I-Cities 2020: session 2.B e-Culture & e-Tourism

Polis-Eye:
Policy Support System for Smart City Data Governance

Speakers: Alessandro Seravalli, Piero De Sabbata, Marco Mamei

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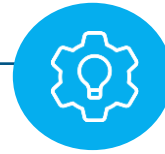CUP E21F18000200007

Polis-Eye

Context

In the context of Smart Cities, Smart Mobility and e-Tourism, digital transformation and **innovation strategies are gaining a central role for the governance to anticipate, address, and overcome the new challenges and trends of the tourism sector**

Project

Polis-Eye is an industrial research project financed by POR FESR Emilia Romagna 2014-2020 under S3 which aims **to provide a tool to help public administrations, citizens, and the main players active on the territory improving the management of the main tourism assets. Lead partner of the project is Geo Smart Lab.**

Goal

The final goal is to analyze heterogeneous datasets through ICT technologies collecting models and results in **a digital platform that could be used by tour operators, tourists, and public decision makers**

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Main Topics and Case Studies

Tourism in the broadest sense: thanks to the partners involved in the project and with the monitoring and the management of information flows provided from several external data sources
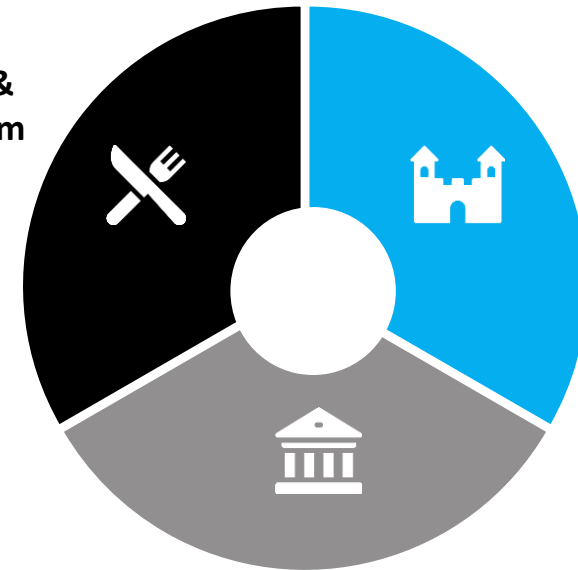
Innovation technology: the project uses technologies for the **big data management combined with AI and machine learning algorithms** for the **development of predictive system**

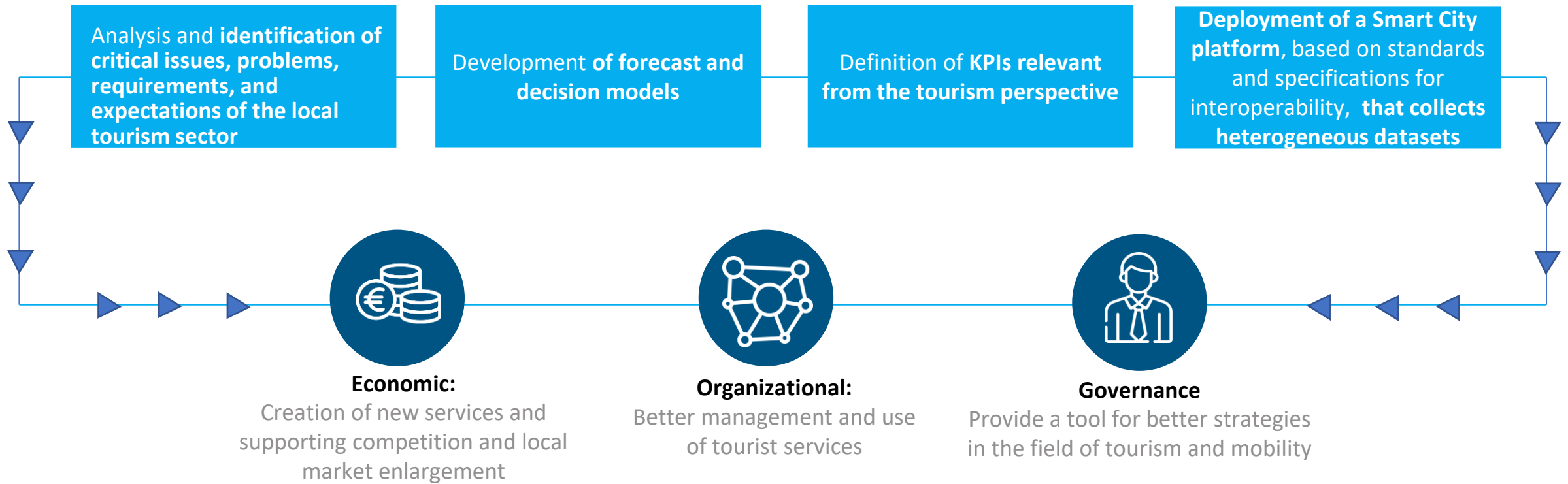**Smart City**: connected, safe and sustainable cities which support the economic growth

