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EUROPEA**



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## **INNOLABS**

***SOSTEGNO ALLA CREAZIONE DI SOLUZIONI INNOVATIVE FINALIZZATE A SPECIFICI  
PROBLEMI DI RILEVANZA SOCIALE***

## **IM.P.A.C.T. project**

(IMmersive technologies to Promote Apulian Cultural heritage and Territory)

# **DELIVERABLE D3-D4**

## **Model of interaction between the different actors Information system and website**

**Temporary Association of Purpose:**

**HGV Italia Srl - Lead Partner**

**Archeologica Srl - Partner**

**Cassandro Srl - Partner**

**Meeting Planner Srl - Partner**

**Never Before Italia Srl - Partner**

**Romano Exhibit Srl - Partner**

**Solutiongroups Srl - Partner**

**Solutions Plus Srl - Partner**

**University of Foggia - Research Organization**

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## **Sezione B1. Definition of the model of interaction between the different actors involved**

### **1. Introduction**

This paper represents a milestone within the IMPACT project funded under the INNOLABS call of the OP FESR-FSE Puglia 2014-2020. The project aims to promote the Apulian territory and above all the less known areas, therefore considered of "lesser" interest, not only by providing information but above all by involving users in an immersive experience capable of arousing curiosity towards fewer tourist routes. explored, but no less interesting.

The reasons behind the project proposal are attributable to two factors:

- The presence of little-known places that have a high environmental and cultural interest;
- The use of technological aids is becoming more and more powerful means to promote territories.

For marginal areas, the use of technological tools, therefore, represents an important promotion opportunity for redevelopment.

This work, the result of research activities, introduces the use of Social network analysis as a tool for analyzing relational networks (networks activated and their intensity, leadership roles and marginal ones, fiduciary or non-trust nature of individual relationships and their replicability. over time) put in place by the partners to support the establishment of a local partnership development process built based on adequate knowledge sharing, the constant promotion of the opportunities offered by the Program and, more generally, the growth of governance capacity.

Therefore, through this project proposal, we intend to use new technologies, in particular new technologies related to Virtual Reality, to arouse curiosity and emotion in the visitor, pushing him to undertake less explored tourist routes, but no less interesting and stimulating. The project provides for the development of multimedia content, aimed at promoting the cultural and landscape assets of the Apulian territorial districts of reference (Union of Municipalities Monti Dauni and Municipalities of the Ionian Area), to be provided through a double solution:

- the creation of an "immersive environment" which, with the help of "Cinema 4D" technologies, for the multisensory and multidimensional viewing of films, combined with viewer solutions for Virtual Reality, can offer users highly emotional experiences ;
- the implementation of viewers with immersive technology capable of guaranteeing a high level of immersion and interactivity

For this technology to be effectively exploited, it needs to be communicated through technological means that can reach the public even over long distances.

The web and social media, nowadays, play a crucial role in everyday life. A Eurostat study on the use of the Internet in the European Union in 2016 states that 87% of European citizens between 16 and 74 years, the percentage increases to 96% if we refer only to Italy, have used the Internet at least once a day. 78% of Italians in particular used the Internet to send and receive e-mails, 70% to view video content, 60% used social networks and read news online and 40% used online services to travel and accommodation.

In particular, they highlight not only how the Internet is being used daily, but also underline how digital is progressively taking the place of analogue.

The advent of social media has placed the user at the centre of attention by allowing him to make his opinion heard through comments, posts and tweets and through the 'likes' or 'dislikes' of the displayed content. It should also be emphasized how it allowed him to create them in his turn.

In this context, it is evident that companies have the possibility of using the web and social media to broaden their range of influence, obtain direct feedback from stakeholders and increase their dissemination capacity.

Therefore, companies MUST analyze their use of social media and the public to which they refer to understand what are the best ways to establish a lasting relationship with those who follow them and define an adequate strategy.

The significant increase in tourist flows in Puglia is rapidly affecting the modernization of the Region, helping to spread a model of sustainable economic development. It is precisely contributing to the enhancement of some of these places that constitutes the main objective of our project. The promotion strategy, which will be perfected through the appropriate co-design activities envisaged by the Living Labs methodology, involves the use of high-tech multimedia stations, capable of integrating Virtual Reality with 4D Cinema, installed in some places strategic for tourism in the region (to be identified among museums, ports, airports, etc.).

The main feature of these workstations will be, not only the use of the latest generation interaction and fruition technologies but also and above all the delivery of emotional content that can arouse curiosity and empathy. If Virtual Reality (VR) technologies have now established themselves as tools capable of arousing curiosity and emotion in users also in the cultural heritage sector, alone they are not sufficient to involve the target audience and only content with a strong impact. emotional can be able to intrigue and fascinate the public.

The relaunch of culture takes place more and more often through the help of innovative technological or digital tools. We frequently aim at the creation of cultural content that gives importance to the form of the message sent its layout, the graphics, to the language register: although the educational enrichment of the user remains a priority, it has become essential to entertain the user, make him curious, entertain him. The average user of tangible and intangible assets is daily exposed to hundreds, perhaps thousands, of stimuli via social networks, and many of the sponsored content that reaches him is created ad hoc for him through an analysis of online interactions and socio-demographic data.

Taking this scenario into account, it, therefore, appears natural that anyone wishing to make themselves known online should be active on social platforms and, above all, should provide for a close and constant online activity that can assert brand awareness.

The main objective is, first of all, to be able to remain etched in the user's mind, to be preferred in the moment of choice. This orientation to the web and social media marketing should not be considered exclusive to companies that produce and sell material goods, but rather it is a very relevant perspective also for those institutions or organizations whose main purpose is not necessarily to sell and advertise a product, since social media marketing does not have as its primary objective to increase sales but to improve the relationship with the customer through communication, to be more accessible to his eyes.

Fundamental to the success of the project will be the illustration of its social consequences and the dynamic presentation of the results achieved. It is implemented with innovative communication tools, to clear social accountability to expand the boundaries and areas of application.

Associated in an increasingly incisive way with emerging technologies, communication must be able to enable new methods of production and distribution of knowledge and to actively involve all the stakeholders of reference.

