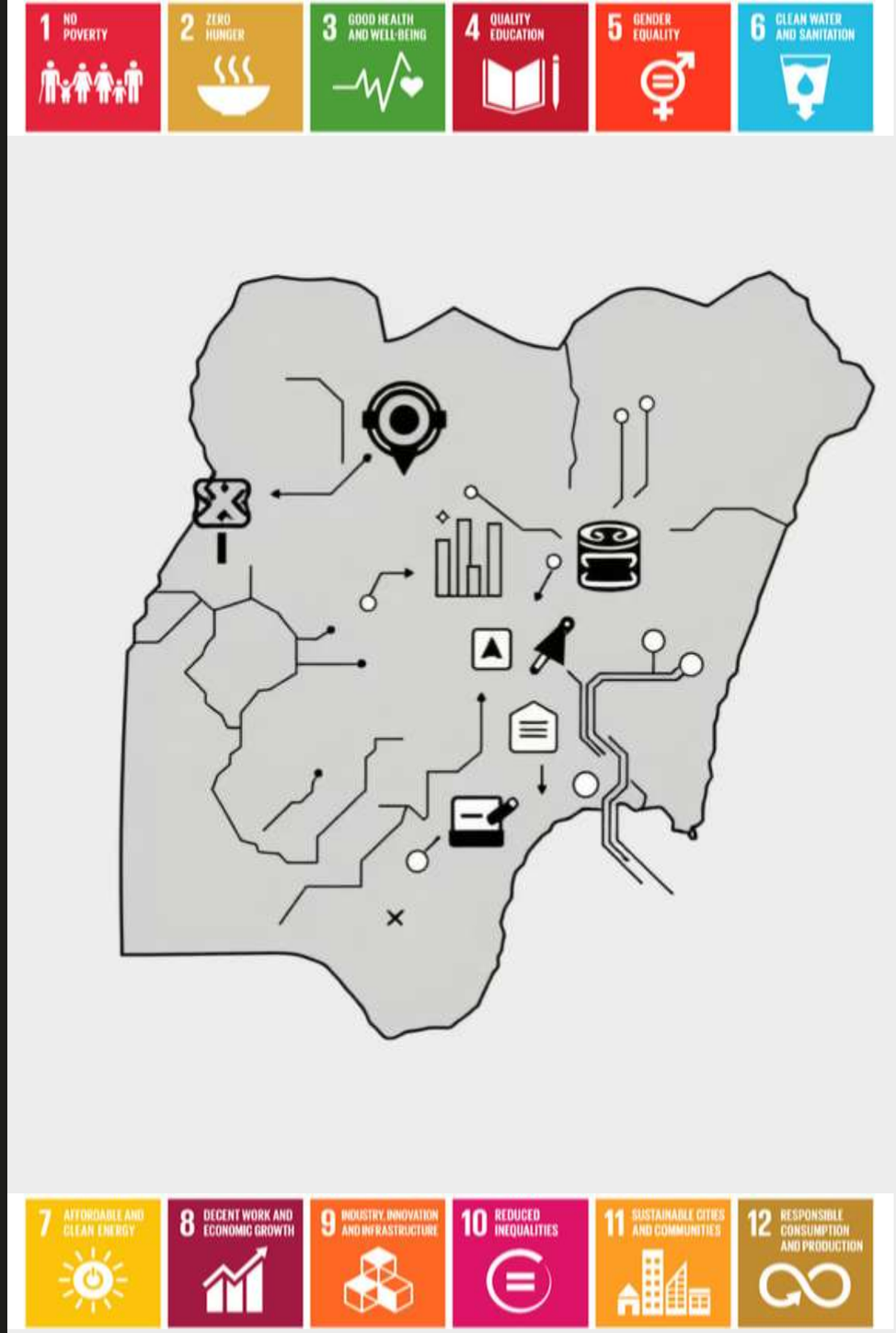
AI Hackathon:
Innovating for SDG Challenges in Nigeria

Thomas Adewumi University SDG Summer School

Date: July 24–25, 2025 | Venue: Virtual Lab, East Campus

Facilitators: Umar Adetola, ABDULGANIYY & Enoch Damilare, OLUNIRAN



Objectives Of This Session

By the end of this hackathon, you will:

Identify a Problem

Identify a real-world problem in Nigeria tied to one or more SDGs.

Design an AI Solution

Design an AI-driven solution with measurable impa

Master Pitching

Master pitching techniques for both judges and investors.

