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Open source software for tourism promotion: Lake Poli School (LaPS) education project

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Engineering (DICA) - Geomatics Laboratory, Como Campus

- ❖ Educational project carried out at Politecnico di Milano, Como Campus
 - **Lake** → Lake Como (Northern Italy), the popular symbol of the city
 - **Poli** → Politecnico di Milano, the university promoting the initiative
 - **School** → the initiative has an academic nature
- ❖ Born from the evidence of the practitioners and academics' difficulties in overpassing the boundaries of their disciplines/languages
- ❖ **MSc course** (5 ECTS) named **Cross Boundary Processes**, aimed at
 - entering **real problems**
 - giving **fresh ideas** to companies
 - connecting **different disciplines**
 - interacting with **different cultures**



**Lake
Poli
School**

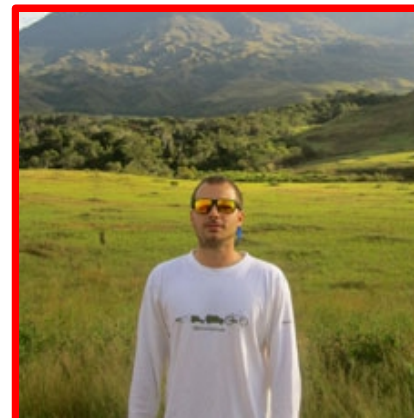
- ❖ The course is opened to the **brightest students** (selection is done) of the **3 MSc Schools** taught at the Como Campus of Politecnico di Milano, i.e.
 - Science Computing Engineering
 - Environmental Engineering
 - Management Engineering
- ❖ Students work in **mixed groups** (5-6 students/group), to each of which a **business case** proposed by a **real company** is assigned
- ❖ Group supervision relies on:
 - a reference tutor from university (**junior researcher**)
 - a **company representative**
 - the **board of Professors** (one for each MSc School)

- ❖ The course is organized into:
 - weekly **meetings** with companies and tutors
 - occasional **seminars** and **teaching alignment**, differentiated by disciplines and designed upon the students' needs
 - other **activities** related to the project
- ❖ Students' **final evaluation** is based on:
 - materials delivered during the course (project plan, intermediate and final project presentation, project report)
 - tutors' and Professors' evaluations
 - students' self-evaluations (every 4 weeks)
- ❖ A **final workshop** is organized, where:
 - students' projects are presented to an **authoritative jury**
 - the best 2 projects receive a **monetary award**

❖ Team composition:

- Arman Shirani
- Gabriel Perez Russo
- Raphaël Nataf
- Daniele Oxoli
- Candan Eylül Kilsedar
- Marco Minghini

Management Engineering



Environmental
Engineering

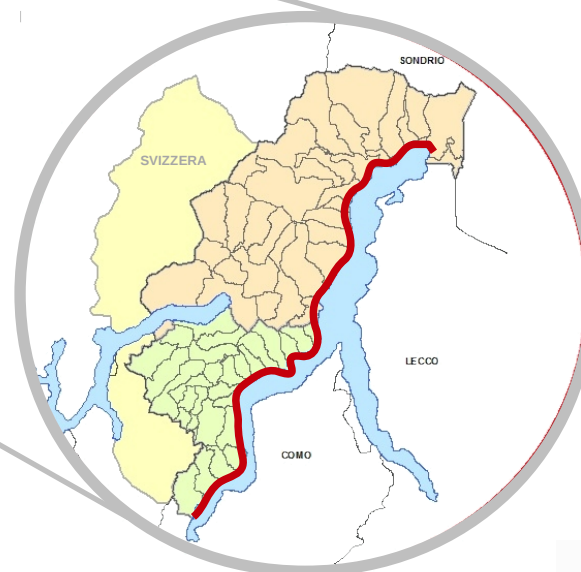
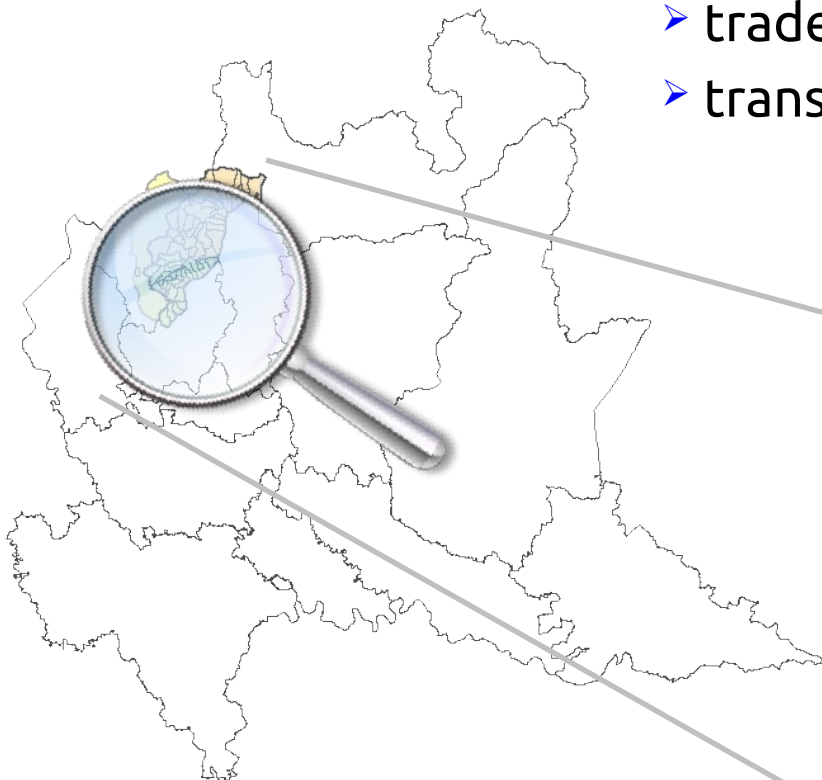
Science Computing
Engineering

