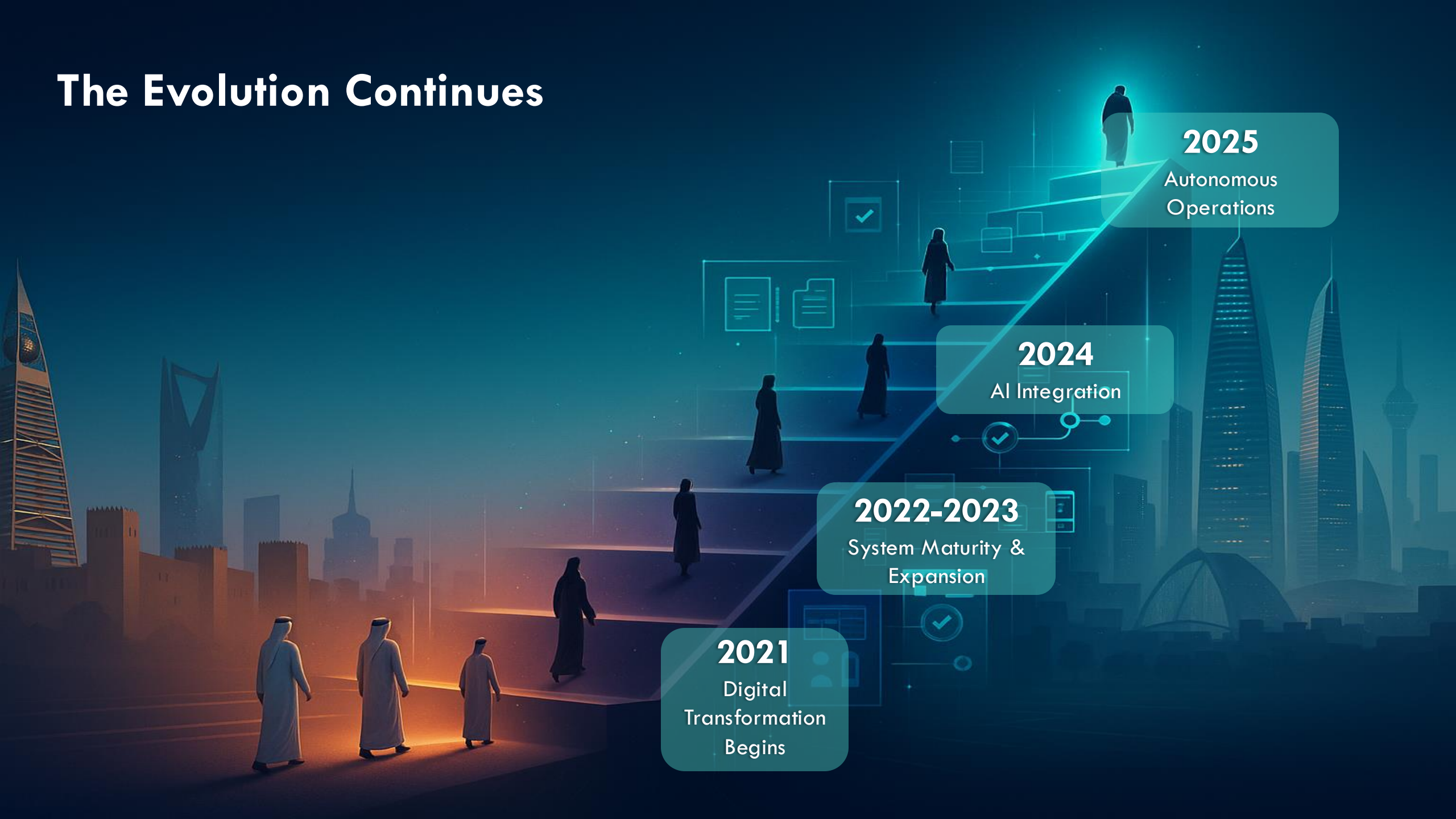
82%
reduction in the need for the number of Inspectors

