CONCLUSIONS AND RECOMMENDED ACTIONS

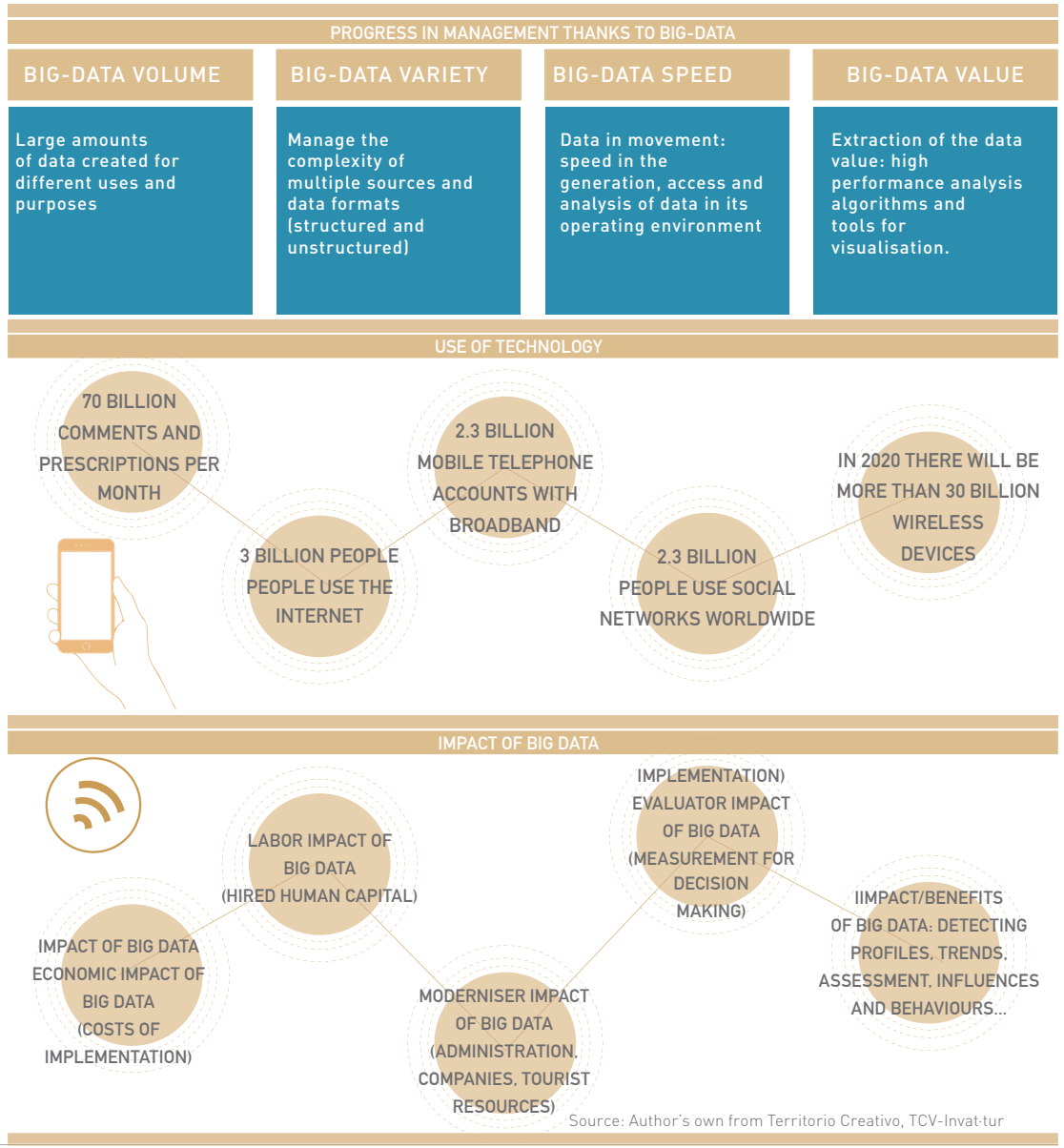
4

4.1 GENERAL CONCLUSIONS

The effects of the **"overtourism"** process in the city may be observed from the analysis carried out. In recent years **changes in business, housing or the public space show us the effects of the touristification process that change the place.** Therefore, traditional or neighbourhood business is being sidelined by activities linked to leisure and tourism. Furthermore, the massive eruption of commercialised tourist housing by means of online portals, creates problems of coexistence and causes an upward trend of rental prices for housing (more than 25% in the past year for the case of Ciutat Vella in Valencia). The tertiarisation of the urban landscape exerts a heavy pressure on the public space that loses quality, entity and social functionality.

This **global process** transforms the city and the observed trends for the majority of European tourist destinations are those of **visitor growth** (except in those cases that have temporarily broken this trend due to unexpected events). This circumstance poses a significant dilemma, that of imposing a limit. The process of touristification has a social impact on the local level that may be important and is subject to significant fluctuations over time. In this respect, **the introduction of the sustainability of the model, the correction of vulnerabilities and the restoration of balance become priority objectives.**

The advantages offered by using open/big data for managing tourist destinations are a given thanks to the volume and variety of information handled, the speed with which it may be managed and the value that may be taken from their handling. Faced with a scenario of increased tourist pressure on destinations that make up historic cities, **an increase in the visitors' interaction with new technologies** is observed. This fact opens a field for the better knowledge of the process that will necessarily have an **impact that it is necessary to evaluate and consider**. The safety in the cities or the privacy of people are issues that must be kept in mind in the handling of big-data for managing "overtourism" in cities of a heritage nature.



