

Real Time Labour Market Information





Agenda

- The project overview
- Methodologies and Processes
- Preliminary analysis results
- Conclusions



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Project Goals

- ✓ Real time data collection and labour market information from web portals: *Feasibility study*;
- ✓ *working prototype* development including 5 European countries.

The research question

*Can Web Job Vacancies provide useful information for designing and implementing new models and tools for innovating Labor **Market Intelligence** and services?*



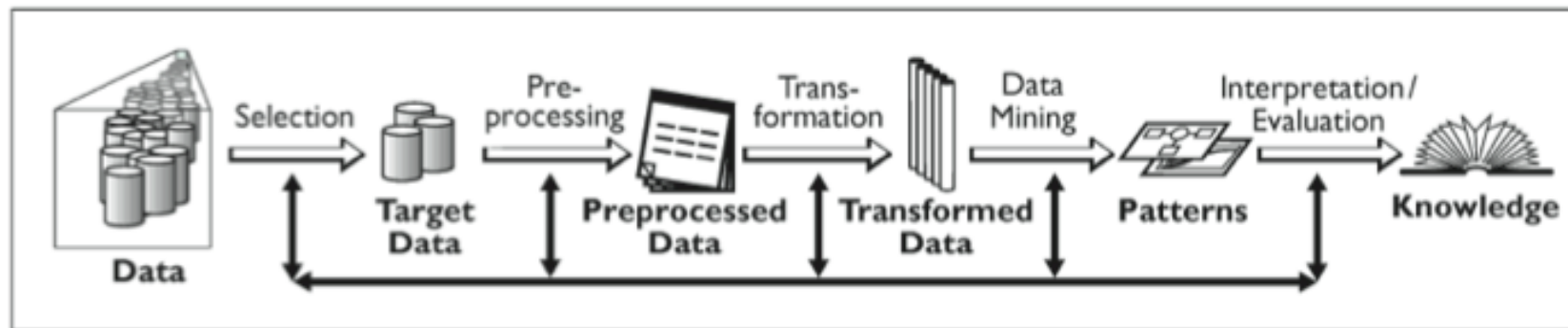
Project Approach 1/5

- **The websites pre-investigation**
 - ✓ which types of websites to choose?
 - ✓ what criteria we can adopt for selection?
 - ✓ what are the ethical issues and how can they be addressed?



Project Approach 2/5

- The methodology and techniques for the analysis
 - the Knowledge Discovery in Databases (KDD) paradigm.



ETL:
Web Scraping
Data Quality

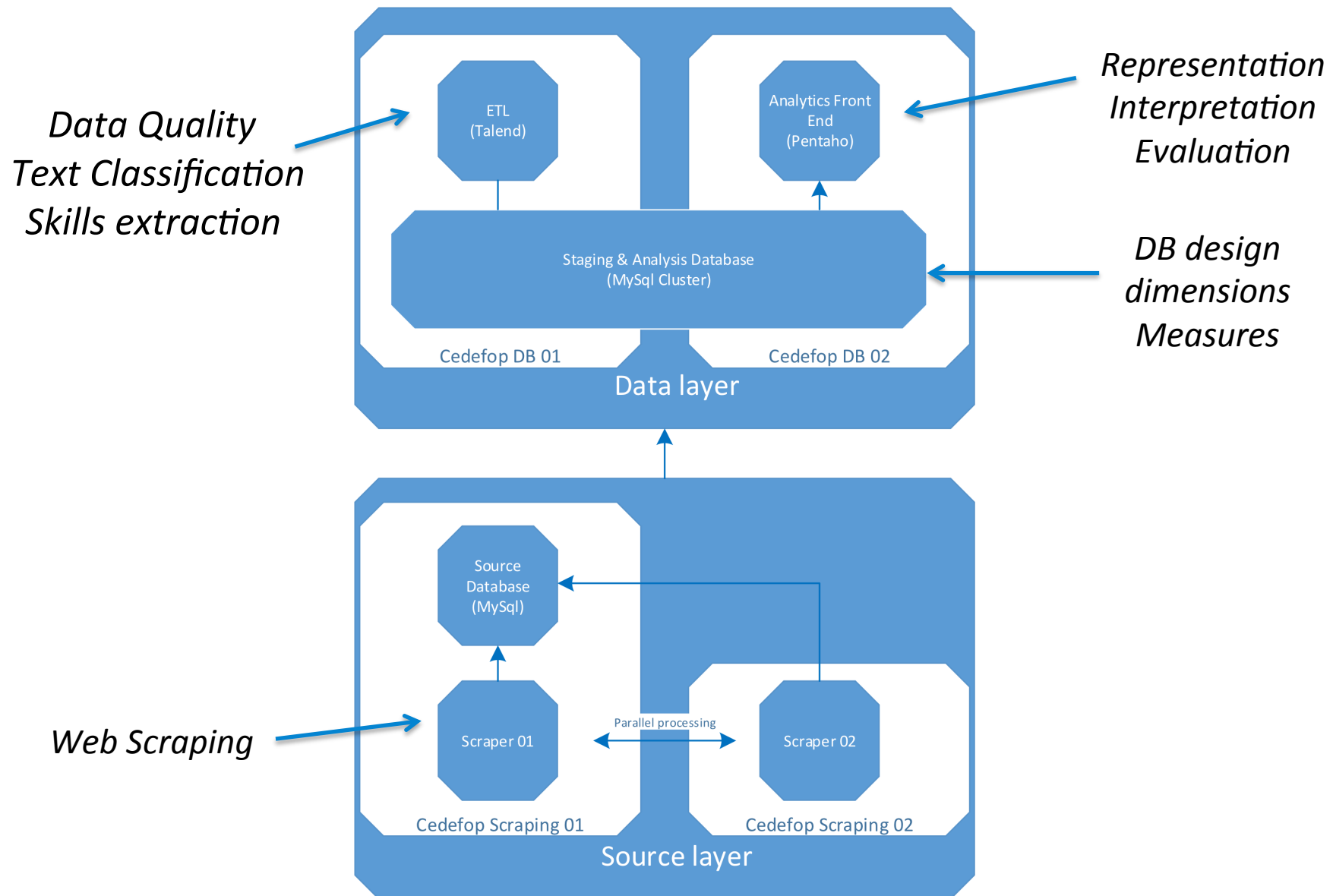
Data Augmentation:
Text Classification
Skills extraction

