

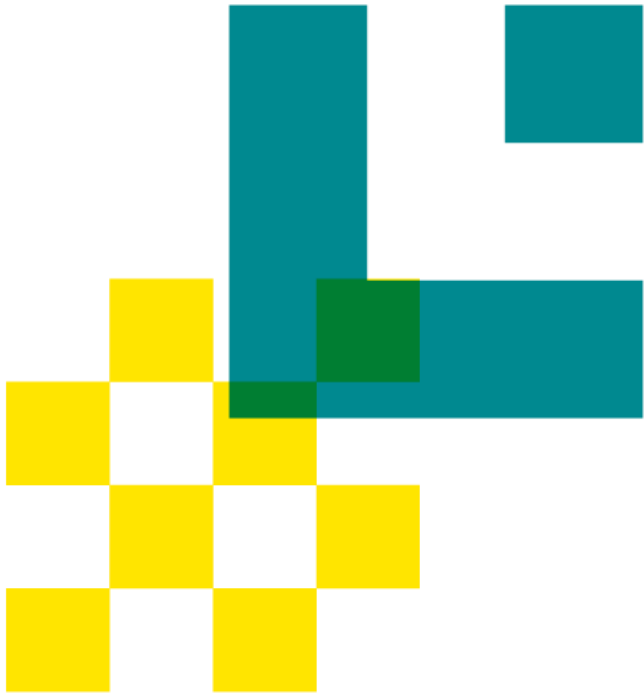
# Geospatial Analytics per l'analisi, la simulazione e il monitoraggio del rischio sociale sul territorio

**Marco Vignoli**

Business Analytics Team Leader

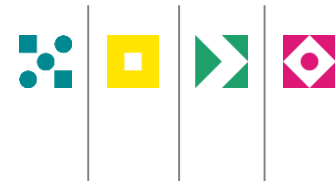
Milano,  
08/06/2017

- ❖ Chi è ICONSULTING
- ❖ Caso d'uso: Geospatial analytics per l'analisi del rischio sociale
- ❖ Architettura applicativa
- ❖ Demo
- ❖ Q&A