Source: Author's own from Territorio Creativo, TCV-Invat·tur

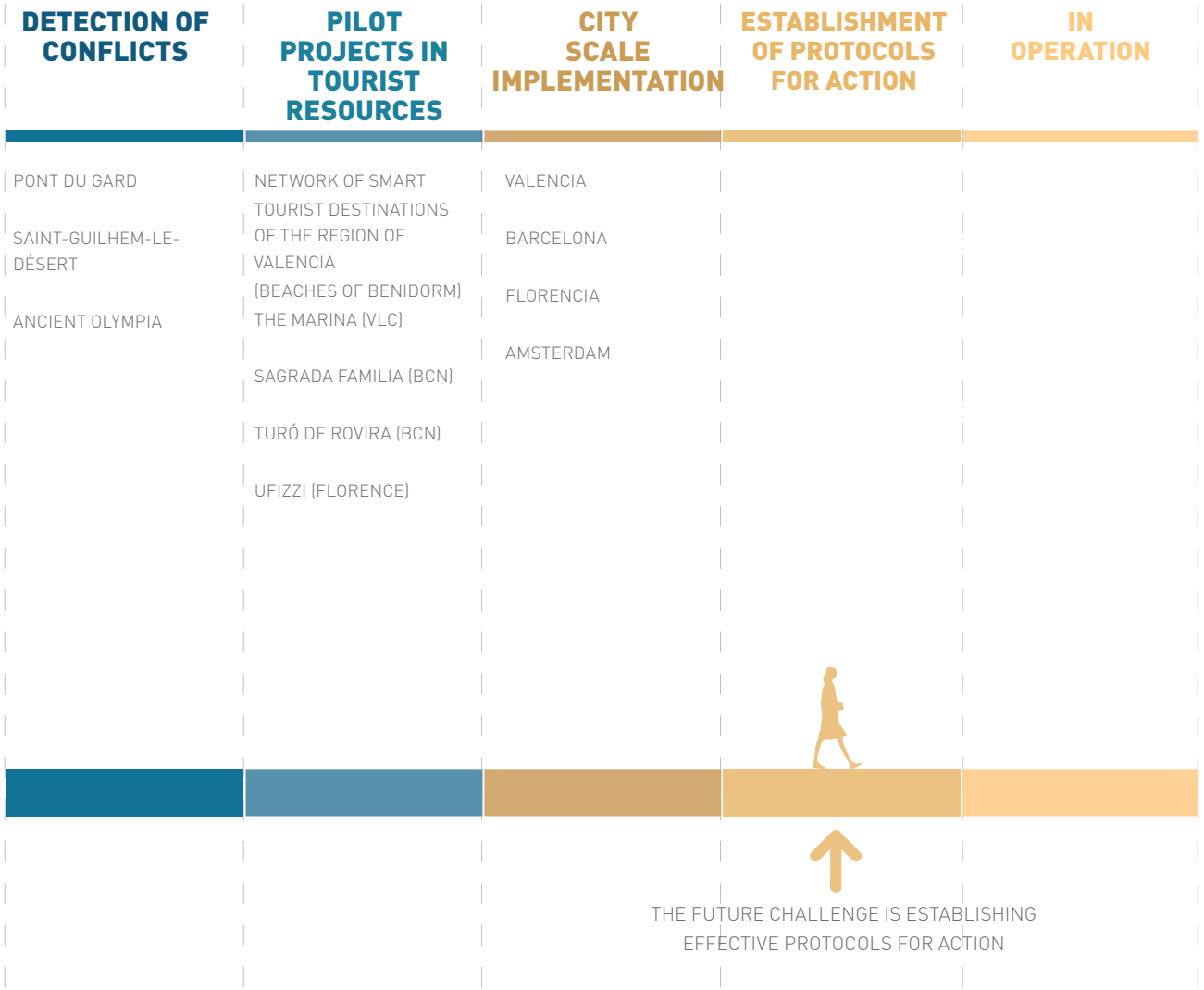
From the analysis carried out in the present study we can see the unequal state of development of the tourist destinations in the implementation of new technologies for managing the phenomenon known as "overtourism".

At the first level we could note destinations that **understand the weaknesses in the management of tourist overcrowding and they address it with conventional methods.** Therefore the need to apply new technologies is highlighted, but for the time being it is not being undertaken, as is the case of Saint-Guilhem-le-Désert, Pont du Gard and Ancient Olympia.

In the case of touristic cities we observe a greater development of the studied cases. On the one hand, the **implementation of small-scale pilot projects** prior to tackling the city scale, it is enabling us to understand the application of new technologies and the limitations of its management. This is the case of the Sagrada Familia in Barcelona or the Marina in Valencia. The testing of these spaces makes it possible to verify the proper functioning and climb towards more complex levels of management.

Furthermore, cities such as Valencia, Barcelona, Amsterdam and Florence are preparing to take the leap for the **monitoring and management of tourist spaces by means of new technologies**. Florence, as it regards to decongesting tourist flows, is creating a new system that will inform tourists about the level of overcrowding the areas of the city, through Wi-Fi on their smart phones in real time. Universal signage (traffic lights: green/yellow/red) will orient them during their stay, also proposing alternative routes, with invitations to visit lesser known or less crowded museums and exhibitions at that time.

At a more advanced level of management would be the **establishment of protocols for action** tied to new technologies. We still don't see this level for the studied cases; however, we are talking about a very near future where conventional systems are nurtured by open/big data in order to improve the experience in tourist destinations with overcrowding problems.



4.2 GUIDELINES

4.2.1. UTILITIES OF NEW TECHNOLOGIES IN MASS TOURISM MANAGEMENT IN HERITAGE SURROUNDINGS

According to the study from the World Tourism Organisation (UNWTO) titled: **"'Overtourism'? Understanding and Managing Urban Tourism Growth beyond Perceptions"** (Koens et al, 2018) 11 strategies to mitigate the negative effects of mass tourism in urban environments are defined.

Any successful urban tourism management strategy must specifically address the short-term challenges derived from the growth of tourism, while simultaneously they must tackle the long-term challenges. This demands a greater planning of the destination and its management and an approach that gathers the aspirations of the many interested stakeholders. It involves deploying a coherent and effective strategy in order to ensure the sustainable development of tourism and to generate benefits beyond the tourism industry operators.

From the measures proposed by UNWTO in the following table, **we detail those in which new technologies may help us make managing mass tourism in urban spaces more efficient** of heritage value in accordance with the Benchmarking work carried out. However, strategy 11 defines the conceptual framework of the present work.

STRATEGY 01

PROMOTE THE DISPERSION OF VISITORS IN THE CITY AND IN THE AREA

- Organise events in the lesser-visited parts of the city and its surroundings.
- Develop and promote tourist resources in the lesser-visited parts of the city and its surroundings.
- Improve the capacity and time that is used in visiting tourist resources.
- Create an joint identity of the city and its surroundings.
- Implement a trip card for unlimited local trips.
- Define the entire city as city centre in order to encourage visits to lesser-visited parts

STRATEGY 02

PROMOTE THE DISPERSION OF TOURISM OVER TIME

- Promote experiences in months with less activity.
- Promote dynamic prices.
- Promote events in months with less activity.
- Establish time intervals for tourist resources and/or popular events attended by real-time monitoring
- Use new technologies (applications or others) to promote the dynamic dispersion depending on the time.

STRATEGY 03

ENCOURAGE NEW ROUTES AND TOURIST RESOURCES

- Promote new routes in the city's points of entry and through the visitor's trip, including in information centres.
- Offer combined discounts for new routes and tourist resources.
- Produce guides and books of the city, highlighting "hidden treasures".
- Create dynamic experiences and routes for different visitor niches.
- Stimulate the undertaking of guided visits in lesser-visited parts of the city
- Develop virtual reality applications in the famous sites and tourist resources to complement on-site visits.

STRATEGY 04

REVIEW AND ADAPT THE LEGAL FRAMEWORK TO THE PHENOMENON

- Review the timetables offered by the tourist resources.
- Review the regulations on groups accessing the most important tourist resources.
- Review traffic regulations in busy areas of the city.
- Ensure that visitors use the parking installations on the edges of the city.
- Create specific drop-off areas for cars and groups in appropriate places.
- Create pedestrian-only areas.
- Review regulations and taxation of new tourist services platforms.
- Review regulations and taxation in hotels and other accommodations.
- Define the load capacity of the city, critical areas, tourist resources, etc.
- Consider a licensing system operator to monitor all the operators, etc.
- Review regulations on the access to certain areas of the city for tourism-related activities.

STRATEGY 05
IMPROVE THE SEGMENTATION OF VISITORS

- ◎ Identify and select segments of visitors with less impact according to the context.
- ◎ Target of repeat visitors.
- Discourage certain segments of visitors from visiting the city.

