

Analytical Policy Brief: Ethical Artificial Intelligence and Smart City Tools for Ukraine's Recovery and EU Integration

Prepared under the initiative “AI4Ukraine: Ethical AI for Recovery on the Path to the EU”

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Executive Summary

This Analytical Report explores the potential of ethical Artificial Intelligence (AI) and Smart City tools to enhance Ukraine's resilience, recovery, and European integration. Based on the European Union's regulatory and normative frameworks, including the EU Artificial Intelligence Act (2024), the OECD Principles on Artificial Intelligence (2019), and the Guidelines of the European Commission and the Council of Europe—notably, the Council of Europe Framework Convention on AI (CETS No. 225) and the HUDERIA methodology for human rights impact assessment—as well as Ukraine's own regulatory foundation, such as the Concept for the Development of AI (2020), the Action Plan for AI Development 2025–2026, the Ministry of Digital Transformation's White Paper on AI Regulation (2024), and the WINWIN Strategy for Digital Innovation (2025–2030), the report assesses Ukraine's legal, institutional, and ethical readiness for the deployment of AI in public administration and urban development.

The analysis identifies key gaps in national regulation, institutional coordination challenges, and opportunities for integrating ethical AI standards into Ukraine's governance, education, and digital transformation systems. The recommendations are addressed to public authorities, the education and professional development sectors, and civil society organizations, aiming to promote responsible, human-centric digital transformation in line with European Union principles and values.

Introduction and Relevance

Artificial Intelligence (AI) and Smart City technologies are transforming governance, economy, and social life worldwide. For Ukraine, these technologies hold special relevance amid ongoing war recovery, reconstruction of critical infrastructure, and strategic pursuit of EU membership.

The integration of ethical and trustworthy AI is crucial to ensuring that digital transformation aligns with democratic values, human rights, and data protection (EU AI Act, 2024). AI offers tools for decision support, service automation, and data-driven governance, while Smart City initiatives introduce systems for sustainable urban management, energy efficiency, and civic participation. In the context of Ukraine's Recovery Plan and EU Digital Decade, both areas represent catalysts for innovation and resilience-building.

European Framework for Ethical AI and Smart Cities

The European Union has established a comprehensive regulatory framework for AI, centered on a risk-based and human-centric approach. The EU AI Act (Regulation (EU) 2024/1689) classifies AI systems according to risk levels—prohibited, high-risk, limited, and minimal—and mandates compliance with transparency, accountability, and safety requirements. It prohibits practices that threaten human autonomy or exploit vulnerabilities, such as real-time biometric surveillance or social scoring. High-risk AI applications (education, employment, justice, transport, etc.) are subject to strict obligations including conformity assessments, risk management, and human oversight. Complementary principles from OECD (2019) and UNESCO (2021) reinforce this orientation toward trustworthy, inclusive, and explainable AI.

In parallel, the Smart City concept within the EU is implemented through cross-sectoral policies—Digital Decade Programme (2030), European Green Deal, and New Leipzig Charter (2020). Smart Cities integrate ICT, IoT, and AI to optimize energy consumption, transportation, waste management, and citizen engagement. EU-supported projects such as Living-in.EU, Horizon Europe's Lighthouse Cities, and Intelligent Cities Challenge exemplify human-centric, interoperable, and sustainable digital ecosystems. Cities like Tallinn, Helsinki, Dijon, and Hamburg have demonstrated effective models of transparent governance, algorithmic auditing, and public accountability. These experiences provide a solid foundation for Ukraine's adaptation of similar frameworks in post-war recovery and governance modernization.

Ukrainian Context: Institutional and Legal Framework

Ukraine's progress toward AI regulation and Smart City governance has accelerated since 2020. The key policy documents include the Concept for AI Development (2020), the White Paper on AI Regulation (2024), and the WINWIN Strategy for Innovation and Digital Development (Cabinet Resolution No.1351-r, 2024). In 2025, the Ministry of Digital Transformation launched the WINWIN AI Center of Excellence as a flagship hub for testing AI solutions in the public and defense sectors. Ukraine has also adopted the Council of Europe's Framework Convention on AI (2025) and the

HUDERIA methodology for human rights impact assessment. Despite these steps, regulatory fragmentation and insufficient coordination between ministries hinder the coherent implementation of ethical AI policies.