76%
rationalization in expenditure

~4x
improvement in operational efficiency

Section 2: From Automated to Autonomous

The Evolution Continues

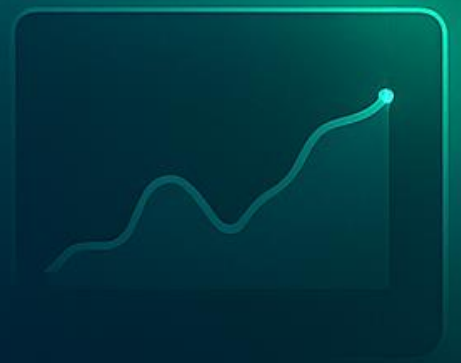


Automated Systems

Rules-based | Human-guided | Predefined Patterns

Autonomous Systems

Self-learning | Adaptive
Predictive | Minimal Human Intervention



The Autonomous Vision for Balady

Section 3: Pega Blueprint – Our Strategic Compass

Introducing Pega Blueprint

- Collaborative workspace for business and IT alignment
- Visual requirements capture with direct stakeholder input
- Accelerated application development through guided processes
- Seamless transition from concept to implementation

Pega Blueprint in Action at Balady

SWA Integration with Momtathel for Inspection Review and Violation Processing
The Saudi Water Authority (SWA) intends to extend the usage of Momtathel to manage the inspection review and violation approval process.

1. Inspection & Auditing Process
- After an inspection visit is completed, the Inspection Manager reviews it.
- Once approved, the visit is routed to an Auditor, whose responsibility is to ensure all findings are compliant and legally valid.
- After auditor confirmation:
  - Violation details are sent via API to SWA.
  - SWA sends an SMS to the violator containing a URL to view the violation details.
  - The violator is required to submit a response or justification.

2. Violator Response & SLA
- There is an SLA of 5 days for the violator to respond.
- Upon receiving a response, SWA pushes it to Momtathel via API.
- If no response is received within the SLA, the case is routed to the Review and Approval Committee, based on the spatial jurisdiction.

3. Committee Review Process
Each committee includes:
- A Head
- Main Members
- Backup Members (activated as needed)
- One or more Secretaries

Role: Committee Secretary
A secretary can:
- Pick the visit from the workbasket.
- Review the case and take one of the following actions:

Actions:
1. Mark as No Violation (with justification)
   - SWA sends an SMS notification to the violator.
2. Mark as Violation
   - Secretary prepares a decision draft.
   - The draft is routed to committee members (head, main, or active backup) for voting.

4. Committee Voting
Each committee member can vote:
1. Violation
2. No Violation
3. Conflict of Interest
- The final decision is based on a majority vote.
- The Secretary can withdraw the draft during voting, before a final decision is made.