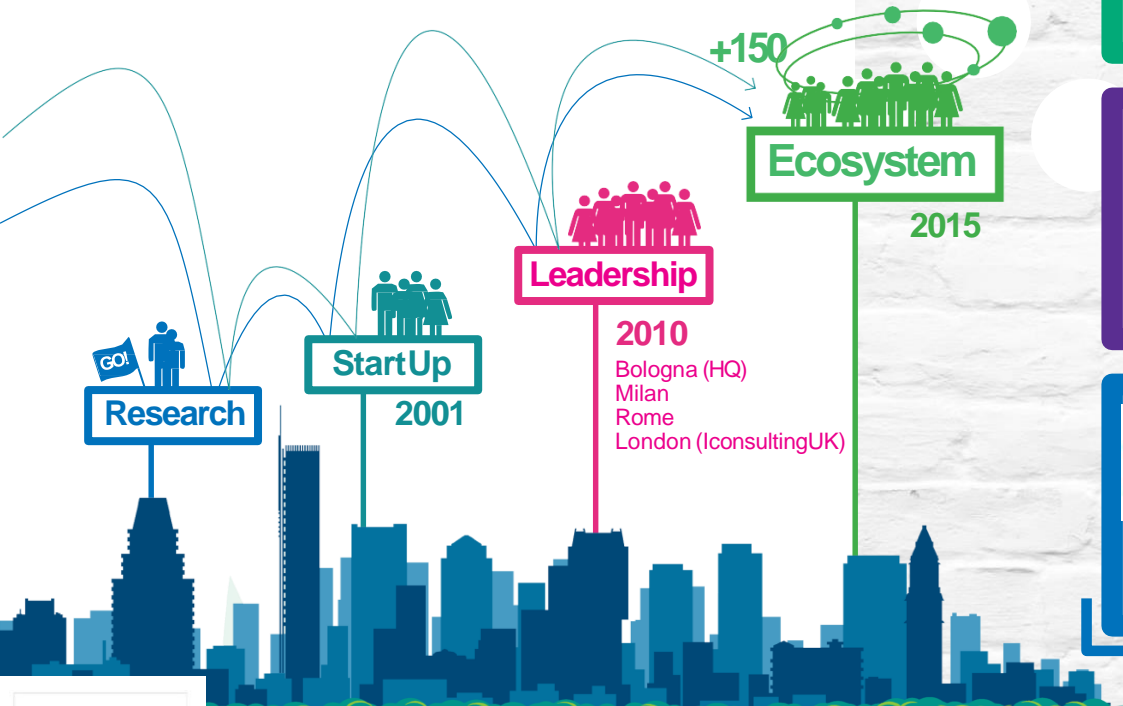
Chi è ICONSULTING

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# Our numbers



Over **500** challenging projects

Over **160** smart people

**4** inspiring offices

Over **150** happy customers

**ORACLE**  
Platinum Partner

**95%** blessed NPS\*

\*NetPromoterScore

Best Workplaces™

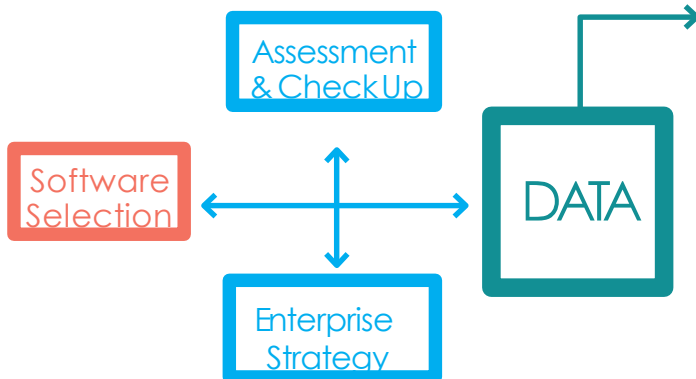


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# Icon Consulting Services

How data driven decision making is transforming companies, industries and governments



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# University

The **data business** is becoming a **key sector** for the European economy, the development of products and services based on data and the analysis of data collected in companies, public entities or that are available on social networks. The aim being to obtain operational indications and to identify new business opportunities.

In one word: **Big Data**, but not exclusively. Companies, in fact, have both a need and an urgency to manage the acquisition, presentation, sharing, analysis and visualization of data.

The Data Scientist is defined by the Economist as “the most interesting job of the twenty-first century, combining the skills of an IT technician, statistician and storyteller to extract the golden nuggets hidden under the mountains of data.”

**BBS**  
BOLOGNA BUSINESS SCHOOL



▶▶ Director of studies “Big Data Analytics”  
Open Program

▶▶ Master Lectures in “Administration,  
Finance and Control” Master

- ▶▶ Master Lectures in “Technology &  
Innovation Management”
  - Executive Master

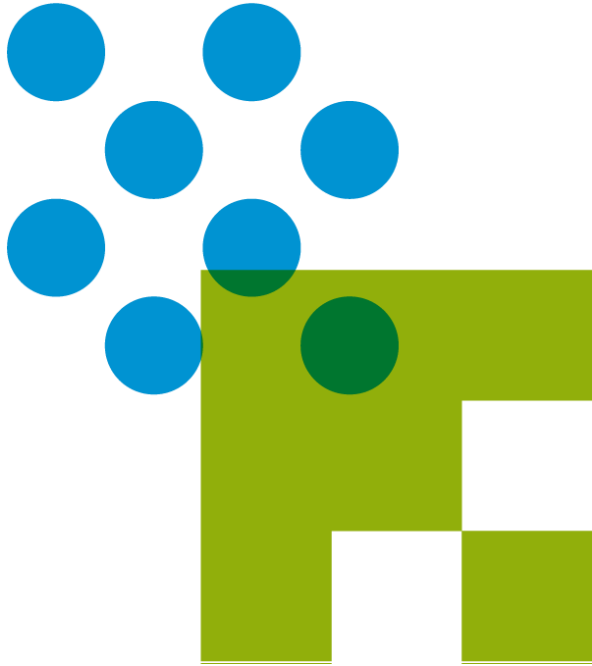
- ▶▶ Continuing education program “Management  
and strategic control of local authorities”