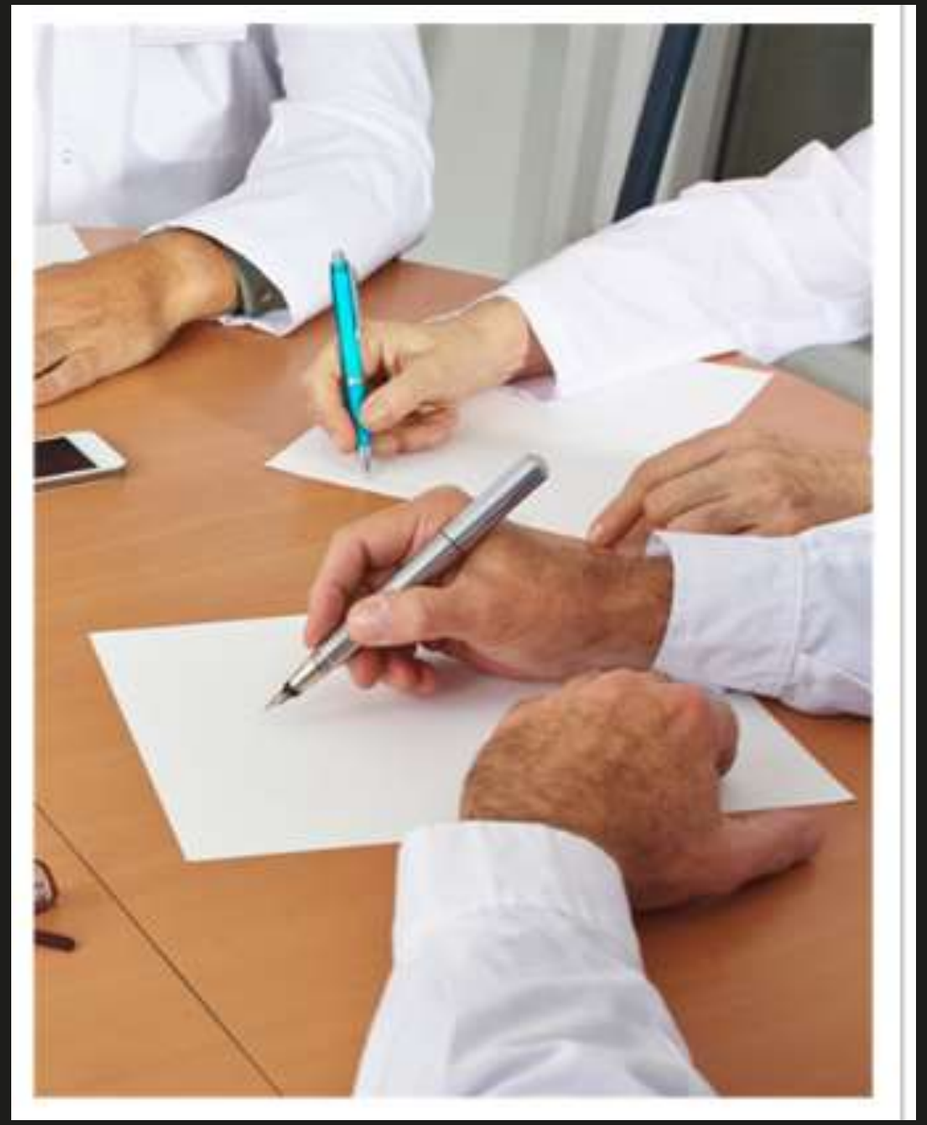
Deliver a Prototype

Deliver a prototype or demo.

Identifying Problems

A **Problem statement** is a single sentence in the form of a question that includes...

- **What** is your design?
- **Who** will use or experience your design?
- **Where** will your designed be used?
- **What** is your design outcome (benfit)?
- What is the difference between an **objective** and **outcome**?



Aligning Problems with SDGs

How to Select a Relevant Problem:

SDG 3 (Health)

AI for maternal health diagnostics, improving outcomes in remote areas.