Blueprint Benefits Realized

70%
faster application development cycle

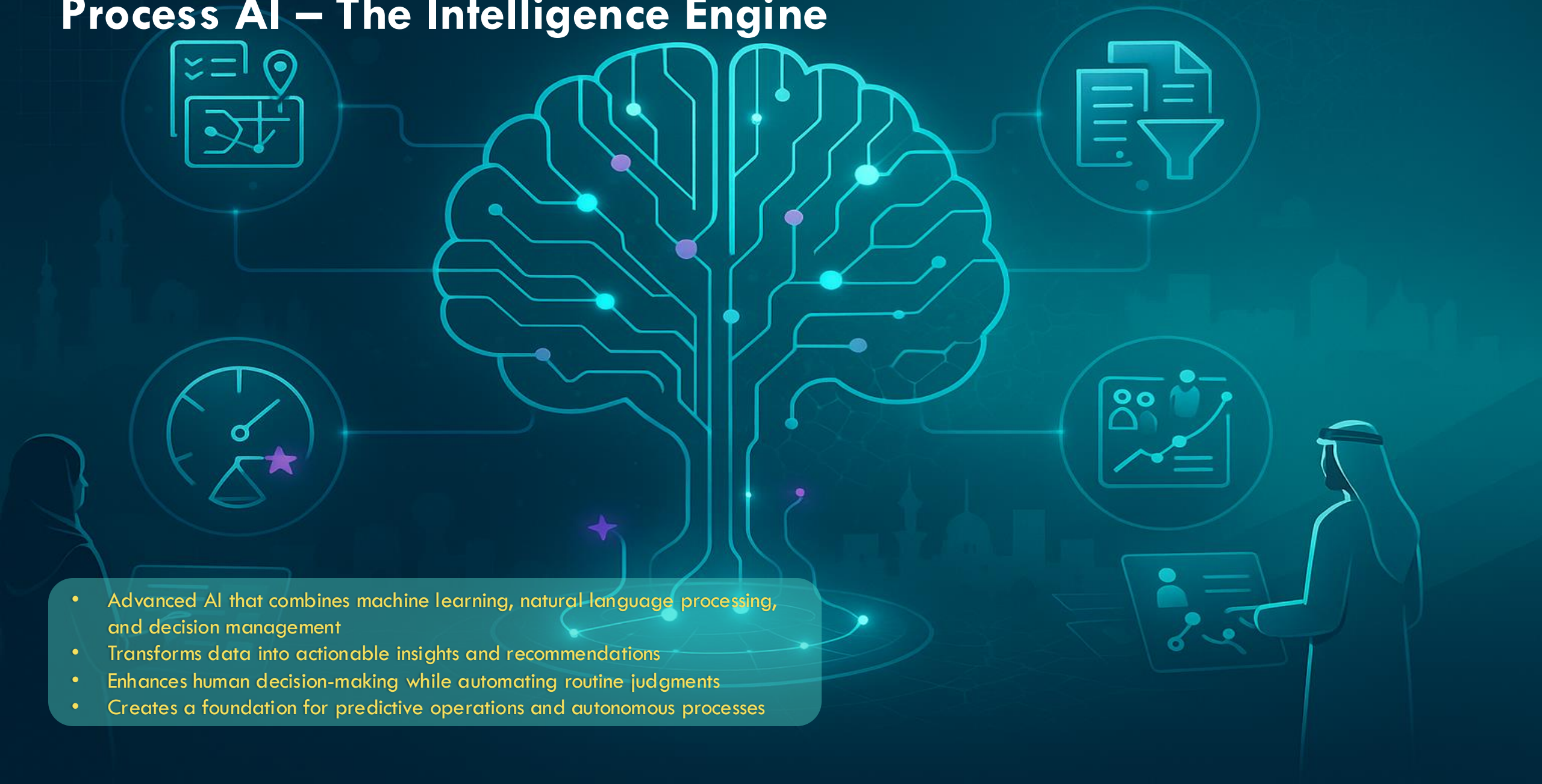
85%
reduction in requirement misalignment

40%
increase in stakeholder satisfaction

60%
decrease in compliance-related delays

Section 4:
Pega Process AI –
Intelligent Operations

Process AI – The Intelligence Engine



- Advanced AI that combines machine learning, natural language processing, and decision management
- Transforms data into actionable insights and recommendations
- Enhances human decision-making while automating routine judgments
- Creates a foundation for predictive operations and autonomous processes

