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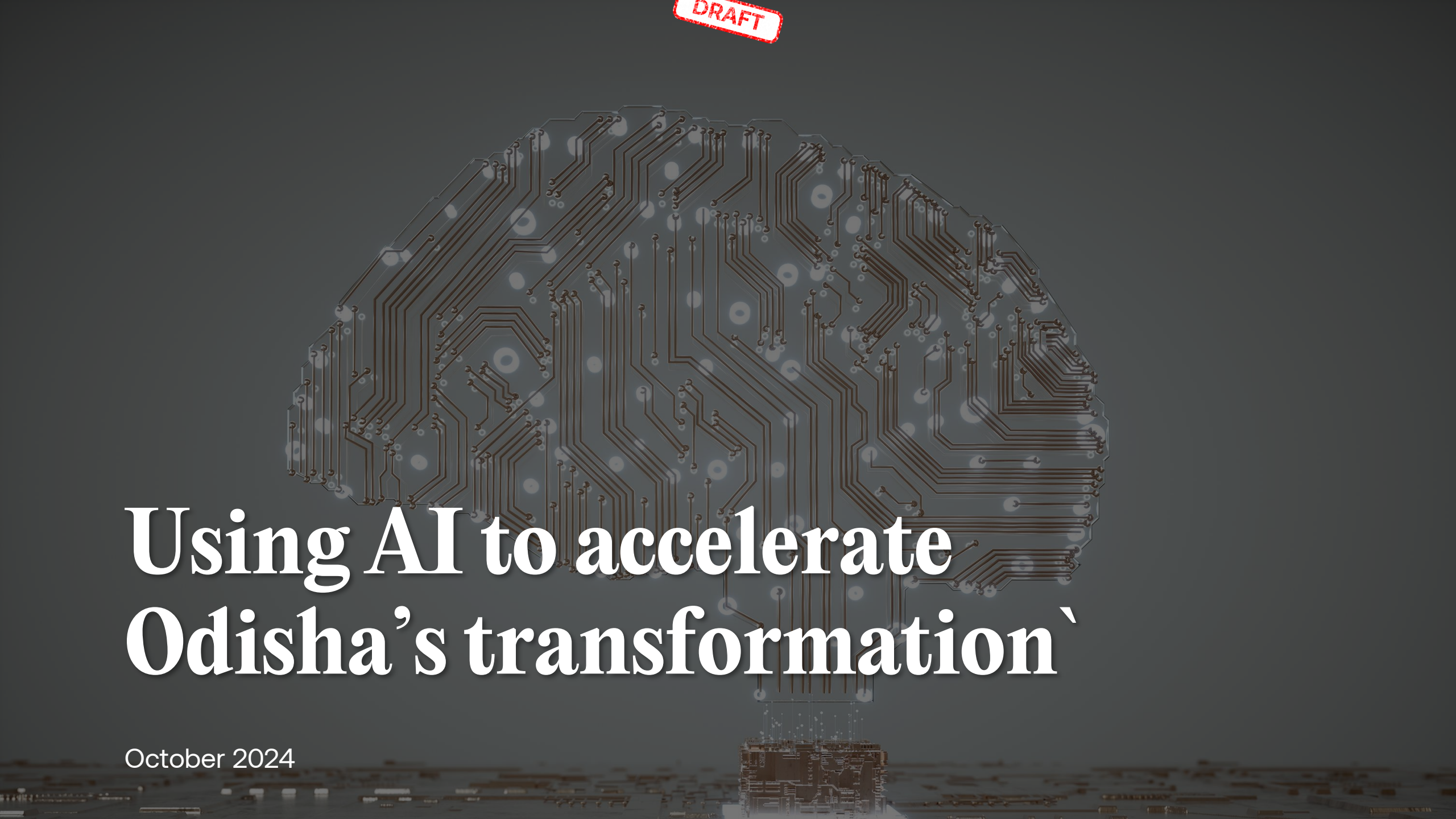

