Department of
Science and Technology

Leveraging technology for a first-world economy: The DOST's GATES Initiative

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DOST's Role in Nation Building



MANDATE

To provide central direction, leadership and coordination of scientific and technological efforts and ensure that the results therefrom are geared and utilized in areas of maximum economic and social benefits for the people



MISSION

To direct, lead, and coordinate the country's scientific and technological efforts geared towards maximum economic and social benefits for the people.



VISION

DOST as the leading enabler and provider of science, technology, and innovation (STI)-explicit solutions towards national development.

PAGTANAW 2050 - TO BECOME A PROSPEROUS, ARCHIPELAGIC, MARITIME NATION BY 2050

2040

MATATAG, MAGINHAWA AT PANATAG NA BUHAY

2028

ECONOMIC TRANSFORMATION FOR A PROSPEROUS, INCLUSIVE, AND RESILIENT SOCIETY

Science, Technology, and Innovation (STI) for a Resilient, Unified and Sustainable Philippines



ALL THESE COMMONLY WORK TOWARDS...

- Advancing knowledge generation
- Producing the next generation of young scientists and nurturing world class filipino scientists
- Developing and utilizing cutting-edge S&T products for community and national transformation
- Steering innovations towards needs of economic competitiveness and productivity
- Igniting the next wave of sci-tech business to thrive in a rapidly evolving ecosystem

DOST 11 PRIORITY PORTFOLIOS

- Job Creation and Entrepreneurship / Regional Development
- Food Security
- Health Security
- Water Security & Environmental Protection
- Energy Security
- Transportation System
- Human Resource Development
- Climate and Disaster Resilience
- Facility Upgrading
- Digital Transformation
- Smart & Sustainable Cities and Communities

Digital Transformation to advance economy

- Revolutionizing sectors through innovative technologies and smarter decision-making.
- Enhancing policy formulation and public service delivery with advanced analytics.
- Bridging gaps across communities, ensuring no one is left behind in the tech-driven future.




GATES
Geospatial Analytics and Technology Solutions Program

Geospatial Analytics and Technology Solutions (GATES)



A large-scale optimized, interoperable, inter-agency, cross-sectoral data and applications ecosystem leveraging AI and geospatial analytics, that can serve as a model for bureaucracy-wide adoption

FOCUS INWARD

Our initial focus is inward in order to empower DOST institutions.

By integrating spatial data with existing datasets within the DOST in a robust framework, and leveraging advance technologies such as AI, machine learning, and geospatial analytics, we empower the agencies to make MORE informed decisions, OPTIMIZE resource allocation, and ENHANCE public services.



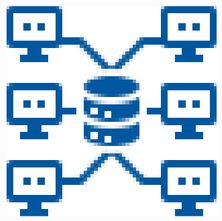
GATES as a model for Government-wide application

BAGONG PILIPINAS

DESIGNED TO HELP ORGANIZATIONS UNLOCK THE POWER OF LOCATION WITH ADVANCED GEOANALYTICS, AND ARTIFICIAL INTELLIGENCE (AI)

- OCEAN OF DATA
- ACCESS TO EXPERTISE
- VAST EXPERIENCE
- READY CUSTOMERS

What DOST aims to do



Support the data mapping and cleansing of various data sets of the DOST system, and develop the corresponding data architecture that will be scalable and AI-ready;



Build and put in place the necessary backend software and hardware required by the data architecture, the frontend dashboard for GATES, and the AI application in line with global standards for the ethical and responsible use of AI



Develop AI-driven geospatial visualization and analytics solutions leveraging a unified data lakehouse to integrate diverse data sources and generate predictive geospatial insights using advanced analytics and suitability models for targeted applications

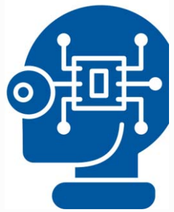
What DOST aims to do



Develop and capacitate a core team of DOST personnel, including agency representatives to upskill and develop them into data science roles through the support of a dedicated team of high-level data experts



Mainstream the GATES and its personnel in the DOST, and its attached agencies, through the necessary supporting policies and protocols, among other related activities



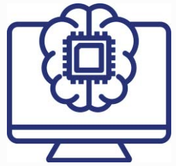
By the end of the program, the GATES Hub will be established at the DOST-Central Office, serving as the Department's central touchpoint for providing geospatial and AI analytics services to all DOST agencies and other relevant stakeholders

GATES Program Components



Navigating the Ocean of Data: DOST-wide data mapping, data cleansing and designing the AI-ready data architecture

Data Architecture



Building the Lakehouse: Establishing the DOST Data Lakehouse and GATES interface using geospatial and AI-powered business intelligence and predictive analysis for strategic and tactical data-driven decision-making.