STRATEGY 06
ENSURE THE RETURNS OF TOURISM ON THE LOCAL COMMUNITY

- Increase the quality of employment linked to tourism.
- ◎ Promote positive impacts of tourism, create awareness and knowledge of the sector among local communities.
- Involve local communities in the development of new touristic
- products.
- Carry out an analysis of the supply and demand potential of the local communities and promote their integration in the tourism value chain.
- Improve the quality of the infrastructure and amenities considering residents and visitors.

STRATEGY 07
CREATE EXPERIENCES IN WHICH RESIDENTS AND VISITORS BENEFIT

- Evolve the city to adapt to the needs and desires of residents and consider tourists to be temporary residents.
- Develop touristic experiences and products that promote the participation of residents and visitors.
- Integrate visitors into the local festivities and activities.
- Create and promote local ambassadors of the city.
- Promote cultural and artistic initiatives such as urban art in order to offer new perspectives on the city and expand visits to new areas.
- Extend the opening hours of visitors' tourist resources.

STRATEGY 08
IMPROVE INFRASTRUCTURE AND AMENITIES

- Develop sustainable mobility plans.
- Create a grid of hierarchical pathways.
- Improve the urban cultural infrastructure
- ◎ Improve directional signage, interpreting equipment and warnings
- Make public transportation more suitable for visitors.
- Establish specific transport installations for visitors during peak periods and appropriate public facilities.
- Create safe cycling routes and promote bike rentals and safe, attractive and specific walking routes. They must be appropriate for people with physical disabilities or advanced age.
- Safeguard the quality of cultural heritage.
- Ensure the cleaning times are adjusted to tourist resources and their "peak" hours.

STRATEGY 09
COMMUNICATION AND PARTICIPATION. INVOLVE LOCAL STAKEHOLDERS

- Ensure that a tourism management group, where all interested stakeholders are included, is established and is regularly convened.
- Organise professional development programs for members, etc.
- Organise local discussions for residents.
- Carry out periodical investigations between residents and other local interested stakeholders.
- Encourage residents to share interesting content about their city on social networks.
- Communicate with residents about their own behaviour.
- Construct social subjects in communities in which there is no cohesive social fabric.

STRATEGY 10
COMMUNICATION AND PARTICIPATION. INVOLVE

- ◎ Raise awareness among visitors on the impact of tourism.
- Educate visitors on local values, traditions and regulations.
- ◎ Provide suitable information about traffic regulations, parking, rates, shuttle bus services, etc.

STRATEGY 11
ESTABLISH MONITORING AND ACTION MEASURES

- ◎ Monitor key indicators such as seasonal fluctuation in the demand, arrivals and spending, visit patterns to places of interest, segments of visitors, etc.
- ◎ Promote the use of big data and new technologies to monitor and evaluate the development of the tourist phenomenon and its impacts.
- ◎ Create contingency plans for peak periods and emergency

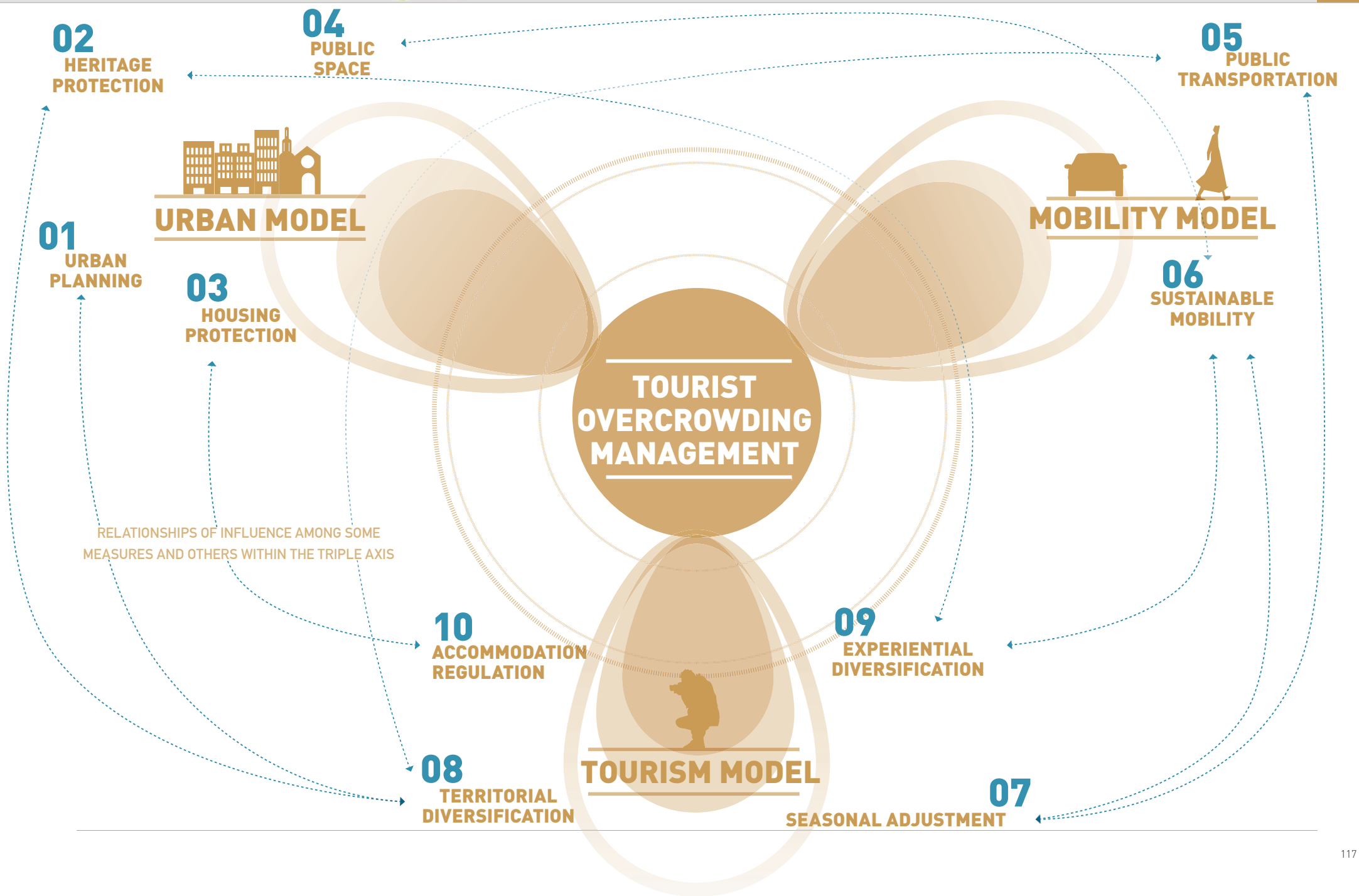
4.2.2. TOWARDS A COMPREHENSIVE TRIPLE AXIS MODEL: TOURISM, URBAN PLANNING AND MOBILITY

In accordance with the study carried out in the context of the Herit-Data project, these are the preferential areas of action in order to correct the trends that may devalue tourist destinations due to the "overtourism" phenomenon. The following table shows the lines of work that have been observed of interest when performing the "benchmarking" of the 6 chosen destinations.

