

2024/25 KSP with Poland

Final Reporting Workshop, July 2025

TOPIC 2:

AI Innovation Ecosystem & Regulatory Innovation for SMEs' Digital Transformation

YOON, Melissa HS
Professor, Hanyang University
School of Law & School of Artificial Intelligence

Contents

I. Current Status Analysis

- Poland's AI Paradox: Infrastructure vs. Utilization Gap
- Multi-Dimensional Barriers & Korea's Success Model
- Regulatory Environment Challenges

II. Policy Recommendations

- Strategic Vision & 6-Pillar Framework
- Priority 1-2: Governance & Demand Creation
- Priority 3-4: Sandbox & SME-Specialized Programs
- Priority 5-6: Ecosystem Integration & Implementation

Poland's AI Paradox

SMEs Drive Economy, but Underutilize AI

99.8%

of enterprises are
SMEs

43.6%

GDP contribution

4%

AI adoption rate

75%

EU 2030 target

The Strategic Opportunity

- **Economic Potential:** AWS research shows €134 billion economic value potential
- **Current Status:** Poland is building world-class AI infrastructure but SMEs aren't prepared to utilize it
- **Policy Implication:** SME AI adoption must parallel infrastructure development for national digital transformation

"Poland is building the highway (AI infrastructure), but SMEs need to be ready to drive on it"

Multi-Dimensional Policy Challenge

4-Layer Barrier Structure

Technical Barriers

- Legacy system integration complexity
- Insufficient datafication levels
- Limited access to quality data

Organizational Barriers

- Shortage of AI expertise
- Management's lack of understanding
- Resistance to change

Environmental Barriers

- Regulatory uncertainty
- Cybersecurity concerns
- Intense competitive pressure

Socio-Cultural Barriers

- **80.7%** believe AI is "not necessary"
- **14.9%** "do not know how AI can help"
- Preference for experience over data

"Single-policy solutions cannot address multi-layered challenges - integrated approach required"

Korea's Policy Innovation

Evidence-Based SME AI Support Model

5

Years to Transform

€221B

Expected Impact (2026)

85%

Sandbox Approval Rate

70%

Commercialization Success

1

Evidence-Based Policy

Regular surveys and impact assessments

2

Integrated Governance

6-ministry integrated sandbox system

3

Ecosystem Approach

Supply-demand simultaneous development

4

Phased Implementation

Maturity-based customized support

5

Industry-Specific Focus

Manufacturing, Healthcare, Finance, Education

Complex Multi-Layer Compliance Challenge

Poland's Regulatory Complexity

EU + National + Sectoral Multi-Layer Structure

- **EU AI Act:** High-risk system compliance, up to €35M fines
- **Enhanced GDPR:** Explicit consent for AI decisions, data minimization
- **NIS2 Directive:** Cybersecurity obligations (2024 implementation delayed)
- **Polish Additional Regulations:** Employee data processing, Polish language requirements

SME Type	Poland Annual Cost	Korea Annual Cost	Difference
Manufacturing	€150-400K	€60-150K	2.5x higher
Service	€110-230K	€50-130K	2x higher

"Transform regulatory compliance from innovation barrier to competitive advantage"

Strategic Vision

Leveraging Poland's AI Infrastructure Assets

€400M

PIAST AI Factory

€50M

AI HUB Poland/year

35

Petaflops Helios

€600M

LUMI AI Project

1

AI-Focused Governance

Strengthen AI HUB Poland

2

Demand-Creation Vouchers

Korean-style stimulation policy

3

3-Tier Regulatory Sandbox

National-Sectoral-Regional structure

4

SME-Specialized Programs

Tailored SME Support + Fast Track
+ Regulatory Learning

5

Regional Implementation

5-city demonstration centers

6

University-Industry Partnerships

Practical research cooperation

Priority 1 & 2: Governance Enhancement & Demand Creation

AI HUB Poland 2.0 Strategy

- Leverage existing **€50M/year budget**
- PIAST-Helios-PDIH network one-stop service
- AI Adoption Observatory establishment
- Strengthened KRIBSI integration

AI & Data Voucher Program

- **AI Voucher:** Up to €133K consortium-based
- **Data Voucher:** Up to €40K for training data
- Approved vendor ecosystem development
- Supply-demand simultaneous cultivation

AI Education & Capacity Building

Public-Private Partnership Model

- **CEO Training Programs:** SME executive AI understanding and DX strategy
- **Capacity Building:** Basic AI training to expert-level programs
- **Multi-stakeholder approach:** Government funding + Academia expertise + Private sector training