## MASTER IN DATA SCIENCE

▶▶ Director of studies “Business Intelligence &  
Performance Management”  
post graduate University program

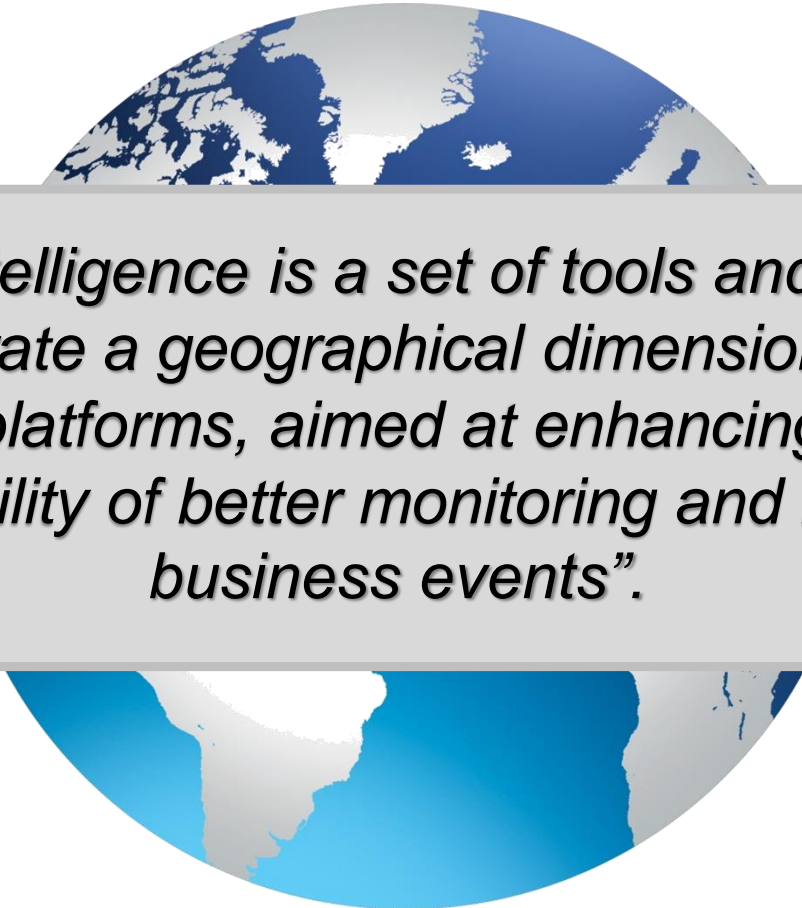
▶▶ CityManagement Executive Master

▶▶ Professorship in “Tools &  
Methodologies for the analysis  
of the performance”



## Location Intelligence

# Location Intelligence: our Vision



*“Location intelligence is a set of tools and techniques to integrate a geographical dimension into BI platforms, aimed at enhancing their capability of better monitoring and interpreting business events”.*