Using AI to accelerate Odisha's transformation`

October 2024

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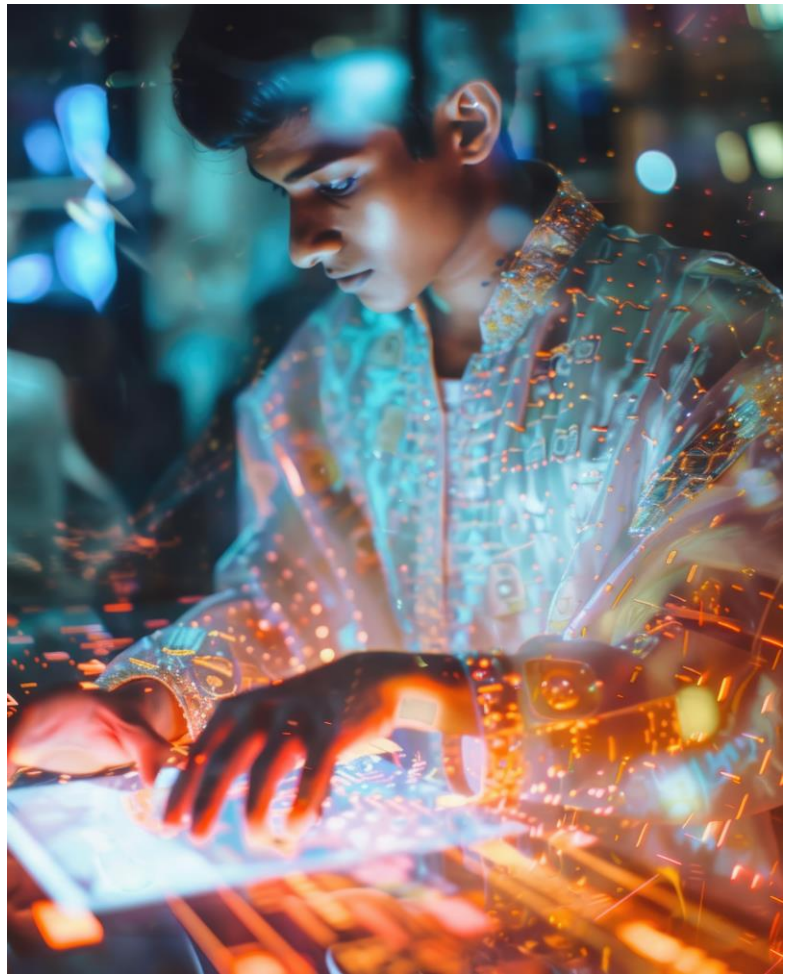
Ask

- **Develop a strategy** for the state to leverage AI for a *Viksit Odisha*
- **Prioritize use-cases** in priority sectors to drive development impact
- **Define roadmap** to implement the AI strategy by Dec 2024



Deliverables

- **Vision** that channelizes efforts for governments and industry
- **Strategic levers** to create an ecosystem for AI-driven impact
- **Targets and actions** for each department with defined timelines

Over the last three weeks, we've deployed a structured approach to develop a draft AI strategy for Odisha

Reviewed international benchmarks

Global leaders in AI with experience in building AI-strategies

Regional peers in India with proven success in leveraging IT solutions

16 major AI-readiness indices from policy organizations and academia

Leveraged learnings from Odisha government

Conducted interviews with E&IT Department staff to beneficiaries

Leveraged existing vision statements from leadership

Reviewed departmental plans and core policies for priority sectors

Validated hypotheses with global experts

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Senior Advisor – Tech & Digital Transformation

