VENICE SMART CITY REPORT

URBEGO international workshop on sustainable mobility

“Every time
I describe a city
I am saying something
about Venice”

Italo Calvino, Invisible cities

CONTENTS

FOREWORD

SMART CITY AS HUMAN SCALE CITY

Words
Giulia Maci,
Urbego

The concept behind smart cities is actually rather vague, there is no common definition of what a smart city is, and most commonly the idea relies on the implicit assumption that urban infrastructures and everyday life can/should be optimized through the technologies and innovations of global IT companies. So, what's the problem with smart cities? Would have been better not using this abused term at all in this project? We realized that it was important to do exactly the opposite: we decide to dwell on this concept, look at it carefully and redefine it through a collaborative process that collected the experiences and perspectives of the different actors involved in the project.

Proximity and democracy
In recent years, the Walkable city along with the compact city concepts have gained wide acceptance among policy makers and urban planners as sustainable urban forms for the future. A good city should be dense, walkable and cyclable. The world's urban population is expected to surpass six billion by 2045. By 2030 a billion of people will move to the global cities to seek for jobs, educational opportunities, and cultural offers. At the same time these cities cannot continue to expand: one-hour travel time is generally the limit that households are willing to spend for most journeys to work. Therefore the cities of tomorrow should invest on public transport, to convert industrial structures and spaces into apartments, to reuse leftover urban spaces as gardens and community areas. Enrique Peñalosa, mayor of Bogotá, said:

"***An advanced city is not a place where the poor move about in cars, rather it's where even the rich use public transportation***".

Joan Clos of UN Habitat echoes: ***"The compact walkable city enhance livelihood for the poor through affordable mobility"***.
Many cities are now seeing that high-quality and walkable spaces contribute to the regeneration of neighborhoods, with commercial property prices increasing in those locations. The presence of good parks, squares, gardens and other public spaces becomes a vital business and marketing tool: companies are attracted to locations that offer well-designed, well-managed public places and these in turn attract customers, employees and services. Pedestrian accessibility influences directly the economic attractiveness, social cohesion and cultural vitality of a neighborhood. In this sense a smart city can be defined as a place where people can move, interact and innovate. A city where, quoting Richard Sennett, "strangers are likely to meet".

Readability and coherence
A central characteristic of smart city is that of legibility. Legibility means the extent to which the cityscape can be 'read'. People who move through the city engage in way-finding. They need to be able to recognize and organize urban elements into a coherent pattern. People needs to structure and identify the space for appropriating it. The city needs a powerful image, a product of immediate sensation and past memory. This city's unique image should be protected such as a cathedral or a monument, to keep intact and recognizable its complex identity.
We only need to think to the distinctive color of Bologna or Florence for example, or to the old facades of Rome or Venice.
A legible environment creates a sense of belongingness and enhances the human experience with the outside world. Also wayfinding signs influences this perception of the city as coherent sequence of spaces, rhythms and images.
Wayfinding is more than Signage: it is concerned with spatial behaviours in relation to environmental stimuli, and then, more generally, with the relationship between subject and environment. Wayfinding is an element of differentiation and identification, a brand which intensifies the city's original meaning. The orientation is, in fact, an interpretive activity, both dependent from the messages that are present in the wayfinding artefacts, and as a response to stimuli coming from the environment. A wayfinding systems which is integrated in the surrounding environment can improve the legibility of a place.

Inclusion and participation
Often the role of citizens has been neglected in the implementation of smart city projects, giving importance to exclusively the technological aspect. A smart city can be instead an instrument to increase democratic participation of people in city government and therefore to create higher consensus and a better quality of life in a social sense. This element

is fundamental in the smart city definition and implementation. Technology should be considered not as a goal or an all-inclusive characteristic but as a tool to involve citizens, changing their attitude towards the urban environment and the local institutions. Technology in cities needs to be urbanized and built around the user. Smart cities will be smart because their citizens have found new ways to recognize, interlink and use in a meaningful way their own and each other's assets, data and other resources. Open Data is one way in which some cities are giving citizens the power to change how they live. City data is opened up to the public who use it to build applications and gain insight into how the city works. Inclusion and participation are important targets for successful smart city programmes to avoid polarisation between the urban elite and low income areas. In the most successful projects, citizens are being empowered through active participation to create a sense of ownership and commitment. So a smart city can be defined as a participative environment that facilitate and stimulate citizens, businesses and the public sector to contribute.

“An advanced city is not a place where the poor move about in cars, rather it’s where even the rich use public transportation”

Enrique Peñalosa

THE MUNICIPALITY OF VENICE

Marco Bordin
OSSERVATORIO NAZIONALE SMART CITY ANCI

Venice: a model for smart cities?

The Municipality of Venice is launching a process of renovation of the city governance through a science of cities which is able to manage in an integrated way the different infrastructures of the territory.

These infrastructures (energy, mobility, water resources, information technology, waste management and natural heritage) are fundamental aspects for the main urban services (security, sport, culture, education, health, leisure, industry): the improvement of these city infrastructures implies the enhancement of the quality of life of citizens.

One of the strategic objectives of the Municipality is the promotion of projects on innovation and sustainability through the interconnection of the existing technologies already in use such as social network,log, communities and other interaction platforms.
The Municipality is also reconfiguring city services because it believes that the availability and accessibility of data are two determining factors for development and wealth creation.

A view of Venice from the top

The success of the process of city transformation depends also on the capacity to exchange experiences, knowledge and issues with other cities, defining common paths and shared solutions.

The City of Venice is meanwhile focusing on six project areas that concur to the holistic approach to a smarter and more livable Venice: smart mobility, smart economy, smart environment, smart living, smart people, and smart governance.

Rialto Bridge, Gondoliers

IUAV

Laura Fregolent e Matelda Reho

The Department of Design and Planning in complex environments (DPPAC) is characterized by a multidisciplinary approach to the land and the urban context, its governance system and its transformation processes undergoing in the perspective of the design in complex environments. This approach results in both research works and didactic activities in collaboration with multidisciplinary teams, professionals and the business world.

When URBEGO proposed to join the Venice smart city workshop, together with the City of Venice and COWI, the offer was received with interest for many reasons. First of all it was an opportunity to interact with a team of professionals from different European countries and with different and multi sectorial skills; it represented a chance to connect them to the students of the courses related to DPPAC; it gave more reasons to work on the theme of the smart city as city capable to improve the quality of life of its inhabitants; and finally it offered the opportunity to focus on the city of Venice and improvements to be pursue at the mobility system's level and in terms of liveability. The activity of the workshop is widely used at the Iuav because it allows to combine the offer of frontal and theoretical classroom teaching with practical activities, as observation of phenomena in their unfolding and on site data collecting. The experience of the workshop is planned within the curriculum as curricular activities, planned and compulsory, but also as an occasional, non-continuous activity, built on the themes of the current debate, in collaboration with organizations and institutions or associations as in the case of the Venice smart city workshop.
As shown above an element of interest in this initiative is the link to the theme of the workshop. Smart city is in fact a theme that DPPAC has included in its agenda, engaging some first research projects with the aim to decline the concept of "smart" that goes concretely in the direction of sustainable urban regeneration.
The concept, which focuses mainly on green or innovative technology-intensive productive sectors, such as the production of energy and techno industries, it also extends to issues of waste removal and recycling, water saving and sustainable building. However, "technology" keeps the hegemony which necessarily leads to narrow the field of interest to the above areas and their interelations with transport, mobility and infrastructure, renewable energy, telecommunications, broadband and digital divide. As suggested by the European Union the issue gathers the interests of cities and communities, economic operators and citizens with the aim to improve urban life through integrated and more sustainable solutions. This means greater energy efficiency, better transport solutions, intelligent use of information technology and communication, but also an important part of planning with a more participatory approach.

IUAV, University

IUAV - Department of design and planning in complex environments

The focus on implementation issues aimed at the urban redevelopment and improvement of the quality of life, through the smart approach, should become the "natural" evolution of how to address the problems of the city. This is the focus of our daily work.

BLIP/SIRIUS

Cities are mad of data - from Blip website

The contemporary *smart cities* model of urbanism is predicated on the rise of private-sector development, the emergence of new construction techniques that allow for the rapid erection of "***cities in a box***," and of course the availability of new technology — including, in particular, tools for generating, capturing and analyzing data, and feeding processed data back into the urban system.
Media theorist Friedrich Kittler observes that cities have historically been not only sites of data storage and transmission, but also of data-processing and formatting.

"it is almost as if the historian of cities [mumford] had forgotten his insight that part of the greatness of ancient florence consisted in having erected, with the uffizi, the first office building — a central bureau for data processing."

The creation of a smart city implies the ability to gather, process and visualize data from multiple sources, creates new possibilities to optimize and improve infrastructures and businesses.
Through data collection and analysis decision makers would be able to effectively understand, evaluate and optimize traffic and people flow, improving infrastructure utilization, traveler experience and local business.

About BLIP
BLIP Systems is a privately held wireless technology company with headquarters near Aalborg, Denmark. It was founded in 2003 as an MBO of the Bluetooth activities within Ericsson Denmark.
The vision and unparalleled expertise at BLIP Systems is derived from 16 talented employees that strive to provide the highest quality service and solutions.
BLIP Systems develops, sells and supports the BlipTrack solution worldwide for monitoring and improving road traffic and traveler movement in airports and train stations.

About Sirius
Sirius Technology is an Italian ICT company focused on resources optimisation through the application of internationally proven, innovative technologies. Working in challenging sectors like urban and in-yard transportation systems or ground handling for aviation, Sirius provides its customers fast and sound solutions joining a deep know-how and selected technologies from its international partners.
Sirius is partner of BLIP systems, offering BLIP's smart city solutions for tracking and monitoring people, vehicles and passengers.

The Uffizi, ca. 1870, photo by Giorgio

Source
Shannon Mattern, https://placesjournal.org/

COWI

Michael Knørr Skov
Vice-President

The Smart City optimizes the everyday life while reducing the costs and consumption to do so. "The truly smart parts of a city are the things you do not see." Whether you want to improve the flow of the traffic, the air quality in the park, the waiting list at the hospital, the energy consumption of streetlights, the sewers under heavy rain, the production rate at the factory or the public usage of city areas you need to know how and when to do it. Our cities are alive with data. A key factor to make our cities smarter is figuring out how to collect these data and how to use them. Many of the necessary technologies are available and we need to use these to develop our understanding and learn more about our cities. It is valuable to view our cities as a single organism rather than individual cells with no influence on each other. A vital part of the smarter city is the digital infrastructure, which will enable us to monitor and analyse big data from the various areas and functions of the city. Doing so will allow us to optimize the city with a wider array of knowledge about the effects and influences from our actions on the city as a whole.The ability to do so relies on a broad collaboration between the various authorities in the city. The smart city is a common goal and will only be obtained and sustained through an understanding as such. In addition to the latest IT solutions, the smart city also relies on smarter planning. Expansion as a solution to our problems in the city is becoming increasingly inadequate and we need to do more with what we already got. This means using every part of our city to the best of our knowledge without negatively influencing the liveability of the city.
Making our cities smarter is a challenging and necessary task.