## 2. The main actors involved

Alongside areas now established nationally and internationally (Gargano, Valle d'Itria, Salento) some places often coincide, but not only, with marginal areas, only partially affected by tourist flows if not completely ignored. The so-called 'minor' places whose potential is still to be exploited and put into a system.

Instead, these places must be able to establish a relationship with their potential audience, maximizing the service they can offer to their visitors, also through web promotion.

You have to find the most effective way to communicate your identity and values by understanding what travellers want to see or where they prefer to stay. The results of this study will derive, therefore, from the systematization of the know-how and the heritage of scientific knowledge of the research partners involved, and in particular, through the knowledge of the reasons that push people to visit places of interest which is another an important element because it allows you to create ad hoc offers based on the wishes of the average visitor, individuals go to cultural sites, mainly with a cognitive / training purpose, so it is a priority, for example, to focus on captions so that they satisfy the viewer's need for knowledge.

However, visitors are not the only stakeholders, i.e. those who influence the existence and functioning of cultural sites.

In economic terminology, stakeholder refers to the subject with an interest in an economic initiative, whose achievement of personal objectives depends on the company. In the case of culture specifically, the stakeholders can condition, through their relationship with the place of interest, its very existence and its very functioning, being bearers of interest in cultural activity.

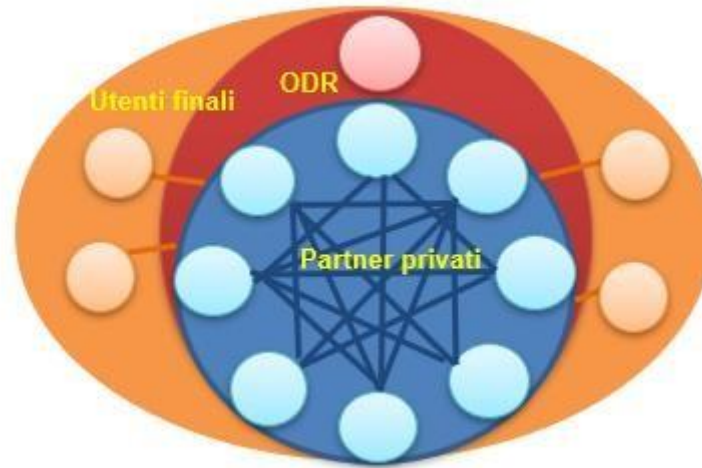
The main actors of a tourist destination are the main internal and direct stakeholders, on which the overall offer of the destination depends. This category includes operators that provide hospitality services and related services (catering, transport, entertainment operators), public and private companies that deal with the management of the attractions of the locality and provide ancillary services for their use and enhancement, public and/or private companies that deal with promotion and development activities.

The main indirect internal stakeholders, on the other hand, include those subjects who, with their actions, play a fundamental role in the tourism development of the territory (local trade associations, local tourism department). About external stakeholders, we refer to the various actors who in various ways act on the destination. Among others, the role played by tourists is fundamental. Through their purchasing behaviour, they determine the choices of businesses and the supply system as a whole, increasingly necessarily oriented towards solutions capable of responding to the growing variety and variability of demand. Finally, secondary stakeholders include all those actors who, even if not directly involved in tourism, are called upon to support the sector.

The cornerstone of the project will therefore be the systematization of the know-how and the scientific knowledge heritage of the **research partners involved, directly and indirectly**, namely: **HGV Italia Srl, Archeologica Srl, Cassandro Srl, Meeting Planner Srl, Never Before Italia Srl, Romano Exhibit Srl, Solutiongroups Srl, Solutions Plus Srl, University of Foggia, Superintendence of**

**Archeology, Fine Arts and Landscape for the provinces of BAT and Foggia, Union of Municipalities of the Dauni Mountains, Archeoclub Massafra, Greenroad of Massafra.**

The operation with which the actors' act within the project follows this relationship model:



With the advent of the Internet and social networks, it has become counterproductive to ignore the evolution of the user and neglect the centrality of his figure. The user has therefore become the central element of a new system in which he participates in the creation and sharing of contents and around which the services, information and contents themselves are placed.

It is, therefore, a user-centred system: the user generates online content - different from those produced by traditional media - defined as user-generated. content. This change of perspective, strongly favoured also by the European Community, contributes exponentially to the decentralization and democratization of information, according to the model of openness, in which content and information are no longer, or no longer only, created and managed. centralized authorities (experts), but various stakeholders, i.e. a wide range of diversified and distributed stakeholders (users, contributors, prosumers ), can easily interact with new mass digital technologies.

With the advent of Web 2.0, the previous top-down information system, in which the information and cognitive transmission model was of the one-to-many type specific to Web 1.0, was transfigured thanks to a total openness to contributions provided by users: we have arrived at a bottom-up system of the many-to-many type, in which the tacit rule of the principle of electronic reputation applies.

An essential role in this web revolution has been played by the development and endemic diffusion of social media, passed from a more individualistic to professional use, of which it is possible to identify some variants:

- Blog ( Skyblog, Slashdot, Mashable, Read Write Web, blog of groups or individuals);
- Social networking platforms (Facebook, MySpace, LinkedIn, Mendeley, Academia, LibraryThing);
- Social bookmarking platforms (Del.icio.us, Ma.gnolia, CiteULike, Digg.in, Reddit, Goodreads, Metafilter, 123brand, Zooppa and, for images only, vi.sualize.us);
- Microblogging and short messaging or micro-sharing platforms (Twitter, Friendfeed, Jaiku, Tumblr, MySay, Hictu, Edmodo );
- Platforms for the media content sharing network ( Youtube, Flickr, Photobucket, Vimeo, Qik, 12Seconds, Picasa, SlideShare, Google Docs, Issuu );

- Virtual Worlds, or virtual interactive platforms such as full immersion (Second Life, ActiveWorlds, Twinity ).

The phenomenon of social networks can be considered fully a child of the new millennium, of limitless connectivity and the evolution of social-relational aspects in digital and virtual mode: in essence, this phenomenon is simultaneously the cause and effect of the evolution of the second generation web, which has favoured and motivated postmodern society on the one hand to forms of social and communicational participation of a global nature, and on the other, the user-consumer to the creation of contents and direct participation in the stimuli offered or directly sought by him. Social networks are, therefore, the main ones responsible for the creation of these new forms of communication, so much so that they are the most relevant creators of what, borrowing an advertising terminology, is called tagline culture, which is a culture in which the message is synthesized by concise sentences that help to create, almost photographing it through instant sentences, what is called the digital self.

