Napoli, 26 Novembre 2024

European Week of Cities and Regions Close to you

How can AI, digitalization, and greening ensure smart and sustainable growth for EU regions and cities?

Official Statistics and AI

designing, testing and sharing experiences

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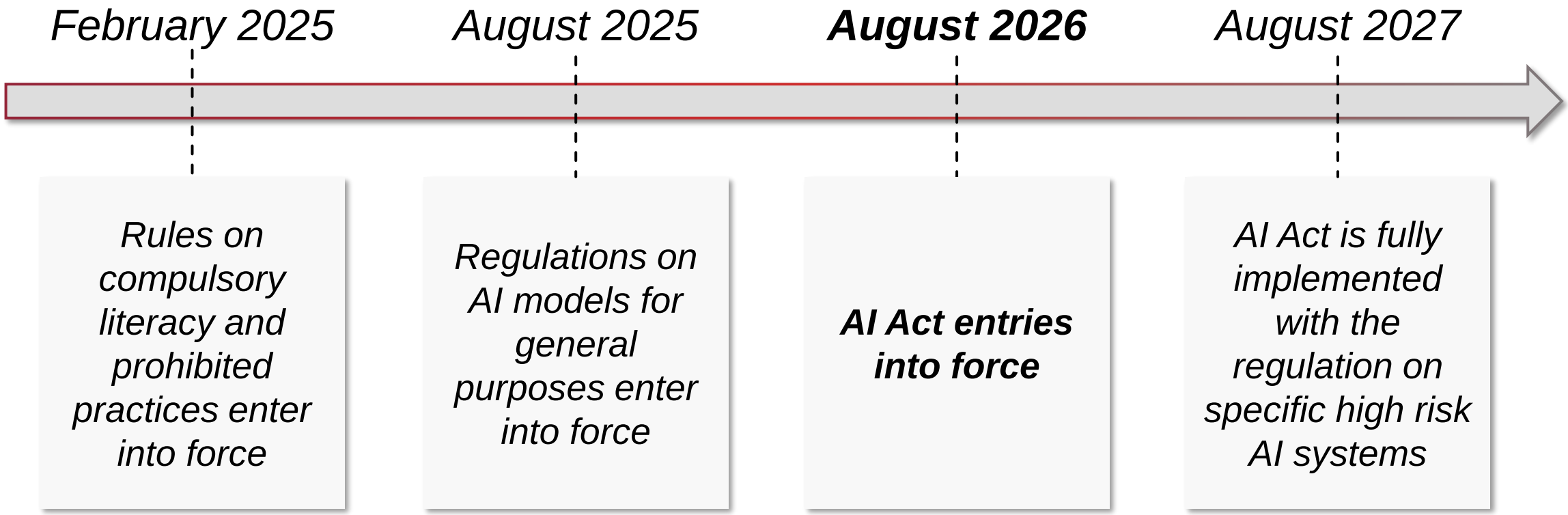
Regulatory Context

On 12 July 2024, the AI Act, a European Union regulation governing the development and use of Artificial Intelligence in Europe, has been published; it will take effect 24 months after, i.e. on 2 August 2026



AI Act

The AI Act classifies each AI system according to the level of risk generated by its use and divides them into different categories

UNACCEPTABLE RISK

Unacceptable risk AI systems are those that pose a threat to the security, fundamental rights and values of the European Union

Examples of prohibited systems include those that use subliminal techniques that operate without a person's knowledge, or deliberately manipulative or deceptive techniques that have the purpose or effect of significantly distorting a person's behaviour

HIGH RISK

High risk AI systems are those that have a potentially significant impact on people's lives

Example of a high-risk system is one used in education and training, to assess learning outcomes, guide the learning process and monitor dishonest behaviour

SPECIFIC TRASPARENCY RISK

Specific transparency risk AI systems are those that do not fall into the high risk or prohibited categories but are subject to transparency obligations

Example of a specific transparency risk system is an AI Application where there is a clear risk of manipulation (e.g. via the use of chatbots) or deep fakes. In this kind of scenarios, users should be aware that they are interacting with a machine

FONTE: REGULATION (EU) 2024/1689 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, ART. 5 AND 6 (L_202401689EN.000101.FMX.XML); ARTIFICIAL INTELLIGENCE – Q&AS

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Impact of AI in Public Administration

The adoption of AI in Public Administrations is transforming processes, enabling efficiency and innovation

AI anticipated and feared impacts are numerous, particularly regarding its effects on the **labour market**

While some see the replacement of routine, repetitive tasks as a risk, AI also presents opportunities by allowing workers to focus on higher-value, more fulfilling activities