Lars-Peter Søbye

COWI - cover annual report

Smart city according to

Ole Stilling, CEO

Many smart city projects focus on a range of possible knowledge-led mobility solutions, generally based around building new infrastructures, implying that technologies alone can solve every urban issues. As the British architect Cedric Price said in the mid-1960s:
"Technology is the answer. But what is the question?"

Too many "smart projects" only look at specific sectors not including the users during the whole process. So water experts do water projects, traffic experts do traffic projects etc.
These projects lack of a cross sectorial coordination or political prioritization among sector-orientated investments. Often social impact and users demand are not considered as an indicators for prioritizing investment in smart projects. The planning and organization of the smart city projects are centralized and top-down, in a framework of public-private partnerships with leading technology firms. The point of the smart city, then, is to attract creative classes and build a productive knowledge-based economy.

The adjective "smart" should evoke instead a sentiment of openness — open data, open access, open source, open platform, open participation, open government. This vision focuses on collaboration and participation, rather than closed, propriety systems and top-down management and governance. It seeks to be more transparent and inclusive, and less technocratic. It enables public institutions and private companies to share data, information, knowledge, software, hardware, and infrastructure through flexible and common platform, contributing to innovate the city.
A smart city, in its broader and deeper understanding, is one in which the structures of the various urban systems are made clear, simple, responsive and even malleable via contemporary technology and design.

IFHP FIHUAT IVWSR

IFHP

Citizens are not only engaged and informed in the relationship between their activities, their neighbourhoods, and the wider urban ecosystems, but are actively encouraged to see the city itself as something they can collectively shape, such that it is inclusive, interactive, accessible, adaptive and changeable, as opposed to the inflexible and mono-functional structures of many contemporary cities. Cities in which citizens understand that they are part of a wider system, and behave accordingly, to take more holistic view beyond individual interests, with government equally engaged into involve, listen and evolve.

This URBEGO workshop was an experiment in this sense: by bringing together different urban actors coordinated by a dynamic team of young international professionals the workshop you can make excellent, clear and logical solutions – often with good socio-economic pay-back. You also need to be in close understanding of the life in the city and the inhabitant preferences.
Involving strategic city partners in a clear and rational process with a positive, cross sectorial and user driven thinking can lead to the creation of a better urban environment. This is the smart city that IFHP imagines.

VENICE SMART CITY

It is difficult to define in a unique and clear way what a smart city is. The adjective "smart", in recent years, has gradually defined the digital city, then an open and inclusive city and, more recently, the sustainable city. In addressing the issue, it is important to transform this theme, often elusive and rhetorical, into something tangible by starting from the existing resources of a place and creating a strategy that addresses the specific needs of that city.
To do so, we need to first understand the changes that the concept of smart development proposes and what opportunities could be seized in each particular situation.

The strategy to make a city smart begins with the understanding of the essence of the city often reflected in its history, followed by an assessment of its modern needs and expressing that through a "new spirit and identity". This new spirit needs to embrace technological innovation, wellbeing of residents, growth of enterprises and rational use of resources and space.

The question that this proposal aims to answer is what is the area where a city like Venice can find this new spirit?
How can Venice be imagined as smart city in its modern understanding when, although created many centuries ago, it is still “smarter” than most of the new cities of today?

VENICE IS MOVING
One of the crucial aspects of the development of Venice is mobility and mobility by water in particular. Venice is the center of constant flows and connections on water that cause high levels of congestion and limit the accessibility of the center. Every day the insular city must sustain around 100,000 visitors, roughly double its current number of residents.

The arrivals are concentrated in an area that includes the train station, the harbor, the Tronchetto station and Piazzale Roma. This movements need to be managed and facilitated. Therefore, it is fundamental for the future of the historic center that the area of the terminals is capable of absorbing and directing the pedestrian flows as well as facilitating the interchange between the different modes of transport in a clear and efficient manner.

CONTINUED

In parallel, the organization of the water bus network, without a clear separation between the tourist and residents services puts the canal under high pressure and creates long queues and very crowded services that affect the resident's everyday movements and the tourist experience of the city.

As a consequence, pedestrian movement and public space strategy for the terminal area is a very important component of the integrated mobility strategy for the historic city and can truly facilitate the implementation of holistic and "smart" solutions.

VENICE SMART MOBILITY PROJECT

After conversations with representatives of the Municipality of Venice on the topic of mobility, Urbego proposed to organize a seminar and a subsequent international planning workshop aimed at students and young professionals with the objective of defining sustainable alternatives to improving mobility in the city.

The activities have been organized in collaboration with the National Institute of Urban Studies (INU), the Municipality of Venice and the University of Venice (IUAV).

The workshop aim was to reflect on the network of transportation on water, the redesign of the interchange terminals with particular attention to pedestrian access and propose a new system of communication and information for visitors.

The workshop was developed around three main areas of planning:

smart human design, wayfinding and mobility systems.

A view of Canal Grande by Roberto Taddeo

The workshop was planned in two separate phases. In the first stage students at the IUAV would build a fact sheet of the challenges and opportunities that the area of the terminals presented regarding the three main themes and a second stage that would allow for the exchange of best practices among the Italian students and international participants.
This set up was chosen to allow for an informed debate to take place and to encourage innovative and diverse solutions to emerge.

This report contains the summary of the proposals put forward and discussions that took place during both stages of the workshop. It represents an important experiment for Urbego that is developing and testing a methodology and approach on walkability, smart mobility and flows management that is focused on data collection, prototype testing and refinement of solutions in close consultation with local stakeholders and government.

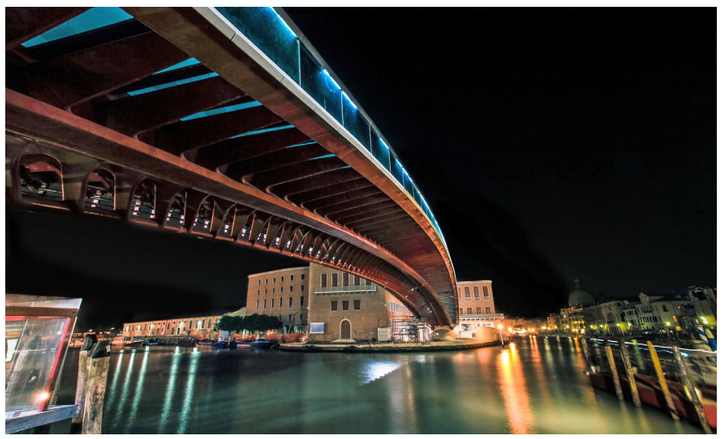
Urbego believes that there is no one solution for all cities and local knowledge and international perspective as well as a trial and error approach on public space design, information and movement is crucial and represents a cost efficient and participatory method that it plans to apply in other historic city centres.

The method, done in collaboration with universities and research institutes can also become a powerful formation tool for the next generation of planning professionals in each city.

This publication is a synthesis of the workshop process and results and it is conceived as the basis for future collaboration between Urbego, IUAV and the Venice Municipality.

"...It is as though space, cognizant here more than anyplace else of its inferiority to time, answers it with the only property time doesn't possess: with beauty. And that's why water takes this answer, twists it, wallops and shreds it, but ultimately carries it by and large intact off into the Adriatic."

– J. Brodskij



Calatrava Bridge in a photo by Roberto Taddeo

THE VENICE CHALLENGE

Tourism odi et amo

"Ah, Venice", sighs the ticket seller when, in Thomas Mann's famous novel Death in Venice, he sells the protagonist his passage across the Adriatic. With its exotic and unique urban environment, its romantic allure, its powerful and mythological history evoked by iconic buildings, Venice has an unrivalled place in the mental map of Europe.

A city that has a long history of attracting people from all across the world, Venice, in many ways, is the tourist destination par excellence. During the post war period, tourist flows into Venice began assuming unprecedented proportions. Today arrivals have reached roughly 20 million a year and approximately 100,000 each day, during the peak season. These figures represent an exceeding of the city's tourism capacity by some two million tourists annually. Moreover the unique geography of the historic city-centre, a group of 117 small islands separated by canals and linked by bridges, further ads to the complexity of the situation. The transportation of goods and people is predominantly made by boat. Otherwise, movement is pedestrian.

Today, the population of Venice is less than 70,000. It is a community in decline, once having a population of some 200,000. Demographic statistics shows a persistent haemorrhaging of the city's population since the 1950s, as people have moved onto the mainland, in response to the overwhelming predominance of tourism and its impact on the local economy causing surging property prices, limiting the employment opportunities outside of tourism and the quality of life due to the congestion of public spaces, transport and other services. Therefore the city has developed a love-hate relationship with tourism which has resulted in a conflict between two social groups: one living through tourism, the other in spite of it. The city needs the tourists, but it is also essentially a heritage city that needs to be preserved therefore a balance needs to be reached.

Those Venetians, who reside in the historic centre, by definition, reside in ways that inherently embody encounters with tourists. To live in Venice is to live with tourists. The project examines how local residents perform encounters with tourists 'on the ground', by exploring and addressing two main issues: the congestion of the arrival area together with the main pedestrian routes and the lack of information or signage to support pedestrian movement.

CONTINUED

This two fold challenge although isolated it has widespread implications on the liveability and management of the city and is juxtaposed by the need to avoid the city becoming a theme park and allowing for residents and visitors to coexist in a way that is dignifying and exciting by maintaining the city's character and heritage.

FOLLOWING THE CROWD

The geography of Venice and its necessity to connect to the mainland has led in time to a concentration of arrivals in an area that includes the train station, the Santa Lucia station, the Tronchetto and Piazzale Roma. With the increase in mass tourism the need to manage and facilitate movement in the area has become increasingly important.

Nowadays, due to the diversification of tourist typology and increasing waves of tourists coming from emerging economies across the globe, the Venice municipality is under pressure to provide a system of terminals capable of absorbing and directing the pedestrian flows as well as facilitating the interchange between the different modes of transport.
At the same time the municipality has identified the need to diversify the access to the city by strengthening the external terminals (Tessera, S. Basilio) and directing the different users flows upstream, outside the historical center.

GETTING LOST IN VENICE

Once in Venice, visitors have the option of using water transport or walking nevertheless, previous research and questionnaires conducted by IUAV and the municipality reveal that confusion and frustration are a constant of the tourist experience in the city. Because the city is unique compared to other cities in the world it is obvious that tourists will generally need more support and guidance to make an informed choice about how best to reach their destination and to explore the city confidently.
This is in part because there is very little information or signage to encourage and support walking although roughly 70% of the daily trips in Venice are made by foot.