Academic tutor

LaPS project: Via Regina



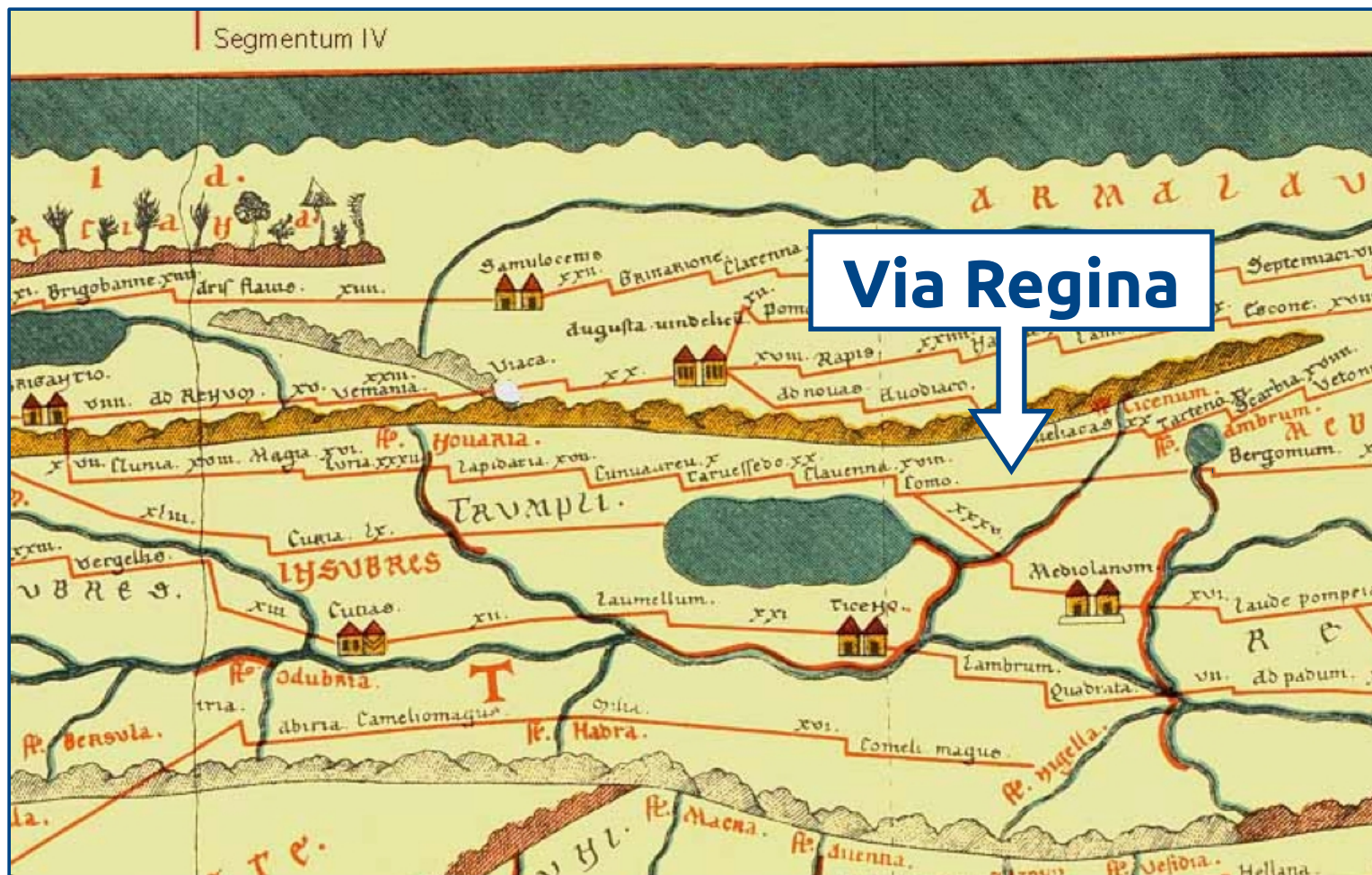
- ❖ Via Regina defines a **cross-border area** between Italy and Switzerland
 - trade and **cultural route** since Roman times
 - transalpine system of **soft mobility** links



LaPS project: Via Regina



- ❖ Via Regina defines a **cross-border area** between Italy and Switzerland



LaPS project: Via Regina



- ❖ “The Paths of Via Regina” INTERREG project (Italy/Switzerland)
 - **purpose:** to valorise the cultural heritage of the area and foster tourism
 - **beneficiaries:** local communities, administrations, pilgrims, tourists
 - **expertise** involved: cultural heritage, land use and design, geomatics

❖ Partners

➤ universities

POLITECNICO DI MILANO



POLO TERRITORIALE
DI COMO



Scuola universitaria professionale
della Svizzera italiana

SUPSI

➤ local administrations



M.V.S.
Museo della Via Spluga
e della Val San Giacomo



➤ cultural associations



IUBILANTES
ONLUS - organizzazione
di volontariato culturale



POLITECNICO
DI MILANO



LaPS project: Via Regina



❖ Mission

- promote a **slow tourism model** for valorising the historical paths of Cernobbio municipality (Italy) to be then replicated along the whole Via Regina

❖ Vision

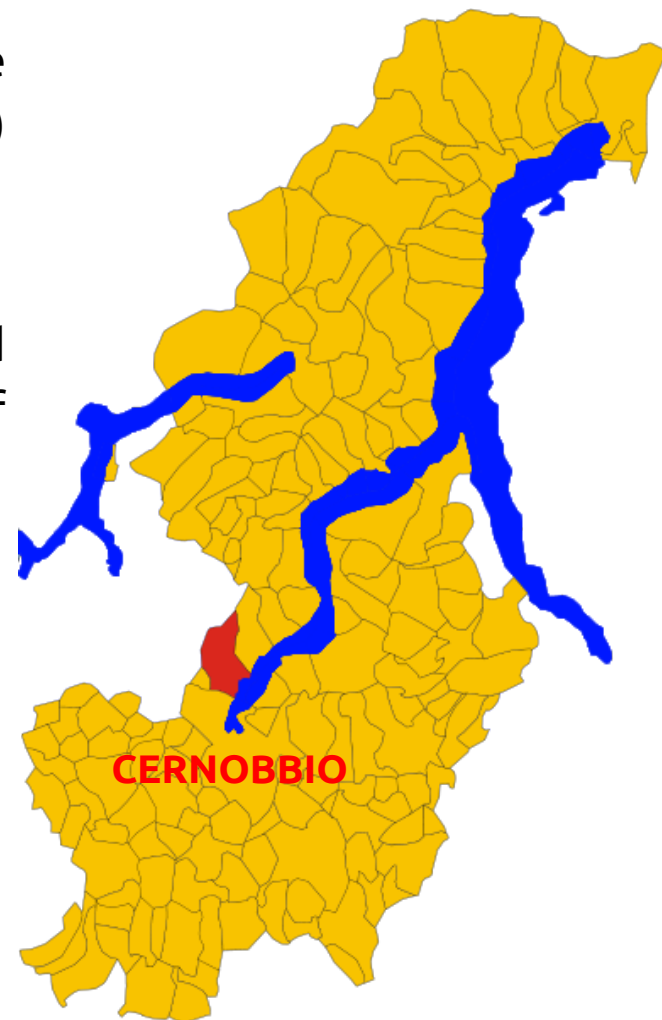
- strengthen the common identity of the involved areas through the protection and valorisation of the available **cultural heritage**