Fico - **Food & Wine tourism**

Borgo di Dozza - **hiking tourism**

Bologna musei – **cultural Tourism**

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Expected Results and Benefits

Analysis and **identification of critical issues, problems, requirements, and expectations of the local tourism sector**

Development **of forecast and decision models**

Definition of **KPIs relevant from the tourism perspective**

Deployment of a Smart City platform, based on standards and specifications for interoperability, **that collects heterogeneous datasets**

Economic:
Creation of new services and supporting competition and local market enlargement

Organizational:
Better management and use of tourist services

Governance
Provide a tool for better strategies in the field of tourism and mobility

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Partners and Companies

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Research Laboratories

Geo Smart lab, AIRI Unimore, Enea Cross Tec, Mechlav – Unife, CIRI ICT - Unibo

25

Researchers involved

6

Companies involved

Lepida, Iscom Group, Imola Faenza Tourism Company, Bologna Musei, FICO, Aeroporto Marconi di Bologna

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Research laboratories

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Companies

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Activity focus 1:
Data source integration

Analytical phase: identifying relevant data sources, extract data rellated to a period, select the most meaningful:

- Airport arrivals (Bologna Airport)
- State and provincial roads (MTS)
- WiFi hot spot connections (Lepida)
- Mobile operator connections per cell (TIM)
- Museum ticket offices (Bologna Musei)
- Park accesses (FICO EatalyWorld)
- Castle ticket office (Rocca di Dozza)
- People counter (IOT at Dozza)
- Weather data and forecast (free web)
- Organised Events (web sites crawling)
- Long term context events (i.e. COVID, human operator)

Fully operational phase: only few meaningful sources are continuously feeding the system with their data

Which ones ? It is an expected out

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Data source integration

**Data semantic and format: the largest part
of the data are already collected but:**

- different granularity (item, period, location,..)
- different formats and coding
- different or no geographical reference
- different levels of uncertainty

Data availability:

- different IT systems or no system
- sometimes very expensive
- 'extreme' privacy protection rules
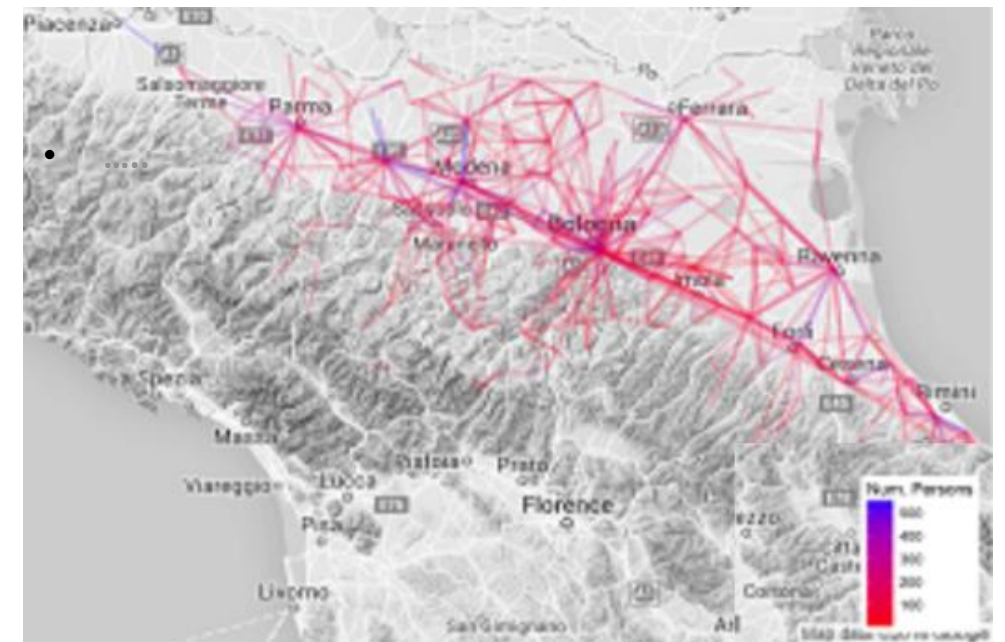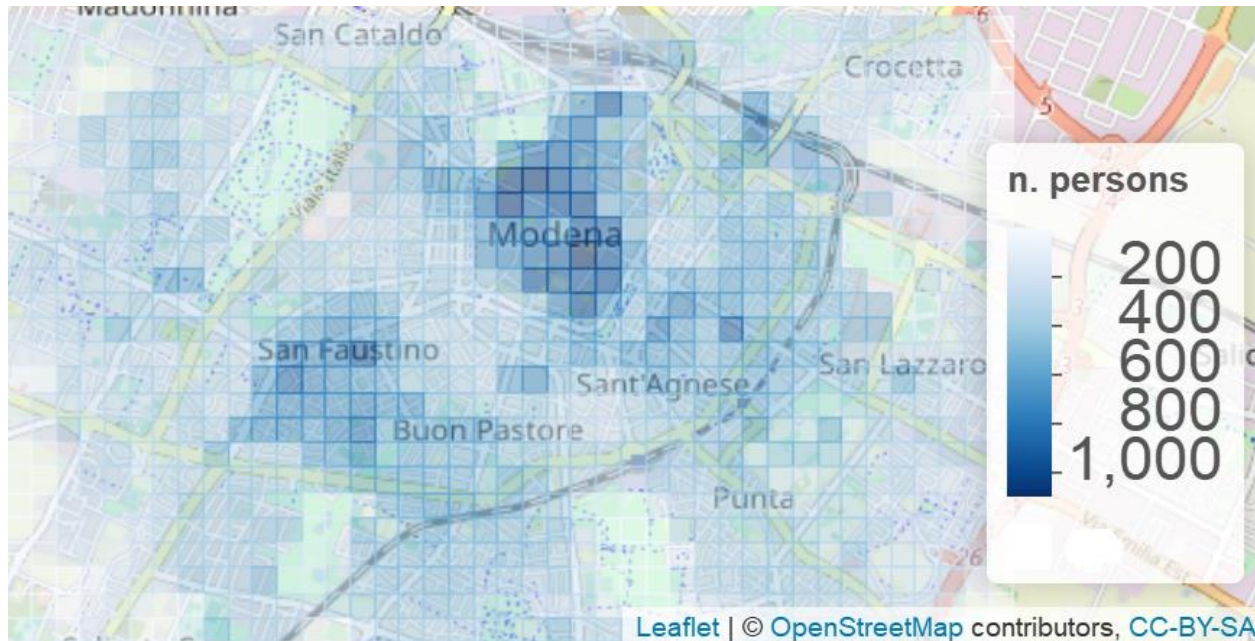- 'old' data might have been discarded
- delayed data updates