In Italy, Public Administration is beginning to embrace AI

5% of local PA, **82% of Regions**, have implemented or planned **investments in innovative AI tools** or Big Data analysis techniques during the 2022-2024 period*

*) ISTAT, PUBBLICA AMMINISTRAZIONE LOCALE E ICT - ANNO 2022 (HTTPS://WWW.ISTAT.IT/IT/ARCHIVIO/294170)

Some Real Challenges in Adopting AI Solutions

Alongside the opportunities offered by AI, it is also necessary to consider the challenges that may affect the development and use of AI solutions in institutions

Private sphere risks

Privacy and data protection: loss, unauthorized use and disclosure of personal data

Intellectual property: unauthorized search and use of copyrighted or licensed content

Disinformation: dissemination of content that does not distinguish between fact, opinion and fiction

Social sphere risks

Reputational: responses tainted by hallucinations

Discrimination: unfavorable predictions for less represented groups

Technological risks

Economic: high costs of the technology

Sustainability: high level of energy consumption used by computing infrastructures

Skills: lack of adequate skills to implement AI solutions

Role of Istat

Istat plays a dual role in this evolving context

Accessibility

AI can enhance data accessibility and statistical production; for example, it can make data more accessible to all

Data quality

Acting as a research institution, Istat experiments with AI and evaluates its impacts, ensuring the rigorous data quality control for which it is known

Toward Ethical and Equitable AI in Statistics (1/3)

Statistical data guide decisions, emphasizing a human-focused approach for ethical use and bias prevention. Istat prioritizes addressing inequalities and representation issues in AI systems

In statistics, **data** are **more** than **mere numbers**. They represent the world and form the basis for **decisions grounded** in **scientific evidence**.

Paradigms of statistical **data production** and **dissemination** are **evolving** with **AI**

AI technological shift demands a **human-centred approach** to ensure an ethical and sustainable future, expand statistical insights and **mitigate** the **risks**

Istat AI experimentation emphasizes **addressing new ethical challenges,** particularly **representation biases** and **inequalities** that AI systems can perpetuate

Toward Ethical and Equitable AI in Statistics (2/3)

The following goals guide the application of AI in statistics

Fair Datasets

- Data must be non-discriminatory
- It is crucial to identify and avoid representational biases in AI training datasets, starting with careful data selection

Universal Accessibility

- Accessibility must be granted regardless of age, gender, ability or other personal and social characteristic
- Design must adhere to inclusive principles

Stakeholder Engagement

- Stakeholders should be involved in designing and evaluating AI solutions
- Iterative and continuous improvement processes are fundamental for a proper design and evaluation

Confidentiality

- Safeguarding privacy is crucial
- The possibility to cross-reference diverse data sources must be avoided

Toward Ethical and Equitable AI in Statistics (3/3)

In order to introduce Artificial Intelligence in a responsible way, it is necessary to follow fundamental principles. It is therefore necessary to have a set of rules, best practices and procedures that can be shared by organizations

Prioritize ethical principles

Promote innovation while respecting fundamental rights

Support cultural growth for a conscious and responsible use of Artificial Intelligence

Tools for AI Governance

Istat has defined an AI Governance Framework to ensure compliance with the regulations and to translate the principles and values defined in the regulatory and ethical framework into practical activities

AI Governance Framework

There is a clear interaction between these areas: for example, in innovation area the procedures and rules defined in Data&Rules area are used to ensure that AI solutions are monitored and reliable. This governance structure ensures that AI is introduced in Istat in a fair, responsible and compliant manner