❖ Objectives

- dissemination of knowledge
- promotion of tourism

❖ Final outcomes

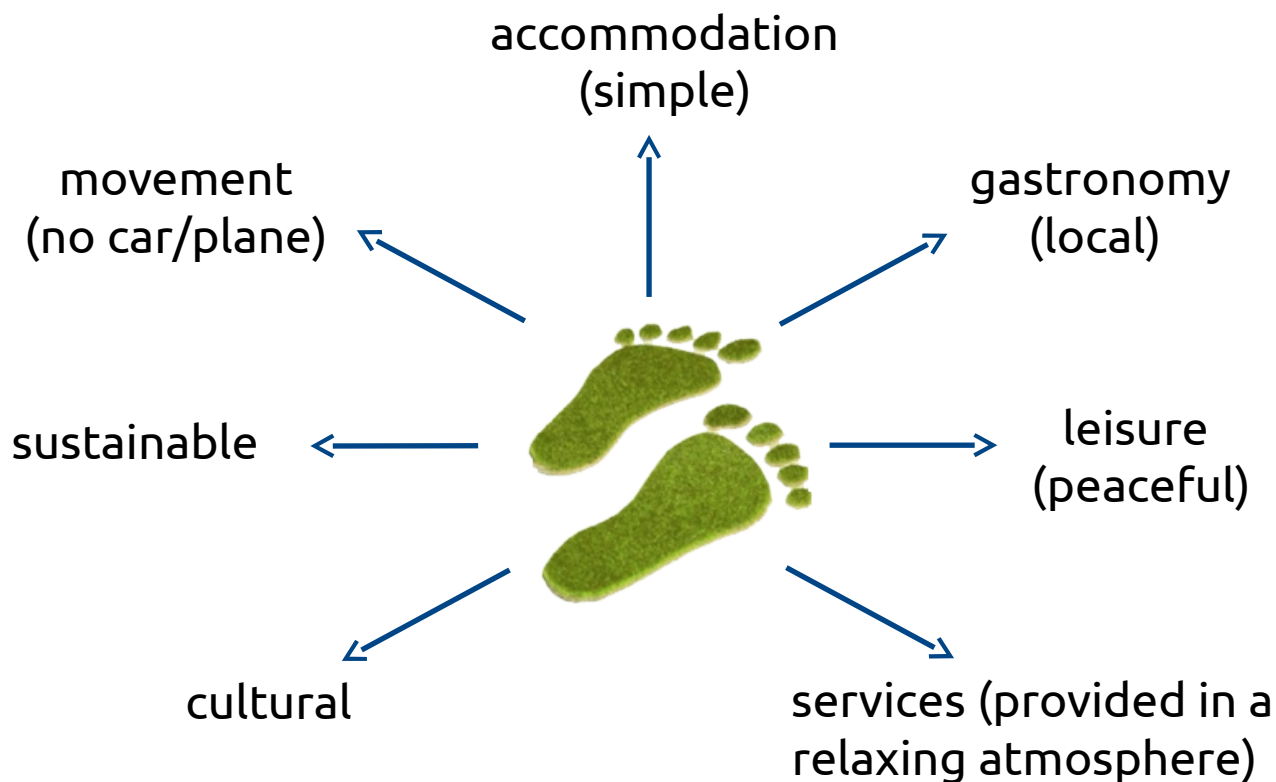
- 2D desktop and mobile **WebGIS**
- website/social media **promotion**
- business plan



Slow tourism at a glance



- ❖ A special case of sustainable tourism focused on:
 - environmental friendliness
 - rediscovery of local traditions and cultural knowledge



Data gathering

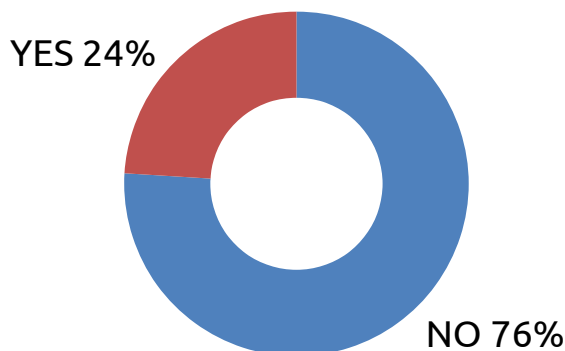
❖ Secondary data

- Cernobbio municipality
- Como municipality
- Milan province
- Iubilantes association