These lines of action are organised around a triple axis model with interactions among them.

1. URBAN PLANNING
2. HERITAGE PROTECTION
3. HOUSING PROTECTION
4. PUBLIC SPACE
5. PUBLIC TRANSPORTATION
6. SUSTAINABLE MOBILITY
7. SEASONAL ADJUSTMENT
8. EXPERIENTIAL DIVERSIFICATION
9. TERRITORIAL DIVERSIFICATION
10. ACCOMMODATION REGULATION

	MECHANISMS FOR CORRECTING NEGATIVE IMPACTS	USE OF NEW TECHNOLOGIES TO IMPROVE THE CORRECTION MECHANISMS
01 URBAN PLANNING	ZONING strategies in the city. Define the areas of focus	Implementation of monitoring systems as a matter of priority according to the ZONING criteria
02 HERITAGE PROTECTION	Strategies for managing the historical legacy, preventing the negative impacts of "overtourism"	Implementation of critical spaces-resources
03 HOUSING PROTECTION	Defence of the city's character as a residential space.	Surveillance and supervision of the trends in the urban area according to the ZONING.
04 RE-QUALIFICATION OF THE PUBLIC	Urban re-qualification strategies based on ecosystem services. Green urban infrastructure	Monitoring critical areas and information to users of alternative spaces.
05 PUBLIC TRANSPORTATION	Intermodal coordination strategies in order to prevent overcrowding of the tourist destination.	Contribute to the time-space diversification strategies and attention to the critical areas. Fast information and systems for the user
06 SUSTAINABLE MOBILITY	Promotion strategies for pedestrian-cyclist mobility in overcrowded areas.	Communication with the user for the experiential improvement of the destination by offering alternative
07 SEASONAL ADJUSTMENT	Promote the decongestion of the critical periods for the tourist destination.	Promote alternatives for peak periods that exceed the destination's load capacity.
08 EXPERIENTIAL DIVERSIFICATION	Promotion of lesser-known resources that complement the destination's archetypal offering.	Coordination of the offering in the destination. Exchange of information.
09 TERRITORIAL DIVERSIFICATION	Partnership-building at the regional level to decongest the heart of the experience, the historic centre	Coordination of the offerings with the region. Exchange of information
10 ACCOMMODATION REGULATION	Control and regulation of the accommodation offerings.	Information and awareness towards the user Monitoring the offerings.


02
HERITAGE PROTECTION
04
PUBLIC SPACE
05
PUBLIC TRANSPORTATION
URBAN MODEL
MOBILITY MODEL
01
URBAN PLANNING
03
HOUSING PROTECTION
06
SUSTAINABLE MOBILITY
TOURIST OVERCROWDING MANAGEMENT
RELATIONSHIPS OF INFLUENCE AMONG SOME MEASURES AND OTHERS WITHIN THE TRIPLE AXIS
10
ACCOMMODATION REGULATION
09
EXPERIENTIAL DIVERSIFICATION
TOURISM MODEL
08
TERRITORIAL DIVERSIFICATION
07
SEASONAL ADJUSTMENT

4.2.3.OVERTOURISM AS A PROCESS
COMPLEXITY OF THE LIMIT AND TREND SCENARIO

As it was previously expressed, mass tourism requires monitoring and therefore the destination must be evaluated in terms of load or reception capacity. In recent years a significant gap has been opened between official figures and real figures of a destination's visitors. It is necessary to correct this information "gap" and parameterise the flows of people in urban destinations. In this respect lines of action of control are pointed out that may be implemented with new open/big data technologies.

- **Control of accommodations.** Supervision of online platforms that enables real time management of a destination's offerings.
- **Control of public transportation.** The cooperation with public or private metropolitan transportation companies (bus, train, taxi, CTV, bike rental, scooters, motorbike) may make it possible to provide relevant information on the tourist flows in the city.
- **Control of "entrance doors".** Urban hubs, ports, airports, stations, etc...become key spaces that make it possible to predict the tourist overcrowding that the urban spaces will later suffer. In cities that receive cruise passengers this is a key aspect.
- **Supervision of the public space.** The implementation of "in situ" monitoring systems (3-D cameras, Wi-Fi networks...), as well as cooperation with mobile telephone companies will allow us to undertake a phenomenological approximation of the overtourism phenomenon .

On this analytical basis, regulation thresholds can be established according to space and time. Depending on the urban space, three approximation scales are proposed:

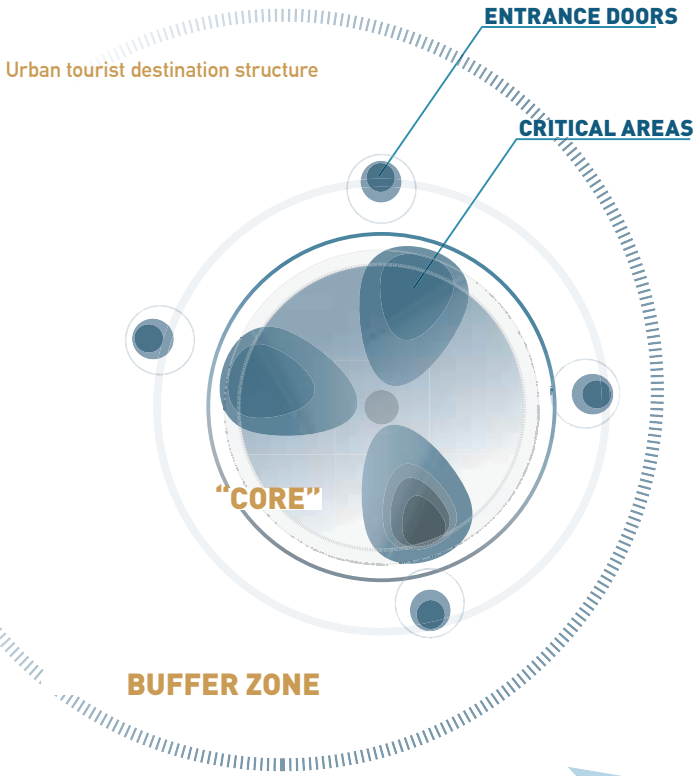
- **Areas of greatest overcrowding.** These are the areas that withstand the greatest overcrowding of visitors. They tend to be arranged around hubs of urban activity such as main squares or tourist resources. Examples of this are Piazza della Signoria in Florence, Town Hall Square in Valencia, around the Cathedral of Barcelona and Royal Palace Square in Amsterdam.
- **Core o centre.** They represent the centre of the tourist experience, encompassing the site with the most heritage value, as are the areas within the walls prior to the 19th century. At times, the core presents a star structure encompassing resources outside the historic centre, as is the case of the Sagrada Familia in Barcelona or the surroundings of the Van Gogh Museum in Amsterdam.
- **Buffer zones** (See regional model). They tend to be areas of urban expansion carried out from the 19th century that respond to a residential nature.