Precisely based on these considerations, netnography has become a fundamental tool in marketing analysis. Netnographic analyses provide companies with a cross-section of virtual users who are analyzed in their social behaviours. In this way, real commercial phenomena can be specifically created, starting from the basic assumption that with social networks the way of accessing information has been reversed: it is not the user who seeks the information but the information that reaches the user on his profile (and this now happens in every sphere, from the strictly commercial to the educational and cultural one). An analysis of this kind was carried out by Trendstream in the GlobalWebIndex report of November 2011 with a specific focus on the adoption of social media in Italy for adequate knowledge of users, with a very high incidence in the preference of Facebook over other platforms of social networking.

In the cultural sector, innovation and technology represent a binomial that has become inseparable, on which we have been betting for some time: new technologies have profoundly transformed the traditional systems of protection, management, enhancement of cultural heritage and changed the methods of dissemination. of culture.

The adoption of ICT has allowed for a definitive rejuvenation of cultural institutions and museums above all, passing from a preconceived Victorian conception (still rather resistant) to a real mass media, a modern tool of cultural and social communication capable of adapting to the profound transfiguration of places into spaces.

Furthermore, attention to users is also evolving further and, with it, the concept of interaction. Indeed, it is essential not to limit exclusively the interaction through new technologies to a single user/object or single user/technology interaction; the task of cultural institutions is also to favour processes of social interaction between users within the interaction with the institution, abandoning the myth of the individual user/visitor. The impact of ICT and digitization on each step of the cultural sector, from content to distribution channels (creation, production and distribution/consumption of cultural products, according to the map highlighted) and the multiplication of technological devices have radically changed the methods of access, consumption and possession of a good by consumers.

Through digitization, cultural products have become reproducible and disseminated at ludicrous costs, through a series of diversified channels. Excluding technologies oriented within the organization (for management, administration, security, video surveillance, etc.), technologies oriented outside it (i.e. aimed at communication, enhancement and use of the offer cultural, whether synchronous or asynchronous, remora or in the presence) are considered an intermediary in the relationship between



users and cultural collections and, as already mentioned, have been divided into three types (visual, interactive, connected).

The concept of network shifts the attention from the single individual to the network of which the individual is the characterizing element, the subtle difference is based on the fact that in addition to expressing personal qualities in the network, qualities deriving from interaction with other individuals emerge. present.

The Social Network Analysis represents, in fact, a set of modern techniques for the analysis of social networks, it analyzes the network as a whole from the nodes to the relationships, shifting the focus on the overview to explain how relationships can affect the behaviour of the units involved.

### 3. The network of actors involved

An approach that allows us to describe the relationships between actors is represented by Social Network Analysis (SNA), which developed in the field of social sciences, and has become an interdisciplinary field of research with a long history of contributions from scholars from different disciplines. In this sense, it cannot be identified as a theory in the social sciences but must be considered as a set of integrated techniques, with a shared methodological perspective, which allows for a description of the relationships between actors and for analysing and interpretation of complex structures. that emerge from the recurrence of these relationships.

The methods of network analysis have been used, first in industrial economics and recently also in the tourism field, by various scholars, which have given rise to a broad reflection and an interesting and fruitful scientific debate. Three lines of study have made a fundamental contribution to the development of network analysis :

1. that of social psychology;
2. that developed by Harvard school researchers;
3. that of the anthropologists of the Manchester school.

The most important contribution is due to Mitchell and the formulation of the concept of a "total network" of a society, that is, [... the set of ties, in continuous branching and growing, which unfolds within and beyond the boundaries of each community or organization.]. In concrete research, however, according to the scholar, it is always necessary to select particular aspects of the total network, the so-called "partial networks". These can be identified through two criteria: the first, based on the individual, consists in extrapolating the social relations that involve him in their totality; in this sense, we speak of "ego-centric" networks. The second criterion, on the other hand, consists in extrapolating the network about a particular social aspect: political ties, kinship obligations, friendship, working relationships, etc.

Mitchell and the researchers of the Manchester school recognize greater relevance to partial networks anchored to the individual, since they allow to identify the links, both direct and indirect, of each individual with all the others.

Specifically, he associates the concepts of "direction", "reciprocity", "intensity" and "duration" with relationships. Some relationships can involve a transaction or exchange and can therefore be considered "direct" from one person to another. An important measure of these relationships is the degree to which the transaction is reciprocated (reciprocity). Duration is a measure of how long-lasting the relationships are activated in particular transactions. Intensity, on the other hand, refers to the strength of the obligations involved in a relationship. That is, it is relative to the strength with which



one feels bound to these obligations or to the multiplicity of the relationship: relationships with more ties are usually more intense as they are more diffusive. As regards, instead, the morphological properties of the network, Mitchell refers to the concepts of density - that is the relationship between detected bonds and potential bonds - and reachability - the probability, that is, with which the members of the network can contact each other. The importance of the concept of a network in the study of a destination has prompted part of the scientific literature of the sector to apply network analysis techniques also in the tourism field.

Pavlovich (2001, 2003) used network theory to examine how relationships between members of a destination network influence the development of the destination. Tyler and Dinan (2001), according to whom network theory represents one of the most suitable approaches to the study of the tourism phenomenon, examined the relationships between the members of a tourism network from a governance perspective, meaning the whole public and private actors, their roles and relationships. Following this line of research, other scholars (Dredge 2004, 2006; Dredge, Jenkins 2003) argue that network theory provides a tool to understand not only the relationships between local institutions, businesses and the local community but also how these relationships can influence collaboration and cooperation between different actors. The reticular approach is also useful in highlighting the need for collaboration and cooperation in this area.

Social Network Analysis makes it possible to construct meaningful representations of a network of connections between the actors of a given system and to measure the role played by some of them. Therefore, it appears appropriate the analysis of the collaboration processes between the operators of the tourist destination analyzed in this project.