The widespread belief that Venice is an inaccessible city, a labyrinth and inhospitable environment especially for the elderly and mobility impaired persists among visitors but is contradicted by the daily experience of frequent Venice commuters and its residents.

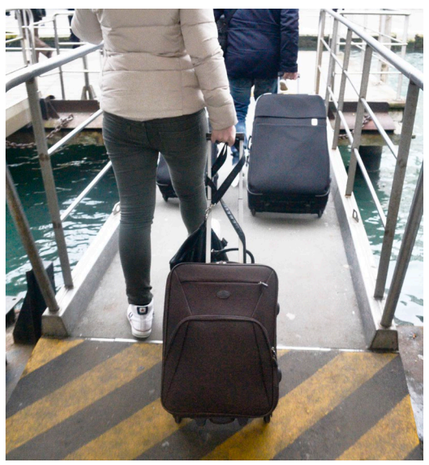
A DESIGN SOLUTION SHOULD IMPROVE THE ACCESSIBILITY OF THE HISTORICAL CITY

component of the mobility strategy that would, not only, improve the management of flows at the terminals, but also contribute to enhancing the tourist experience across the island so that they can count on a clear and consistent guidance system that allow those who come to town, tourists but also commuters, of through it as best as possible.

As mentioned previously the project took place in two phases.
Phase I: July 2013 (conducted by IUAV)
Phase II: 27-31 August (conducted by Urbego)

70% OF THE DAILY TRIPS IN VENICE ARE MADE BY FOOT

BUT THERE IS VERY LITTLE INFORMATION TO SUPPORT WALKING



Confusing signage across the city together with a plethora of signs at the terminals, no coherent and integrated information system that distinguishes between the various modes of transport makes orientation even more difficult.

Under these circumstances the project promoted an integrated and complementary planning approach in the terminal areas, looking at the reorganization of functions and flows and proposing simple design solutions to improve the accessibility, the permeability and use of the public space. Signage and information strategy was identified as a strong

THE WORKSHOP VENICE SMART CITY

How to connect an ancient city to the rest of the contemporary globalized world?

In the pre-workshop phase the IUAV students prepared the preliminary field work and background research on the themes identified. Urbego defined key questions and activities and asked the students coordinated by IUAV professors to compile a set of fact sheets that would allow the international participants to get a very good understanding of the main challenges and opportunities in the terminal area.
The questions and activities defined under the three main themes of the workshop are presented below.

SMART HUMAN SCALE DESIGN WORKSHOP QUESTIONS
How can the Venice terminals absorb and manage the flows and respond to different needs of the visitors? What is the role of urban design in improving the accessibility of the historic city?

PRE WORKSHOP ACTIVITIES
The smart human scale design component of the pre workshop activities in July focused on observing and analysing how the terminal area of Santa Lucia – Tronchetto arrival point- Piazzale Roma works. In particular the students were asked to compile a report (including pictures, videos and drawings) on the following aspects:

1. Direction and capacity of flows
2. Waiting and interchanging time at the landing stage and ticket points
3. Urban furniture: quality and use
4. Walkability: level of efficiency of the pedestrian connections
5. Management of the vaporetto's stops
6. Visibility and design of ticket points
7. Type and distribution of the different services/functions (tourist information, café, ticket offices etc)

WAYFINDING AND INFORMATION SYSTEM

WORKSHOP QUESTION
Can wayfinding and communication solutions change the way residents and visitors navigate the public space and improve the particularly negative image of Venice as an inaccessible place?

PRE WORKSHOP ACTIVITIES
The wayfinding component of the pre workshop activities in July focused on identifying practical signage and information solutions that have the potential of changing this perception and improving the daily experiences of visitors and residents alike.
The basis for this activity was the previous research that has been conducted by the Communication and Design Department at IUAV entitled VENICE 2 WAY. Students decided, with the guidance of their coordinator, on locations around the terminal area (Piazzale Roma, Train Station, Vaporetto Terminal and Tronchetto) where they would like to test different previously developed wayfinding solutions. Students also designed prototypes, of the selected options to be tested during the workshop in August.

Wider questions that were also explored during this stage:

1. Can the solutions be implemented across the city?
2. What is the target group for the specific solution?
3. What wayfinding problems do they address?
4. What are the strengths and weaknesses of the chosen solutions pre-testing? (logistics, integration with the wider public space, implementation costs, stakeholder engagement etc)
5. Is the design inclusive for all user categories?

A view of the city

View from top of Piazzale Roma

Biennale totem located near a

MOBILITY SYSTEM WORKSHOP QUESTION
How can the efficiency and performance of the vaporetto lines be improved in order to offer sufficient capacity and satisfying levels of service?
Can the reorganization of the network of transportation on water into distinct lines for tourists and residents address the problem of crowding and relieve pressure on the canal?

PRE WORKSHOP ACTIVITIES
The exercise proposed for the pre-workshop activities consisted of performing a diagnosis of the existing system (taking into account all its components) by gathering information about the city's water bus network through: existing documentation, sites visits, interviews of transport authorities and operators
Wider questions that were asked during this stage were:
1. How do the transportation services (vaporettos routes, services for commuters/tourists, strategic stops in the network, etc) work in Venice?
2. Which are the characteristics of movements on the canal?
3. What are the station characteristics in term of equipment and accessibility?
4. What are the characteristics of passenger information and ticketing points?

The information gathered for all of these themes was subsequently shared with the international participants in August.
The material compiled by the IUAV students together with comprehensive presentations and site visits organized by municipality representatives represented the basis for an intense week of experimentation and debates.

The following section presents the approach and analysis produced in the pre-workshop phase by the IUAV students and their coordinators.

PHASE I

July 2014
Pre-workshop conducted by IUAV

THE WORKSHOP
VENICE SMART CITY

Words
Laura Fregolent

The workshop was organized in two phases: the first at the beginning of July, it was only to students of advanced degrees of DPPAC; the second at the end of August was also attended by young architects and urban planners in Europe.

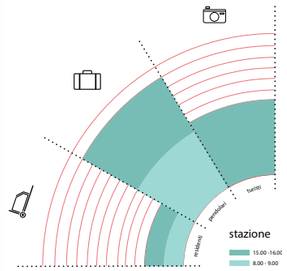
The main aim of the first phase was: to start analysis and processing of census data; to collect data through the sensors installed on the stops of ACTV in Piazzale Roma and at the Railway station; to gather data through the survey with questionnaires; to explain all these data in graphical format along with the data of the main mobility flows collected between Piazzale Roma and the railway station. Finally part of the work was dedicated to the recognition and description of the signage and of the information materials in the area.

In the first phase the students' work was accompanied by a series of seminars on the city and the planning choices related to the mobility system (Marco Bordin); on mobility flows (Lucio Rubini); on some strategic action lines for the turistic port with the explanation of the different projects for teh area (Ylenia Bristot and Andrea Stefani).

There were also somo lessons and seminars of Iuav professors involved in the workshop about planning the urban scale (Laura Fregolent), design, visual communication and public information (Emanuela Bonini Lessing) and new technologies (Andrea Prati) for information and communication.

The seminars give information to the students about the content and the context of investigation – through different disciplinary approaches – and for the analysis, design and planning in a complex environment such as is that of the city of Venice.

qualitative interviews made in the train station area



The overall work has allowed a first reflection on the problems identified and then addressed in the second phase of the workshop, which was attended, by Iuav students and young European planners and architects. The participants worked together to identify ideas and find solutions of the problems identified, such as: congestion due to the high number of tourists; the coexistence of different flows of users (residents, tourists, commuters); the confused and ineffective signage on services and alternative ways to the canonical ways of tourists.

The students worked in small groups, both in the first and second phase. The groups were organized on the basis of acquired skills, but trying also to maintain in the framework of the groups the multidisciplinary approach that characterized the workshop.

COLLECTING DATA

The map of the fluxus recorded during the first phase of the workshop

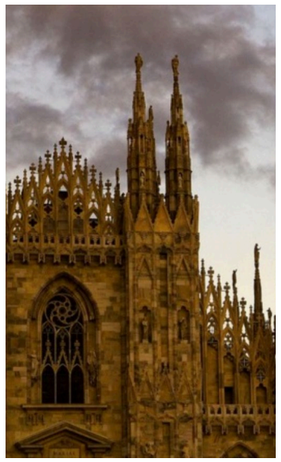
SMART CITY AND ICT

SMART CITY AND ICT

Words
Andrea Prati

Within the umbrella of the term "Smart City" a key role is played by the ICTs (Information and Communication Technologies) which have the general objective to make the applications smarter through sensors, automatic processing and decision support systems (DSS).
Possible technologies that might be employed in a city include: WSN (Wireless Sensor Networks) for environmental monitoring tied with big data analysis algorithms for DSS; and LBS (Location-Based Services) in the form of specialized App for mobile devices with augmented reality, advanced recommender systems, and electronic tourist guides.

These technologies will open in the near future to unprecedented developments in terms of innovative applications for the cities. In particular, LBS could be used for several innovative applications, such as: people flow analysis (by analysing the GPS tracks collected through mobile phones); tourist applications where historical buildings and cultural heritage of the city can



City of Milan hold the "digital islands"
photo by Gianni Dominici

be presented in innovative ways, including augmented reality with virtual rendering of the artefacts in past centuries; social and collective behaviour analysis for understanding habits of people with respect to their daily life (collecting not only typical paths for home-work commute, but also their preferences for food, lodging, etc.).

And most remarkably these applications are not disjoint and can be (most of them) part of a

City of Genova as domain leader
for the creation of the Port Green
photo by Roberto Taddeo

single App.
LBS, however, are not mature enough for a wide spreading into the city community.

The main limitations are both technological and societal. From the technological viewpoint, battery consumption and user-friendly graphical user interfaces are the most relevant (and often neglected) challenges. From the societal viewpoint, privacy issues must be taken carefully into account and coupled with a good strategy for convincing as many citizens as possible to use the App (e.g., through gamification and discounts).

COMMUNICATE THE CITY

COMMUNICATE THE CITY, INFORMING USERS

Words
Emanuela Bonini Lessing

Students of the master in visual communication design at Iuav that took part to the workshop have focussed in particular both on the necessity of integrating all information required in a design based system and on the visual interface of the proposed sign-posting system.

Since at Piazzale Roma and at Stazione Santa Lucia a great variety of city users transit everyday, students have concentrated on the crucial places and the times in which the information has to be provided, and how to translate it in a coherent visual language.

They had to find a balance between the necessity of adopting standardized international signs, pictograms and maps familiar to most tourists and commuters with the need of characterizing in a unique way the welcome to the city.

