Building Sustainable AI Ecosystem

Presented by Dale Sukwon Yoon, CEO of AIWORKX

AI for a Better World, Powered by Inclusive Innovation

Introducing AIWORKX: Korea's First AI Social Venture

“True Intelligence begins with human diversity”

Founded in 2015 as Korea's first AI social venture, pioneering inclusive job creation within the AI data labeling industry.

Empowering Neurodiversity: The world's first to train individuals with autism as expert data labelers.

Synergistic Teaming: Pairing autistic talent with career-interrupted women, maximizing team potential and data quality.

Tech-Driven Productivity: Advanced DataOps solutions to streamline workflows and build massive high-quality datasets.

Trusted Enterprise Partner: Contributing to foundational AI models of Korea's major enterprises such as Samsung, Hyundai, SK & etc.

AIWORKX Transformation : From Data to E2E Solution

1

Data

Creating inclusive jobs for diverse groups and providing open-source datasets for public interest.

2

Model (sLM)

Developing lightweight, high-performance models using fewer resources for energy efficiency.

3

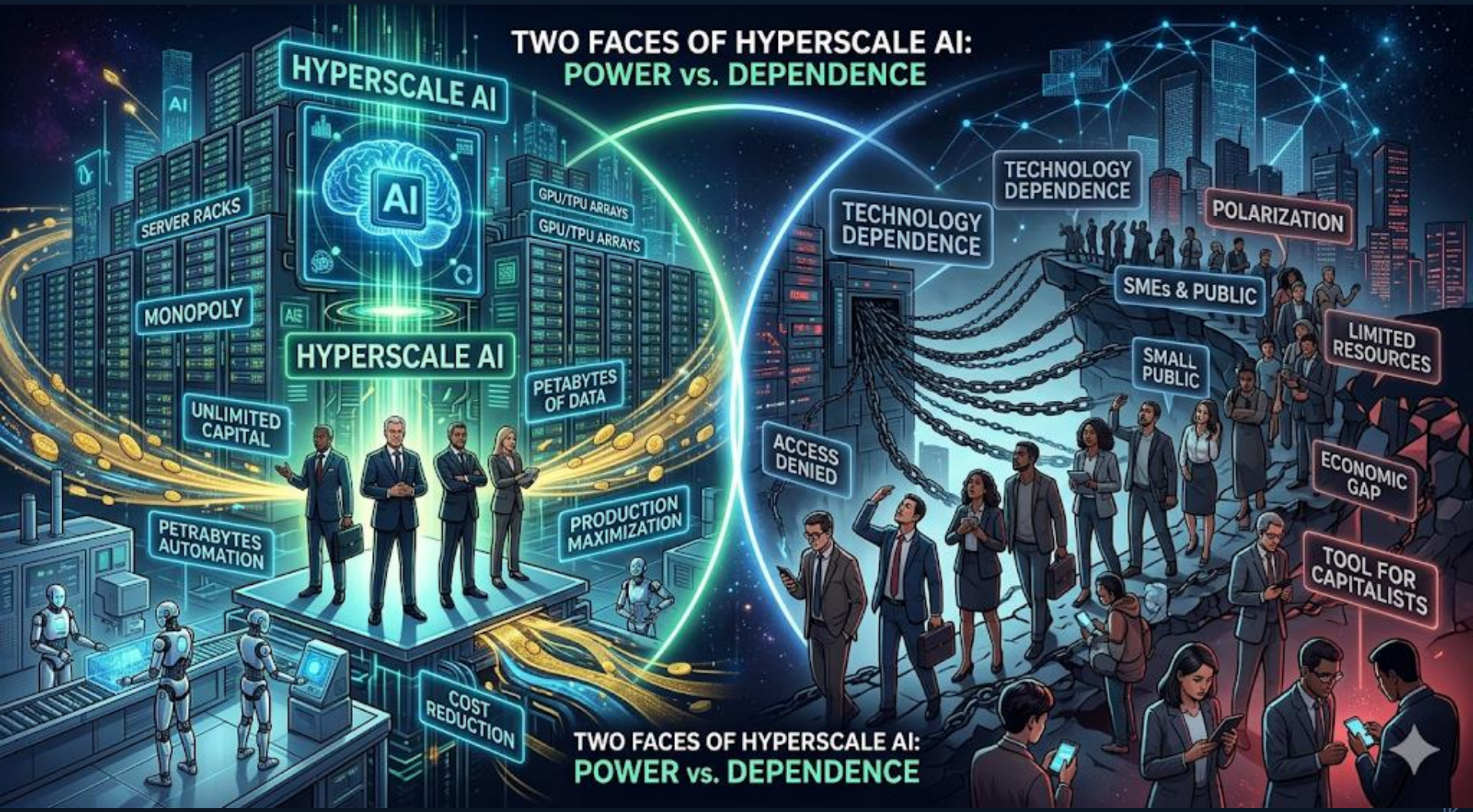
Agent

Deploying goal-oriented care-call agents that prompt concrete actions for social well-being.

4

Validation

Ensuring reliability and fairness by actively evaluating and preventing AI bias and discrimination.