Infrastructure & AI-powered Platform



Future-ready DOST: Upscaling and integrating Geospatial Analytics and AI in Planning and Decision-making

Geospatial AI Applications & Solutions



Sustaining GATES: Institutionalizing and expanding the reach of the GATES Program while developing the DOST Data Science cadre

Sustainability & Institutionalization

DOST OFFICE OF THE SECRETARY

3 SECTORAL PLANNING COUNCILS

PCAARRD
Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development

PCHRD
Philippine Council for Health Research and Development

PCIEERD
Philippine Council for Industry, Energy and Emerging Technology Research and Development

2 COLLEGIAL AND SCIENTIFIC BODIES

NRCP
National Research Council of the Philippines

NAST
National Academy of Science and Technology

7 R&D INSTITUTES

ASTI
Advanced Science and Technology Institute

FNRI
Food and Nutrition Research Institute

FPRDI
Forest Products Research and Development Institute

ITDI
Industrial Technology Development Institute

MIRDC
Metals Industry Research and Development Center

PNRI
Philippine Nuclear Research Institute

PTRI
Philippine Textile Research Institute

6 S&T SERVICES

PAGASA
Philippine Atmospheric, Geophysical and Astronomical Services Administration

PHIVOLCS
Philippine Institute of Volcanology and Seismology

PSHSS
Philippine Science High School System

SEI
Science Education Institute

STII
Science and Technology Information Institute

TAPI
Technology Application and Promotion Institute

16 REGIONAL OFFICES

80 PROVINCIAL S&T OFFICES

DOST-Advanced Science and Technology Institute's Sample Research and Innovation Projects for National Development

SPACE TECHNOLOGY

- Remote Sensing and Data Science (DATOS) Helpdesk
- Synthetic Aperture Radar and Automatic Identification System for Innovative Terrestrial Monitoring and Maritime Surveillance (SARwAIS)

WIRELESS TECHNOLOGY

- ASTI Advanced Remote Data Acquisition (ASTI-ARQ)
- Resilient Education Information Infrastructure for the New Normal (REIINN)
- Signal Assessment Using Geospatial Analysis Project (SAGAP)
- Understanding Lightning and Thunderstorms Project (ULAT)

ARTIFICIAL INTELLIGENCE

- ASTI-Automated Labeling Machine (ASTI-ALaM)
- iTANONG
- Gul.ai

EMERGING TECHNOLOGIES

- DataProtect
- Quantum Circuit Simulation (QCS)
- Kooha
- NetMesh

ROBOTICS



- Autonomous and Unmanned Systems (AUS)



- Robot for Optimized and Autonomous Mission-Enhancement Responses (ROAMER)

SMART CITIES



- V2X Initiatives for Road Safety (VIROS)

GeoRiskPH

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Innovations for Resilience

Geospatial Information Management and Analysis Project for Hazards and Risk Assessment in the Philippines: Change the way you manage and analyze geospatial data