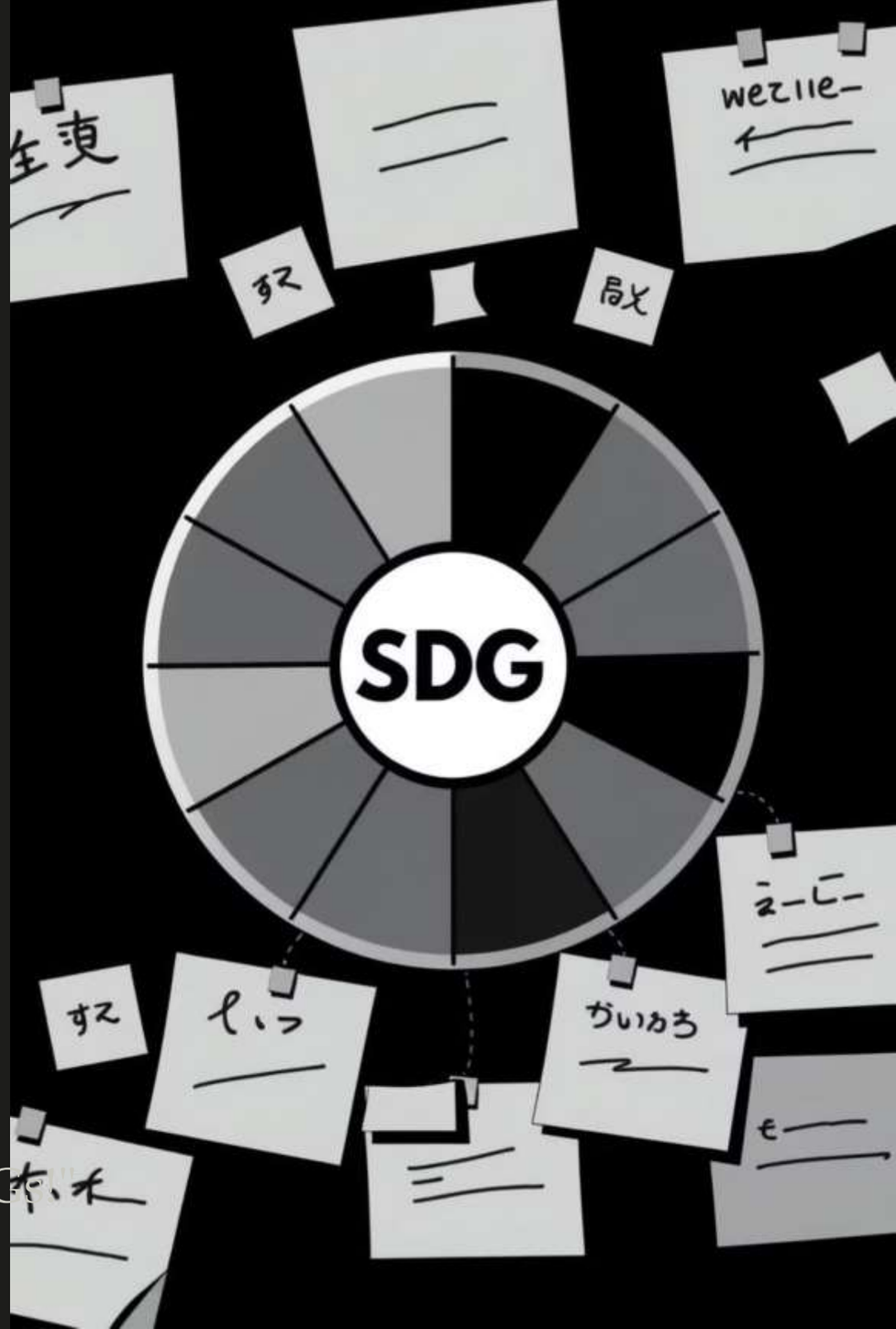
SDG 4 (Education)

Chatbots for rural student learning, bridging educational gaps.

SDG 8 (Economy)

AI tools for SME financial inclusion, empowering local businesses.

tivity: "Brainstorm problems in your community—map them to SDGs."




1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE AND JUSTICE
17 PARTNERSHIPS FOR THE GOALS
THE GLOBAL GOALS
For Sustainable Development

AI-Driven Solutions: Innovation for Impact

Explore how artificial intelligence is transforming industries and addressing complex global challenges. This presentation will cover the fundamentals of AI-driven solutions, their design, real-world applications, and the critical considerations for their successful implementation.

Understanding AI-Driven Solutions

Definition

Solutions leveraging AI to automate, enhance, or intelligently solve problems across various domains.

Key AI Areas

Includes Machine Learning, Natural Language Processing, Computer Vision, and Generative AI like LLMs.