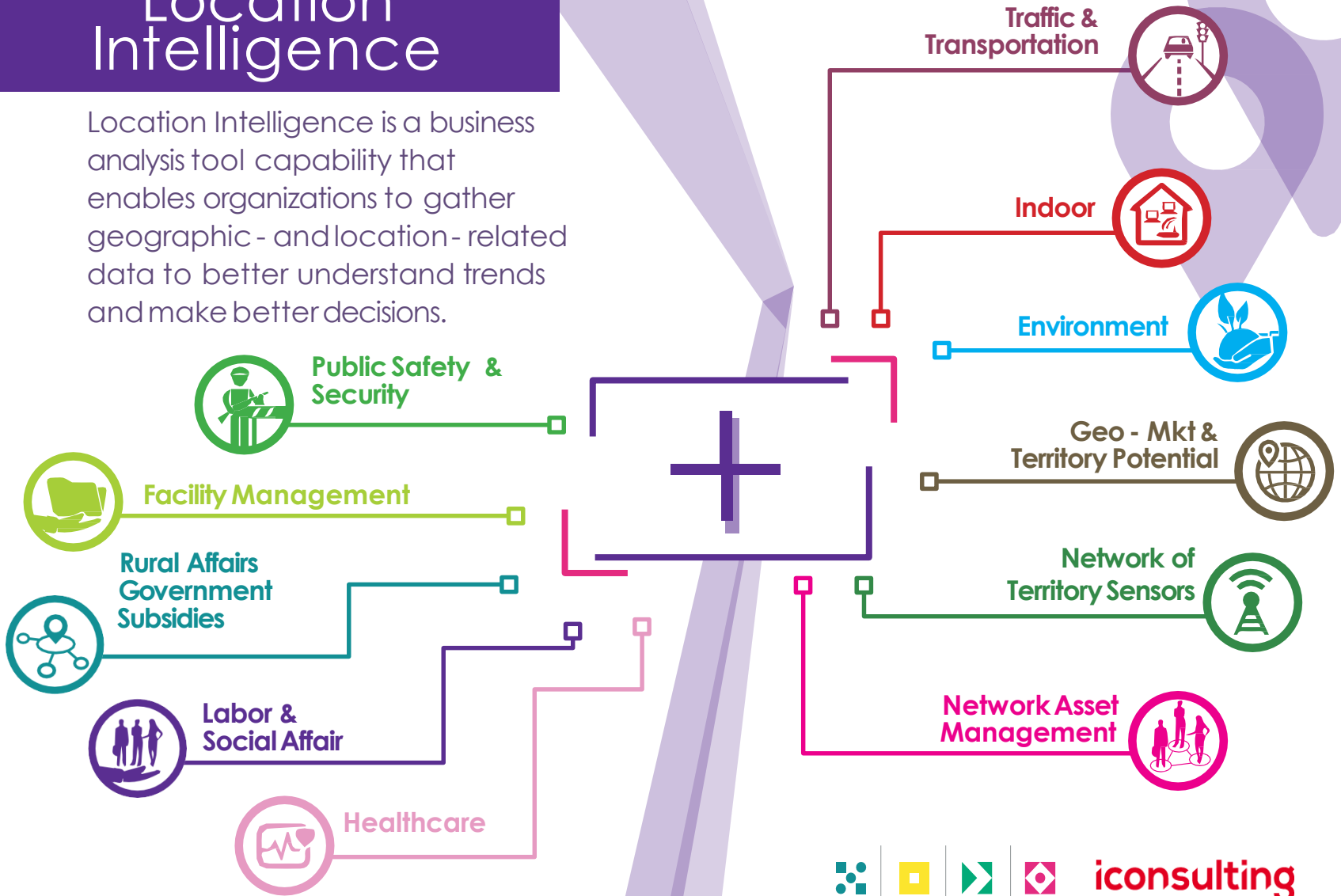
Golfarelli, Mantovani, Ravaldi, Rizzi: Lily: A Geo-Enhanced Library for Location Intelligence  
15th International Conference, DaWaK 2013, Prague, Czech Republic