They were concerned about how to make recognizable the based on water and pedestrian routes local transport system – a slow

Venezia accessibile
Created by C. Contrino, R. Baracco,
M. Miccichè, B. Pandolfi, L. Tommasetti

one – to people used to major highways, railway, naval and airport traffic. In other words: how to connect an ancient city characterized by a unique morphology and history to the rest of the contemporary globalized word.
Considering the quality of the urban environment that has to be preserved, the design proposal also keeps within the lines of some suggestions on how to behave in Venice, envisioning the different necessities of all city users.

Thanks to the active participation into the workshop of different qualified partners, the workshop has pointed out what the main stakeholders are and what the often contrasting economical interests are that lay behind the present and possible development of the city.

The study conducted during the workshop was based on preliminary exercises on the same topic developed in a design lab conducted by Emanuela Bonini Lessing and Bruno Genovese.

Sapevi che!
Created by M. De Vincentiis, D. Gaudenzi,

THE 2 WAY PROJECT

2WAY IS A PROJECT BY
GIULIA D'ANGELO, CARLA FELICETTI, TAJA LUXA, HELENA PRINCIPATO, BELEN SEGU, TOMMASO TRONCHIN

The complexity of the city shapes the mobility of Venetians and tourists. Sometimes their coexistence can be very hard. Here's our strategy for a human approach and a dialogue between city actors.

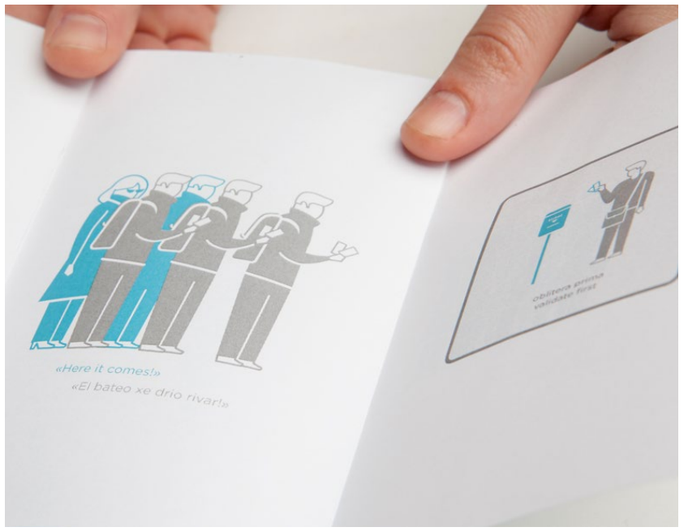
Words Carla Felicetti

Life in Venice isn't simple. Every day its inhabitants need to share the medieval infrastructure of the city with a multitude of tourists from all over the world. The co-habitation can be hard, sometimes even unbearable. Tourists can annoy Venetians even with very small things.
The 2way project was developed to help tourists and Venetians to coexist in a complex place. The project developed a handbook and specific behavioural signage to help newcomers to find their way around the city and also understand the Venetian mentality. The project also developed information for residents to show them the difficulties a tourist faces in the city and potentially open an invisible line of communication between these two often opposing crowds.

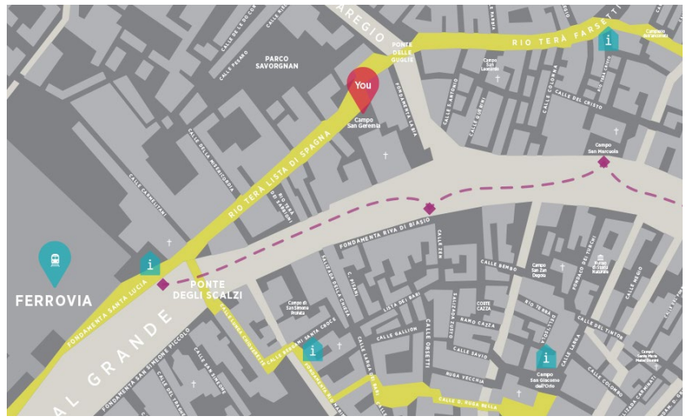
Handbook
The manual presents two sides of the same coin. One side helps tourists to understand the Venetian point of view.
The other side is addressed at inhabitants, who need to understand how difficult and frustrating a tourist can feel in Venice. Skits show the city in a funny way and turn the attention from character to character depending on which side you read.

Signs
Signage is a visual etiquette for tourists. It consists of little advice placed in critical points in the city. The nature of this signage is to be non-invasive and for this reason they have a small size (20x20cm).
The wayfinding system consists of two different totems that are a sort of safe harbour where tourists can find directions. Totems are placed along the most popular tourist itineraries and also distribute the behavioural handbooks.

INSIDE THE MANUAL
The part addressed to the tourists is coloured in soft blue. At the center of the page there's a tipical situation of congestion or confusion. When the page is opened the solution came out and the signal appears, helping you help you understand how to behave in that situation.



THE MANUAL
The handbook is realised with a particular structure that show the content as two sides of the same coin. One referred tWo the tourist, the other one for the resident. We choose two different colours to represents different users.



THE MAP
The map shows the position of totem and signs in the city. The totem, both horizontal than vertical are placed all around the city. The behavioural signs are placed just in few crucial places near the station. That because our aim was to "suggest" not force people to do something.

VERTICAL TOTEM
Vertical information points are placed in the station to give tourist a first important safe harbour where tourists can find directions. They also distribute the handbook.

SIGNS ON THE WALLS
Singage is a visual etiquette for tourists. It consists of little advices placed in some critical points in the city. The nature of this singage is to be non invasive. The size of the signs is 20x20cm.

HORIZONTAL TOTEM
The wayfinding horizontal totem is used in larger fields. They are presents but not in an intrusive way. We placed them along the most popular tourist itineraries.

COLOURED SIGNS ON THE FLOOR
This tipe of strong solution is realzed only in two bridges. Ponte degli Scalzi is the first one because is the first one you see out of the station. Our aim is to guide people to the behavioural signs suggest them to pay attention to this new kind of signs they also can find on the floor.

PHASE II

August 2014
International workshop conducted by URBEGO

URBEGO APPROACH

ANALISYS, TESTING AND PLANNING: URBEGO APPROACH

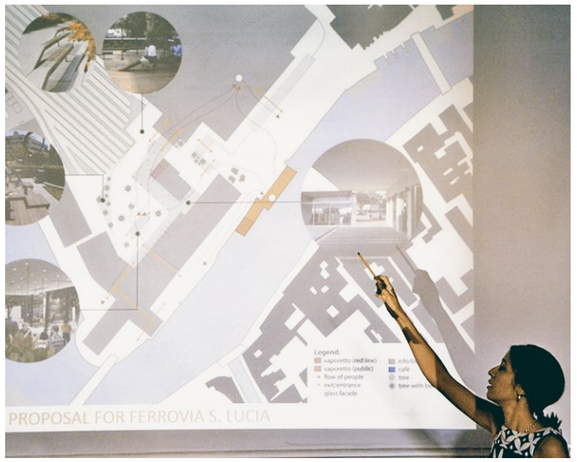
Words
Giulia Maci

The workshop, held by Urbego, gathered together students from the IUAV and young professionals from across Europe working together for ten days-full immersion team work. The participants were divided into three groups (urban design, transport planning, design of communication) assisted by a group of young international professionals from Urbego and COWI. The workshop applied a collaborative, interdisciplinary approach that involved all stakeholders in providing new planning perspectives and ideas to stimulate existing expertise, interests and creativity. The workshop consisted of three interrelated phases: analysis, testing and design.

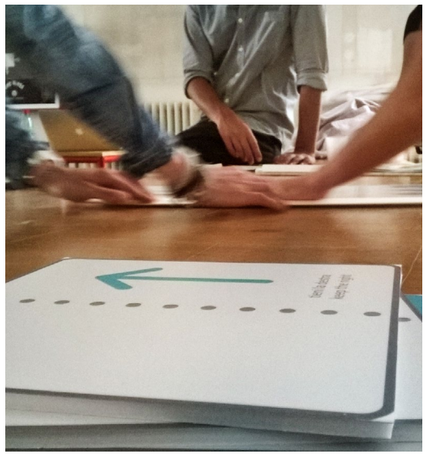
Analysis
Before the workshop, five sensors were installed in the station area to identify the number of people, and their origin and destination, by collecting anonymous data from Wi-Fi devices, such as mobile phones and tablets. The data collected by these sensors was processed and georeferenced during the workshop to understand the impact of tourists flows and form an evidence base for alternative planning scenarios.

The analysis also involved presentations from different local experts and stakeholders, collecting data on mobility in Venice, conducting interviews for the different target groups, monitoring activity around the vaporetto's major stops and the intermodal nodes and analysing pedestrian mobility in the central station and Piazzale Roma area.

Testing
During the workshop wayfinding signs part of the 2way strategy



were tested in the area around the station to gain an understanding of how people read and navigate the city. The purpose of this was to get constructive feedback so that the wayfinding solutions could truly respond to the users' needs. These tests determined the size, placement and materials of the signs and their integration with the streetscape, as they would be vying for valuable and often crowded footway space. A user-centred approach, balanced with best practices and the extensive knowledge of the design team, was essential in order to test and validate ideas during this fast-moving phase.



Design
The results of the workshop consisted of a strategy for a peaceful coexistence of tourists and residents with a focus on pedestrian mobility. In particular the team worked on a new image for the station area integrating urban design with communication and wayfinding.
The workshop findings were presented during a meeting opened to the public and attended by representatives of the City Of Venice, the University of Venice, ACTV (public transportation company) and local media.
urban design with communication and way-finding.

The workshop findings have been publicly presented with the participation of representatives of the City Of Venice, the University of Venice, ACTV (public transportation company) and local media.
This publication is a synthesis of the workshop process and results and it is conceived as th basis for future collaboration between Urbego, IUAV and the Venice Municipality.

In the pictures you can see two moments of the workshop. Prototyping moments and the final

TESTING SIGNS

Understanding the context dealing with users

Words Carla Felicetti

Venice is par excellence the place of walking. Pedestrian movement in a context of bridges and narrow alleyways where it is difficult to get around can be intimidating and confusing if you are not used to it. At first Venice appears as a labyrinth. Existing signs are overflowing and confusing, often repetitive, and this only generates "information disorder" contributing to the image of Venice as an inaccessible city.
What is the best thing to do in such a context? Where can you start to formulate a wayfinding strategy that is effective? What information needs to be provided and how to translate it into a coherent visual language?
These are questions that you would ask in any city but in Venice we had the additional challenge of working with one of the most famous and protected cities in the world.

Due to the complexity of the environment, we considered important to deal directly with users and their different needs. From an Urbego perspective the best way to understand the context was to test and record reactions and suggestions of pedestrians. Inspired by the 2way project we decided to take into account not only the needs of tourists, but also those of the residents. By considering these two different needs the aim was to design a signage system that would facilitate urban mobility and allow for the redistribution of flows that would then lead to the easing of congestion on the internal streets.
We tested two types of signs: the informational totem and behavioural signage. Both solutions placed along the flow paths from the main arrival terminals.