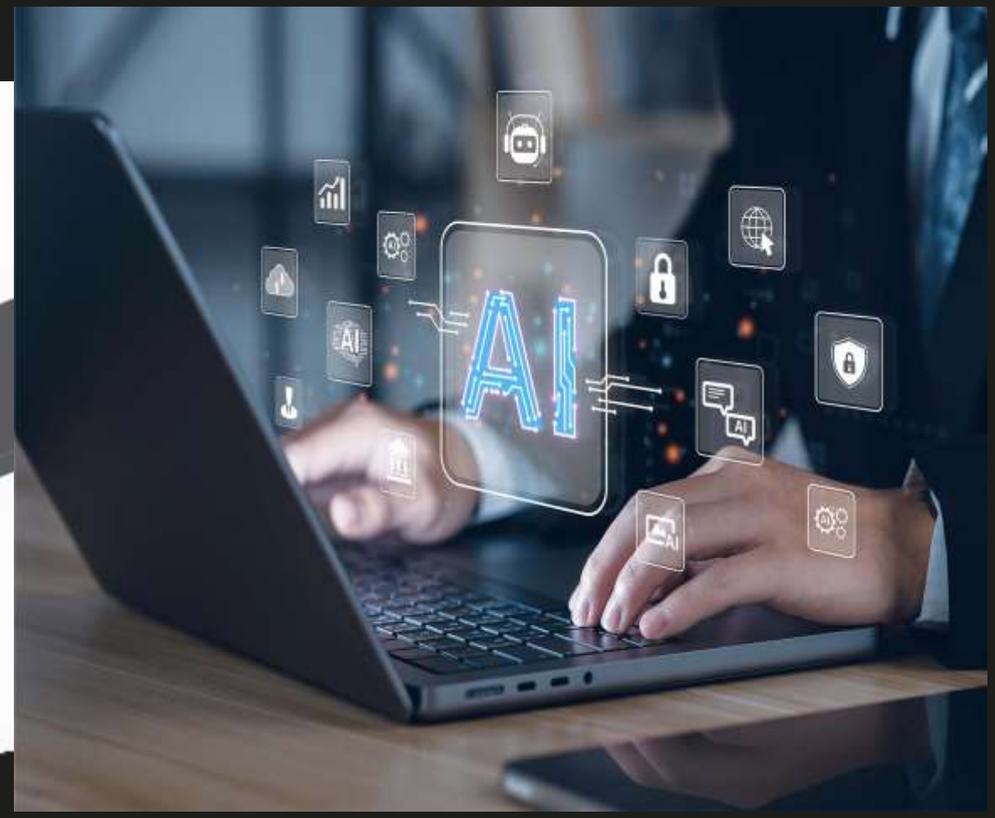
Why It Matters

AI scales problem-solving, uncovers deep insights, and significantly reduces manual effort in complex tasks.

Designing Effective AI Solutions

AI is not magic; it demands thoughtful integration with real-world problems, blending domain expertise with suitable AI models and tools.

1. Utilize Practical Tools
   Leverage platforms like TensorFlow, PyTorch, Face, and OpenAI APIs.
2. Pre-trained Models
   Employ pre-trained models and open-source r to accelerate development.
3. Match Tool to Task
   Select the appropriate AI approach (e.g., NLP f problems, Computer Vision for images).



Example: AI-Powered Crop Disease Detection

This innovative solution uses computer vision and a mobile interface to identify crop diseases early, enhancing food security for rural farmers and supporting **SDG 2: Zero Hunger.**

Transformative Real-World Use Cases

Healthcare

- Early disease diagnosis with ML.
- AI chatbots for mental health triage.

Education

- Personalized learning via AI tutors.
- Automated grading and feedback systems.

Sustainability

- AI for advanced climate modeling.
- Smart energy management systems for efficiency.

Navigating Challenges in AI Deployment

Ethical & Technical Barriers

- Addressing bias in data and models.
- Ensuring model explainability and transparency.
- Protecting data privacy and security.

Best Practices for Successful AI Solutions

Problem-First Approach

Always begin by defining the problem, not by selecting the technology.

Validate with Real Data

Test and validate with actual data before attempting to scale your solution.

Embrace Open Resources

Utilize open-source tools and community knowledge for accelerated development.

Rigorous Testing

Routinely test for bias, fairness, and overall performance of your AI models.

Document Assumptions

Clearly document all model assumptions to ensure transparency and maintainability.

Building an AI-Driven Solution

Ensuring Robustness and Impact

- **Open-Source Tools:** Utilize frameworks like TensorFlow, PyTorch, or access powerful APIs like GPT.
- **Scalability:** Design solutions that can grow to impact a large population.
- **Local Context:** Tailor your AI to Nigeria's unique challenges and data availability.