TWO FACES OF HYPERSCALE AI:
POWER vs. DEPENDENCE
HYPERSCALE AI
AI
SERVER RACKS
GPU/TPU ARRAYS
GPU/TPU ARRAYS
MONOPOLY
HYPERSCALE AI
PETABYTES OF DATA
UNLIMITED CAPITAL
PETRABYTES AUTOMATION
PRODUCTION MAXIMIZATION
COST REDUCTION
TECHNOLOGY DEPENDENCE
TECHNOLOGY DEPENDENCE
POLARIZATION
SMEs & PUBLIC
LIMITED RESOURCES
SMALL PUBLIC
ACCESS DENIED
ECONOMIC GAP
TOOL FOR CAPITALISTS
TWO FACES OF HYPERSCALE AI:
POWER vs. DEPENDENCE

Core Principles for Sustainable AI Ecosystem

1. AI as Collaboration Partner (Human In the Loop)

AI should not replace humans but work alongside them. We design structures that create jobs for diverse social groups.

2. Open-Source Spirit

Preventing monopolization by sharing outcomes openly. Build public-interest datasets and open-source models for social & environmental issues.

3. Practical Field-Ready Agents

Developing agents that solve real-world social problems through concrete, actionable services and interventions.

4. Lightweight Domain Models

Focusing on accessible, domain-specific sLMs (e.g., healthcare, care) that require minimal infrastructure.

5. Renewable Modular Data Centers

Inference-first, NPU-centred modular edge data centres powered by renewable energy.

6. Trustworthy AI by Default

Ensuring ethical stability through rigorous validation systems designed to actively prevent bias and discrimination.

Anything for LLM, Something for sLM

Lightweight AI Models is key for Sustainable AI ecosystem

Not every AI task needs a frontier LLM.

LLM

100B+ params

Use: General reasoning, creative tasks

Energy: Very High

SLM

1–13B params

Use: Domain-specific inference

Energy: Low

Drastically cuts energy consumption and carbon emissions by utilizing domain-specific Small Language Models (SLMs)

SLM Application Domains

Medical / Care

Symptom classification, medication reminder, care call

Customer Service

Automated financial counseling and complaint handling

Environmental

Renewable energy data analysis, carbon monitoring

Low-Resource Language

Khmer language, minority language support

Education

Personalized learning, job training content creation

Training for Big, Servicing for Small

Small, modular edge NPU data centers based on renewable energy

Renewable Energy

Solar and wind integration
On-site energy self-sufficiency

NPU-Centred

Inference Optimization Chip
Maximize power efficiency

Real-World Examples Modular Liquid Cooling Data Center (Schneider, VIPO IO & etc)

Traditional vs Edge Data Center

Metric	Traditional DC	Modular Edge DC
Transmission Loss	5–10%	< 1%
Cooling (PUE)	1.5–2.0	1.1–1.3
Carbon Footprint	High	Near-Zero
Deployment Time	12-24 months	4–8 weeks
Renewable	Limited	Native
Scalability	Fixed	Modular +/–

AI for Environmental Problem-Solving

Example: Sixty Hertz (60Hz) - AI-Driven Mapping of Unmetered Solar Power

Sixty Hertz (60Hz)

Solar Power Station Mapping via Satellite AI

1. Satellite Imagery

Satellite to photograph the location of solar panels across the country

2. AI Data Labeling

AIWORKX Team Precision Labeling Panel Boundaries

3. Deep Learning Recognition (95% Precession Recall)

Utilizes high-resolution aerial photography and AI analysis to identify small-scale, unmetered solar installations by SK Telecom AI Center

4. Grid Stability & Forecasting

Enables precise tracking of "Behind-the-Meter" (BTM) generation, crucial for stabilizing regional energy grids.

Why This Matters

Inclusive Jobs

Disabled and career interrupted women are key personnel in labeling

Accelerating Carbon Neutrality

Disabled and career interrupted women are key personnel in labeling

Contributing to the Energy Transition

A vital tool for regional energy transition plans and supporting RE100 compliance across industrial zones.

Globally scalable

The same model can be applied to Developing Countries


10.43 m/s
123.44 W/m²
8.4 ℃
100 %
제주특별
지역도
45.36
70.63
NOW


애안동_4499_4614
4,946.34 kWh
SKT AI 모델 자세히 보기
NOW

Cambodia IBS: Inclusive AI in Action

KOICA IBS Project · Phnom Penh · 2026–2030

The Problem

9.9%

Youth Unemployment
High youth unemployment rate among ASEAN countries

19.4%

NEET Rate
Percentage of young people outside of education, employment, and training

1/4,000

Khmer Corpus
Extremely low resources compared to English

Our Approach

1. **ICT & AI Education**
   Train 100 youth/year · 5-year cumulative 500+
2. **Khmer Dataset Build**
   500K sentences/year · 5M total · Open-source
3. **sLM Build**
   Domain-specific lightweight Khmer sLM
4. **Public Service Agent PoC**
   5+ PoCs · Govt, finance, telco sectors

Principles in Practice: Inclusive AI Delivered

Core Principles → Cambodia IBS Project

1	2	3	4	5
Collaboration Partner	**Open-Source Spirit**	**Practical Agents**	**Lightweight Models**	**Trustworthy AI**
Youth as data creators	Khmer corpus open-released	Public chatbot & admin PoCs	Low-resource Khmer sLM	Native QA & bias checks

Expected Impact by 2030

500+	100	5M	5+	BEP
Youth Trained	**Digital Jobs**	**Khmer Sentences**	**PoCs Deployed**	**Achieved 2030**
100/year × 5 years	Direct employment	Open corpus built	Public & private sector	Self-sustaining model

"AI's future won't be decided by performance alone. Our true edge is how deeply we embed public value and inclusivity into design."

“AI’s future won’t be decided by performance alone.

Our true edge is how deeply we embed **inclusion** and **sustainability** into design."

Let's build an inclusive AI ecosystem—together with **AIWORKX**