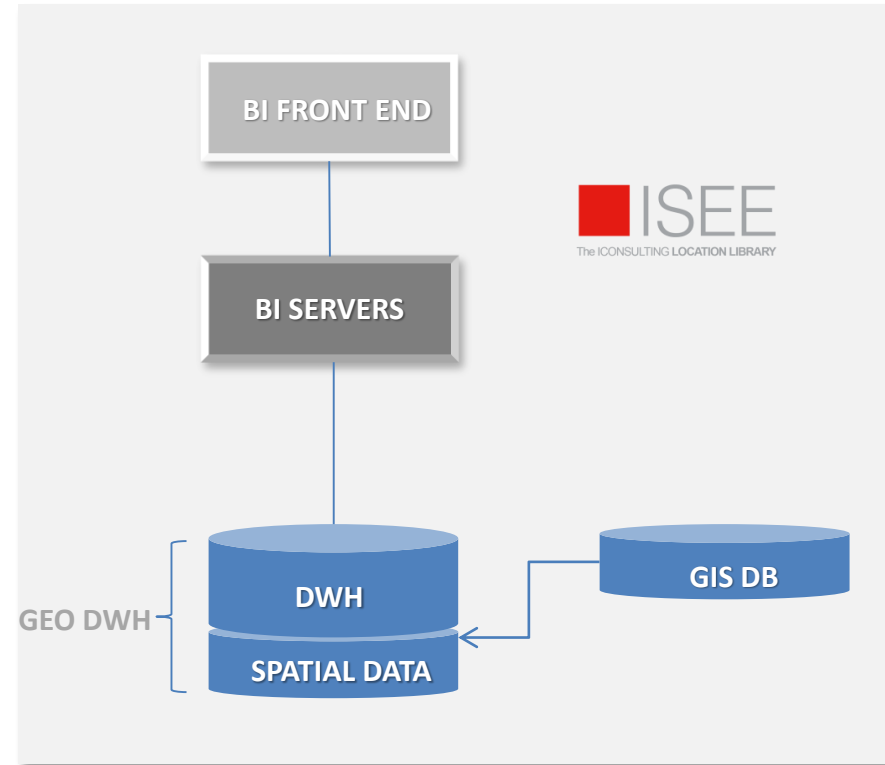
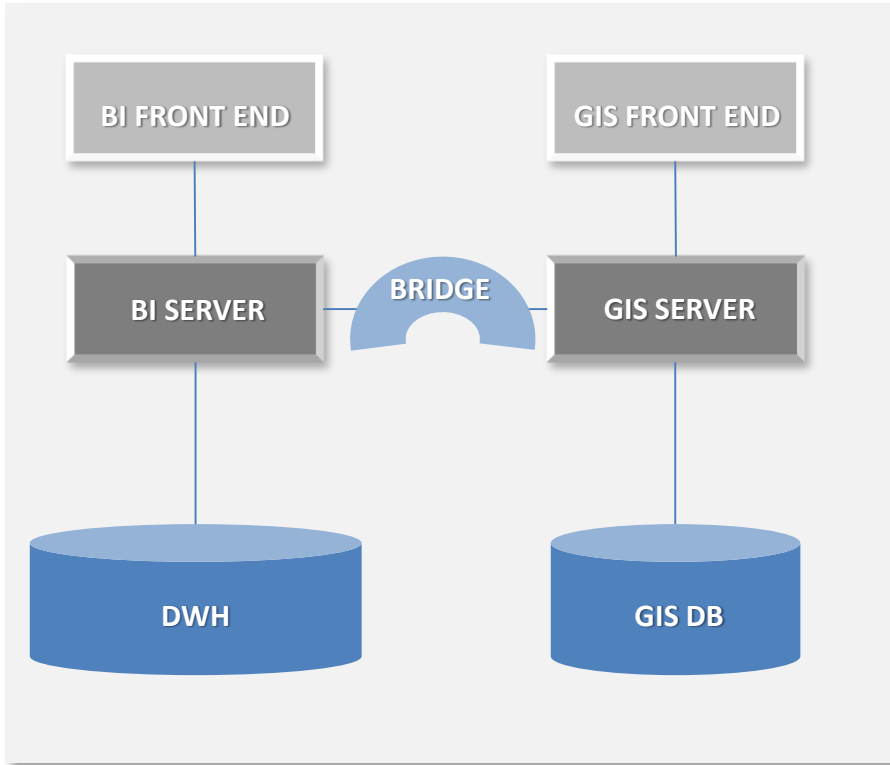