All these pictures came from the user test we did during the second phasde of the workshop

We were able to observe the reactions of people and collect valuable suggestions that have provided excellent material for the next brainstorming session. In particular we found very useful the suggestions about the totem, its visual impact and the map on it. A challenging but effective approach from the point of view of a smart design that wants to be more and more user centred.

"A journey of a thousand miles begins with a single step"

Confucio

COEXISTENCE STRATEGY

Public Realm and Wayfinding Proposals

Words Farah Makki

Venice is one of the most desirable tourists destinations in the world with almost twenty million staying in the insular city in 2013, mostly for one night. Located in the middle of the Laguna, the location of the city is charming and the views it creates are breathtaking nevertheless, it raises a critical issue: arrival and departure flows are concentrated in two points located at approximately 2 minutes walk of each other: the train Station of Venezia Santa Lucia, and Piazzale Roma. Almost 100,000 people arrive daily at these two main points that connect the city with the mainland. That number is double than the 48,000 inhabitants the city hosts today. This concentration creates high congestion and leads to a conflictual situation between resident and tourist flows along most streets and alleys. On reaching the island either in Piazzale Roma or at the train stations, tourists' movements are guided by the attractiveness of the Constitution Bridge that offers an open line of sight to the city and invites people on both sides to cross it. The bridge is also the only clear route for visitors arriving in Piazzale Roma. The current layout and design of Piazzale Roma is confusing, doesn't have an identity and visitors cannot understand they have actually arrived in Venice and end up asking themselves if it is a Venetian piazza or a parking lot.

This mono-orientation or even disorientation stands mainly in the inefficiency of the information system. Faced with no coherent information, tourists tend to follow the crowd heading across the bridge without really knowing if their destination is actually across the bridge. The qualitative assessment undertaken during the workshop confirmed people's bewilderment when arriving in the city.

In spite of this initial negative impression Venice is still pictured as pure "romance" in people's eyes, a dream city for people from all across the world. The apparent desirability of the city in the visitors' eyes does not translate into actual liveability for Venetians. The function of the city is hugely under threat. Venetians are abandoning the insular city for Mestre situated on the mainland to avoid ever increasing pressure from tourist numbers and the significant reduction in essential everyday services. The spectacular Venice by day turns into a ghost town by night. Streets and piazzas stand empty since inhabitants are very rare and increasingly older.

How can Venice be saved from mass tourism? How can the dichotomy between tourists and residents be resolved? Would reshaping mobility and access be a key solution? The "detourism" strategy is often presented by authorities and endorsed by residents as an obvious rescue plan. Nevertheless, is it as simple as that? How can one guarantee that fewer tourists will generate more

26 thousand
visitors per square kilometer. This is the pression tourist record

353 tourists
Number of tourists for every resident in the city every

247 tourists
of 353 are visitors hit-and-run, who do not stay in town, but go around for the "calli" only for a few

Source
Cesdoc studio, data emerged from the research of the study center of the Order of Accountants

The only alternative to coexistence is codestruction

– Jawaharlal Nehru

inhabitants? Would the limitation on tourist numbers encourage Venetians to come back? Spatial analysis of the Census data shows that today Venice lives out of tourism. Most of people's income comes from touristic services: restoration, hotel accommodation or cultural activities. If limiting the number of tourists is taken forward, this needs to be done as part of a very comprehensive strategy of replacing some of the lost income from tourism with other activities as well as a strategy of restoring housing affordability and essential services to the island. Otherwise this approach can potentially turn into a double edge sword and reinforce resident's migration to mainland by creating even fewer income opportunities.

The worst case scenario, feared by all residents is the complete Disneyfication of Venice. How will future tourists be able to truly appreciate this wonderful city without its inhabitants? Local identity must be reinforced. What could be the solution?

Although residents don't appreciate the tourists that encumber their daily life tourism is their way of making living. Confronted with this unbalanced situation, a rejection strategy would not address the issue. Venice is still a city where residents and tourists coexist and have done so for many years. For Urbego and the IUAV team, it was unthinkable to turn Venice into a museum with controlled access. Our approach sustains the coexistence of this conflictual but complementary

90 THOUSAND
Almost persons that arrive daily to the city. Even if it is no possible to extimate the correct number of visitors

58 THOUSAND
Extimated number of inhabitants in the historical center of the city.
(Murano and Burano Islands are not included)

CONTINUED

actors and works on understanding the concrete needs of each side. Our goal: re-plan to decongest, decongest to comfort. Indeed, decongestion shouldn't mean a limitation or banning of flows but a better redistribution to relieve the pressure on some areas.

Urbego and the IUAV team made use of the data collected during the initial phase of the workshop and also of the data collected by the sensors installed by Blip Systems to capture pedestrian movement in the terminal area. The proposed solutions were based on both quantitative and qualitative evidence and focused on the re-design of the public transport arrival areas together with a coherent and targeted online and offline wayfinding and information strategy.

The planning team focused on drawing the imageability of the city entrances and on redirecting the flows by exploring new ways to discover the inner city and put forward the rich cultural offering of Venice.

The wayfinding team focused on elaborating an orientation and information system based on virtual and physical solutions. In-situ experimentation was conducted to test the initial prototypes and the results were used to reshape the design of the final proposals.

The method of testing and collecting information constantly during the design process and cross reference it against the initial quantitative and qualitative evidence was decided by Urbego from the onset of the project. With the help of Blip Systems and the IUAV we were able to put this new approach into practice and show that an intensive, in-situ design and strategy oriented workshop can be an extremely efficient tool.

CAN WAYFINDING AND COMMUNICATION SOLUTIONS CHANGE THE WAY RESIDENTS AND VISITORS NAVIGATE THE PUBLIC SPACE?

SMART SOLUTIONS HAVE USER AT THE CENTER.

THE PROPOSALS MADE REFLECT AN UNDERSTANDING OF NEEDS AND A DIALOGUE BETWEEN ALL THE CITY ACTORS

URBEGO'S METHOD PUTS CITIZENS AT THE CENTER OF THE ENTIRE DESIGN

This workshop has not only managed to define initial proposals for the terminals but also to bring at the same table the various stakeholders, working together in a setting that allowed for creativity and a positive attitude.

As a group we believe that smart solutions have the user at the centre. They are solutions which reflect an understanding of needs and a dialogue between city actors. In the case of Venice this dialogue has showed us that sometimes the obvious solution might not be the best. Urbego established a method that puts citizens at the centre of the entire process from data collection, problem identification and proposal testing to planning solutions. Daily users of the streets of Venice were involved every step of the way and shaped the project with the aim of improving their city.

Rebalancing the tourist – resident dynamic will require not just improvements to mobility and wayfinding but also housing affordability, the improvement of services and economic diversification etc.

The Chinese philosopher Confucius once said "a journey of a thousand miles begins with a single step".

Urbego and IUAV in collaboration with the Municipality of Venice began the prelude of an initiative that we hope will turn Venice in a more liveable city.

A story to be continued...

MAIN BASINS OF RELAPSE FLOWS

Words Carlo Piantoni

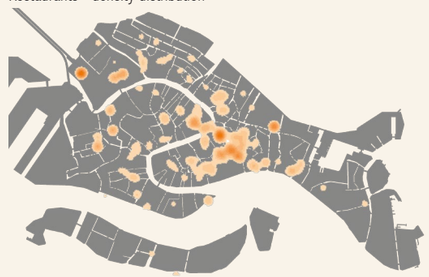
Every ten years the economic censuses provide a comprehensive overview of the size and characteristics of the national economy with a fine spatial detail. The basic data obtained allows the preparation and updating stock of productive units to be used as the basis for the execution of sample surveys. We used them to estimate the main basins of relapse flows. The representations which have been elaborated identify the density of a random variable according to the non-parametric method of estimating (a process of kernel density) the level of concentration of the activities of major interest for the return of information regarding the quantity and appearance flows slow mobility within the city of Venice. The map shows thickening more marked in areas of higher densification and identifies a number of locales that are distributed over the city.

TOTAL ECONOMIC ACTIVITIES

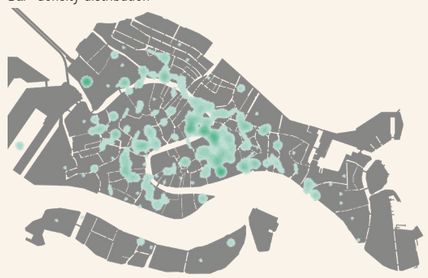
SOURCE: Istat - Census of industry and services in 2001
(latest available data, are still in the works as of 2011)