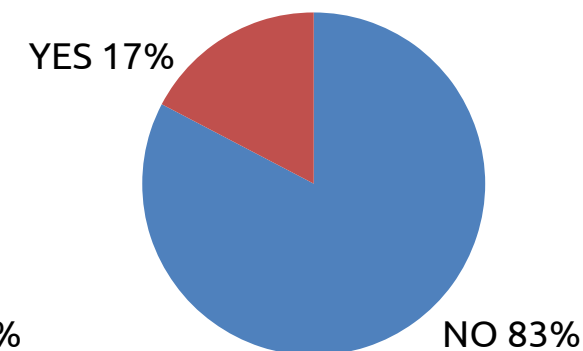
❖ Primary data

- surveys
- interviews

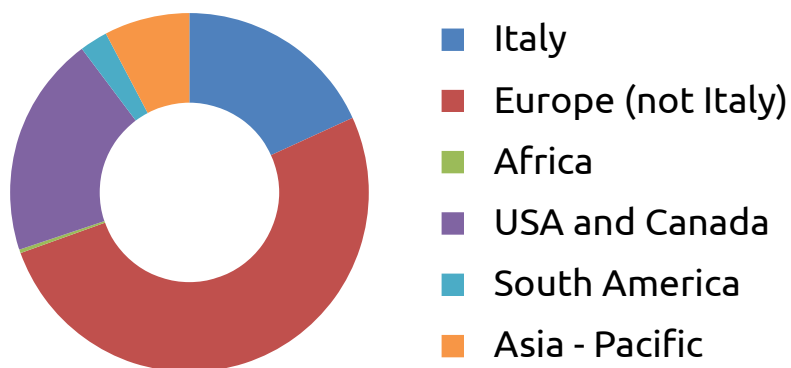
awareness of paths



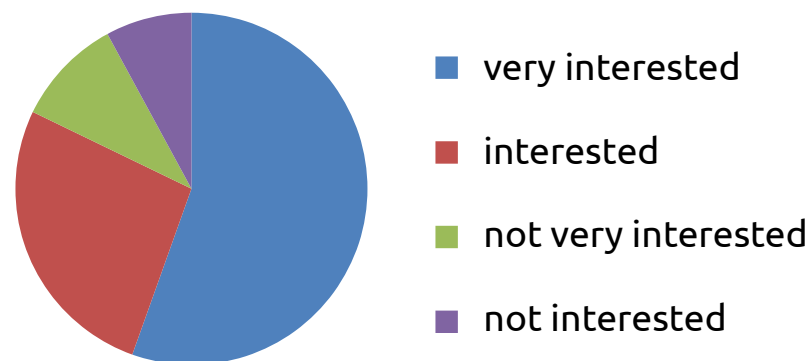
awareness of slow tourism



people coming to Cernobbio



willingness to use a WebGIS



❖ Strategic segmentation

Provenance	% Visitors (2012)	Number of Visitors (2012)	Characteristics
Italy	18,19	21476	<ul style="list-style-type: none"> - familiar with the culture, willing to go beyond what foreigners can experience - willing to cut with their stressful life
Europe (not Italy)	51,32	60597	<ul style="list-style-type: none"> - belong to the same European culture - aware of environment protection and ready to adopt a sustainability behavior - willing to cut with their stressful life
Africa	0,33	386	<ul style="list-style-type: none"> - far culturally - less aware of the sustainable tourism concept
USA and Canada	19,94	23547	<ul style="list-style-type: none"> - less aware of the sustainable tourism concept - less willingness to discover the mountain paths
South America	2,52	2978	<ul style="list-style-type: none"> - tend to visit the EU for short periods and embrace several countries in that time - not very aligned with the Slow Tourism concept
Asia - Pacific	7,71	9103	<ul style="list-style-type: none"> - tend to visit the EU for short periods and embrace several countries in that time - not very aligned with the Slow Tourism concept

❖ Targeting

Provenance	Size	Attracted by Slow Tourism	Attracted by discovering traditions and culture	Technology oriented	Rank
Italy	3	2	1	4	2,5
Europe (not Italy)	1	1	2	3	1,6
Africa	6	6	5	6	5,8
USA and Canada	2	4	3	2	2,8
South America	5	3	4	5	4,2
Asia - Pacific	4	5	6	1	4,1
Weights	0,3	0,3	0,2	0,2	

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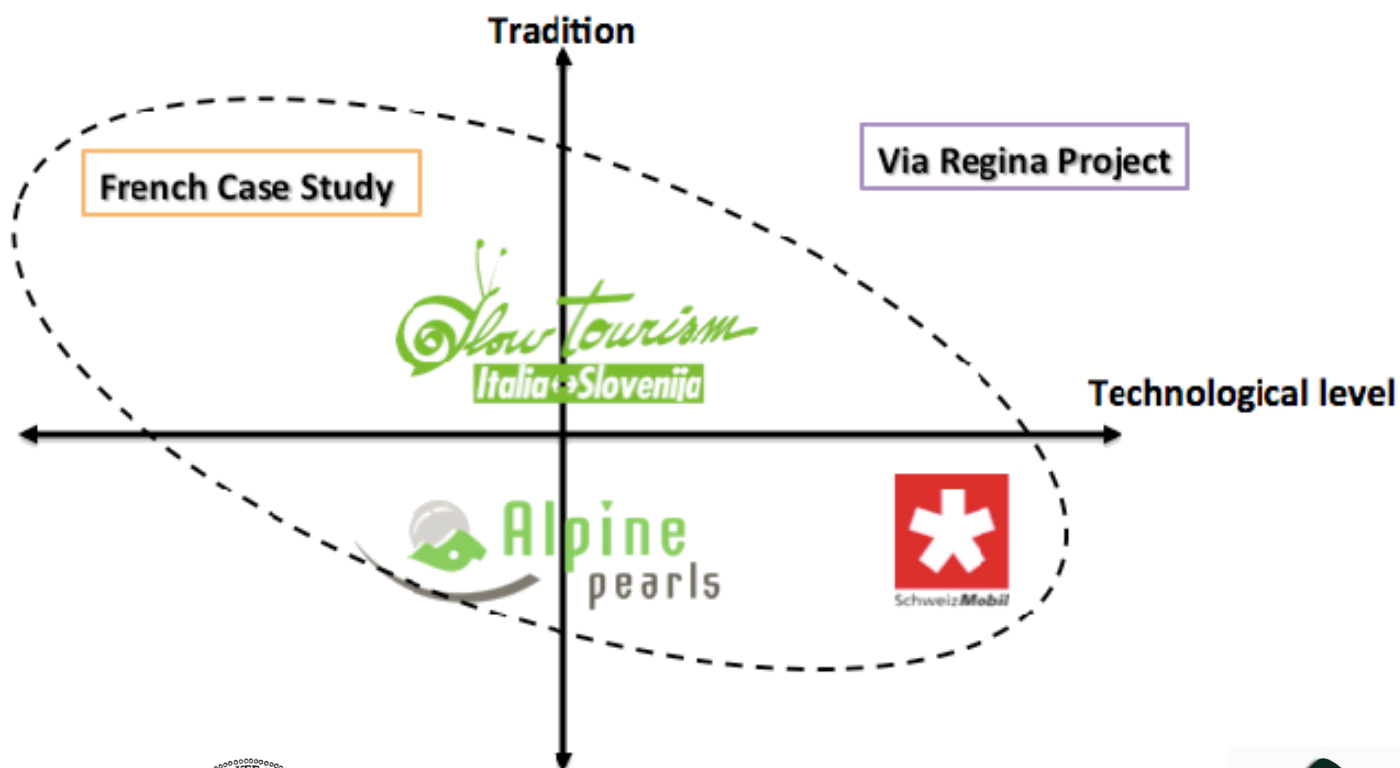
Competitive analysis

- ❖ Analysis of **similar case studies** promoting sustainable/slow tourism
 - identification of strategic **advantages**, **disadvantages**, and **best practices** according to 6 established domains