Data Modelling:
DB design
dimensions
Measures

Data Analysis:
Representation
Interpretation
Evaluation

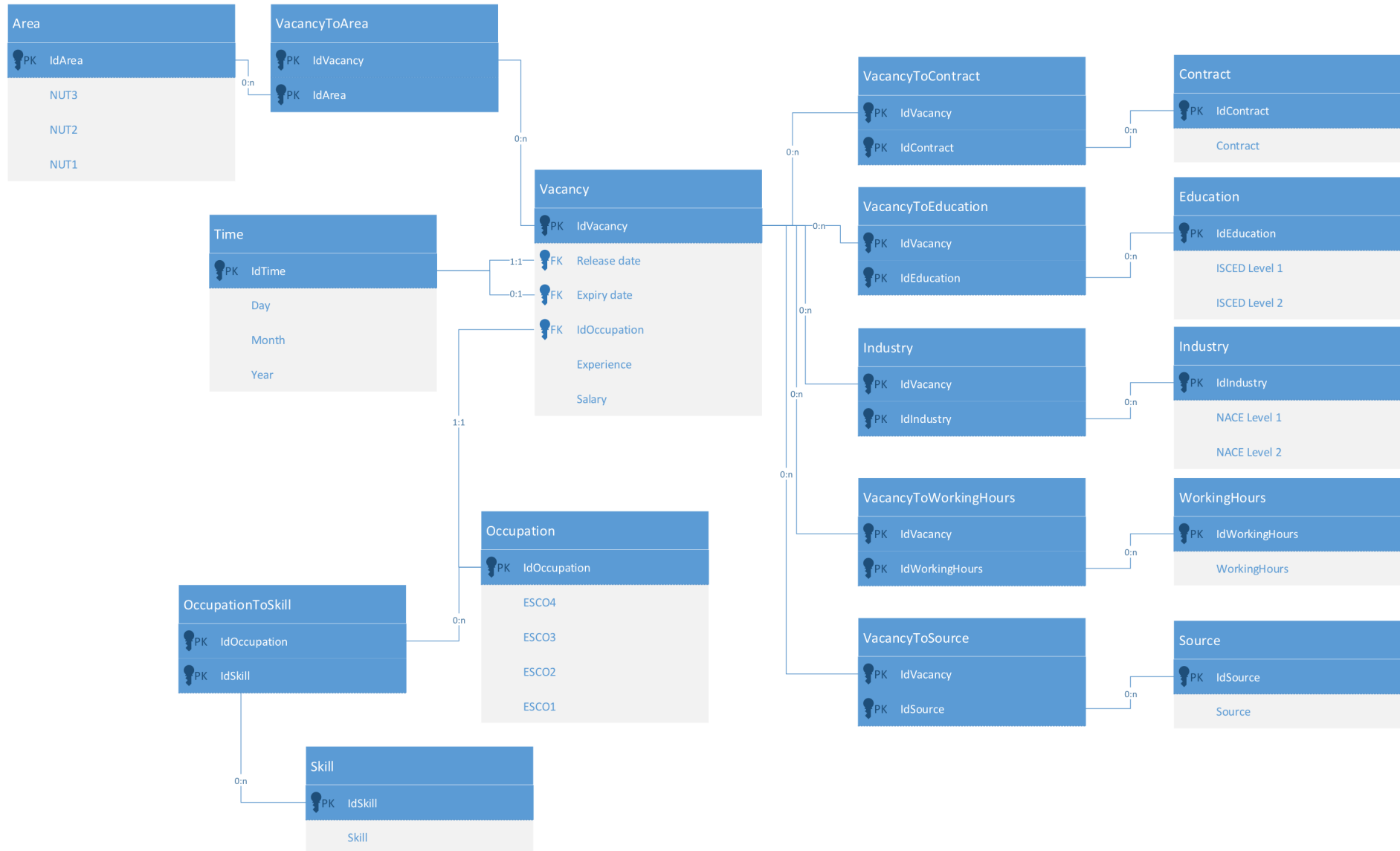


Project Approach: Systems Architecture 3/5





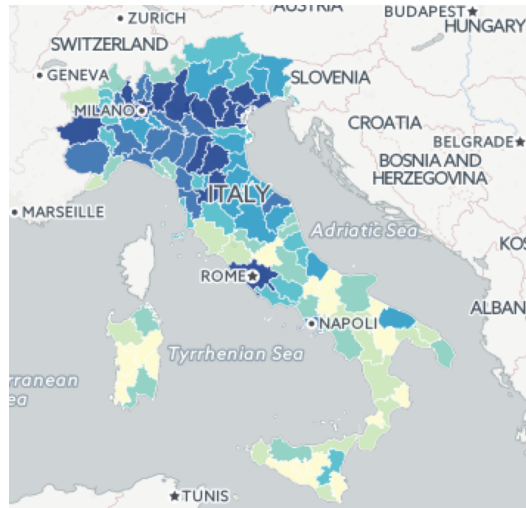
Project Approach: Data Model 4/5





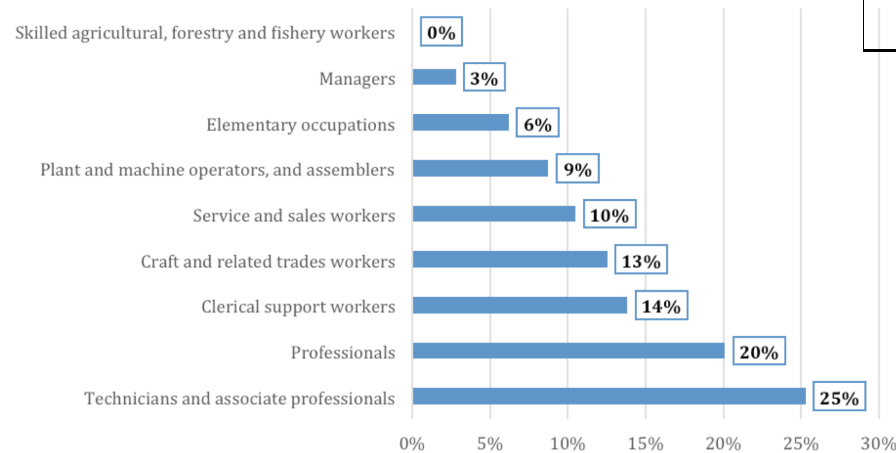
Project Approach: Data Analysis 5/5

Web Job Vacancies by Nuts 3 division, Italy



Web Job Vacancies by industry, NACE level 1, Italy

Id Industry	Industry	Number of job vacancy	Percentage
C	Manufacturing	28.312	36%
N	Administrative and support service activities	10.858	14%
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	10.180	13%
J	Information and communication	8.395	11%
M	Professional, scientific and technical activities	6.988	9%
X		3.627	5%
	Total	78.954	100%



Web Job Vacancies per occupation (1st ISCO/ESCO digit), Italy

Shop sales assistants – ISCO/ESCO code 522

Relationship
english flexibleworkinghours
 shiftwork
 MSoffice experienceinthesameposition
 holidayworkinghours customerrelationship



Relevant concepts and keywords

15 Web Sites
5 Different countries
4 Months
4 Million vacancies

Heterogeneity and Variability
across countries
in the use of the web
In the sector distribution
In the frequency of occupations by sector

The vacancy and skill data allows to:

- ✓ identify and weight the ***most requested skills*** for each ISCO/ESCO occupation.
- ✓ analyse the dynamics of **job vacancies and skills within territorial units and economic activities.**
- ✓ **Investigate features** concentration on territorial units.