Hotels - density distribution

Restaurants - density distribution



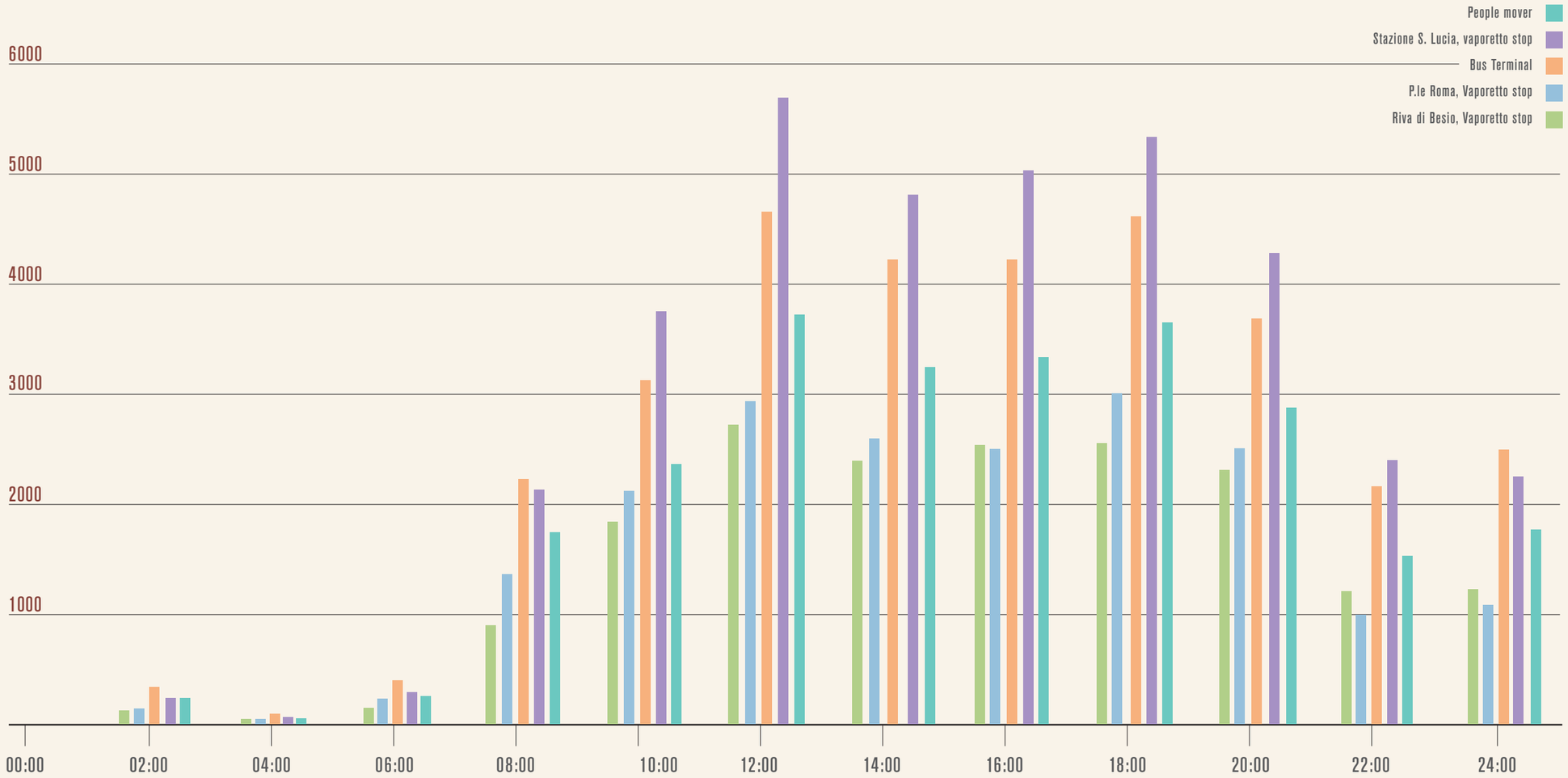
Bar- density distribution



Economic activities - density distribution

FLOW DATA COLLECTION

The focus of this work is on Piazzale Roma and the Railway Station St. Lucia square, which are two important poles of the city as they are it's entrance and exit. Five sensors "Blip Track" have been installed in a network in this area and located in the spaces which were made available by the transport company ACTV. This allowed us to get a feed-back regarding major/minor congestion events where public transport interchange.
This work done during the workshop enabled us to process the data collected during a whole day which was taken as a sample: 08/25/2014.



INSTALLATION OF SENSORS

BlipTrack System
This sensor has an immediate use, although it is complex technological equipment. Among the characteristics of greater importance is the presence of two directional antennas that enable quantity monitoring actions.
This allows you to monitor the concentrations and timely flows of movements. BlipTrack allows you to detect and count the smartphones' active Wi-Fi signals and possibly Bluetooth signals, even though in this work it was used only on Wi-Fi. The signals picked up are anonymized by the system The sensor works 24/7 and in all weather conditions and also works in passive mode and doesn't interfere with other existing Wi-Fi networks.
Blip Track's functioning is related to the cooperation with the rest of the technology made available by COWI.

WiFi Traffic SENSOR

COWI manages the share in storage, management and charting of the data collected by the system and Blip; through the platform made available by COWI it's possible to download the raw data. However, an interface oriented to georeferencing analysis for displaying the data on a map is missing. During the workshop activities we bypassed this aspect through the use of GIS software (Geographic Information System) through which it was possible spatialize, process and view the data acquired from the network sensor Blip. This return has proven as effective, very explicit and intuitive.

Weaknesses
not all people have a smartphone, at the same time some of them may have more than one with them, only those who have the Wi-Fi device on (and/or Bluetooth in case) are considered but they don't have to be connected to a WiFi or Bluetooth-signal to be picked up by the sensors.
The Blip Track System can't be used as a direct count of persons in one specific place. But relative to another count or flow in the system the count is highly valid.

Developments
be able to rely on data secured from the cells by different telephone operators.
The stumbling block in this kind of analysis is still fairly strong, as it relates to privacy and liberalization by it's owner.

PROPOSALS

A new vision for Venice

The data collected by the five Bluetooth and Wi-Fi sensors in the central station and Piazzale Roma area were processed to observe and record visitors' behavior and preferences in terms of mobility.

These data provided the basis for the definition of a new strategy for managing flows in the station. The proposal aims to decongest the busiest streets by acting promptly on improving the accessibility.

The strategy consists of a physical reorganization of the Piazzale Roma bus station and the main entrances to the historical town, the design of a new way finding system that guide the visitors to their destinations while giving them the sense of city's rich cultural history and the integration in the communication system digital information designed for different users (students, residents, tourists) in order to facilitate movement and enhance the architectural and cultural heritage.

A new vision for Venice, starting from smart mobility.

ARRIVAL POINT STRATEGY

Words Salma Khamis

The City of Venice is renowned for its beauty and uniqueness of its urban fabric, architecture, and artworks. It is located on a group of small islands separated by canals and linked by bridges, consequently certain accesses from the shore side.
There are two strategic arrival points either by bus/car heading to Piazzale Roma or by train at the railway station Santa Lucia.
These two main arrival points create enormous congestions, not only for traffic but also for pedestrians. Undisputed, Calatrava Bridge (Ponte della Costituzione) connecting Piazzale Roma and the public space in front of the main entrance of Stazione Santa Lucia, is an immense eye-catcher which dominates the pedestrian access to Venice, where other bridges become visually inaccessible and ignored.

One-Way Flow Strategy
On a macro scale, the proposed urban strategy resolving these two congested areas focuses on a one-way circulation (counter clockwise) design, redirecting pedestrians entering Venice and guiding their access, enhanced by defined story paths on a micro scale. This is expected to reduce the pressure on these two congested areas and guide the pedestrian flows in different directions to enter Venice.

Eye-Catcher Balance
Gate to Venice
Tourists as well as some commuters arriving at Piazzale Roma by bus or car can hardly orientate themselves. They miss directions and information leading to the city and their destinations – in other words, there is no clear overview of where they arrived and where they can go from there. On the one hand, the proposed "Gate to Venice" is a light minimal intervention which balances the dominance of the Calatrava Bridge. It attracts the visitors and gives them a clear starting point towards the city from Piazzale Roma. The inviting welcome area helps them to get information, ticket offices, waiting areas, cafés and groups the current souvenir kiosks into one main area. The design of the "Gate to Venice" is based on light structured panels using local materials: local stone for the base, which is also used as benches to rest, and metal and glass for the panel itself. The heights of the panels are inspired by the skyline of Venice respecting the valuable beauty behind it. In addition, digital panels were integrated with the design for general transportation information such as departures and arrivals.
The proposed design of Piazzale Roma would not only redirect pedestrian flows but also traffic flows, considering different uses and modes for residents, commuters and tourists. The integration of the tram way, separating the tourist airport bus from the local bus for residents and commuters and a "kiss and ride" parking area for short time users, reduces the traffic conflicts caused by buses and cars. The proposals also include a new vaporetto "red-line" with fewer stops for tourists improving their ability to reach attractions without intersecting with local residents and creating congestion on local services.

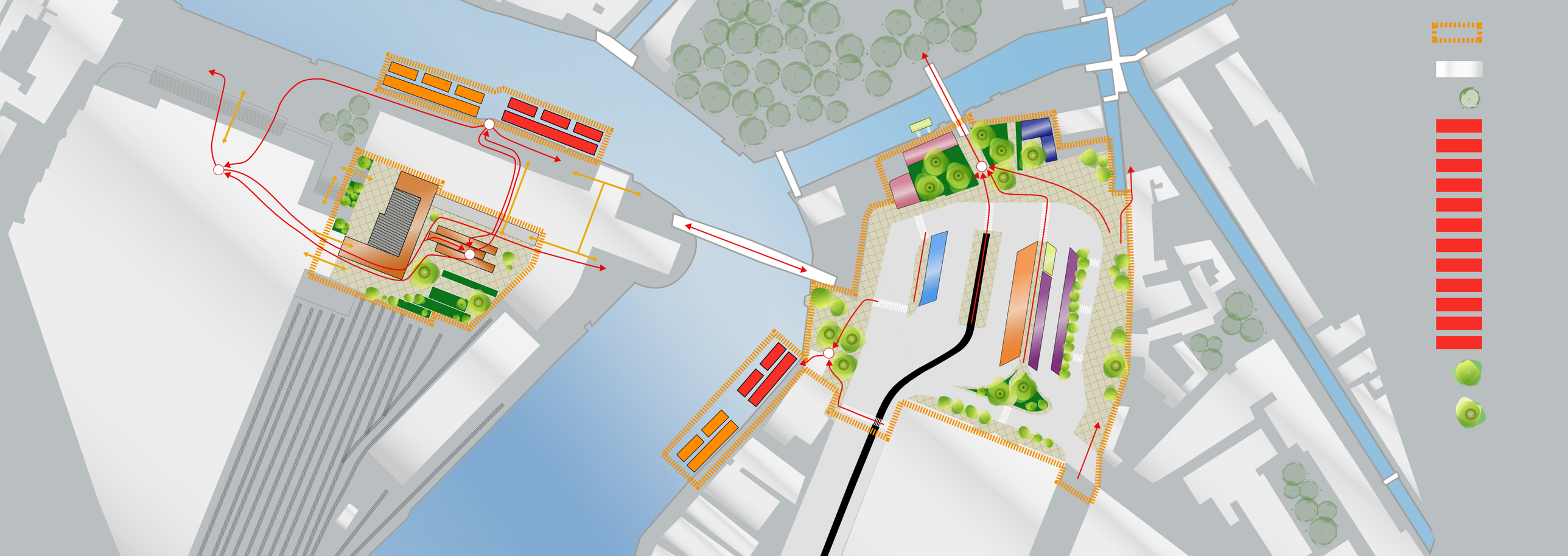
Santa Lucia Station
A regeneration plan of the main railway station Santa Lucia is being currently implemented and also has a specific focus on re-planning the public space in order to decongest the routes and offer a better passenger experience.