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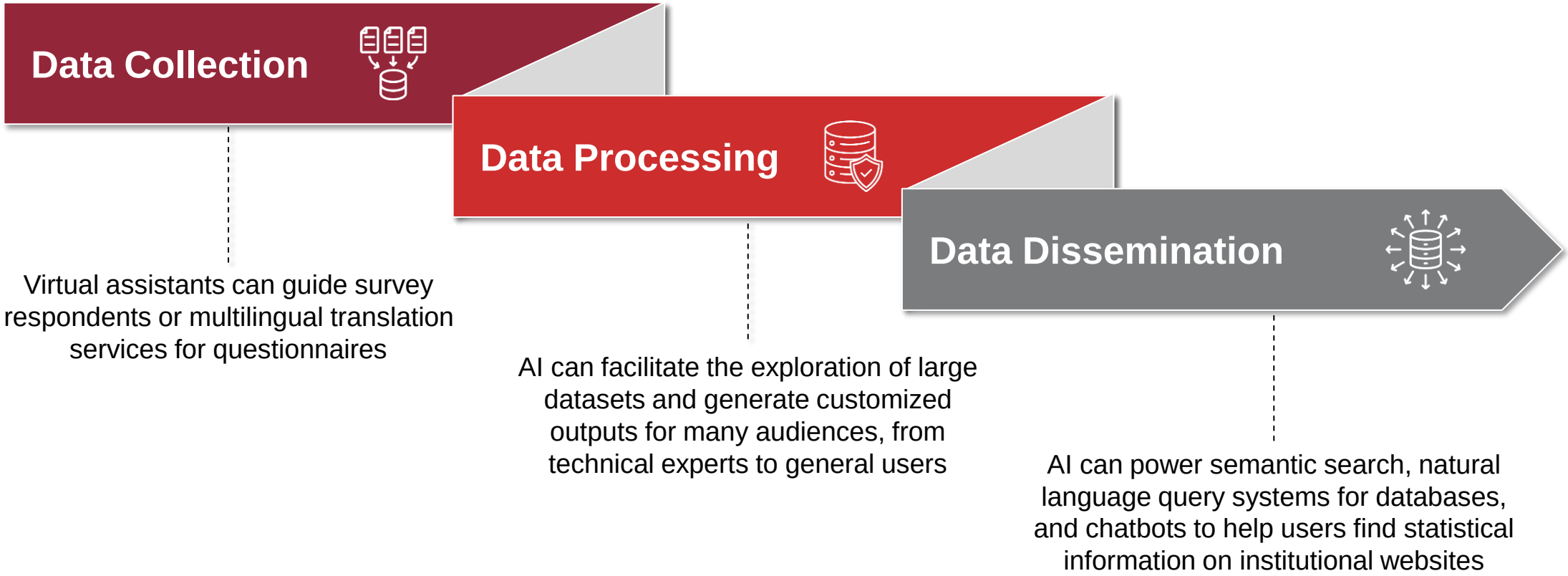
AI Applications in Official Statistics

AI offers numerous opportunities throughout the statistical process



***Internal Use**: AI can optimize Istat internal workflows, enhancing overall efficiency in ordinary work*

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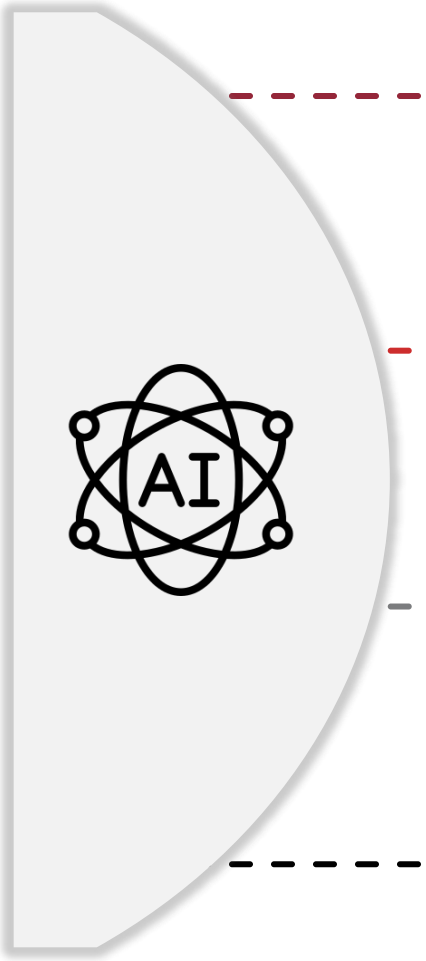
Istat AI Initiatives

Istat has launched/is launching several AI initiatives



1

Improving Contact Center Efficiency
Using AI to manage user requests effectively

2

Semantic Search and Multilingual Reporting
Enhancing accessibility to Istat resources

3

European Project "ESSNet One-Stop-Shop Shop For Artificial Intelligence/Machine Learning for Official Statistics"
Creating a unifying platform for AI and machine learning in official statistics

4

Staff Training and Awareness
Promoting responsible use of AI tools through internal training and external engagement activities, including events like this one

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Conclusions and Perspectives

The adoption of AI solutions must comply with three fundamental aspects

User-Centric Design

AI solutions must prioritize user experience while adhering to ethical principles and values

Risk Mitigation

To recognize AI's risks, Istat actively studies and addresses them to minimize negative outcomes

Data Quality Assurance

Maintaining rigorous quality control across all statistical production stages remains a cornerstone

Future opportunities include leveraging new data sources and advancing IT standards and technologies to integrate AI and machine learning into statistical production, particularly using Big Data. These innovations promise to expand the horizons of official statistics.

Thanks

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