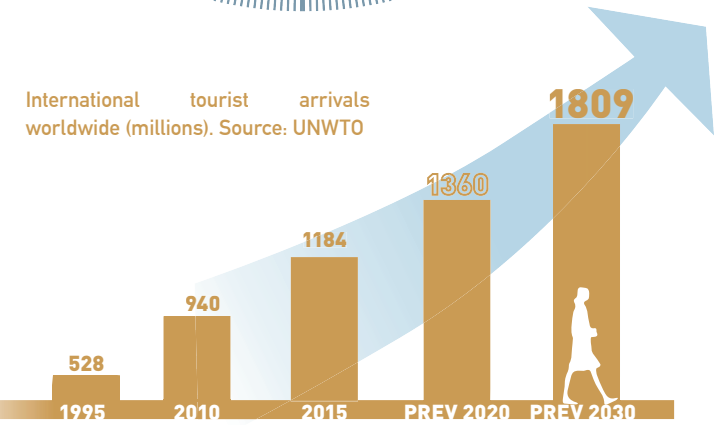
On these three basic levels, regulatory measures may be refined according to their specific reality. Depending on the time, the measures may be adjusted to the stages of tourist influx, fine-tuning if it's a peak or valley period within the seasonality of a destination.

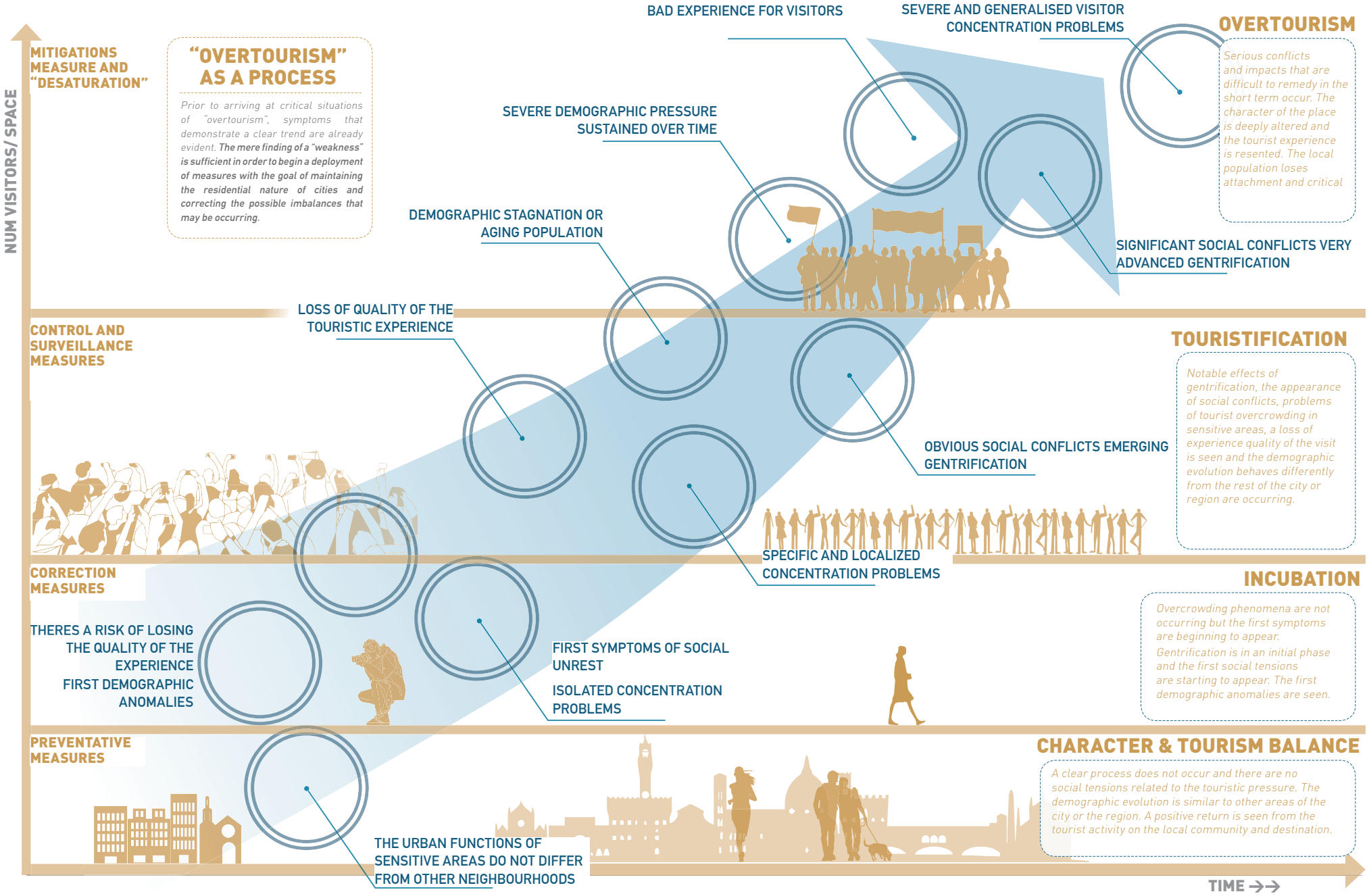
Together with this basic scheme of measures adapted to the space and time, the importance of **evaluating the model of the desired city and its relationship with tourism** should be emphasised. From the present study and in tune with other benchmarking studies that address the same phenomenon, the idea emerges that **"overtourism" is the culmination of an unrelenting process that all urban destinations of heritage value follow in an international context of an increased number of trips and the visitors' selection of urban tourism.**

Prior to arriving at critical situations of "overtourism", symptoms that demonstrate a clear trend are already evident. **The mere finding of a "weakness" is sufficient in order to begin a deployment of measures with the goal of maintaining the residential nature of cities and correcting the possible imbalances that may be occurring.**

In the figure on the page to the right we can see the main stages that urban tourist destinations experience prior to reaching the state of "overtourism". This upward escalation is based on global phenomena that have a clear and significant local impact.






NUM VISITORS/ SPACE
MITIGATIONS MEASURE AND "DESATURATION"
"OVERTOURISM" AS A PROCESS
Prior to arriving at critical situations of "overtourism", symptoms that demonstrate a clear trend are already evident. The mere finding of a "weakness" is sufficient in order to begin a deployment of measures with the goal of maintaining the residential nature of cities and correcting the possible imbalances that may be occurring.
BAD EXPERIENCE FOR VISITORS
SEVERE AND GENERALISED VISITOR CONCENTRATION PROBLEMS
OVERTOURISM
Serious conflicts and impacts that are difficult to remedy in the short term occur. The character of the place is deeply altered and the tourist experience is resented. The local population loses attachment and critical
SEVERE DEMOGRAPHIC PRESSURE SUSTAINED OVER TIME
DEMOGRAPHIC STAGNATION OR AGING POPULATION
SIGNIFICANT SOCIAL CONFLICTS VERY ADVANCED GENTRIFICATION
LOSS OF QUALITY OF THE TOURISTIC EXPERIENCE
CONTROL AND SURVEILLANCE MEASURES
TOURISTIFICATION
Notable effects of gentrification, the appearance of social conflicts, problems of tourist overcrowding in sensitive areas, a loss of experience quality of the visit is seen and the demographic evolution behaves differently from the rest of the city or region are occurring.
OBVIOUS SOCIAL CONFLICTS EMERGING GENTRIFICATION
SPECIFIC AND LOCALIZED CONCENTRATION PROBLEMS
CORRECTION MEASURES
INCUBATION
Overcrowding phenomena are not occurring but the first symptoms are beginning to appear.
Gentrification is in an initial phase and the first social tensions are starting to appear. The first demographic anomalies are seen.
THERES A RISK OF LOSING THE QUALITY OF THE EXPERIENCE
FIRST DEMOGRAPHIC ANOMALIES
FIRST SYMPTOMS OF SOCIAL UNREST
ISOLATED CONCENTRATION PROBLEMS
PREVENTATIVE MEASURES
CHARACTER & TOURISM BALANCE
A clear process does not occur and there are no social tensions related to the touristic pressure. The demographic evolution is similar to other areas of the city or the region. A positive return is seen from the tourist activity on the local community and destination.
THE URBAN FUNCTIONS OF SENSITIVE AREAS DO NOT DIFFER FROM OTHER NEIGHBOURHOODS
TIME →→