The network analysis allows, in particular, to analyze the relationships between the actors of the destination under two aspects:

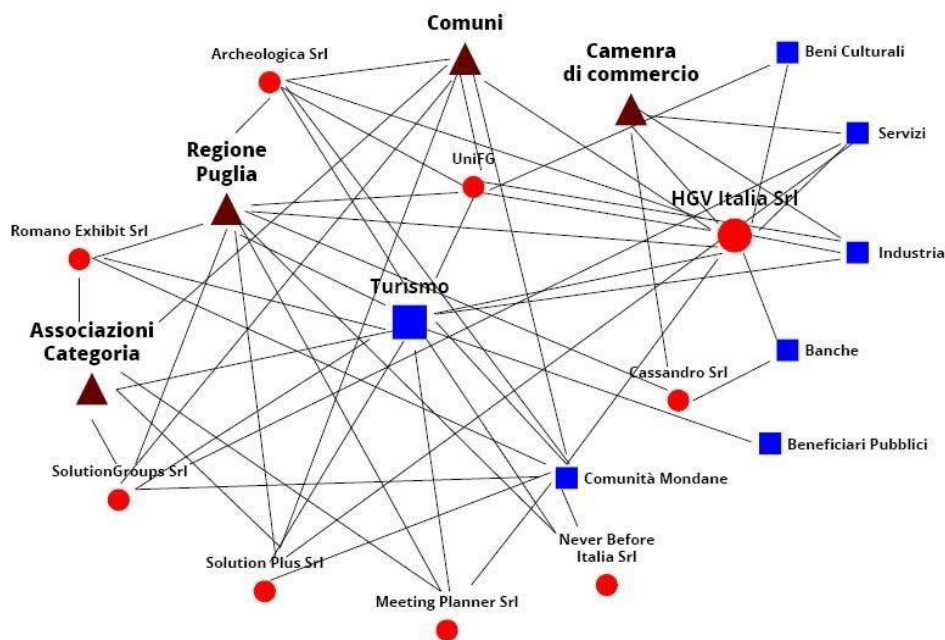
1. the internal structure of the network, for example, the links between the actors belonging to a particular cluster within the tourism industry;
2. the "external" links of the networks, for example, the links between local institutions and representatives of the components of the tourism industry.

Therefore, network analysis techniques allow not only to visualize and analyze the topology of the network of relationships but also to improve the understanding of the organizational structures and of the production organization in the destination itself, which is essential for the formulation of policy indications.

To determine the ability of the actors to involve the territorial partnership in the implementation of infrastructures and technologies to promote synergies with other groups in favour of the integration of interventions and their sustainability, the first set of relational structures analyzed is inherent to the collaborations undertaken with other subjects for the realization of immersive experiences.

The opportunities for meeting and their number, aimed in this sense are categorized into the following types: events organized to present tenders, territorial information desks created, permanent panels/forums with the use of digital technologies for the active and continuous involvement of citizenship and organization focus groups with end users, training and mentoring of internal staff in companies, dissemination on the media (posters, invitations to schools and associations, involvement of economic operators in the tourism sector, animation on social media, etc.), information brochures.

The network of relations is summarized in the figure below, through which the information relating to the centrality of the subjects involved is also returned, expressed based on the size of the nodes: the greater the size of the node, the greater the level of the centrality of the same and, therefore, the greater the number of links made with the other actors.



The relationships between the partners and other subjects built in the reference period are expanded in number and complexity. Among the subjects with which the partners have built more relationships, in particular, the set of companies and trade associations in the technology and tourism sector, with which all the partners have collaborated at least once in the network in question, emerge. From the observation of the data, a generally positive effect emerges generated by the network activities. Compared to the indicators proposed it would seem that the partners were able to promote the creation of networks between local operators and that the network activity made it possible to acquire and transfer good practices to the territory. There is also no lack of positive reports regarding the meeting with new project partners and the best use of territorial promotion channels. The degree-based centrality indicator, that is the number of actors to which each node is connected, is integrated into the figure in the dimensions of the nodes themselves (the greater the size of the node, the greater the centrality value).

The actor who appears to be more central in the network of activated relationships is HGV Italia Srl, followed by Archeologica Srl, Cassandro Srl, Meeting Planner Srl, Never Before Italia Srl, Romano Exhibit Srl, Solutiongroups Srl, Solutions Plus Srl, University of Foggia, while among the subjects who more than others participated in the various meeting occasions, and with whom the partners have established collaborative exchange relationships, the companies and associations in the tourism, technological and archaeological world, the Provinces, the mountain communities and, the companies/associations in the world of crafts and commerce, the Superintendence of Archeology, Fine Arts and Landscape for the provinces of BAT and Foggia, the Union of Municipalities of the Dauni Mountains, the Archeoclub Massafra and the Greenroad of Massafra.

The presence of networks of formal and informal relationships present in a territory can condition its development paths. In this sense, we speak of the positive and negative consequences of the networks of economic and extra-economic relations for local production systems. A widespread network of relationships in a given territorial context has positive economic consequences for local development because it favours economic cooperation and makes available cognitive resources, such as information, or regulations, such as trust, which allow actors to achieve objectives that would not

be otherwise achievable, or they would be at a much higher cost. Therefore, they contribute to the enlargement of the market and favour its functioning by providing information and trust.

For the categories identified above, to implement the mapping of stakeholders, it is possible to identify two parameters for their identification:

- **the ability to influence** is determined by the following factors: size, representativeness, current and potential resources, specific knowledge and skills, strategic location;
- **the capacity/level of interest** of each stakeholder concerning its impact and its "pressure capacity". It is established by two factors: the impact of the policy considered for the sphere of action and objectives of the identified stakeholder and the pressure initiatives that stakeholders can put in place to promote or claim their interests or to favour their participation in the decision-making process.