Ursule Kajokaite
Advisor – Digital and Tech Transformation

Johan Harvard
Senior Advisor – Data & Artificial Intelligence

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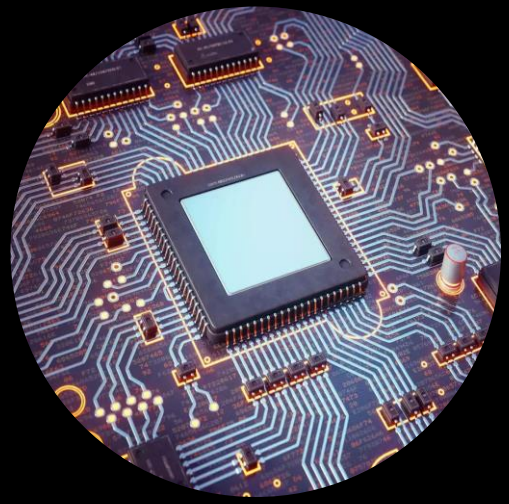
OUTLINE

Odisha has made significant strides in technology

Bhubaneshwar is India's emerging IT hub, attracting investments and creating employment



Advancing semiconductor and AI sector, Odisha is establishing a one-of-a-kind O-Chip CoE[1]

Odisha is a leader in Disaster Mgmt. technology , pioneering EWDS[2] implementation

Odisha One offers a unified platform for citizens to access government services online

Notes: 1. Centre of Excellence 2. Early Warning Disaster Systems

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It is now seeking to leverage artificial intelligence to address its priorities.

Education

- Implement digital education programs and provide advanced infrastructure, including modern computer labs, to enhance STEM skills in students
- Upskill teachers through a digital skilling program
- Provide career counselling to students starting Class 9

Healthcare

- Improve capacity of primary healthcare systems
- Provide state sponsored insurance to ensure affordable healthcare for all
- Improve diagnostic accuracy and predictive healthcare

Agriculture and Farmer Empowerment

- Build irrigation infrastructure to expand land covered and increase area covered under irrigation
- Improve farmer market access by digitizing access and operations
- Enhance agricultural knowledge among farmers and support crop management

Disaster Management

- Undertake coastal afforestation and increase mangrove cover in cyclone prone areas
- Protect vulnerable communities such as fishermen and tribals
- Rapid damage assessment and predictive maintenance

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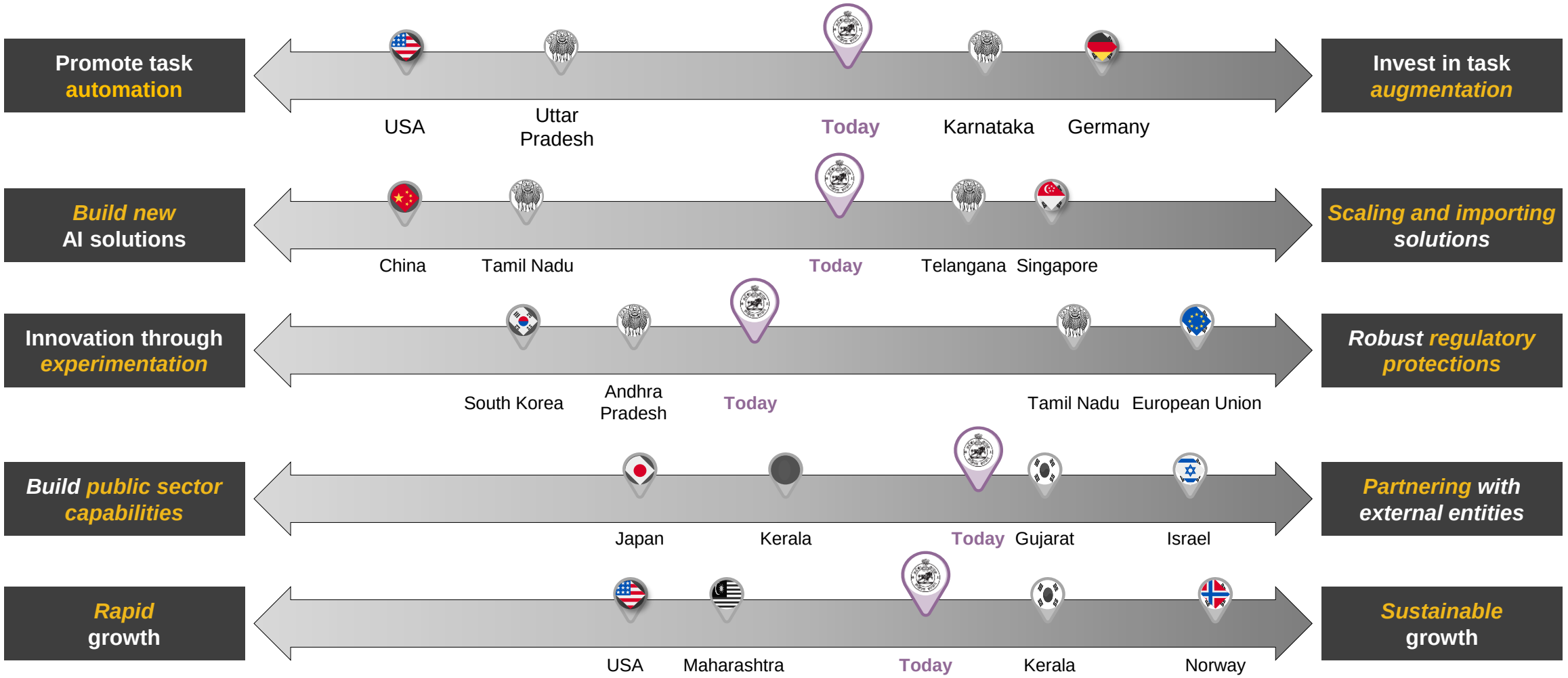
Drawing from global exemplars and leading Indian states, Odisha must make five strategic choices to propel its AI-driven transformation