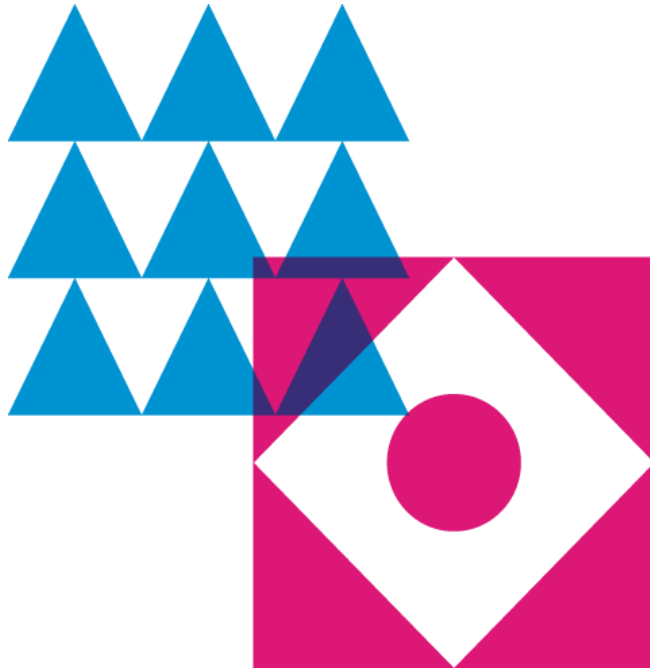
# Location Intelligence

Location Intelligence is a business analysis tool capability that enables organizations to gather geographic - and location - related data to better understand trends and make better decisions.



# Location Intelligence: Architetture di riferimento





Caso d'uso: Geospatial analytics per  
l'analisi del rischio sociale

# Contesto di business

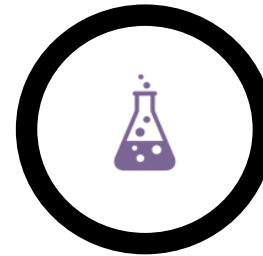
- **Cliente:** Leader in Italia nel settore utilities
- **Obiettivo:** Realizzazione di un sistema analitico per il calcolo del Rischio Sociale basato su un modello di calcolo del rischio (scenari PEL e ELS) con funzionalità di simulazione

# Contesto di business



## Obiettivi:

- Analizzare il rischio in maniera interattiva
- Simulare la variazione di rischio