Request an account

Watch Video



HazardHunterPH

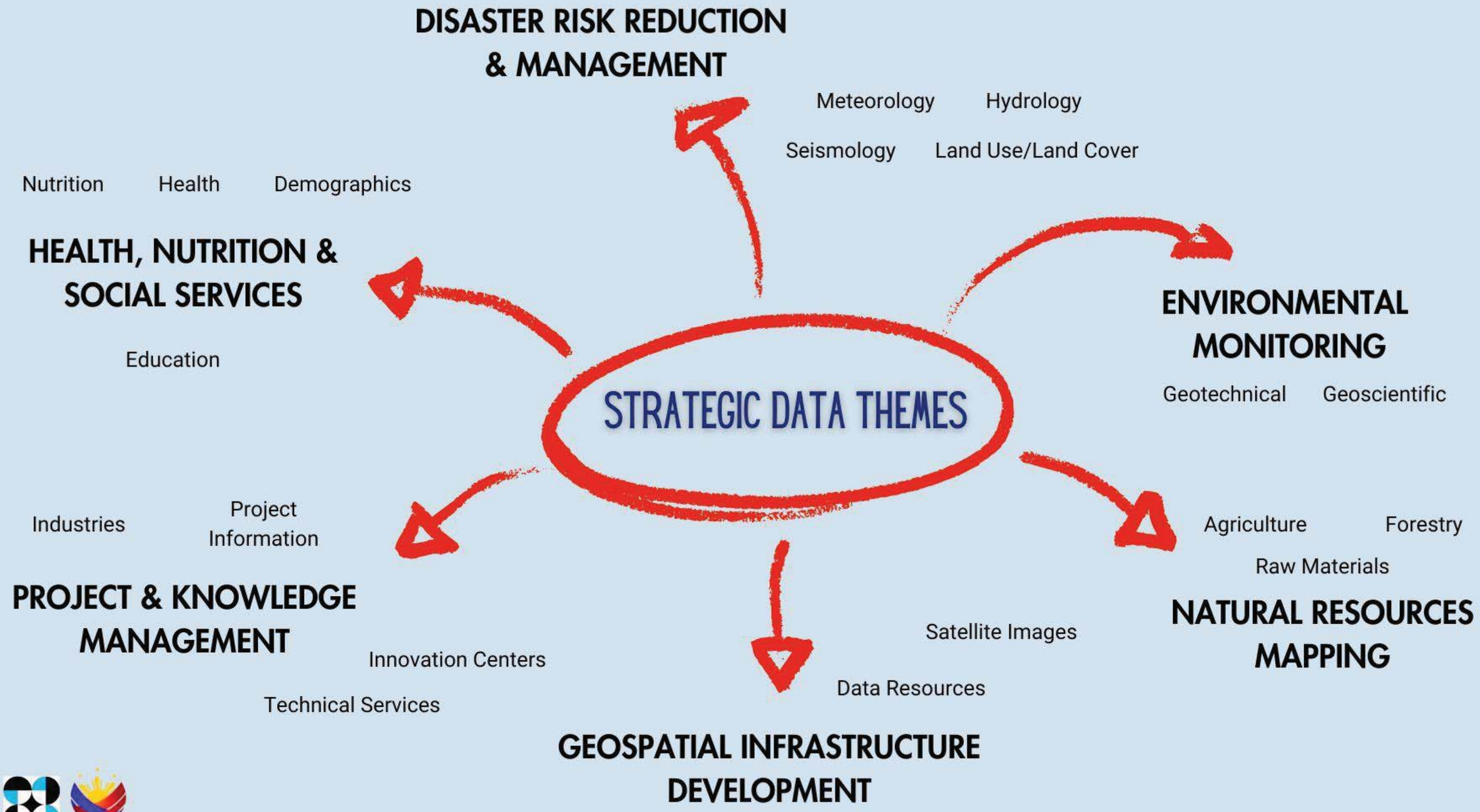
GeoAnalyticsPH

GeoMapperPH

Map & Feature

3D Earth Risk

PlanSmart


DISASTER RISK REDUCTION & MANAGEMENT
Meteorology
Hydrology
Seismology
Land Use/Land Cover
Nutrition
Health
Demographics
HEALTH, NUTRITION & SOCIAL SERVICES
Education
ENVIRONMENTAL MONITORING
Geotechnical
Geoscientific
STRATEGIC DATA THEMES
Industries
Project Information
PROJECT & KNOWLEDGE MANAGEMENT
Innovation Centers
Technical Services
Satellite Images
Data Resources
GEOSPATIAL INFRASTRUCTURE DEVELOPMENT
Agriculture
Forestry
Raw Materials
NATURAL RESOURCES MAPPING

DOST GATES HUB

ENHANCED DECISION-MAKING

Visualize and analyze spatial data to uncover trends, patterns, and insights that are critical for strategic planning and policy formulation.

OPTIMIZED RESOURCE MANAGEMENT

Visualize and analyze spatial data to uncover trends, patterns, and insights that are critical for strategic planning and policy formulation.



IMPROVED PUBLIC SERVICE

Design and implement better public services, by understanding the geographical needs and behaviors of your constituents.