Odisha will leverage AI to empower lives, create opportunities for youth, drive economic growth, and build a resilient society through partnerships with innovators, swift implementation, and responsible AI use.

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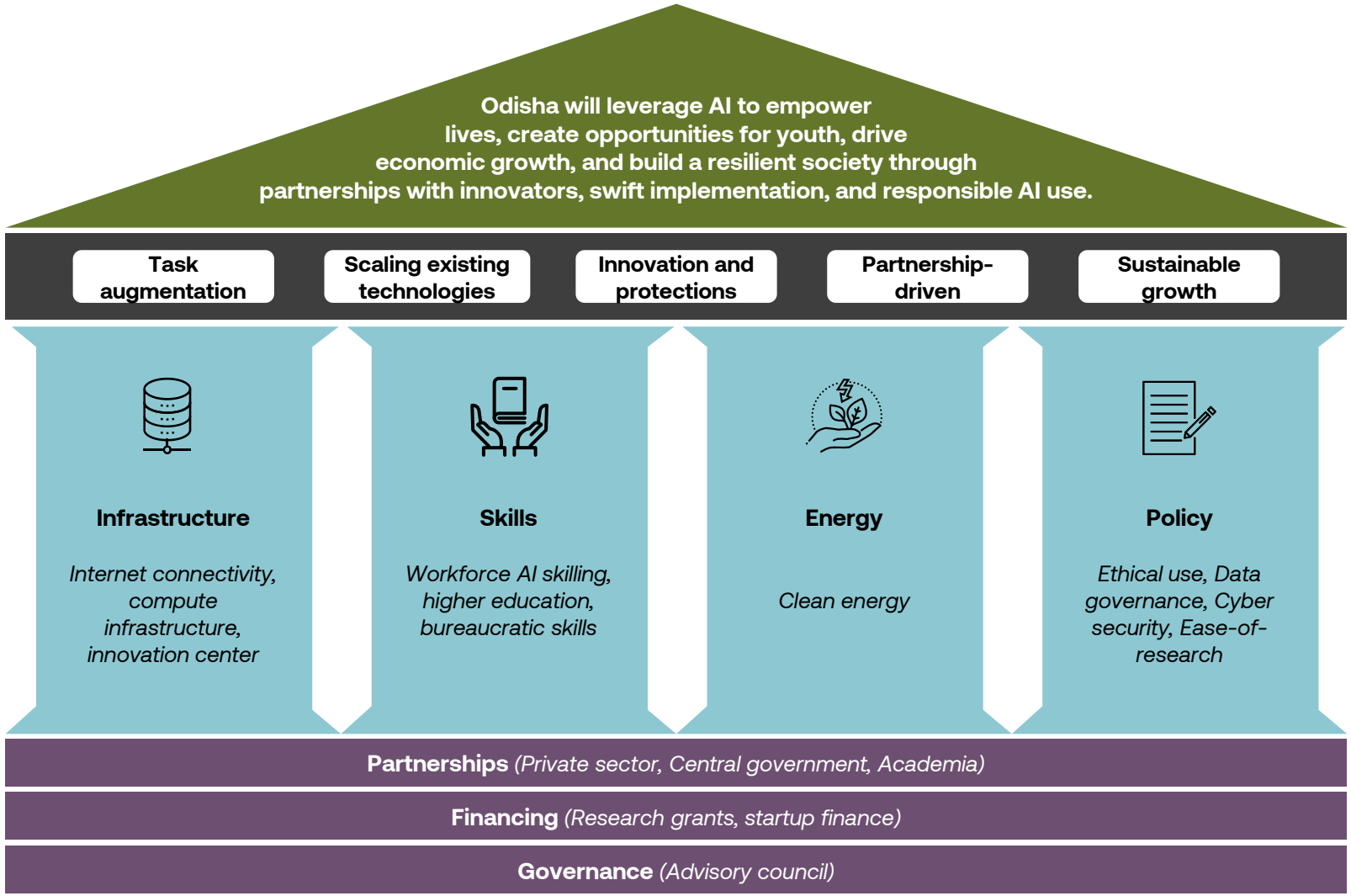
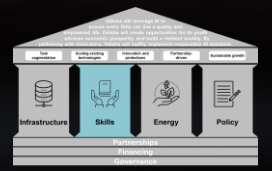
Odisha's AI Strategic Framework