4.2.4.TOWARDS A REGIONAL MODEL
THE TOURIST DESTINATION AS CONSTELLATION OF PLACES-EXPERIENCES

New technologies allow us to optimise criteria that previously were defined in urban, mobility or tourism policies. Tending to the heritage city as a complex entity, in the 4 cities studied (Valencia, Barcelona, Florence and Amsterdam) a pattern has been observed that places value on this study and what we call the **space-time model.** This model is based on improving the interrelationship of the three types of spaces that comprise an urban destination.

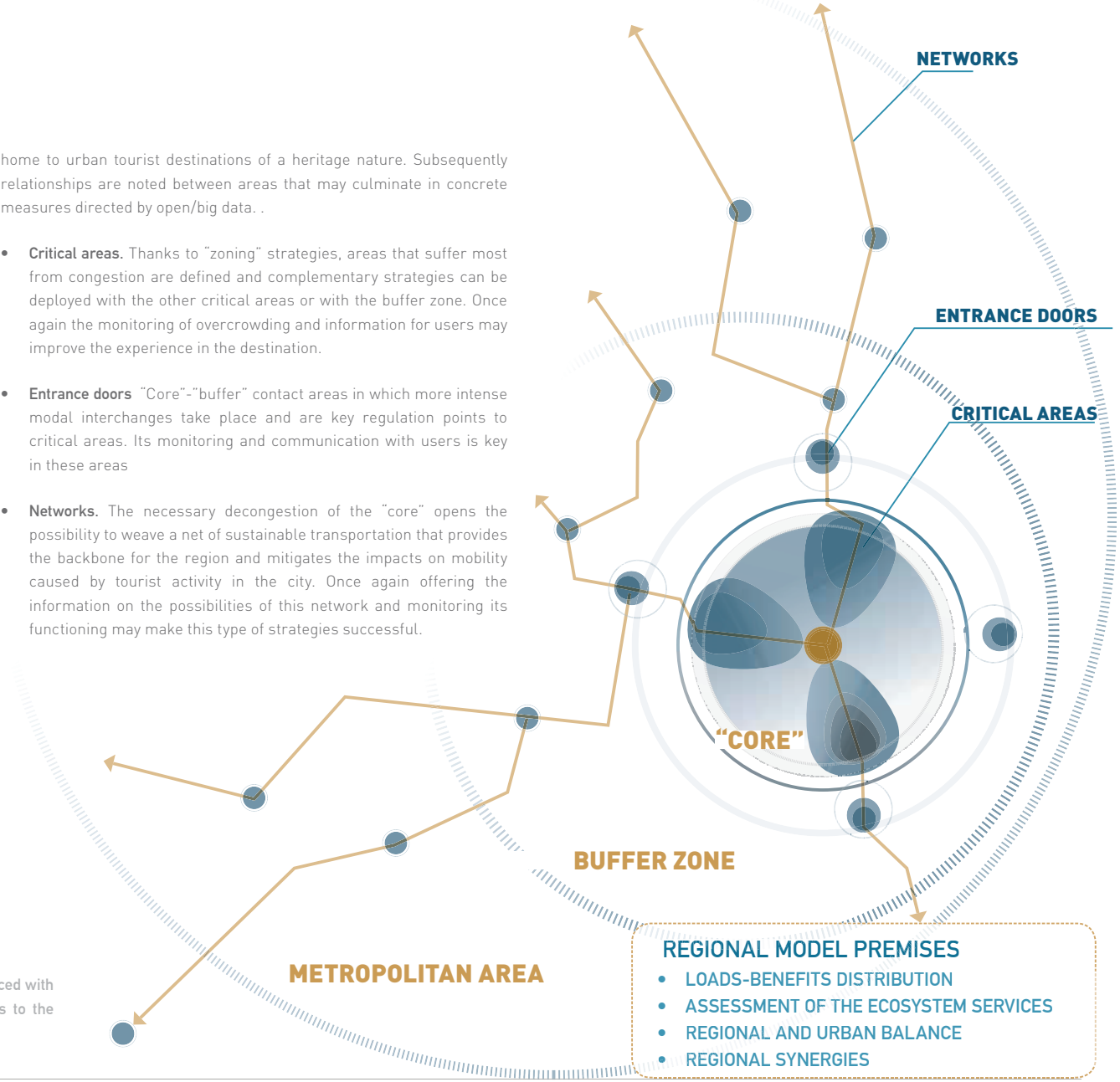
1. "Core". Historical Nucleus In this space the most notable effects of the "overtourism" phenomenon are deployed. Increased housing prices, substitution of local or traditional business, pressure on the public space, tertiarisation of the urban landscape, social conflict, etc... The functions of monitoring and action of tourist overcrowding by means of new technologies in these areas are critical.

2. "Buffer". Buffer zone. It involves an urban fabric that accompanies the heritage value space and tends to be configured like a compact and homogeneous urban grid. In this space the indirect effects of accessing areas that tend to get overcrowded are concentrated. They represent a fabric that may complement the "core" as long as it does not become a dispersal of the negative effects that then colonise the entire city.

3. "Area". The Metropolitan Area is home to a larger, more diverse area that may be linked to the "core". Regional diversity may favour an experiential diversification and seasonal adjustment of the touristic phenomenon.

New technologies may help to coordinate and manage the areas that are home to urban tourist destinations of a heritage nature. Subsequently relationships are noted between areas that may culminate in concrete measures directed by open/big data. .

- **Critical areas.** Thanks to "zoning" strategies, areas that suffer most from congestion are defined and complementary strategies can be deployed with the other critical areas or with the buffer zone. Once again the monitoring of overcrowding and information for users may improve the experience in the destination.
- **Entrance doors** "Core"-"buffer" contact areas in which more intense modal interchanges take place and are key regulation points to critical areas. Its monitoring and communication with users is key in these areas
- **Networks.** The necessary decongestion of the "core" opens the possibility to weave a net of sustainable transportation that provides the backbone for the region and mitigates the impacts on mobility caused by tourist activity in the city. Once again offering the information on the possibilities of this network and monitoring its functioning may make this type of strategies successful.



The spatial-time diversification cannot be an escape route when faced with the effects of over tourism. It involves complementary measures to the review of a comprehensive model for the city and its area.