Process AI Uses Cases

Inspection Time Estimation

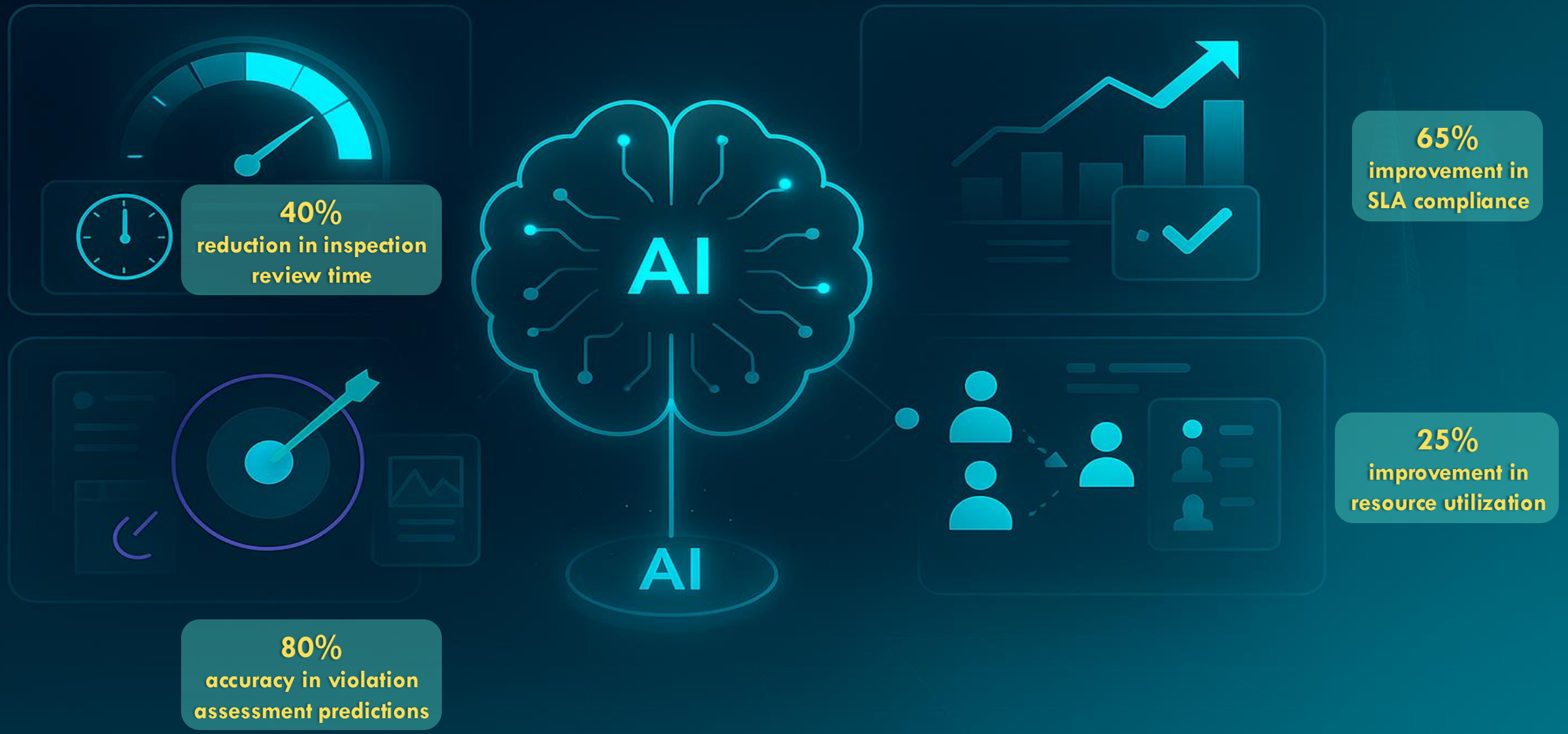
Violation Decision Support

AI

Objection Resolution

SLA Breach Prediction & Intelligent Routing

Process AI – The Results



40%
reduction in inspection review time

65%
improvement in SLA compliance

80%
accuracy in violation assessment predictions

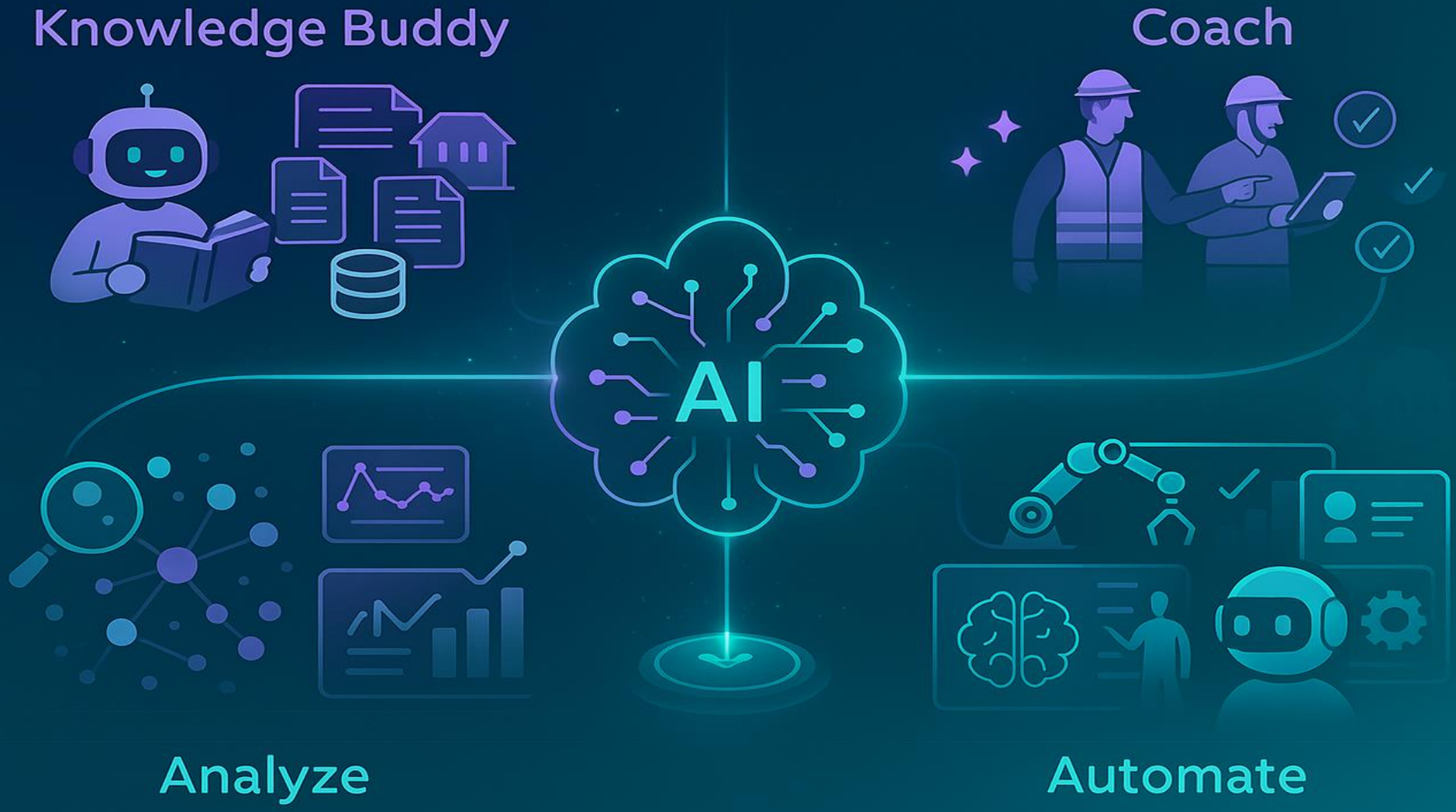
25%
improvement in resource utilization

Section 5: The Future

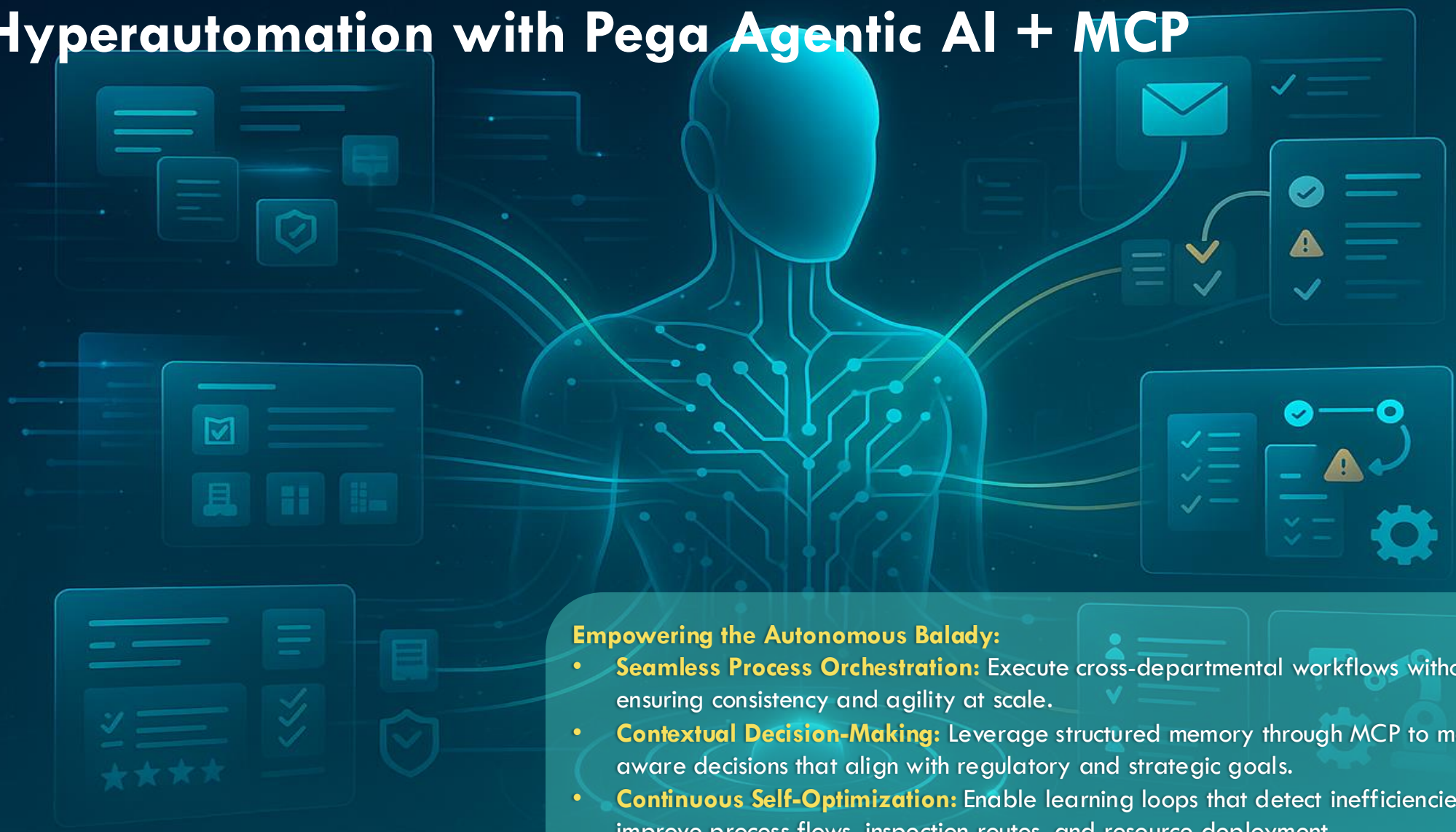
Pega Process Mining

- Uncover hidden inefficiencies across all municipal inspection workflows
- Create digital twins of processes for real-time simulation and testing
- Identify permit processing bottlenecks and compliance gaps instantly
- Data-driven continuous improvement in citizen services

Pega GenAI: Intelligent Assistance at Every Level



Hyperautomation with Pega Agentic AI + MCP



Empowering the Autonomous Balady:

- **Seamless Process Orchestration:** Execute cross-departmental workflows without human intervention, ensuring consistency and agility at scale.
- **Contextual Decision-Making:** Leverage structured memory through MCP to make informed, situation-aware decisions that align with regulatory and strategic goals.
- **Continuous Self-Optimization:** Enable learning loops that detect inefficiencies and proactively improve process flows, inspection routes, and resource deployment.
- **End-to-End Governance:** Ensure traceability, transparency, and policy compliance across all automated municipal operations—from service requests to field inspections.

Shaping Saudi's Future

Smart Cities Powered by **Pega** & **Aaseya** Digital Innovation.

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