Digital Infrastructure

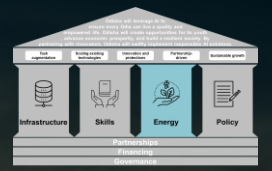
Pillar element	Importance for Odisha
Internet Connectivity and Use	• To enable mass adoption of AI use cases and innovation in AI, investing in internet connectivity and usage is critical • Odisha should carry out large scale projects to improve internet connectivity, handheld penetration and digital literacy, expanding its digital reach to the remotest districts
Computing Infrastructure	• Investing in computing infrastructure is crucial to share, store and process large amounts of data required to build and scale AI applications • Odisha should invest in supercomputing facilities and data centers to grow compute capacity and build up-to-date open data platforms and interoperability frameworks
Innovation Center	• Innovation in AI and creation of specialized AI solutions addressing Odisha's specific socio-economic problems will require centers of AI innovation • The state should look to invest in research facilities, centres of excellence, tinkering labs and incubation hubs to enable this innovative AI environment

Skills



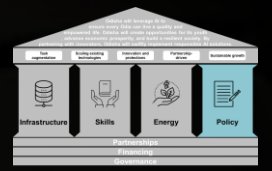
Pillar element	Importance for Odisha
Workforce AI skilling	• Skilling the workforce in AI allows the masses to transition into a new labour market influenced by AI and helps build and maintain a competitive advantage in AI • Odisha should design and implement skilling initiatives and vocational training modules in AI to create opportunities for students and professionals in the field
Higher education	• Inclusion of AI from higher education levels is crucial to develop a new generation of AI ready citizens, pushing the innovation and talent in AI • Odisha should incorporate AI-related courses into the curriculum, establish specialized AI programs, provide faculty training, and encourage AI research and development
Bureaucratic skills	• A general understanding and skilling in AI for government officials is crucial for the responsible and ethical development and implementation of AI in society • Odisha should develop comprehensive AI training programs for govt. officials covering AI fundamentals, ethical considerations, and project management best practices