	Local traditions used as a marketing lever	Website	WebGIS	Technology features	Slow tourism facilities	Capability of raising international awareness
French Case Study	++	-	-	-	+	+
Italy Slovenia	+	-	-	-	-	-
Alpine Pearls	+	+	-	-	++	++
Swiss Mobility	-	++	++	++	+	+

Positioning

- ❖ Focus on 2 main domains:
 - **tradition**: use of cultural heritage and local traditions as a marketing leverage, and emphasis on the authentic aspect of the experience
 - **technology**: development of a website/WebGIS to enhance tourist experience

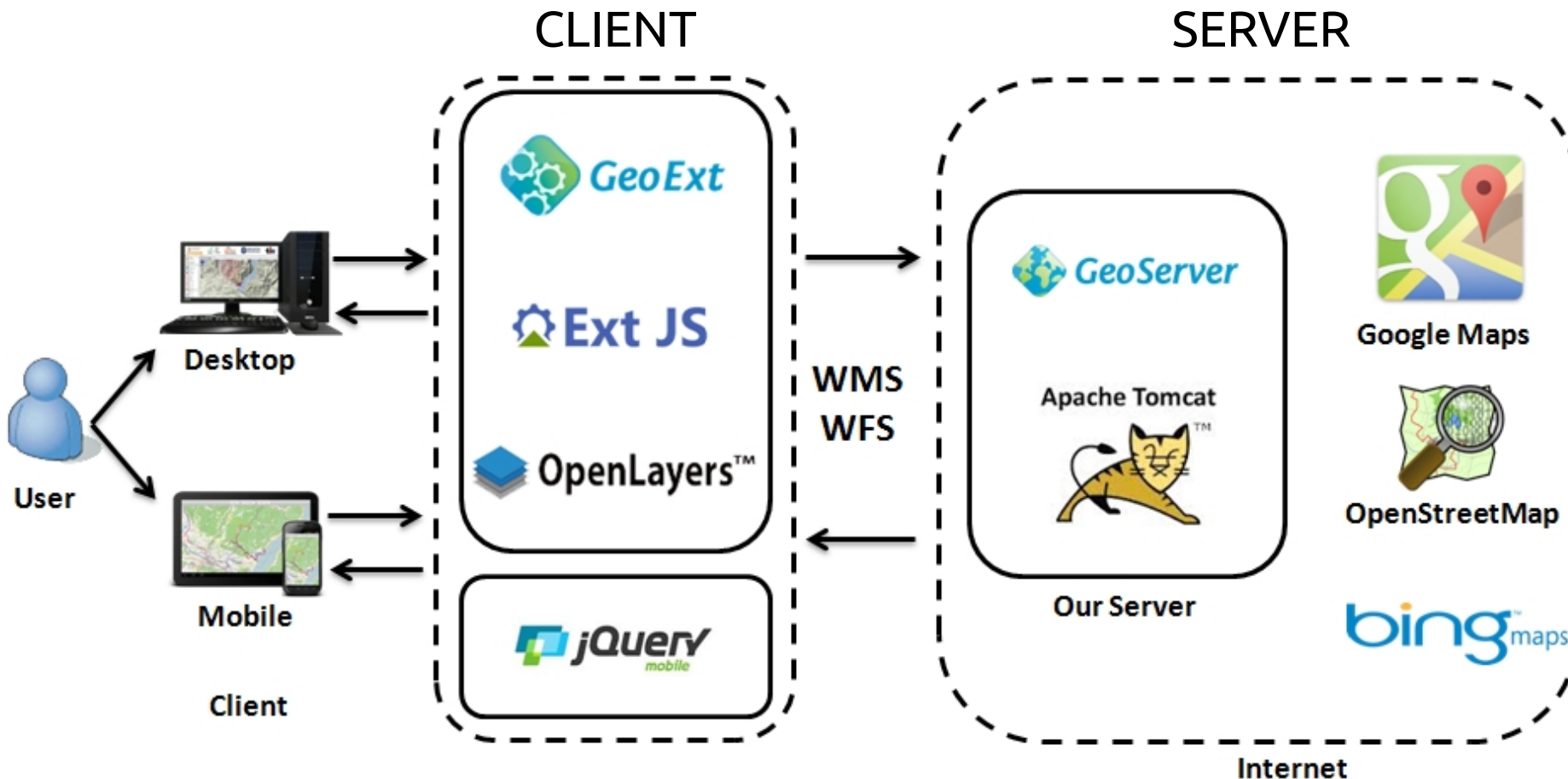


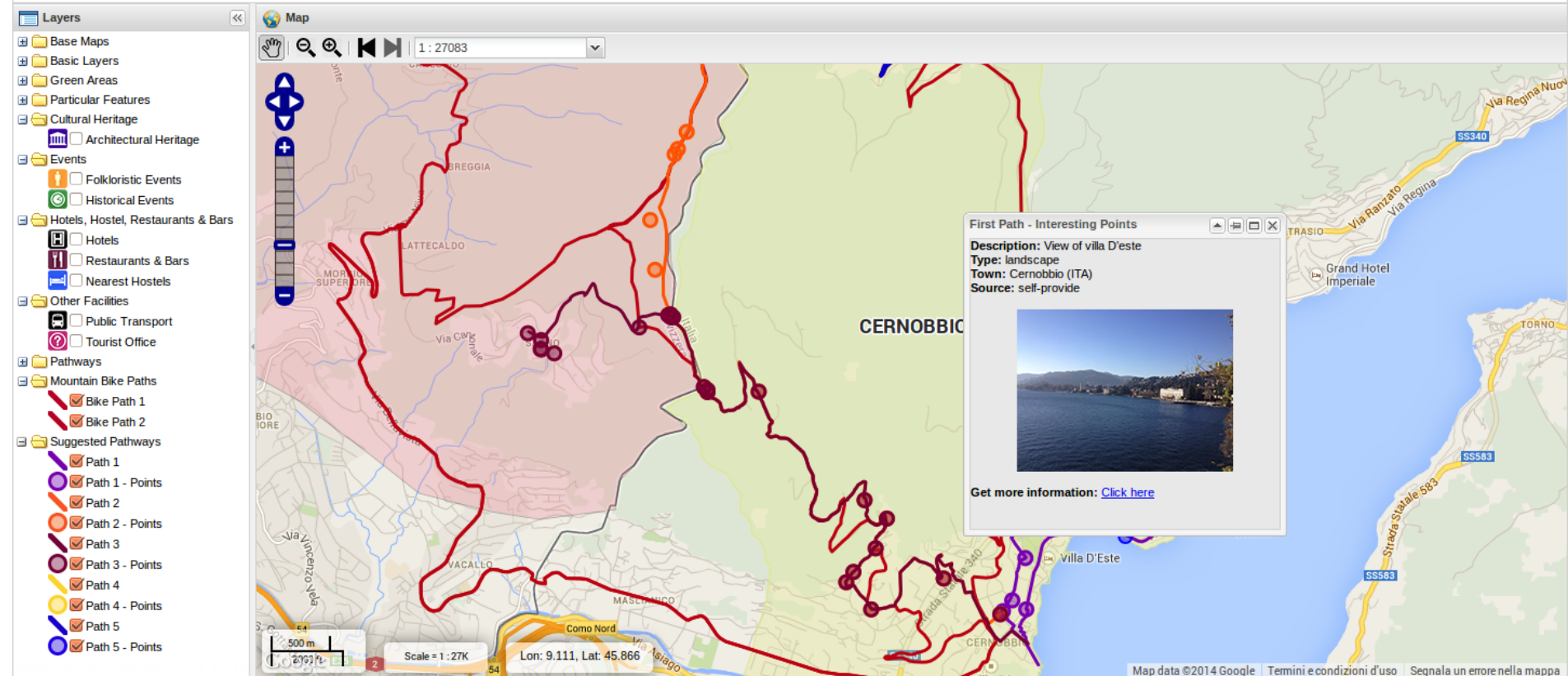
Geospatial data collection/pre-processing