From the analysis of these factors it is possible to create an influence/interest matrix to obtain three categories of stakeholders:

		<b>INFLUENCE</b>	
		<b>Low</b>	<b>High</b>
<b>INTEREST</b>	<b>Bass</b>		<b>Attractive stakeholders</b> (a category that should be involved)
	<b>Tall</b>	<b>Weak stakeholders</b> (a category that must be involved)	<b>Essential stakeholders</b> (a category that needs to be involved)

- the **essential stakeholders**, that is, those who need to be involved because they have a high interest and high influence on the reference policy and, therefore, a strong ability to intervene in the decisions that the Administration wants to adopt;
- **attractive stakeholders**, that is, those who should be involved because they have low interest but high influence. This category can be represented by pressure groups or opinion leaders capable of influencing public opinion on certain issues;
- **weak stakeholders**, i.e. those with high interest but low influence. This category is represented by subjects who do not have the means and tools to be able to express their interests strongly and homogeneously; these subjects often coincide with the target groups of the Administration's policies and it is therefore advisable to involve them in the formulation of the policies themselves.

Network theory allows us to describe the structure of a system as a set of elements connected through a series of relationships. These relationships expressed in terms of collaboration, cooperation or partnership relationships are examined through the use of specific indicators, which, by defining the structural characteristics of the network, make it possible to shed light on how the relational structure affects the behaviour of both individual actors that of the system as a whole.

The relevance of this type of analysis consists in the possibility of using quantitative methods to analyze phenomena and relationships that can be faced up to now with qualitative techniques, opening new horizons in the study of tourist destinations and their governance systems.

Applying Social Network Analysis, as an interpretative approach to the systemic organization of a tourist destination, it is necessary to start from the assumption that the unit of analysis is not represented by the individual, as in traditional research, but by an "entity" composed of a set of individuals and links between the same individuals.

In this perspective, the basic concepts are those of:

- actor;
- relational bond;
- dyad and triad;
- group and subgroup;
- relation;
- net.

**The actor** is the basic element of a network, not necessarily represented by a single individual, but also by a company, an association or other social units. In most applications, attention is focused on groups of actors of the same type (eg companies), even if it is possible to analyze conceptually different actors or those belonging to different groups.

**Relational bonding** refers to the bond that connects one actor with another. The distinctive feature is that this link is established between pairs of actors, highlighting a connection of some kind. Examples of bonds can be affective relationships, the transfer of material resources (economic transactions, etc.), interaction based on the exchange of information and formal relationships.

**The dyad** consists of a couple of actors and the possible links between them. This bond is a property of the couple and cannot be referred to as only one of the two components. The analysis of the dyads, therefore, allows studying the properties of the relationships between pairs of actors (eg reciprocal relationships).

**The triad**, on the other hand, is made up of a subset of three actors and the possible links between them.

**A group and a subgroup** are defined as a finite set of actors that for conceptual, theoretical or empirical reasons are treated as a single whole within which network measurements can be made. The group and the sub-group, therefore, include both the actors and the bonds they present. The relationship is the set of bonds of a specific typology between pairs of actors belonging to a specific group.

**the network** is a frame made up of a finite set of actors and the relationships between the actors themselves.

### 3.1. Destination analysis

The stakeholder theory described above represents an approach to analyzing tourist destinations from the point of view of the organization of the offer. The destinations constitute complex economic and social systems in which a series of stakeholders with different needs and purposes participate, to be coordinated for the achievement of common objectives, according to a fair balance between benefits for individual actors and the entire system. The stakeholders of the destinations, in particular, are represented by the operators of the sector, the Local Authorities, and by all the categories of companies that have relationships with tourism companies. They can be divided into four basic categories:

- -oriented stakeholders (a *mixed blessing*);

- *supportive* ) stakeholders ;
- marginal stakeholders;
- opposing ( *non-supportive* ) stakeholders.

The first category includes many of the types of companies that make up the supply system, which, especially due to their small size, need guidance to improve their performance. The subjects assigned to the role of guide, which in the case of a tourist destination could be public bodies or trade associations, are the *supportive*, i.e. those who also carry out a more indirect and incisive activity in terms of initiatives to be launched and problems to solve. The marginal stakeholders, on the other hand, are the subjects who exercise an indirect interaction with the system. Finally, the adversary stakeholders represent the categories that may be opposed to initiatives at a systemic level. The complementarity of the services offered by the different categories of companies determines sometimes different interests, with risks of overlapping and economic and social consequences. It follows that, for the survival and competitiveness of the destination, there is a problem in managing the complex set of relationships between the socio-economic and institutional interlocutors and elaborating concrete decisions and actions for the satisfaction of the various stakeholders.

However, the management of a destination involves complex decisions in which it is not always possible to satisfy the needs of all stakeholders; in this sense, the setting and definition of common objectives can be an important factor in convergence. The cohesion of the various stakeholders around the strategic initiatives of the destination depends, however, on the value that these initiatives can produce for the stakeholders themselves. By "value" we mean the value of the system stakeholder relations, or rather the net difference between benefits and costs that the individual stakeholders perceive in establishing and maintaining these relations.

The creation of value concerns all the stakeholders between whom relationships are established, for which there are no antithetical relationships, but complementary relationships that configure a virtuous circle that feeds itself. In other words, for the destination's lasting success, it is necessary to create the conditions for building, maintaining and strengthening exchange relationships that are advantageous for all stakeholders. The competitiveness and attractiveness of the destination are also a function of the ability to generate satisfaction within the destination, not only towards tourists.

The stakeholder theory, therefore, favours a deepening of the relationships that are established between the stakeholders of the destinations, focusing attention on the economic and social balance between different interests; however, it does not explain how and according to what contents strategic choices must be oriented to achieve adequate performance results. To this end, it is necessary to use a strategic analysis model capable of explaining, both conceptually and analytically, the sources of the strategic and market success of a destination.

The *resource-based approach view* emphasizes the role of business resources and skills ( firm-specific factors ) in the achievement of competitive advantage, allowing the overcoming of the typical logic of *strategic management studies* that see the structure and dynamics of the sector as a condition of the level of competitiveness of the 'agency. According to this approach, the reasons for a differential advantage are to be found in the specific endowment of resources that the company has to its competitors. Specifically, the success of the company depends on its ability to make the most of its strategic resources, that is, those capable of generating income positions to the competition.

Compared to traditional approaches, therefore, the object of analysis moves within companies rather than focusing on external analysis and the attractiveness of the reference sector.

Therefore, the analysis must be carried out at a double level, corporate and systemic, and precisely considering:

- common or local resources, not necessarily owned by the system or by the companies that are part of it, but which contribute to the competitiveness and, therefore, to the performance of the system itself;
- the resources and skills of the individual players in the tourism sector;
- skills, the result of inter-company cooperation and/or overall system level;
- the ability to manage the system, including through the establishment of ad hoc bodies.