Energy



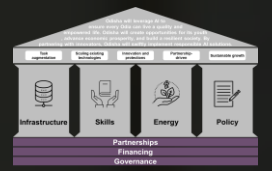
Pillar element	Importance for Odisha
Clean energy	• AI's growing demand for computational power can significantly increase energy consumption, making sustainability critical for long-term viability • Odisha should focus on investing in clean energy to ensure that as AI systems scale, they do not exacerbate environmental challenges • The state can equip its data centers with renewable energy sources and adopt energy-efficient technologies, minimizing environmental impact while enhancing its appeal as a sustainable AI hub

Policy



Pillar element	Importance for Odisha
Ethical use guidelines	• A framework for responsible AI development and deployment can help address algorithmic bias, data privacy, transparency, and accountability • Odisha should design ethical use guidelines to protect the rights and interests of all citizens and build public trust and confidence in AI technologies
Data governance	• Effective data governance is crucial for maximizing AI's potential, potentially yielding financial benefits 1.5 times greater than without such frameworks • Clear data management procedures and quality standards will strengthen Odisha's AI capabilities and establish the state as a leader in responsible data governance
Cyber security	• AI systems are interconnected, so an attack on one can disrupt entire networks and cause widespread damage • Odisha should implement AI-powered cybersecurity solutions to strengthen defenses and safeguard its AI ecosystem
Ease of research	• AI innovation thrives in environments that remove barriers to experimentation and collaboration • Odisha should design research-friendly policies to foster a more innovation-focused environment

Foundations



Pillar element	Importance for Odisha
Partnerships	• A thriving AI ecosystem requires collaboration among various players, including technology providers, research institutions, startups, and end-users • Odisha should form international partnerships to design and develop a collaborative AI ecosystem while promoting its use
Financing	• Robust financial backing is essential to absorb these risks and ensure sustained innovation • Odisha should focus on strengthening the financing ecosystem to fast-track AI research and stimulate entrepreneurial activity
Governance	• AI advisory councils provide expert guidance on AI policy and strategy, reflecting the growing recognition of the need for expert input and multi-stakeholder engagement • Odisha should build an advisory council to help it stay ahead of the curve, adapting its AI strategy to address new developments and maximize benefits

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OUTLINE

Education

Personalized learning & support

Platforms that analyze student data to personalize learning paths, provide adaptive exercises, and offer virtual tutoring

Virtual assistants for education

Provide individualized support to students, answer their questions, and assist teachers with administrative tasks

Career guidance

Systems that analyze student data and labour market trends to provide career recommendations tailored to individual interests and aptitudes

Recommendation systems for e-resources

Analyze user preferences and learning patterns to suggest relevant materials

Skills matching and job placement

Platforms that analyze student skills, industry demands, and job market trends to recommend relevant job opportunities

Healthcare

Fraud detection in schemes

Identify irregular billing patterns, fraudulent claims, and anomalies by analyzing large datasets from healthcare schemes

Diagnostics

Machine learning models can assist doctors by analyzing medical images and patient data, allowing faster and more accurate diagnoses

Risk assessment

Analyzes patient data, medical history, and lifestyle factors to predict the likelihood of developing specific diseases or health conditions

Infrastructure optimization

Help optimize hospital resources by analyzing usage patterns to allocate beds, medical equipment, and staff more effectively

Telemedicine triage

Chatbots assess patients' symptoms in real-time, directing them to the appropriate healthcare professionals via telemedicine platforms

Malaria risk mapping

Utilize climate, demographic, & geospatial imaging data to forecast malaria outbreaks, enabling targeted interventions in high-risk regions

Agriculture

Digital authentication in schemes

Verify farmer identities and prevent fraud, ensuring that financial support is delivered to the intended recipients

Pest surveillance systems

Analyze crop decay patterns and provide farmers with timely advice on pest control measures

Precision agriculture

Utilize satellite, weather, soil, and sensor data to monitor crop health and optimize irrigation schedules