The Smart City agenda remains largely decentralized. While several municipalities (Kyiv, Lviv, Vinnytsia, Mariupol* *before 2022*) have launched digital platforms for urban management, the lack of national interoperability standards limits scaling. Funding constraints, weak local expertise, and the need for transparent data governance remain barriers. Nevertheless, Ukraine's recovery process provides a unique opportunity to embed ethical AI and Smart City principles from the outset of reconstruction—integrating sustainability, inclusivity, and digital trust.

Key Findings and Opportunities

Ukraine demonstrates a strong normative intention to align with EU standards but lacks binding legal instruments equivalent to the EU AI Act.

Institutional fragmentation limits the implementation of coordinated AI and Smart City policies across ministries and municipalities.

Ethical and human rights frameworks (HUDERIA, GDPR-equivalent protections) are not yet systematically embedded in public-sector AI projects.

Smart City initiatives in Ukraine are primarily pilot-based and lack a unified national standard.

Education, awareness, and public trust are the weakest yet most essential components for successful ethical AI adoption.

Integrating AI and Smart City development can accelerate Ukraine's reconstruction, enhance governance transparency, and promote resilience through data-driven decision-making.

Recommendations

For Public Authorities, the Verkhovna Rada of Ukraine, the Ministry of Digital Transformation, Local Governments, and Regional CDTOs

Ukraine is at a crucial stage of developing its Artificial Intelligence (AI) governance system and building digitally enabled communities. To overcome policy fragmentation, enhance public trust, and create favorable conditions for innovation, the following measures are recommended:

1. **Accelerate the development and adoption of the Law on Artificial Intelligence**, harmonized with the *Regulation (EU) 2024/1689 – Artificial Intelligence Act*, ensuring a risk-based approach and the classification of AI systems into prohibited, high-risk, and limited-risk categories.
2. **Incorporate ethical principles of AI development** into the forthcoming *National Strategy for Artificial Intelligence Development until 2030*, including the principles of the United Nations “AI for Good” initiative, enhanced protection of personal data aligned with the *EU General*

Data Protection Regulation (GDPR), and establish a national methodology for monitoring risk-based categories of AI systems and mechanisms for prohibiting or restricting high-risk AI applications.

3. Establish a unified national regulatory authority on Artificial Intelligence, mandated to coordinate policy, monitor the AI market, and ensure compliance with ethical and legal standards. This body should perform functions equivalent to EU supervisory authorities, coordinating the implementation of the AI Act, certification and risk assessment of AI systems, and interacting with the Ministry of Digital Transformation, other central executive bodies, academia, and business.

4. Develop a national AI risk management system based on international standards (such as *NIST AI RMF* and *HUDERIA*) and introduce a **public registry of high-risk AI systems** in both the public and private sectors, including risk profiles, conformity status, and designated contact points.

5. Align the Personal Data Protection legislation (draft law No. 8153, harmonized with the GDPR) with the forthcoming *Law on Artificial Intelligence* to ensure legal coherence.

6. Adopt a national standard for algorithmic transparency and explainability in e-services and administrative decision-making, including the **right of citizens to obtain explanations** of algorithmic outcomes.

7. Clarify liability for AI-assisted decisions, ensuring a clear distribution of responsibility among developers, providers, implementers, and data owners.

8. Improve the regulatory framework for Smart Cities, introducing a legal definition of “smart city,” and establishing requirements for interoperability, cybersecurity, data ethics, and citizen participation in urban governance.

9. Amend public procurement and public–private partnership (PPP) legislation to enable innovative models such as *regulatory sandboxes* and *outcome-based procurement* for AI and Smart City projects.

10. Invest in capacity-building for public-sector professionals, expanding the competencies of regional and municipal *Chief Digital Transformation Officers (CDTOs)* in digital transformation, AI ethics, and data management.

11. Reaffirm Ukraine’s commitment to the principles of the New Leipzig Charter (2020) and develop a national roadmap for integrating these principles into urban spatial development and digital transformation strategies.

12. Integrate the “Just, Green, and Productive City” principles into community recovery and Smart City projects, ensuring cross-sectoral cooperation, digital inclusion, and the ethical use of emerging technologies.