In summary, the success of the destination depends on the set of resources and skills of the territory, of the individual companies operating at the local level and of the system as a whole.

The enhancement of the wealth of resources and skills available in the area allows the transformation of local specificities into distinctive factors at a global level, allowing companies to develop original competitive strategies as enriched by the reference to the context in which they are located. These are resources linked by a geographical constraint and, therefore, non-transferable, unique, scarce, and difficult to imitate.

*resource-based* logic, a resource not only as a "context" (geographic and physical) within which business management is carried out but as a set of elements settled over time (institutions, culture, social relations, skills) that have a propulsive role on business activity, through the human and social capital resources available in it.

To this end, it is necessary to identify territorial development models, which, formulated in the economic-applied field (regional and industrial), have found application in the tourism field.

Such models are:

- **milieu innovateur:** it is part of the theoretical debate on local production systems by interpreting the phenomena of spatial development as the effect of innovative processes and synergies that occur in limited territorial areas. The main distinctive elements of the milieu innovateur are two: the geographical proximity and the socio-cultural proximity of the economic actors participating in the system of relations. Specifically, geographical proximity is to be understood not as a mere geographical distance but as a relational space in which all those economic phenomena that allow for cost savings (reduction of production and transaction costs) and to develop of supply chain relationships develop. both vertical and horizontal. Socio-cultural proximity, on the other hand, refers to mutual trust, the presence of shared models of behaviour as well as moral and cognitive codes common to all the actors of the local system. The theory of the milieu innovateur, therefore, by focusing attention on the socio-economic link between the productive community and the social community, is well suited as a theoretical and empirical approach for the study of a tourist destination. The concept of proximity - geographical and socio-cultural - and that of relational capital can be applied both to the milieu and to the tourist destination.
- **Local Territorial System (SLoT):** introduced to analyze and describe the socio-territorial realities and potentials of geographically identifiable areas, this conceptual model can be extended to the case of a local tourism system, considering the latter as a model of productive specialization of systems territorial. This system consists of four elements:
  1. **the local network of subjects** is understood as the set of relationships (of a negotiating, cooperative, competitive and even conflictual nature) woven between the actors (individual and collective, public and private) present in a local territory. In this context, the local adjective takes on a precise meaning, namely that of physical proximity,



consequently circumscribing relationships to those based on knowledge and direct communication (face-to-face), trust, reciprocity, etc.;

2. **the local milieu**, that is, the set of favourable conditions for territorial development in which the local network of subjects operates. These favourable conditions are identified in the set of tangible and intangible resources that have settled in the territory as a result of an evolutionary process that has involved both the local society and the territory itself;
3. **the interactions between the local network, the local milieu and the ecosystem**, which consist in translating the potential of the milieu into communicable and exchangeable values through processes of symbolic and material transformation of the environment;
4. **the interactions between the local network and the supra-local networks**, or with the so-called "long networks" which have the task of connecting the local level with the territorially superordinate levels.

This aspect takes on considerable importance in the tourism field in which for some years we have witnessed a radical overturning of the planning of local tourism development. A *top-down approach has been passed* to the adoption of a *bottom-up governance model* in which the individual local realities are directly registered in the actions of enhancement and tourism promotion of the territories.

- **tourism cluster**: it originates from Porter's theory of industrial clusters, which defines it as a group of interconnected companies and associated institutions operating in a particular field, territorially contiguous and connected by elements of commonality and complementarity. The main business cluster models have been developed in the industrial sector, with a limited focus on tourism. The clustering approach, despite having an evident impact, is concentrated on creating a network of actors to enhance a place and remains vague at the definitional level. The solution suggested identifying a cluster, therefore, appears to be that of referring to the horizontal and vertical links - upstream and downstream - between companies and institutions.
- **tourist district**: defined as a socio-economic entity characterized by the active presence in a historically determined area of a community of people and a population of industrial enterprises that tend to interpenetrate each other. It consists of four fundamental elements:
  1. **a delimited territory**: the place where the district is located which corresponds to a limited geographical area made up of several municipal territories and characterized by its specificity determined by the geography of the territory, by the local population or by easily identifiable and identifiable elements;
  2. **the presence of a local community**: identified by a group of people with specific elements of historical and cultural identity and with an economic model such as to recognize a homogeneous set of values;
  3. **a multitude of companies**: specialized in one phase or a few phases of the sector's production process and interacting with each other and connected by a series of formal or informal relationships, such as to generate a collective learning process and efficient work segmentation;
  4. **the presence of local institutions**: which, through their role, guarantee the involvement of the actors in projects and programs for the functioning and development of the district.

#### 4. The networks of 'minor' Apulian cultural heritage

The characteristics of the tourist product, on the one hand, consist of a broad set of goods, services and attractions created by different subjects and, on the other, the tendency of the tourist-visitor to judge the value of the structure of the offer as a whole, rather than that of the single components,



make superficial the analyzes that do not follow intersectoral approaches. Precisely this configuration, characterized by very close links with other sectors, highlights that inter-entrepreneurial and network relations in the tourism sector assume a pre-eminent function, both for the need for complementarity of the services offered and for the need for vertical integration of the supply chain. In a competitive context in which inter-company relations are increasingly a determining strategic factor, the fact of knowing the existing links between tour operators allows us to reach a systemic and strategic vision that can be translated into coordinated policies and actions since it is from the internal interactions between them. that it is possible to create greater value for the tourist and, therefore, achieve strategic success at the level of the entire destination. These relationships can be analyzed as:

- set of exchanges, with the object of exclusive observation of the exchange of the market;
- set of relationships, or rather as a network of stable relationships between different subjects.

In setting up this work, we intend to investigate not so much the single episode of exchange, but the set of relationships that form a coordinated system of exchanges, and the effect of the continuous interaction between interested actors, which can consequently give rise to forms of collaborations. more stable and contribute to the pursuit of a more solid competitive condition for businesses and for the tourist destination itself. The Social Network Analysis, as already extensively argued, allows to focus attention on the relational nature of the structure of the production system, identifying in the relationships that are established between the actors the explanation of the economic phenomena; therefore, it appears very pertinent for the analysis of the interdependencies and connections that develop within a destination, constituted, in fact, by a complex network of subjects between which relations exist ranging from information exchange to agreements and partnerships of various guy.