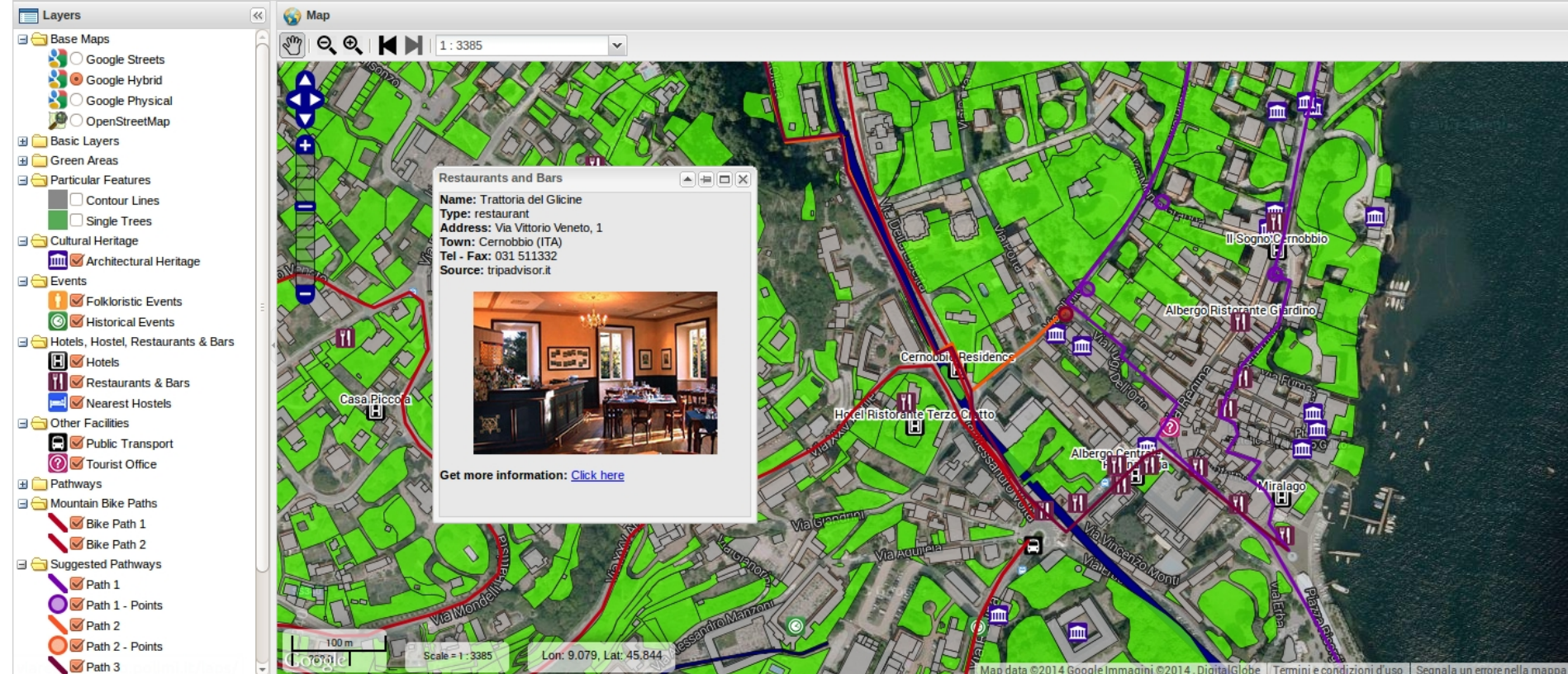
- ❖ Data was collected/created from the following sources:
 - Cernobbio municipality
 - Iubilantes association
 - Canton Ticino Office of Cultural Heritage
 - Lombardy Region Web geoportal
 - field surveys
- ❖ And consists of:
 - official vector cartography of Cernobbio municipality
 - lodging and eating services, public services (transportation/offices)
 - folkloristic and historical events
 - cultural heritage
 - hiking and mountain bike paths with relevant points of interest
- ❖ Pre-processing required for both attributes and geometry
 - a **basic course on QGIS** was given!