THERE IS NO CLEAR OVERVIEW OF WHERE THEY ARRIVED

AND WHERE THEY CAN GO FROM THERE

PEOPLE WHO ARRIVE IN PIAZZALE ROMA FEEL WELCOMED, WELL INFORMED AND READY TO DISCOVER THE CITY

THE PUBLIC GARDEN BECOMES A PLEASANT WAITING AREA

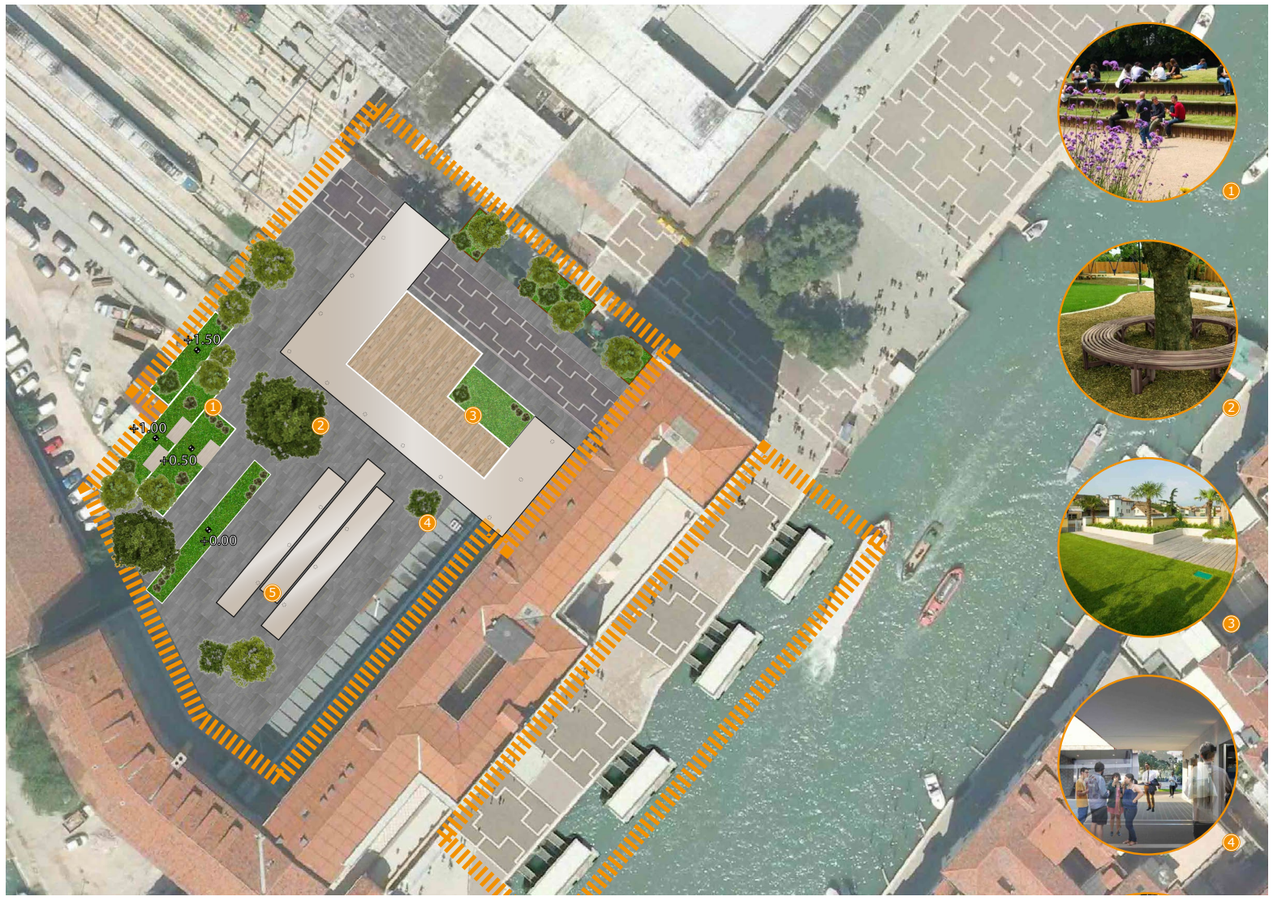


CONTINUED

Currently passengers are mostly directed to use the main exit, arriving in the square, a large open space with the vaporetto stops in front and two potential directions of travel to the right and left. In this large space the tourist's view is captured by a lively street scene and imposing architecture reflected in the canal. Nevertheless, after the initial marvel tourists usually realize they do not know where they should go. Therefore, the proposals being implemented by the local authority to create an alternative route through the internal station courtyard and widening the exit towards Piazzale Roma will help redirect the flows.
The public space between the south-west side of the railway station and Calatrava Bridge provides a covered waiting area and information points for travelers. An existing building intended to be a telecommunication center is adapted to commercial uses and tourist services, including a youth hostel. Additionally a multi-leveled landscape design around the courtyard works as a green buffer between railway tracks and travellers. Not overlooking the vaporetto stops in front of the station, which blocks the view towards San Simeone Piccolo from the railway station, the plan suggest to cluster and redistribute the lines, also implementing the tourist "red-line" to improve the flow of travelers, decongest Ponte Degli Scalzi and clear the view.

Tourist Info-point
A tourist information point is located in Piazzale Roma bus station. The shape of this element is inspired by the historical city gates that were traditionally built to provide a controlled access to and departure from a walled city for people and goods. The gate invites tourists and travelers arriving at the bust station to explore the city from this point, lightening the overcrowded

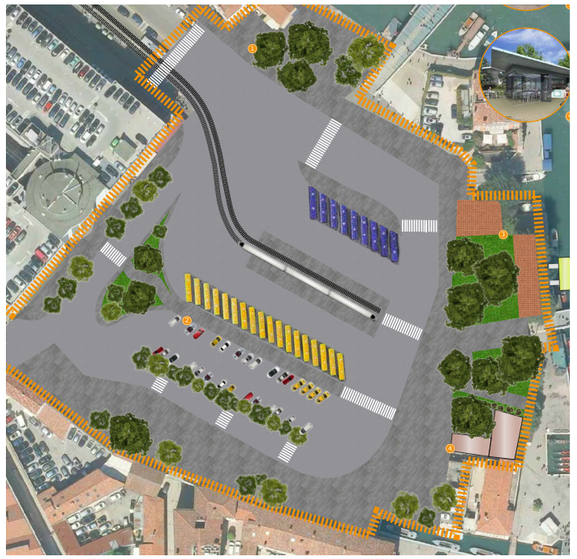
The project on the space in front of the train station



Costituzione bridge and distributing the people flows in a more rational way. The gate exhibits the main information about the city thematic routes (in relation to the Mivago application), travel information, details of all visitors attractions and leisure activities. The information center should be visible and become a new reference point for the visitors but at the same time it is smoothly integrated into the surroundings, using light, traditional and transparent materials and reorganizing in one element the different and chaotic signals that crowd the area. The public garden becomes a pleasant waiting area of the bus station. The people who arrive in Piazzale Roma feel welcomed, well informed and ready to discover the city.

A detail of Piazzale Roma re-design

A section of Santa Lucia station



Overview of the intervent in Piazzzale Roma

Piazzale Roma with the new gate that welcomes people

PHYSICAL REROUTING SUPPORTED BY THE WAYFINDING AND INFORMATION PROVIDED AND THE MIVAGO APP

REDISTRIBUTION OF FLOWS

In correspondence of the quantitative analysis of flows, the working group has paid specific attention to survey qualitative oriented perception of residents, which must be put back at the centre of the entire debate on the city and tourists, who must be accompanied and supported for exploring city. Residents are now few and a city without its inhabitants, its craftsmen, its neighborhood shops, is a city that is likely to die. The city without tourism thus can not survive; tourism that does not appear to be quality but becomes wild increasingly. Citizens doesn't matter a mass tourism in order to show how this is always increasing but rather want a quality tourism, which fervently lives the City in all its aspects and that stays long.Unfortunately, nowadays the economic availability is limited, the tourists try to save money and for this reason what results is the figure of tourist that does not stay in the town but it stops in the day to visit the main attractions and ignoring other peculiarities of the City. The construction of the Constitution's Bridge has diverted the flow of tourists and this factor has caused bother for the traders because many areas are isolate. Traders also complain of a lack of signage and information on routes and modes of transport because in most cases, the tourists come into the stores only to ask some questions in reference to way-finding and not for buy products. Another problem is related to the use of public transport; seems that tourists prefer to travel by boat and this creates discomfort to citizens because there is a crowding within the means and behavior of tourists is not respectful towards the citizens.

RESIDENTS ARE FEW

A CITY WITHOUT ITS INHABITANTS, CRAFTSMEN IS A CITY THAT IS LIKELY TO DIE

From the point of view of tourists the problems are different. There is a real sense of loss upon arrival at station and Piazzale Roma, there is a lack of a clear identity of the target point and this is also due to the lack of wayfindings.

FROM TOURISTS THE PROBLEMS ARE DIFFERENT:

REAL SENSE OF LOSS

LACK OF WAYFINDINGS

TOO MANY VAPORETTO STOPS

Other perceived discomfort is related to the use of public transport that is too many stops and has very long timescales.
The overall analysis therefore reflects a city with two faces: the City of Venice, ancient, unusual, abandoned to his fate in opposed to the tourist town famous for its originality and beauty. Thus it will be possible to transform this city, universally considered among the finest in the world, in a Human Smart City, a city where citizens and tourists are the main actors of urban intelligence?
In the first phase of analysis has been identified a problem of congestion pedestrian along axes well defined. With the analysis of the data collected, the main places of attraction and interest of the city represented by Piazza San Marco, the famous "drawing room of Europe", and the Rialto Bridge, appear to be reached by tourists and citizens mainly following precise paths. This routes were called "barbaric lines", terminology chosen in reference to the meaning of the term and then to the "clash of civilizations" triggered by the passage of an unacceptably high number of individuals. The main interest is to modify the flows having as source points the main gates to the town, Piazzale Roma and the Santa Lucia's railway station, headed to the two most popular destinations mentioned above.

MAP OF VENICE WITH ROUTES

THE MAIN CONGESTIONED ROUTE, IS SPLIT INTO THREE ALTERNATIVE PATHS TO GUIDE TOURISTS

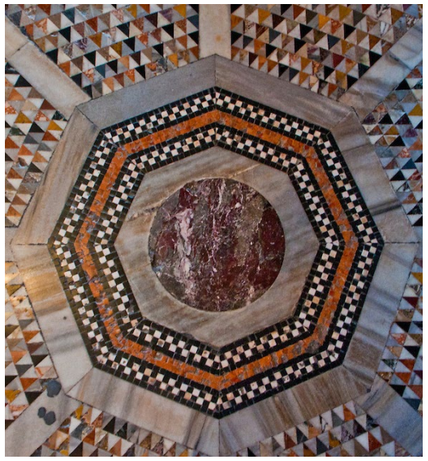
UNIFIED VISUAL IDENTITY

CAN WAYFINDING AND COMMUNICATION SOLUTIONS CHANGE THE WAY RESIDENTS AND VISITORS NAVIGATE THE PUBLIC SPACE?

Words Simona Dobrescu

An important part of any wayfinding strategy is the clarity and easiness with which pedestrians are able to read, understand and recognize the signs. This is particularly important in very crowded street environments where there are opposing flows and various side movements such as entry and exit from shops, hotels and restaurants like in the case of Venice. The less time it takes people to find their way less congestion is likely to occur. Moreover the overall experience of both residents and visitors is expected to improve as frustration and confusion are reduced and more time is available for actually discovering and enjoying the city.