Farmer knowledge improvement

Analyze satellite and drone imagery to assess crop health, predict yields, and provide actionable insights for better crop management

Crop price forecasting

Analyze market trends, route optimization, and warehouse management to ensure farmers receive timely and accurate crop price information

Disaster Management

Risk assessment and vulnerability mapping

Analyzing geospatial data, infrastructure information, and socio-economic factors to identify high-risk areas and vulnerable populations

Infrastructure monitoring and predictive maintenance

Using sensors and AI algorithms to monitor the structural health of critical infrastructure, predict potential failures and maintenance needs

Damage assessment and resource allocation

Analyze satellites, drone footage, & social media data to quickly assess damage after a disaster & target relief efforts, especially in remote areas

Communication and resource management

Chatbots to answer frequently asked questions, provide real-time updates on the situation, and guide communities to access relief resources.

Simulation and training for disaster response

Optimize evacuation plans and shelter management to create realistic simulations of disaster scenarios

Climate data analysis for long term risk

Analyze historical climate data and predict future climate change impacts to inform long-term disaster risk reduction strategies

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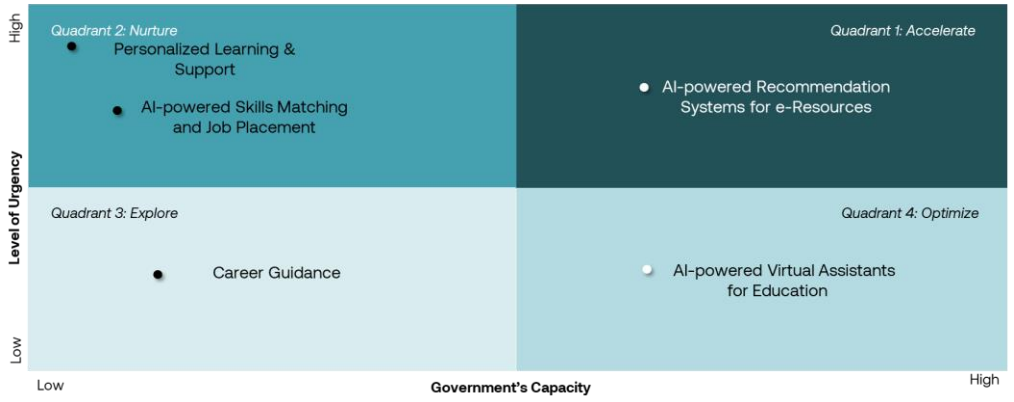
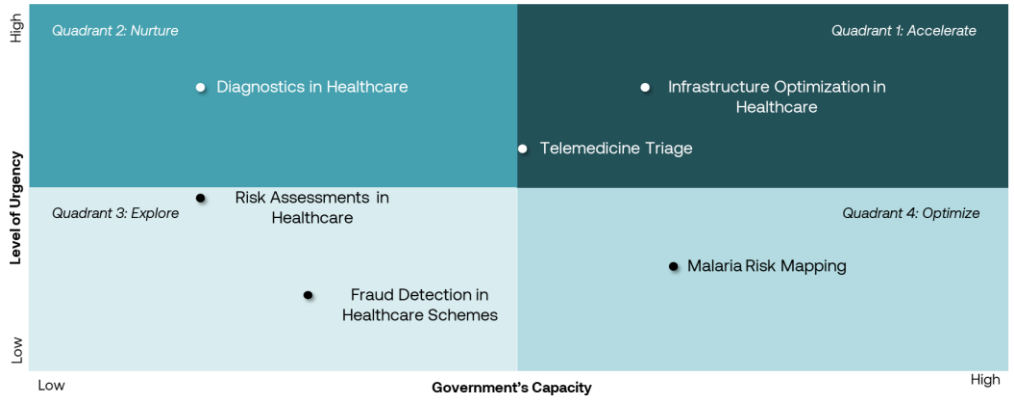
Odisha will look to then prioritize use cases and strategize the governments' role in implementing these use cases