Example: "FarmSense AI" for SDG 2 (Zero Hunger)—predicting crop diseases to enhance food security.

Deliverables:

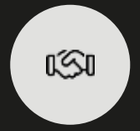
- Prototype (MVP) / Wireframe
- Pitch Deck (Template provided)
- 3-min Live Demo

How to Pitch a Winning Solution

Turning Ideas into Impactful Proposals

Why Pitching Matters

1 2 3



Secure Support

A powerful pitch can unlock funding, garner crucial support, and earn the necessary approvals to propel your vision forward.

First Impressions

In the fast-paced world of innovation, first impressions are often the last. Make every word count.

Show Value

A strong pitch showcases clarity, unwavering confidence, and the inherent value of your solution, leaving no room for doubt.

Know Your Audience

Tailoring your pitch is paramount. Understand their needs, pain points, and the specific language they speak.
For **investors**: Focus on ROI, market size, and scalability.

For **customers**: Highlight benefits, user experience, and how it solves their immediate problems.

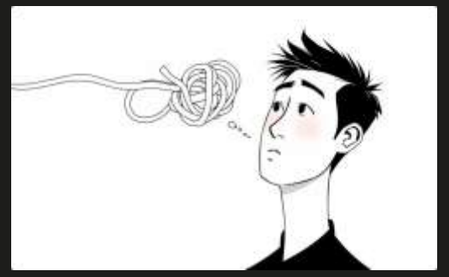
For **executives**: Emphasize strategic alignment and operational efficiency.

- Anticipate objections and questions. Prepare your rebuttals to build confidence and address concerns proactively.

Structure of a Winning Pitch

1. **Hook**
   Grab their attention immediately with a compelling statement or question.
2. **Problem**
   Clearly articulate the pain point you are addressing.
3. **Solution**
   Present your idea as the clear and concise answer to the problem.
4. **Value**
   Explain the benefits and the return on investment (ROI) your solution offers.
5. **Call to Action**
   Clearly define the next steps you want them to take.

The Problem & Opportunity



Creating Effective Slides

Keep It Simple, Clear, and Visual

Be Visual

Use keywords, not full sentences. Aim for clarity, not clutter.

Readability

Use large fonts (24pt+). Ensure high contrast. Stick to 1-2 fonts and consistent colors.

Concise Content

One big idea per slide. Max 5 bullet points. Avoid dense paragraphs.

Visual Aids

Charts, icons, images enhance understanding; don't just add text.

Consistency

Align elements. Maintain a uniform style for transitions, colors, and headings.