Both the floor of Piazza San Marco and Santa Lucia Station have the same pattern. One of our sources of inspiration



An exampe of beautiful patterns you can find all around the city, in the churches and in the historical sites.

SIGNS IDENTITY
A coherent visual language

There are various locations where a unified visual identity is important and the team has identified these to be the square in front of the train station and in particular the vaporetto stops opposite the station entrance as well as Piazzale Roma.
These two main arrival points are crucial especially for the tourists that visit the city as they will need to make a decision on where to go based on the information they can find at these two points. At the moment there is no cohesion and clarity of signage and some of the photos taken on site show how cluttered and confusing the information is. Under these circumstances any new wayfinding elements needs to be well integrated with the street environment and any old signage that is likely to be maintained such as the street names or the National Rail signs. Also, any new signage has to be designed in such a way that it does not increase the visual clutter and is able to stand out without dominating the location where it is placed.

Four of the different pattern designed for the project.
Each solution identify a specific route in the city.
Find them around your path reassure pedestrians they are on the right way.

This is how the different pattern are placed into the ciy creating a consisten visual system with the vibrant streets

TRADITION AND COLOURS AS INSPIRATIONS FOR A NEW IDENTITY

As a consequence the workshop participants have proposed a new visual identity inspired by traditional Venetian tiles with intricate geometric patterns and vibrant colours as well as from the visual identity of the canals and the gondolas in particular the black painted wood and silver gondola heads so characteristic of the city. A combination of these materials and patterns can be seen in the final design of the totem and in the supporting wall mounted and trail markers proposed to be delivered in conjunction with the MiVago application. The MiVago app also makes use of the rich Venetian design tradition and proposes a series of colourful geometric tiles to identify each walking trail included in the application and game.

MATERIALS, COLOURS AND PATTERNS: FROM THE CITY TO THE WAYFINDING SYSTEM

As it can be seen from the proposals the totem is proposed on a black background with silver metal linings and a silver base that replicate the composition of the gondola heads. The metal base of the totem is proposed to hold the geometrical pattern of San Marco square as a symbol of the city. The composition of dark/black wood and white writing and silver framing is also proposed for pole signs and potential bridge signs that will need to be mounted at strategic locations across the city and especially some of the most important local squares also known as campi.

WAYFINDING SYSTEM PROJECT

Punctual interventions in a very vibrant street environment with a specific identity

Words Simona Dobrescu

The most important type of wayfinding is the one provided by the built environment itself, its landmarks and visual elements that guide pedestrians in their journey throughout the city. Ideally this environment is intuitive and self-explanatory.
Nevertheless, whilst natural wayfinding is very easy to follow by residents and daily users of certain areas, it is less obvious for visitors, unfamiliar with the place, naming conventions, language etc.As a consequence, it is becoming increasingly important for cities across the world and, in particular cultural and touristic centres, to introduce additional wayfinding elements to cater for continuous changes in demographics and travel patterns.
Under these circumstances, Venice is an ideal case study as it has approximately 90,000 visitors each day that need to be able to find their way around the island irrespective of their trip length or purpose. The street environment in Venice is a lively scene, a truly visual spectacle of colours, buildings, sights and sounds. Deciding what signage or journey support visitors need, where it is best to install it and what would be its impact is much more complicated to predict than in many other cities in the world. As a consequence, the approach of the workshop has been to test, consult with users, refine and propose rather than come in with a pre - established solution. Some of the ideas that have been previously proposed by the IUAV wayfinding and design studio have been part of the test that took place over two separate days in two very different weather conditions (both during a rainy and a sunny day). Two types of signage has been tested: behavioural signage and an information totem.
The behaviour and reaction of pedestrians has been recorded and where possible, interviews have been conducted to gather feedback and suggestions.
The findings from these were the following:

1. there is generally an over provision of information at the main arrival points that tends to be confusing and disorganized and a great underprovision of information anywhere else across the island

2. tourists arriving in Venice lack supporting arrival information

3. there is no visual coherent identity of signage throughout the city

4. more internationally recognized pictograms are required

5. wall mounted signs are less likely to work because there are numerous active frontages and signs just get lost in the background

6. bridges are the most important decision point for pedestrians

General Wayfinding Proposals
Following on from the findings of the testing the team decided to work on two aspects of the wayfinding strategy during the week of the workshop. The first part of the strategy looked at providing an element of signage and information that would be replicable in various strategic locations in the city, would be able to help visitors find their bearings and also give them the necessary information to decide on their next step.
It was thought that a totem would the most appropriate way to provide this information given the positive response that it received during the testing and also the potential it has to become a cost efficient information point with limited impact on the historical environment.The proposed totem would be 2.1 m tall by 1.1 m wide, it would include a central map oriented heads up, it would reference walking distances of important landmarks and neighbourhoods (sestri) and vaporetto lines and stops.
It was thought important that this totem would include a list of all the available transport options, private and public, across the island as it has become apparent from conversation with tourists that this information was lacking, or was not very clear. Also it has been proposed to include a free map of the city and the transport network in specially designed compartments on the side of the totems for tourists to pick up and drop off at various points in the city. The idea behind this initiative would be for tourists to mark up interesting places they see, places to eat and drink and pass that information on to the next users of the maps.
A particular feature of the totem would include a tide level scale that would document an exceptional tide level achieved at the various locations where the totem would be installed.
Also, due to the characteristics of the environment the totem would have to be treated for extreme levels of humidity and continuous water exposure.

The initial proposal of the totem was also for it to be fitted with wireless technology in order to be used as a stand-alone information and reference point across the city. It was proposed that the totem be installed in approximately 5 strategic points including Piazzale Roma and the train station square. The overall aim of all the proposals are to provide for Venice a modern information and wayfinding system that offers the necessary information for visitors and supports the journey across the city by using strategically placed directional totems at the arrival points and the main tourist attractions. At the same time the proposals aim to leave room for discovery and mystery and add to the street environment well integrated and beautiful elements that enhance the lively street scene.
Additional recommendations that came out of the workshop relate to the fact that the city needs to adopt a strong and unified signage and information identity as well as a light touch approach to behavioural information that could help the coexistence of tourists and residents and minimise the congestion and crowding that is a daily occurrence.

Wayfinding in the streets of Venice

Words Carla Felicetti

For most of the approximately 20 million visitors each year arrive in Venice, the old town is a labyrinth. As user of the city in some cases I love to get lost, because I can discover a city far from a flow of mass tourism. However I know that it is important to can count on a clear and consistent guidance system that allow those who come to town, tourists but also commuters, of through it as best as possible.
As designer I can recognize in the signs system a powerful and very crucial tool to facilitate urban mobility and redistribute the flows.
Recent surveys carried out by the City of Venice on the state of the signaling system, reveals interesting data on what it is the actual Venetian layering system orientation.
Just think that only in the area of the historic city there are more than 1,000 signs, located mainly in the districts of San Marco (268), San Polo (253) and Santa Croce (216).
The Municipality studio reveals that the San Marco district is absolutely the one with the highest number of cartels, however the higher density of signals is located in San Polo district.
The work done by the offices of tourism in some areas of the township is definitely an important starting point and a strong signal that suggests the way ahead: redefine e new, appropriate wayfinding system.

FONTE
Comune di Venezia www.comune.venezia.it

In the picture two examples of the totem put in the context.

APP FOR VENICE TOURISTS

Words Chiara Fantin

MiVago App
Main User Interface for the tourist app

Nowadays communication and technological innovation are elements of extreme importance in a time of great cultural and social change. They are also considered useful tools, if not essential, to foster the growth and development of the entire national economy in all sectors and especially tourism.As a consequence the group proposed the idea of creating an application dedicated to tourists, offering various ways of visiting the historic center of Venice with the help of a technological product.
The first phase of analysis has identified a problem of pedestrian congestion along well defined axes. With the analysis of the data collected, the main places of attraction and interest of the city are represented by Piazza San Marco, the famous "drawing room of Europe", and the Rialto Bridge. These main points appear to be reached by tourists mainly following very precise paths. These routes were called "barbaric lines", terminology chosen in reference to the meaning of the term and then to the "clash of civilizations" triggered by the passage of an unacceptably high number of individuals.
In accordance with a coexistence strategy the main interest is to modify the flows having as source points the main gates to the town, Piazzale Roma and the Santa Lucia's railway station, headed to the two most popular destinations mentioned above. To lighten the flows "barbarians" were hypothesized alternative paths to guide tourists in less frequented routes. The application proposes a series of itineraries tailored with content related to monuments, streets, squares, palaces, museums and other places of value, but also has sections dedicated to specific routes, graduated according to the needs of the user. They are designed themed routes depending on the various types of users: families with children, couples, for those who want to experience life style or for those who, having only a short time, he wants to know the city in a few stages.As for usability, the proposal is to make the application available in Italian and English, can be used on devices iOs and Android. Furthermore it is expected that the version for the tablet is set to be enjoyed horizontally, so as to effectively exploit the device screen.At the launch of the application the user, as well as for recording, can choose a line between those proposals, and be led to the discovery of the lagoon city. You may discover, through photos and descriptions reported by the application, peculiarities of monuments, streets, squares, palaces, museums and other places of value along the way he selected. In respect of each route is suggested also a game that provides a "treasure hunt" virtual.

The game provides for the reporting by the application of a particular (a shrine, a statue) present along the route; the user is assigned the task of searching the corresponding actual item and photograph it to validate the discovery of the "treasure". For each element recognized will be awarded points that will take the user to take advantage of the services provided in the city.

FURTHER CONSIDERATIONS

How to link the global agenda of smart cities into a very specific and unique urban context? The workshop tried to give an answer to this difficult question looking for a new and fresh approach to planning.

Moving forward

Stop saying "I wish",
start saying "I will"

The Venice Smart City project has been an interesting but challenging experience. With this project we tried to gather, reconcile and summarize in a common vision the perspectives and interests of different stakeholders. We tried to think differently and creatively about the mobility in Venice, looking at international cases and overcoming the "it cannot be done here" culture. We had to orientate ourselves in a labyrinth of fragmented institutional responsibilities, imagining a shared and open city governance.

This project tested also our capacity of working intensively together as multidisciplinary team on an over-studied and sensitive topic for the city, looking for a new and fresh approach to planning. The workshop posed the difficult question on how to link the global agenda of smart cities into a very specific and unique urban context. One month after the workshop, the different local and international actors gathered together to discuss in detail the proposals and to reflect on further ways to collaborate.

The mobile phone application designed during the workshop is under development, a methodology to measure and manage big pedestrian flows in historical cities has been defined, and a project research on smart mobility that elaborates upon the workshop outputs has started.

The Venice Smart City project has been an interesting but challenging experience, and it still is.

“Our strength is our diversity”

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