4.3 RECOMMENDED ACTIONS

As a summary of the work, as a final reflection, 8 lines of action are collected that should guide a proper implementation of the new open/big data technologies within the management of urban tourist destinations of a historical nature. These are:

1. UNDERSTANDING OVERCROWDING
2. OVERCROWDING PLANNING
3. ZONING OVERCROWDING
4. GOVERNING OVERCROWDING
5. TECHNOLOGY AT THE SERVICE OF PEOPLE
6. FROM MEASUREMENT TO ACTION
7. URBAN LANDSCAPE AND OVERCROWDING
8. EXPERIENCE AND OVERCROWDING

01 UNDERSTANDING OVERCROWDING

02 OVERCROWDING PLANNING

03 ZONING OVERCROWDING

04 GOVERNING OVERCROWDING

05 TECHNOLOGY AT THE SERVICE OF PEOPLE

06 FROM MEASUREMENT TO ACTION

07 URBAN LANDSCAPE AND OVERCROWDING

08 EXPERIENCE AND OVERCROWDING

01 UNDERSTANDING OVERCROWDING

The first step is to develop tools to parameterise overcrowding. Understanding overcrowding entails a process beyond obtaining data. In this respect, Real Time Data monitoring involves a practice that enables stakeholders involved in decision making, local operators and inhabitants to decide how to address overcrowding at that time.

The application of technology may involve administrations taking management steps, for operators to adjust their resources and for residents to adapt their experience. The capacity measures in Turó de la Rovira are enabling the City Council of Barcelona to adjust the cleaning and security services to the influx points of the area.

HOW DO NEW TECHNOLOGIES HELP US?

New technologies represent an efficient tool for visualising overcrowding, either in real time or by means of measurements that enable us to see trends. In Florence, the DATA SCIENCE FOR SOCIAL GOOD EUROPE 2017 project offers us an original way of visualising the movement of people between different tourist resources.

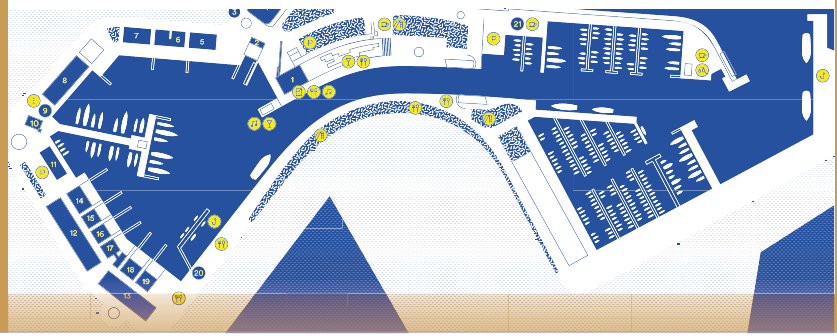
02 OVERCROWDING PLANNING

Planning for overcrowding is deployed on two fronts: time and space. In this respect, it is interesting to understand the patterns of when overcrowding happens and where problems arise from the overcrowding of a tourist destination. This planning requires evaluating the load capacity of tourist destinations as a key stage. The present study shows how places of international interest and those suffering from overcrowding do not yet have an assessment that defines the manageable limits for residents, the urban space, operators and the administration. .

As it has been defined in the present study, planning transcends the field of tourism management and requires an comprehensive approach from areas such as urban planning, mobility and heritage management.

HOW DO NEW TECHNOLOGIES HELP US?

New technologies may produce quantitative data on a complex phenomenon such as that of overcrowding. In the case of the Marina of Valencia, they are carrying out an interesting process of reinterpreting the port area so that the population may take ownership of the place from a functional and symbolic point of view. Regarding qualitative on-site assessments, public turnout parameterisations are added in order to improve the experience and the functioning of the space.



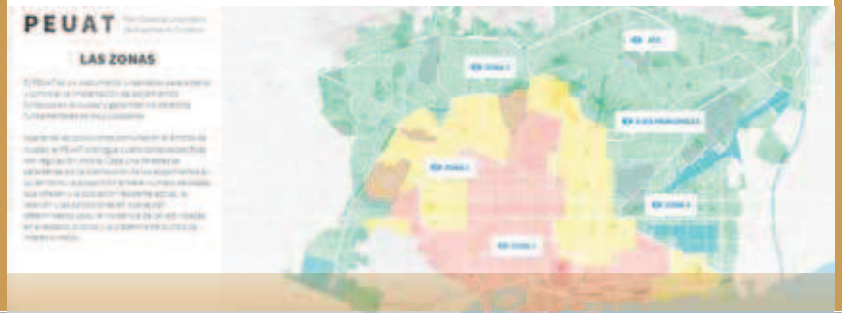
03 ZONING OVERCROWDING

Tourism is deployed in the area with different intensities. The present study demonstrates that the visitors' experience is often concentrated in very specific places. This tourist overcrowding in certain places is an opportunity to improve the overcrowding planning by means of "zoning" strategies that enable specific measures to be defined for each field and to define the different load capacities. This regional differentiation makes it possible to prioritise urban areas to focus the use of new technologies and make public investments more efficient.

Often times, overcrowding draws a kind of "neural network" in the area with greater or less connectivity among nuclei from different entities. This diagnosis can make it possible to design alternative scenarios to improve the tourist experience.

HOW DO NEW TECHNOLOGIES HELP US?

In Barcelona the Special Tourist Accommodation Plan (PEUAT) regulates the installation of tourist accommodation establishments, as well as youth hostels, temporary accommodation collective residences and housing for tourist use. There is a tech team that, helped by new technologies, is carrying out surveillance work on housing for tourist use (HTU). By means of Big Data handling and technical inspection this challenged is addressed in Barcelona.



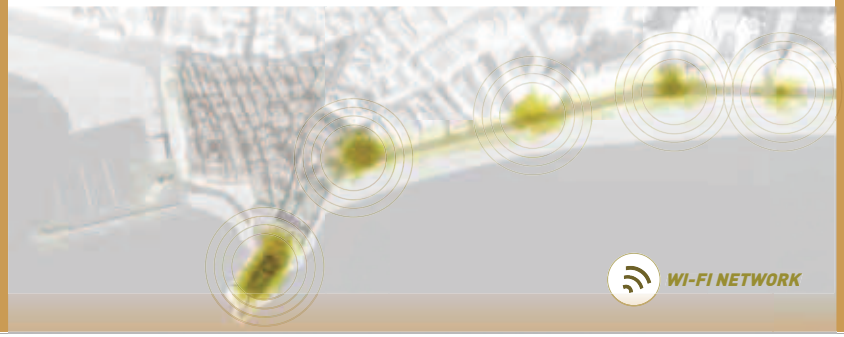
04 GOVERNING OVERCROWDING

One of the challenges for governments of tourist destinations is the overlap of joint policies of urban planning, mobility and tourist management as it regards to the social and business fabric. The implementation of actions that have emerged from the diagnosis of the situation, from the planning and zoning of the overcrowding require a road map.

As in the case of Florence, The Region of Tuscany, the Florence Metropolitan Area (which includes 42 municipalities, one of them Florence) and the city of Florence itself work in coordination to develop policies that improve tourism management.