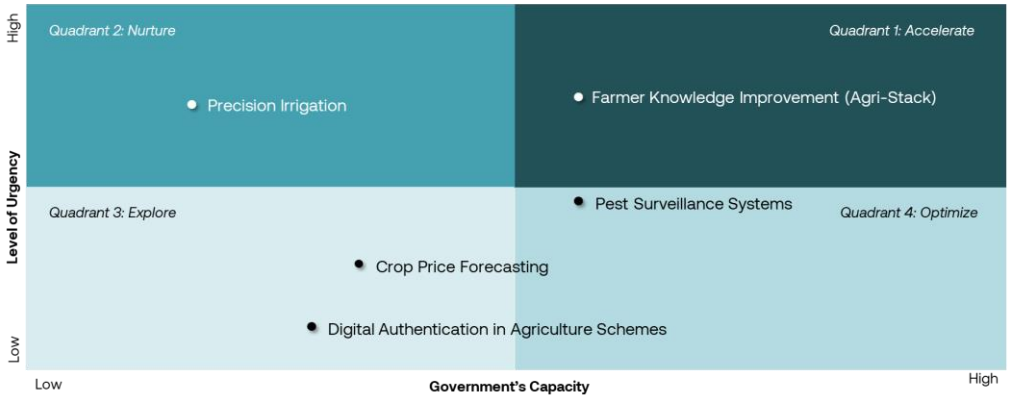
Education



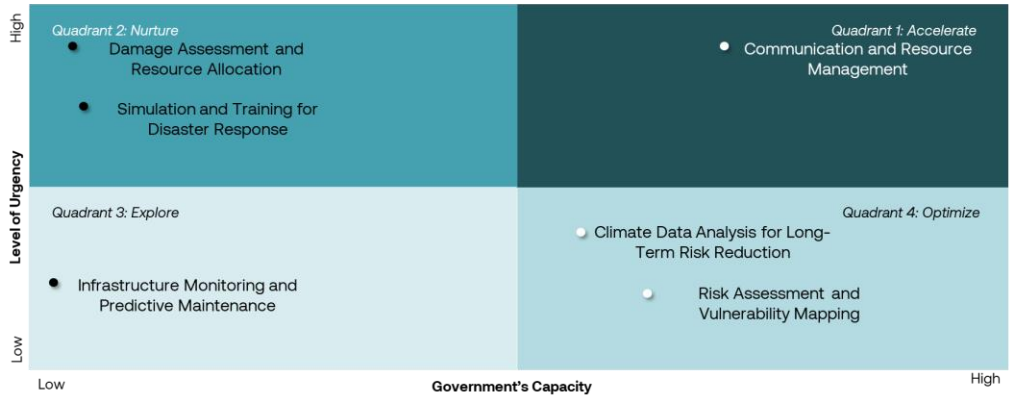
Healthcare



Agriculture



Disaster Management



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Over the next 2 months, we will finalize the Odisha AI Strategy

28th Oct — 30th Nov — 13th Dec

AI Vision & Strategy

- Utilize **TBI's AI readiness** framework and experts to identify focus areas for Odisha
- Study **exemplar countries and states** to identify best practices
- Conduct workshop to **refine vision and strategy** for the state

Underway

Outcomes Finalized AI Vision

Consultations and roadmap

- Departments to **identify goals for 2029 and 2036** and **key use cases** to achieve them
- **Validate use-case feasibility** and resource requirements by consulting experts
- **Refine the sector strategies** based on the interactions and **finalize budget and resources**

Outcomes Refined AI strategy with project proposals

Synthesis and activation

- **Engage with stakeholders** to assimilate inputs and align with National AI mission
- Create a **roadmap to outline steps** for implementation of strategy
- **Establish a dedicated delivery unit** to effectively advance and achieve the identified priorities

Outcomes Draft strategy document for cabinet approval

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To drive rapid action, we will setup an empowered working group in close relationship with nodal departments