The purpose of the analyzes carried out in this work is, specifically, to translate some concepts of network theory (density, connectivity, centrality, geodetic distances, clusters, etc.) into new tools for the tourism economy, i.e. functional interpretation of the operating mechanisms and identification of the competitiveness factors of a destination. At the same time, this work aims to represent an attempt to apply the Social Network Analysis that goes beyond the descriptive analysis of the network, focusing on the formal and informal links of companies engaged in the production of goods and services that are located upstream and downstream of tourist activity, as well as on the evaluation of the importance of kinship ties for the development and consolidation of the aforementioned commercial ties.

The choice of the so-called Apulian 'minor places', i.e. those adjacent to areas now established nationally and internationally (Gargano, Valle d'Itria, Salento), often coinciding, but not only, with marginal areas, only partially affected by flows if not completely ignored, as a case study it derives from the peculiarities of its local production system as well as from its model of tourism development.

The local economy draws its resources from various sectors with a prevalence of the tertiary sector of services and commerce, which employs 40% of the total population.

The promotion strategy, which will be perfected through the appropriate co-design activities envisaged by the Living Labs methodology, involves the use of high-tech multimedia stations, capable of integrating Virtual Reality with 4D Cinema, installed in some places strategic for tourism in the region (to be identified among museums, ports, airports, etc.).

The main feature of these workstations will be not only the use of the latest generation interaction and fruition technologies but also and above all the delivery of emotional content that can arouse curiosity and empathy. If Virtual Reality (VR) technologies have now established themselves as tools capable of arousing curiosity and emotion in users also in the cultural heritage sector, alone they are not sufficient to involve the target audience and only content with a strong impact. emotional can be able to intrigue and fascinate the public.

## 5. The territorial context of reference

The 'minor places' of Puglia, i.e. those adjacent to areas now established nationally and internationally (Gargano, Valle d'Itria, Salento), coinciding with the marginal areas, are only partially affected by tourist flows if not completely ignored, as a case of the study derives from the peculiarities of its local production system as well as from its model of tourism development. The local economy draws its resources from various sectors with a prevalence of the tertiary sector of services and commerce, which employs 40% of the total population.

The main feature of these workstations will be not only the use of the latest generation interaction and fruition technologies but also and above all the delivery of emotional content that can arouse curiosity and empathy. If Virtual Reality (VR) technologies have now established themselves as tools capable of arousing curiosity and emotion in users also in the cultural heritage sector, alone they are not sufficient to involve the target audience and only content with a strong impact. emotional can be able to intrigue and fascinate the public.

In the specific case, the project proposal provides for preliminary and systematic study moments through which to identify macro elements characterizing the territorial areas of reference: on the one hand, the Union of Municipalities Monti Dauni, characterized by the sequence of villages and perched inhabited areas, surrounded by dense woodlands, along the slopes of the Apennine chain, which historically represented a border hinge between endemic communities characterized by cultural diversity; on the other, the Municipalities of the Ionian Area, land of the "gravine" system, characterized by the strong relationship between the historical-settlement fabric and the natural erosive furrows, hosting an extensive wood and Mediterranean scrub cover, which reach the sea crossing the plain.

The identity elements of both sectors will be characterized from a historical-cultural point of view (archaeological, historical-artistic and monumental architectural evidence), by intangible assets (local knowledge and traditions connected both with agro-pastoral, food and wine, artisan activities and with a religious-religious sphere) and landscape (contexts of significant naturalistic interest): the results of this project will strongly depend on the know-how and scientific knowledge of the research partners involved, which will be subjected, where deemed appropriate, to the necessary insights and additions.

Governance policies in the tourism field have therefore focused on planning the tourist reception capacity and on the expansion cycle of presences.

## 6. Interaction model

The analysis of the interactions through the experiential and user-centred approach of the "living lab" can be carried out based on qualitative or quantitative methods. The theoretical approach of the tourism economy is based on the concept of tourism as a system, both for the heterogeneous and plural nature of the tourist product, and for the complete interaction that develops between the elements that contribute to its production and use. Tourism can be defined as a complex system in which the following interact: the tourist, a subject who exerts a demand for experiences on the market, the companies that produce goods and services intended to satisfy the tourist demand, and the administrative political system, which can influence on the development and organization of supply and demand, and the host community, including the party not directly involved in the tourist activity.

Qualitative methods have the merit of analyzing the knowledge construction process in depth and great detail, but they are very expensive from the point of view of the time required for the analysis and rather subjective in the interpretation of the results. Quantitative methods, on the other hand, offer a dimensional description of the community based on the exchanges that have taken place and the participation in the interactions by individuals, but do not allow to clarify the role and weight they have had for the functioning of the whole. of the community and for the knowledge-building process.

The SNA adopts a quantitative-relational approach which, instead of being based on the characteristics and attributes of individual subjects, is based on relational data, i.e. connections, contacts or ties that characterize a group of people or a set of more or less complex organizations (families, associations, companies, nations, etc.). The most common methods of collecting relational data use the techniques that the tradition of social inquiry makes available: direct observation and survey by questionnaire or interview. Through direct observation, the frequencies of interaction, even particular ones, are usually detected within a predetermined period or interval. It requires a spatial and temporal delimitation of the field of investigation, a precise definition of the group of subjects and the type of interaction, and the choice of which parameters to detect in the light of the theoretical approach adopted: presence-absence, duration, intensity, direction, etc. The survey techniques by questionnaire or interview allow access to relational data through the testimony of an interviewee who lists the subjects with whom he has relationships, which constitute information relevant to the research. The answers collected are then analyzed by specific software to obtain a mapping of the information network and the related indications - called density, centrality and proximity - which describe the position of the subjects in the network based on their relationship relationships. This allows an organization to understand and improve the relationships between the subjects of a network, capable of facilitating or preventing the creation and sharing of knowledge. Applied for example to knowledge management, SNA can identify patterns of interaction between actors, both these structures and individuals, understanding the number of connections and showing the information jams that translate into facilitation or stiffening of work procedures. A complete SNA analysis allows you to:

- interpret the lack of connections between the actors of a network;
- highlight ideas for improvement to accelerate the flow of knowledge and information;
- recognize the groups and individuals who have central roles and vice versa identify those who remain isolated;
- discover the bottlenecks that block the circulation of information;
- raise awareness and value of the effects of informal networks;
- understand the cases in which the increase in information flow can have a greater impact on activities and efficiency.