13. **Mainstream ethical AI standards into Ukraine’s national recovery programs**, embedding human-centric and responsible AI use across all national and regional recovery strategies—for decision-making, resource allocation, and performance monitoring.
14. **Promote Smart City development as a key recovery tool**, encouraging local governments to deploy Smart City technologies for efficient management of energy, transport, security, and public services.

For Educational Institutions and the Professional Development System

The preparation of competent professionals is a key precondition for the ethical and safe implementation of AI and Smart City technologies in public administration. It is recommended to:

1. **Update curricula** of postgraduate education institutions and centers for professional development of civil servants, incorporating mandatory modules such as “*AI Ethics and Human Rights*,” “*AI Risk Management*,” “*Smart City for Public Managers*,” and “*Digital Security and Inclusion*.”
2. **Promote an interdisciplinary approach** combining managerial, legal, technical, and social aspects of AI, and involve *IT professionals, analysts, and cybersecurity experts* in teaching.
3. **Apply practice-oriented learning formats**, including simulations, case studies, and digital “sandboxes” for modeling AI-based decision-making in public administration.
4. **Introduce a certification system** for civil servants’ competencies in AI, Smart City governance, and digital leadership, and integrate micro-certificates into performance evaluation (KPI) systems.
5. **Strengthen partnerships** between the *National Agency of Ukraine on Civil Service (NACS)*, the *Ministry of Digital Transformation*, the “*Diia.Osvita*” platform, universities, and international donors to expand online learning and exchange of best practices.
6. **Invest in building digital literacy and professional capacity** at national and local levels to address the shortage of qualified public-sector staff and to enhance understanding of both the technical and ethical dimensions of AI.
7. **Implement digital inclusion programs** in line with *WCAG 2.2 standards*, ensuring accessibility of digital services, community learning hubs, and support for vulnerable groups.

For Civil Society Organizations

1. **Establish an independent expert platform “AI & Cities Observatory”** to monitor the ethical and transparent use of algorithms in public governance.
2. **Promote standards of responsible AI use** through ethical codes, awareness campaigns, open guides, and public consultations on AI-related projects.

3. **Strengthen participation of Ukrainian cities** in European initiatives such as the *EU Smart Cities Marketplace*, the Mission “*100 Climate-Neutral and Smart Cities*”, and *Horizon Europe* to facilitate knowledge exchange and attract investment.
4. **Foster peer-to-peer learning** and the dissemination of best practices among cities and communities to accelerate local digital transformation.
5. **Ensure public oversight and civil-society participation** in monitoring the use of AI, particularly in sensitive sectors, and guarantee the legal principle that “*the final decision remains with a human being*,” preventing the full autonomy of AI in critical decision-making processes.

Conclusions

Ukraine’s pathway toward recovery and EU integration requires embedding ethical and human-centric AI as a core component of governance modernization. The combination of AI and Smart City tools offers transformative potential for transparency, efficiency, and resilience in public administration. By aligning with European standards and fostering cross-sectoral collaboration, Ukraine can not only rebuild but also reimagine its governance model for the digital age. Ethical AI, guided by trust, accountability, and inclusion, should become a foundation for Ukraine’s democratic and sustainable recovery.

This Analytical Policy Brief presents a condensed summary of the Analytical Report “Ethical Artificial Intelligence and Smart City Tools for Ukraine’s Recovery and EU Integration” (Kyiv, 2025, 36 p.), prepared under the initiative “AI4Ukraine: Ethical AI for Recovery on the Path to the EU.”

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Background information

The Ukrainian National Platform of the Eastern Partnership Civil Society Forum (UNP) (<http://eap-csf.org.ua/>) is a network of more than 150 non-governmental organizations in Ukraine that advocates Ukrainian interests within the framework of the Eastern Partnership. The platform is part of the Eastern Partnership Civil Society Forum (EaP CSF).

The Eastern Partnership Civil Society Forum (EaP CSF) is a unique multi-layered regional civil society platform aimed at promoting European integration, facilitating reforms and democratic transformations in the six Eastern Partnership countries - Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. Serving as the civil society and people-to-people dimension of the Eastern Partnership, the EaP CSF strives to strengthen civil society in the region and boost pluralism in public discourse and policy-making by promoting participatory democracy and fundamental freedoms. The EaP CSF is a non-partisan bona fide non-governmental organisation”.

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