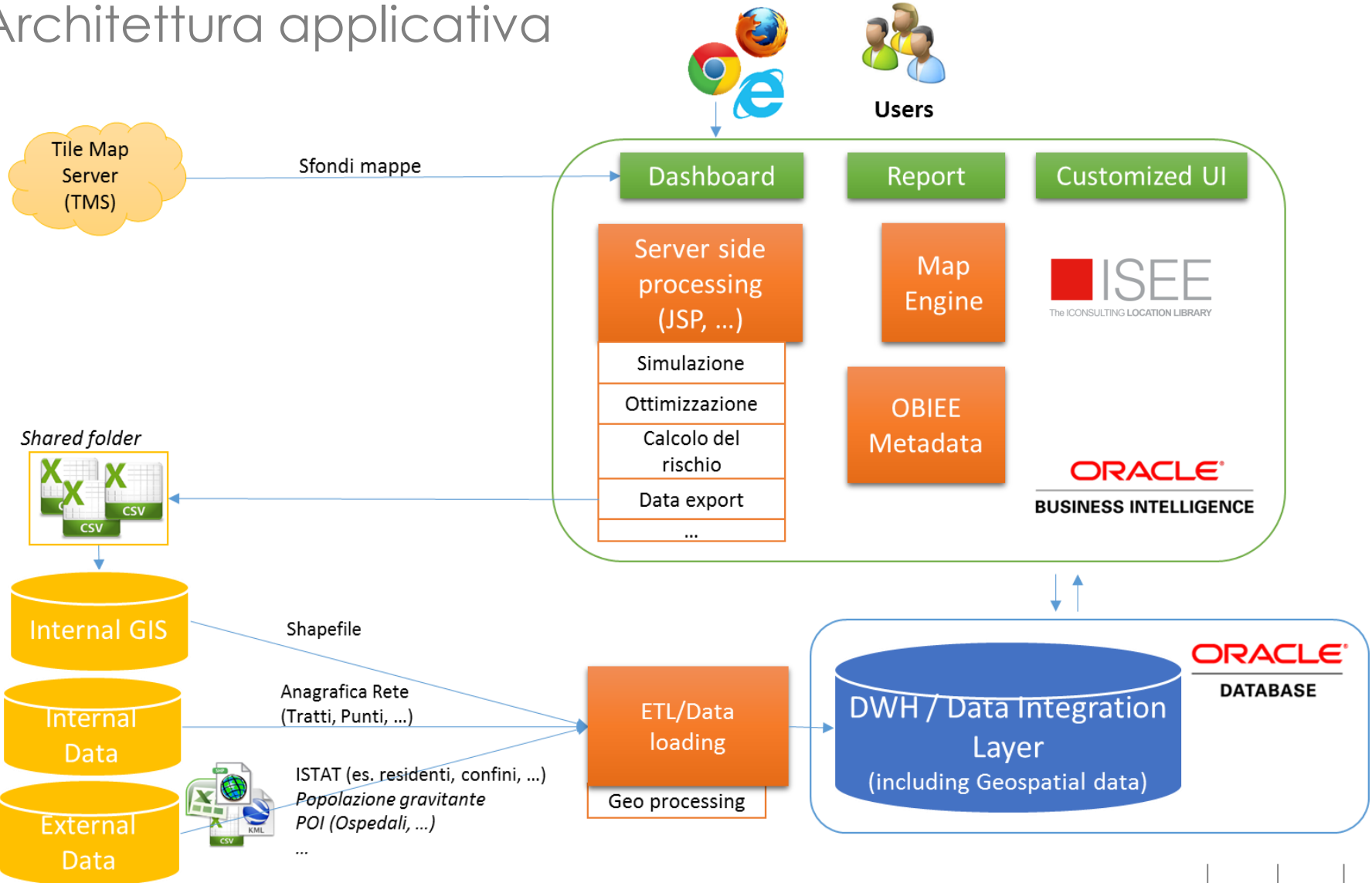


- *Qual è il rischio legato alla rete in quella zona geografica?*
- *Come varia il rischio se si modificano alcuni parametri?*
- *Che differenza c'è tra due contesti?*
- *Qual è il contesto ottimo?*

## Contesto di business: Funzionalità richieste

- **Calcolo del rischio** associato alla rete lineare.
- **Integrazione di dati esterni:** popolazione ISTAT, frane, edifici (es. ospedali), ...
- **Analisi** della rete e del rischio su mappa.
- **Simulazione base:** modifica caratteristiche fisiche della rete (probabilità) e popolazione impattata (conseguenze).
- **Simulazione estesa:** modifica anagrafica edifici, rete (eliminazione / creazione tratte), parametri globali.
- **Ottimizzazione:** algoritmo per la creazione di un nuovo contesto ottimizzato secondo vincoli configurati.
- **Confronto** tra diversi contesti simulati.
- **Reportistica** e Dashboarding “Istituzionale”.

# Architettura applicativa





Demo



# Location Intelligence: Recap

- **Internal and external data integration**
  - Ministry and Gov Departments; ISTAT (demographics, boundaries, ...); HERE (POI, routing); OpenData; data provider (Nielsen, SymphonyIRI, Gfk, ...)
- **Geographic analysis**
  - Proximity analysis
  - New data visualization: KPIs on Heatmap; bi-directional navigation; ...
  - Mixed queries
- Simulation and **Geo-What if Analysis**
  - Site location, site distribution, territory potential, marketing intelligence, areas of influence, customized models...
- Optimization and **Prescriptive Analytics**
- **Other capabilities:**
  - **Indoor Analysis**
  - **Spatial Data Mining**: Place of interest and Co-location; Forecasting of high-potential areas; ...



Q & A

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