"Demand Creation → Ecosystem Formation → Self-Sustaining Expansion"

Priority 3: 3-Tier Regulatory Sandbox System

Design Logic: SME Accessibility-Centered

- **Trade Secret Concerns:** Technology exposure with large enterprises
- **Regional Cluster Preference:** Existing trust networks
- **Phased Entry:** Regional → Sectoral → National development path

Tier 1: National

KRIBSI Operation

- EU AI Act requirements
- High-risk systems
- €1M+ projects

Tier 2: Sectoral

Ministry Cooperation

- Manufacturing (Industry)
- Healthcare (Health)
- Fintech (KNF)
- AgTech, Education

Tier 3: Regional

5-City Centers

- Warsaw (comprehensive)
- Kraków (R&D)
- Gdańsk (maritime)
- Wrocław, Poznań

Priority 4: SME-Specialized Support Programs

Tailored Support Program Based on SME Type

Type A: AI Solution Adopting Enterprises

A-1: Manufacturing SMEs (47% current adoption)

- Industry 4.0 Sandbox Establishment
- Smart factory demonstration environment
- AI adoption investment tax credit 20%

A-2: Service SMEs (25% current adoption)

- Privacy-by-Design Support Package
- GDPR-compliant AI architecture design
- Verified chatbot/consultation solutions

Type B: AI Solution Developing Enterprises

B-1: AI Startups (≤50 employees, ≤5 years)

- Polish AI Startup Accelerator
- Initial investment: up to €500K
- MVP Sandbox: 6-month demonstration

B-2: AI Specialized SMEs (51-250 employees)

- AI Excellence Center Support
- R&D tax credit up to 200%
- Global partnership linkage

Fast Track Program

Target: Companies ≤50 employees, revenue ≤€10M

- Rapid review: 6→3 months
- High support rate: 80% cost support
- Dedicated mentor: 1:1 consultant

SME AI Regulatory Compliance Support Program

Goal: 50% reduction of €150-400K regulatory burden

- 4-level stepwise learning process
- Risk simulation and mock testing
- Multi-stakeholder cooperation

Priority 5 & 6: Regional Strategy & Ecosystem Integration

Poznań PIAST Center

AI infrastructure & digital services hub

Kraków Tech Valley

R&D and AI development focus

Gdańsk Maritime Hub

Maritime industry AI specialization

Warsaw Innovation Hub

Comprehensive platform

Wrocław Industry 4.0

Smart manufacturing center

Academic-Industry AI Partnerships

- **NCBR Specialized Programs:** AI-dedicated industry-academia cooperation
- **Practical Research:** AI graduate thesis ↔ SME challenges matching
- **Joint Development:** Government-funded university-SME teams

"Existing Infrastructure + Academic Excellence + SME Innovation = Polish AI Ecosystem 2.0"

Implementation Timeline: 3-Phase Strategic Roadmap

Phase 1: 2025-2026

Foundation Building

- AI HUB Poland-SME support system
- 1,000 SME voucher pilot
- AI awareness campaigns
- 3-Tier sandbox framework

Target: 6% AI Adoption

Phase 2: 2027-2028

Ecosystem Scale-up

- Full 3-Tier sandbox operation
- PIAST network nationwide expansion
- Sector-specific AI solutions
- Regional hub network

Target: 8% AI Adoption

Phase 3: 2029-2030

Leadership

- EU AI best practice development
- Central European AI hub positioning
- Cross-border AI collaboration
- Knowledge sharing & model replication

Target: 10% AI Adoption (Government Goal)

Success Metrics

- AI adoption rate progression: 4% → 6% → 8% → 10%
- SME regulatory compliance cost reduction: 50%
- Economic impact realization: €134 billion potential

Strategic Recommendations

From Infrastructure to Implementation

"Poland is building substantial AI infrastructure. The policy challenge is connecting this infrastructure to SME innovation. Korea's experience provides a proven roadmap."

€400M

PIAST Investment

450M

EU Market Access

#1

Central Europe AI Experts

12

National AI Policies

Immediate Actions

- **3 months:** AI HUB Poland-SME connection
- **6 months:** 1,000 SME voucher pilot
- **12 months:** 3-Tier sandbox design

Korea-Poland Partnership 2.0

- Sandbox operation know-how transfer
- Voucher program design cooperation
- Performance measurement methodology

***Poland 2030: From Advanced AI Infrastructure to Effective AI Implementation
Central European AI Hub Supporting SME Innovation***

Thank You