HOW DO NEW TECHNOLOGIES HELP US?

In Benidorm (Alicante) in 2010 the body Benidorm Tourism Foundation of the Region of Valencia was founded, known by its commercial name "Visit Benidorm", consisting of a mixed public-private entity. In it, private stakeholders and administrations are represented. As a Smart Tourist Destination, they are sharing monitoring information by Wi-Fi networks as an example of good practices of public-private coordination.



05 TECHNOLOGY AT THE SERVICE OF PEOPLE

Unlike other types of tourist destinations, heritage cities are first and foremost neighbourhoods where people live. Tourist overcrowding poses an exacerbation of the effects of tertiarisation of the neighbourhoods of the heritage city. This phenomenon is causing a series of effects that transform the place. Traditional or neighbourhood business is being sidelined by activities linked to leisure and tourism. The massive emergence of tourist housing commercialised via online portals may create coexistence problems, greater competition for occupying the public space is caused and the housing market is affected by increasing prices. The use of technology in management should complement a social approach to the problem. We see how cities such as Venice lose residents while places such as the Ciutat Vella neighbourhoods have stagnated. In the same way, the application of new technologies poses regulatory challenges such as the preservation of privacy

HOW DO NEW TECHNOLOGIES HELP US?

In the Ciutat Vella de Valencia Special Plan perception surveys and workshops with residents were carried out. The detection of existing imbalances in the processes of transforming the urban landscapes is enough reason to correct this vulnerability from urban planning. By means of Open-Data applications and regional analysis, the process of tertiarisation was shown.

06 FROM MEASUREMENT TO ACTION

The present study shows that the application of new technologies for managing the overcrowding of urban heritage tourist destinations are in the developmental stage and under consideration the in the majority of cases. This occurs in first-rate destinations such as Amsterdam, Florence or Barcelona.

The definition of protocols for action requires an implementation phase that makes it possible to obtain the phenomenological patterns (of behaviour).

Of the experiments currently underway, we can see how increasingly accurate data are needed to define the guidelines for action in the framework of the governance of the tourist destination. The visitor segmentation or duration of the stay are data of great interest in order to understand the tourist experience.

HOW DO NEW TECHNOLOGIES HELP US?

Florence, as it regards to decongesting tourist flows, is creating a new system that will inform tourists about the level of overcrowding the areas of the city, through Wi-Fi on their smart phones in real time. Universal signage (traffic lights: green/yellow/red) will orient them during their stay, also proposing alternative routes, with invitations to visit lesser known or less crowded museums and exhibitions at that time.

This will all be possible thanks to the installation of sensors, throughout a series of strategic points of the city, which will make it possible to track attendance; but also thanks to the collaboration of telephone companies able to analyse data anonymously.

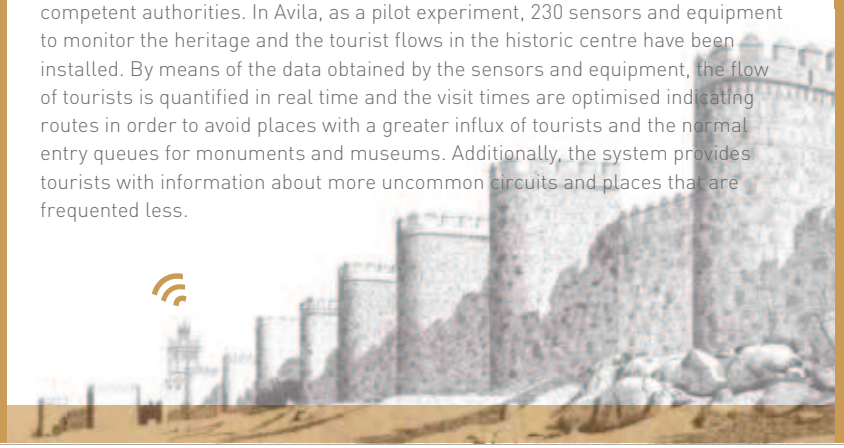
07 URBAN LANDSCAPE AND OVERCROWDING

Overcrowding due to tourism in urban environments deeply transforms the landscape. The continent of the city doesn't substantially change, but the contents do, the ways of inhabiting the urban space, its function and therefore its significance, the character of the place is altered.

In October 2017 Amsterdam prohibited shops targeted at tourists. Amsterdam announced the prohibition of any new store targeted at tourists such as bike rental shops, souvenir shops or others. This measure involves a business categorisation that may be applied in more places in order to prevent overcrowding and the alteration of the urban landscape's character.

HOW DO NEW TECHNOLOGIES HELP US?

Smart Heritage City (SHCITY) is a project from the Interreg Sudoe programme that will address the innovative challenge of creating a single open code tool to manage historic urban centres and facilitate the decision making work of competent authorities. In Avila, as a pilot experiment, 230 sensors and equipment to monitor the heritage and the tourist flows in the historic centre have been installed. By means of the data obtained by the sensors and equipment, the flow of tourists is quantified in real time and the visit times are optimised indicating routes in order to avoid places with a greater influx of tourists and the normal entry queues for monuments and museums. Additionally, the system provides tourists with information about more uncommon circuits and places that are frequented less.



08 EXPERIENCE AND OVERCROWDING

The sense of requalification of a tourist destination, in other words, the ultimate aim of its renovation or improvement, is in many cases to create a memorable visitor experience, a visit that can be remembered and transmitted. In this sense, understanding the phenomenon helps us to visualised the quality perceived by the visitor in order to preserve those aspects that contribute to an interesting interrelation between the urban space and the visitor.

The qualitative and quantitative analysis of the experience in the destination is an approach that allows us to refine the diagnosis. Therefore, new technologies should go hand in hand with on-site studies of observation and consultation with those people that are experiencing the destination.

HOW DO NEW TECHNOLOGIES HELP US?

The Uffizi Gallery in Florence, with 3.4 million annual visitors, is developing a system based in Big Data in order to prevent waiting and generate "sustainable tourism". By means of an algorithm that collects scientific information, the experience of the tourist resource and city in general has improved.

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COMUNITAT VALENCIANA
Jaume Mata. Turisme i Ciutat. valencia Convention Bureau.
Carole Duserre. Técnico en la Marina de Valencia.
Leire Bilbao. Gerente Fundación Visit Benidorm.

BARCELONA
Xavier Suñol. Director Turismo del Ayuntamiento de Barcelona.

OCCITANIA
Magali FERRAND. Directrice Déléguée. Direction du Tourisme et du Thermalisme/ Site de Montpellier

FLORENCE
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Andrea Giordani y Carlotta Viviani. Tourist and Economic Promotion Office - City of Florence.

WESTERN GREECE
Lavrentios Vassiliadis. Departamento de Planificación de Estrategia de Turismo. Región de Grecia Occidental

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Program manager City in Balance

Daniel van Motman
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FACING THE OVERTOURISM CHALLENGE IN CULTURAL AND NATURAL HERITAGE SITES USING OPEN/BIG DATA

GENERALITAT VALENCIANA

TURISME COMUNITAT VALENCIANA

interreg Mediterranean HERIT-DATA

Project co-financed by the European Regional Development Fund