WebGIS architecture





<http://viaregina.como.polimi.it/laps>



Layers

- Base Maps
 - Google Streets
 - Google Hybrid
 - Google Physical
 - OpenStreetMap
- Basic Layers
- Green Areas
- Particular Features
 - Contour Lines
 - Single Trees
- Cultural Heritage
 - Architectural Heritage
- Events
 - Folkloristic Events
 - Historical Events
- Hotels, Hostel, Restaurants & Bars
 - Hotels
 - Restaurants & Bars
 - Nearest Hostels
- Other Facilities
 - Public Transport
 - Tourist Office
- Pathways
 - Mountain Bike Paths
 - Bike Path 1
 - Bike Path 2
- Suggested Pathways
 - Path 1
 - Path 1 - Points
 - Path 2
 - Path 2 - Points
 - Path 3

Map

1: 3385

Restaurants and Bars

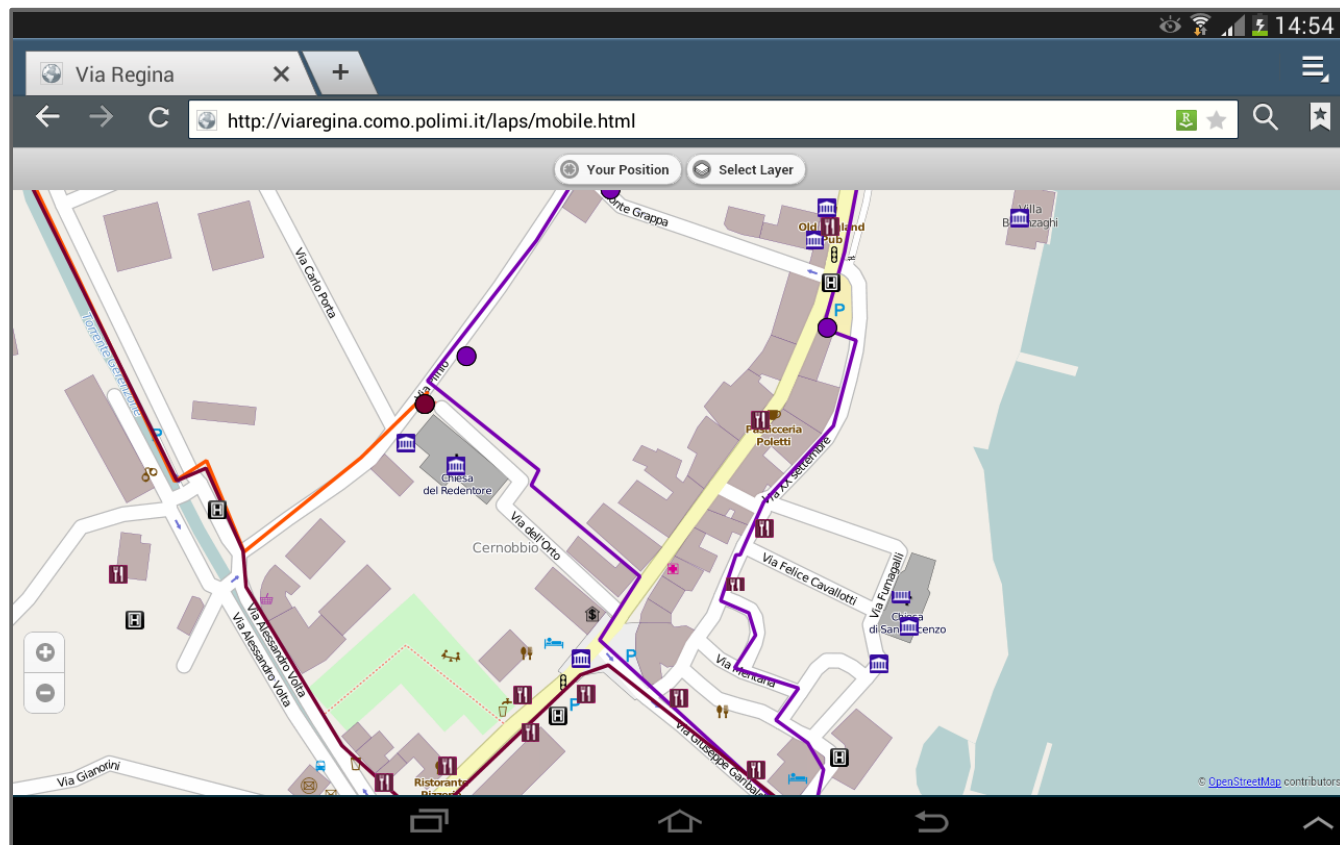
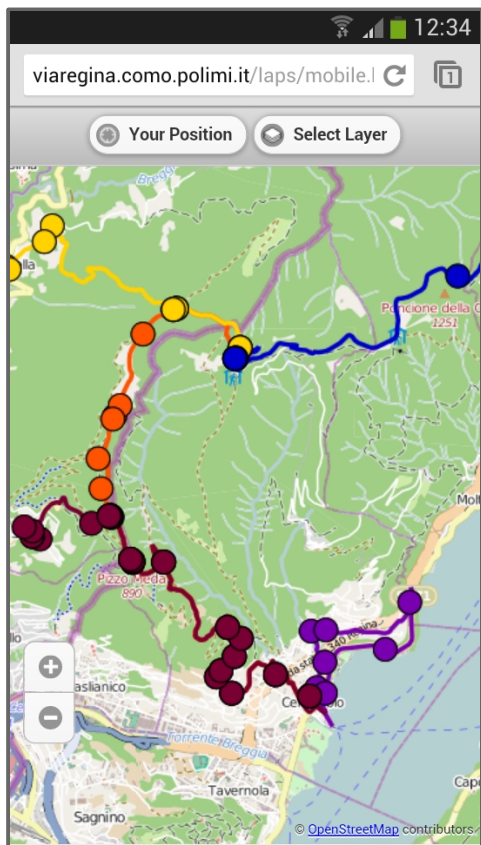
Name: Trattoria del Glicine
Type: restaurant
Address: Via Vittorio Veneto, 1
Town: Cernobbio (ITA)
Tel - Fax: 031 511332
Source: tripadvisor.it

Get more information: [Click here](#)