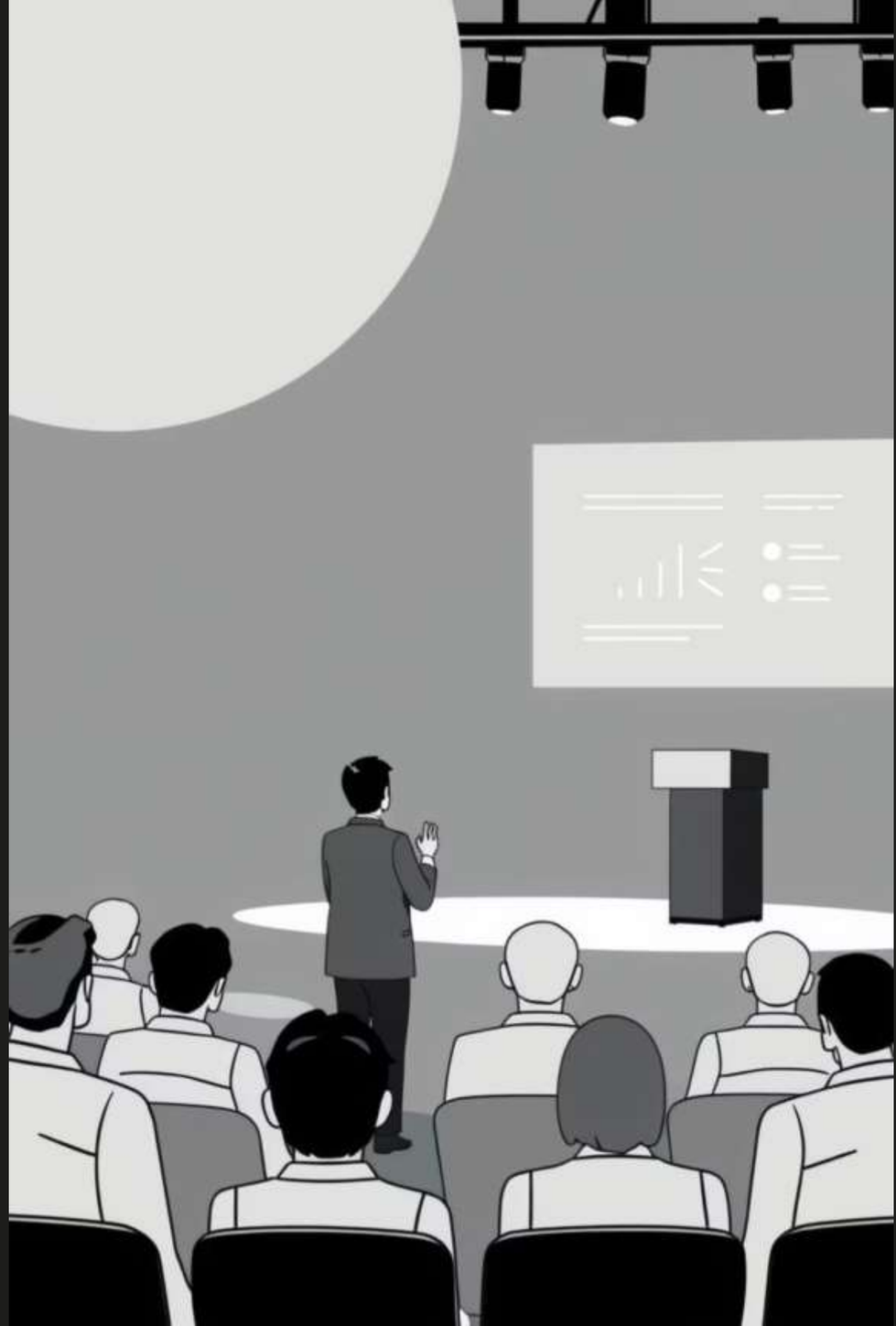
Presenting Your Solution

Describe your idea simply, focusing on its core functionality and benefits. Avoid jargon and technical terms.

Clarity: Ensure anyone can understand your solution quickly.

Visuals: Use demos, prototypes, or mock-ups to illustrate your solution in action.

Differentiation: Clearly explain how your solution is superior or distinct from existing alternatives.



Make It Believable

1

Show Evidence

Present data on traction, customer interest, or in-depth market research.

2

Team Credibility

Introduce your team members and highlight their relevant experience.

3

Business Model

Outline your revenue streams and how your solution generates value.

4

Implementation Steps

Provide a clear roadmap for how your solution will be brought to life.

Pitching to Win

Competition vs. Investor Pitches:

For Judges	Common Ground	For Investors
• Innovation & Creativity	• Solution & Innovation	• Value Proposition
• Impact & SDG alignment	• Value Proposition	• Revenue model
• Technical details feasibility	• Market availability & size	• Market size
	• Scalability	• Scalability

Pro Tips:

Hook: Start with a staggering statistic ("70% of Nigerian smallholders lack access to…").
Value Proposition: Sell your idea from the stand point of value
Keywords: "Sustainable," "scalable," "user-tested," "SDG-aligned."

Judging Criteria

20%

SDG Relevance/Value proposition

How well does your solution align with and address specific SDGs?

30%

AI Innovation

The novelty and effectiveness of your AI approach.

20%

Feasibility

The practicality and implementability of your solution.

20%

Pitch Clarity

How clearly and persuasively you present your idea.

10%

Impact Potential

The potential for real-world, measurable positive change.

Winning Teams Get:

- Mentorship for further development.
- Feature in TAU's SDG Innovation Report.

Expected Outcomes from Participants

1

Team Deliberation

Collaborative brainstorming and problem-solving sessions.

2

Workflow for Solution

A clear block diagram or flowchart illustrating your solution's process.

3

5-Minute Presentation

Each team will deliver a concise and impactful pitch.

4

Proper Documentation

Code repository and a demo video of your prototype.

Call to Action

Next Steps:

- From The team created by Given Numbers (1 to 7).

Pick a problem by **July 24, 2025, 2:00 PM WAT**.

Utilize the provided **resources and tools** on the hackathon platform.

Q&A

Open floor for questions.

Your ideas could become the seeds of sustainable change—bridging AI innovation and SDG gaps in Nigeria.

MEET THE FACILITATORS

Umar Adetola, ABDULGANIYY

Mechatronics Engineering

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SGAC Member

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Ready to Innovate?

Let's build a better future for Nigeria, together!

Thank You!