COST EFFICIENCY

Reduce operational costs by identifying and addressing inefficiencies and optimizing processes through actionable geographic insights

Empowering Economic Growth Through GATES



Driving Innovation and Competitiveness

Harnessing Advanced Technologies and Catalyzing New Industries



Supporting Efficient Governance

Data-driven Decision Making and Enhancing Delivery of Public Services



Promoting Sustainable Development

Resilience to Climate and Disasters and Building Smart and Sustainable Cities

Empowering Economic Growth Through GATES



Empowering the Workforce

Upskilling and Talent Development and Jobs Creation



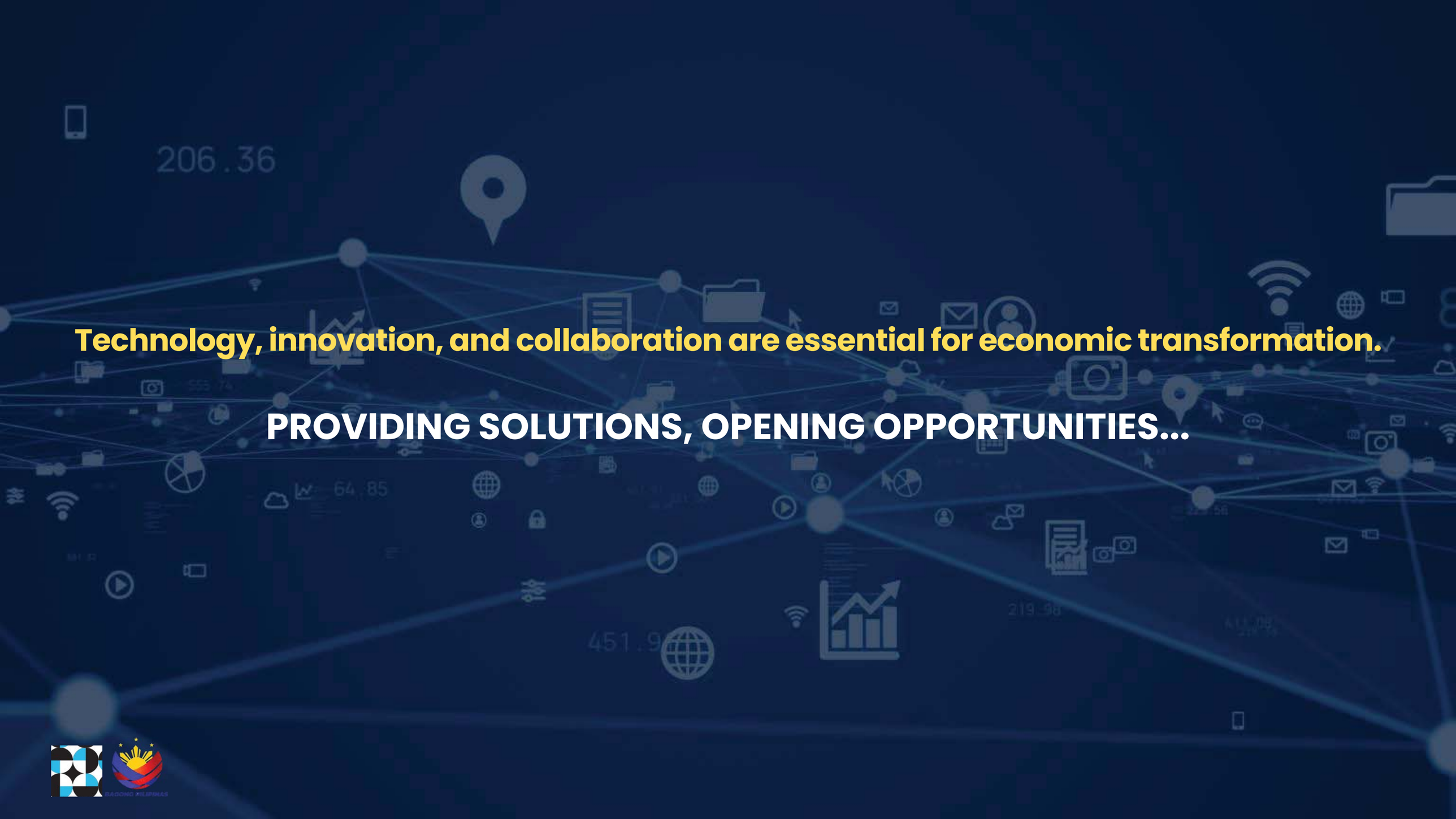
Bridging Inequalities

Inclusive Growth and Optimizing Resource Allocation



Aligning Global Standards

Ethical and Responsible Use of AI and Meeting Sustainable Development Goals



Technology, innovation, and collaboration are essential for economic transformation.

PROVIDING SOLUTIONS, OPENING OPPORTUNITIES...



Thank you.
#OneDOST4U

Sa siyensiya at teknolohiya...
negosyo ay kikita
industriya ay aarangkada
kalusugan ay sisigla
mukha ng bawat Pilipino, ay may pag-asa.