Raw data → **Triage area** → **Interoperability platform** → **UrbanDataSet** → KPI

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Activity focus: Data analysis

Telecom Data:

- Data collected passively from mobile network operators
- Aggregated data (GDPR-compliant)
- People Density and Mobility
- Aggregated profile information

Applications

- Presence at events + Attendance Estimation
- Tourist monitoring and fluxes
- Anomaly Detection
- Covid
- ...

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Activity focus: Data analysis

Presence and Mobility Forecasting (timeseries)
- State of the art forecasting models
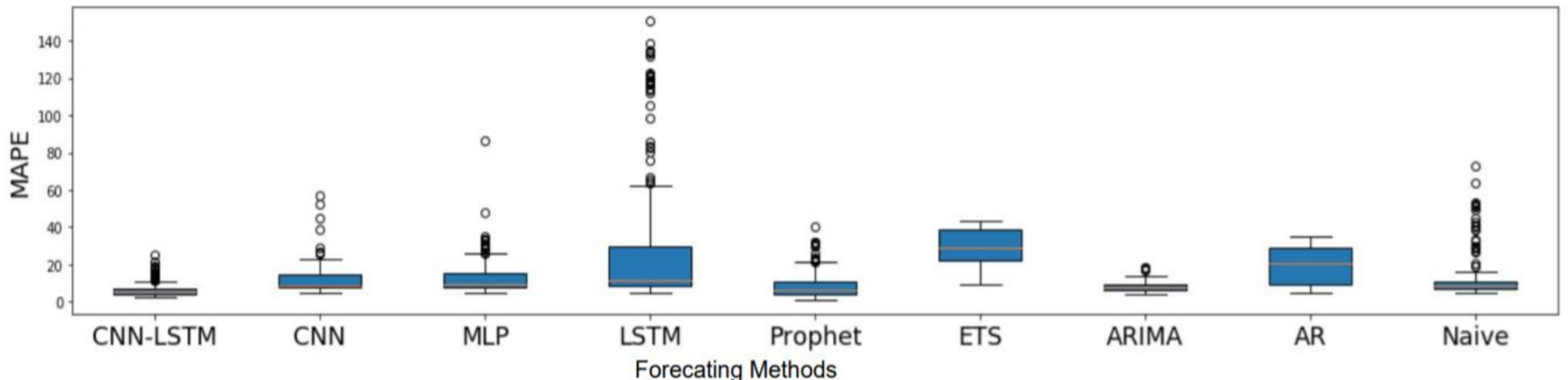- Multicell forecasting

Spatial Correlation Analysis
- Long-range correlations

Anomaly detection
- Events
- Assembrements

Mobility from Density
- Data improvement

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Contacts & information

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