Scale = 1:3385
Lon: 9.079, Lat: 45.844

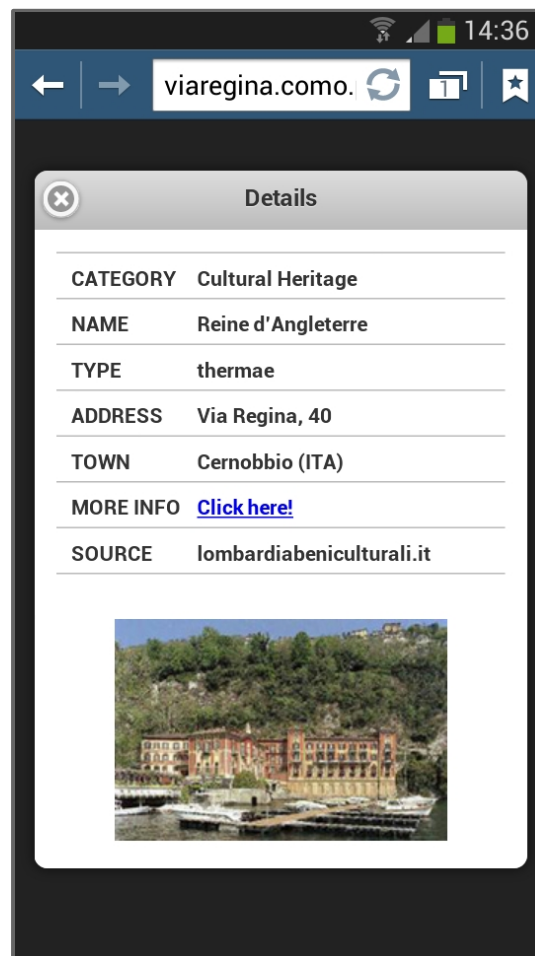
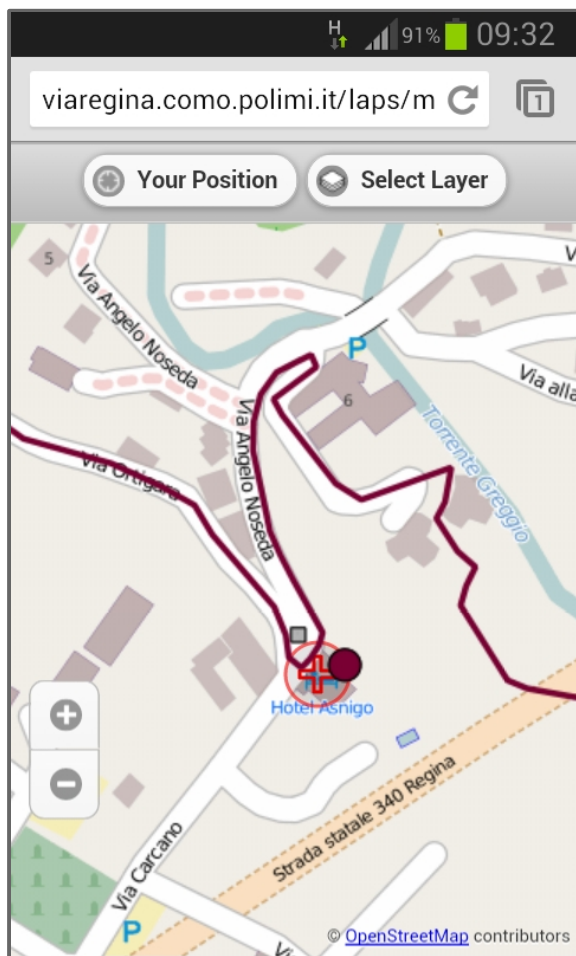
Map data ©2014 Google Immagini ©2014, DigitalGlobe
Termini e condizioni d'uso
Segnala un errore nella mappa

<http://viaregina.como.polimi.it/laps>



<http://viaregina.como.polimi.it/laps/mobile.html>

Mobile WebGIS



<http://viaregina.como.polimi.it/laps/mobile.html>

Promotional strategy



- ❖ Physical channels (for tourists already present in the area):
 - brochures, posters & QR code in hotels, restaurants, shops, tourist offices, etc.
- ❖ Online channels (for attracting new tourists):
 - dedicated website (<http://viaregina.co.nr> — temporary!)



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 - social media interaction



- ❖ Definition of **indicators** to measure the achievement of the project goals

Strategic Objective	CSF	KPI
Accuracy of the data	Quality of information	Number of errors reported
		Number of negative comments
	Information disseminated	Number of articles in newspapers & blogs
		Number of new articles published on the website
Understanding and protection of territory	Events promoted	Number of events
		Number of participants
Promotion of tourism	Number of people reached	Monthly visits to the website
		Monthly likes on the FB page
		Monthly followers on Twitter
		Number of places with our flyer/poster
	Number of tourists in Cernobbio	Number of tourists in hotels
		Number of tourists in restaurants

Conclusions

- ❖ Use of FOSS in **education** for a real, **multi-disciplinary project**:
 - LaPS work allowed to **overpass the boundaries** of the single disciplines
 - **integration** of multiple competencies (management engineers + GIS experts)
 - work developed in **cooperation** with the project researchers and stakeholders
 - WebGIS solutions have been used as a **basis** for the Interreg project

Conclusions

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 - integration of multiple competencies (management engineers + GIS experts)
 - work developed in cooperation with the project researchers and stakeholders
 - WebGIS solutions have been used as a basis for the Interreg project
- ❖ Winners of Lake Poli School!



FOSS perception

- ❖ What is your **perception of FOSS** after the LaPS project?
 - **positive** perception, **powerful tools** for any project, **unlimited applications**
 - expectation was to find less stable and less documented software, but there are instead a lot of **resources**, **community discussions** and almost **no bugs**
 - **programming** skills are crucial for using FOSS
- ❖ Was FOSS **effective** for achieving the goal? Were there any **limitations**?
 - using FOSS was **fundamental**, they brought **simplicity** and **effectiveness**
 - FOSS **flexibility** was a key element in the project, products could be **customized** according to the needs (e.g. the libraries were changed to get some results)
 - using FOSS allowed to **focus the effort on the output** more than on the means needed to reach the output
 - FOSS allowed to **exploit** some **premade solutions** developed by others
 - limitations are the **need of an adequate programming** background and sometimes the **difficulty in finding help**

FOSS perception

- ❖ Was the development of a **managerial framework** useful to integrate the FOSS GIS development?
 - management enables a **good planning**, **good use of the resources** and a **good control**, that are **essential to succeed** in any given project
 - management increased the **motivation**, provided a better project management, gave us **ideas** to reach the public and **understand** their preferences/opinions
 - thanks to management, we **developed the software in a better way**
- ❖ Is there any added value in using FOSS in **education** and **multi-disciplinary projects** like yours?
 - the easiness with which **results can be shared and enjoyed**, which made it clear to anyone (even people with different training and employment) how FOSS applications can be integrated into many areas
 - the facility to **access** them and to **learn** how to use them
 - the possibility to **customize** the software according to the needs

Acknowledgments

- ❖ This research has been funded by the INTERREG “I Cammini della Regina – Percorsi transfrontalieri legati alla Via Regina (The paths of Regina – Crossborder paths departing from Via Regina)” 2007-2013 project.