To facilitate the interaction between all the actors involved (companies, research institutions, end users), the project envisages the opening of a common virtual space for the exchange of data and project documents, intermediate and final, by activating a project e-mail box and configuring a shared data storage platform. It is also planned to create a dedicated project site (acting as a document repository and as a remote office for the expanded sharing of project activities and their respective outcomes, including a user registration system), to allow along the way the updated development of project activities, step by step, and to share operational strategies and results. To this end, CMS (Content Management System) and KMS (Knowledge Management System) technologies will be used to make it possible to share and facilitate the collection, retrieval and sharing of knowledge. KMS, in particular, can create, collect and classify information from various data sources in an organized and structured way.

In particular, the project envisages the preparation of:

- a cultural attraction of particular value to the Region (for example the MARTA or Castel del Monte or another of the main Apulian castles) with the potential involvement of the Pugliese Museum Center;
- a tourist hub (such as Bari or Brindisi Airport or the Port of Bari or the Port of Brindisi) with the potential involvement of the SEA or the local Port Authorities/cruise ship companies;
- a conference centre that hosts a possibly international congress, with the potential involvement of the Tourism Section of Confindustria Puglia

In the same way, pursuing a logic of continuous product improvement, a marketing survey will be carried out (mainly in the form of exit surveys, questionnaires, and focus groups), able to provide valuable information on strategies (hospitality, information, assistance, exposure, interactivity, etc.), to involve and satisfy existing (or potential) audiences and win over new visitors, also taking into account logistical aspects concerning the location and accessibility of the cultural asset. Thus, the strengths and weaknesses of the offer will emerge from it, on which we will try to intervene in a logic of continuous quality improvement. In addition, the administration of questionnaires addressed to the final user through a qualitative survey with one-to-one interviews carried out on a sample basis will allow the processing of the data collected to verify the validity of the effects that can be generated by the model adopted for the construction. of the final product.

The strength of the IMPACT project is the approach towards the enhancement of cultural heritage through the edutainment model, which is the branch of e-learning that allows you to learn school and extracurricular concepts playfully, through multimedia training contents. A project aimed at the substantial need to communicate while having fun because it approaches the good as a generating element of experience and, therefore, emotional involvement. The technologies used to allow the user to increase the possibilities of experiencing cultural heritage by providing a series of innovative tools by applying narrative-cinematographic techniques, capable of striking first the heart and then the head of the spectator. The result can only be that of triggering the desire on the part of the user to discover more and, therefore, to visit.

The use of new technologies, such as Augmented Reality and Virtual Reality, allows the three-dimensional visualization of the cultural sites affected by the project, highlighting the characteristics of the main monuments and observing the changes that time and man have brought, to arouse curiosity and emotion in the visitor, pushing him to undertake less explored tourist routes, but no less interesting and stimulating. In addition, content such as 360 videos, 360 images, images both reconstructed in 3D and also filmed in 3D, texts, sound suggestions, and multisensory effects will be implemented, through the presence of an avatar figure who will appear next to the visitor and who will introduce him to the journey. of discovery.

The final result will focus on conveying an emotional story linked to the cultural and natural heritage of the respective geographical areas, highlighting the peculiarities and identity characteristics of the same.

The common thread of the needs expressed by the End Users is to promote interest in "minor" cultural sites and sites, ie places which, despite having significant points of interest, do not enjoy an adequate flow of visitors.

In particular, the model aimed at increasing the interaction of cultural sites provides for the preparation and creation of an "immersive environment" with the aid of "Cinema 4D" technologies for the multisensory and multidimensional viewing of films, combined with viewer solutions for Virtual

Reality, able to offer users highly emotional experiences, as well as the implementation of viewers with immersive technology able to guarantee a high level of immersion and interactivity

In a Virtual Reality (VR) environment it is possible to come into contact with some fundamental characteristics of virtual reality, which are:

- navigation;
- interaction;
- immersiveness.

By navigation, we mean the possibility of being able to explore the 3D scene made available by carrying out real personal navigation without it being a predetermined path and the same for everyone, in this way each user will enjoy a unique experience. What makes a VR application stand out is the amount of interaction present in the video game. Virtual reality and augmented reality among the various multimedia technological means available today, are the expedients that come closest to forms of art and creativity.

The use of new technologies should be able to satisfy the objectives in terms of fruition through tools that allow a whole new dialogue between the public and cultural institutions.

There are many ways in which cultural reality becomes part of the user's reality. The relationship between information and communication technologies (ICT) and cultural heritage has increasingly extended by advancing into different areas, for example by applying, and transforming itself to the processes, methods, criteria and tools for the acquisition and processing of cultural data and information. Initially, ICT and the relationship with cultural heritage were directed towards the renewal of libraries, museums and archives to expand the functions from that of conservation to those of promoting culture.

## 7. Participatory involvement

The relationship between technology and culture is substantially changing the way art is used, modifying the way of visiting an exhibition thanks, for example, to the inclusion of multimedia installations that make the experience more impactful, thanks to the presence of large screens, augmented reality viewers and apps to be installed on your phone have the purpose of involving the visitor by making him live a multisensory experience. The addition of technological tools and communication via the web also had an impact from an economic point of view, the digitization of the works and archives combined with the latest generation means of communication allowed a reduction in costs, increasing efficiency. and at the same time bringing the public closer together thanks to the possibility of offering a more targeted experience by monitoring visitors and analyzing their feedback.

For several years, both at the European and national levels, the authorities have been pushing towards a greater connection between culture and technology to guarantee the definitive transformation of cultural institutions into "socio-cultural platforms of integrated development" capable of allowing active communication with their public and fruition of one's cultural heritage without geographical boundaries and projected towards a future in which sharing and the open access model will be ever greater.

Virtual technology certainly does not want to replace real experience but aims to broaden the user base by supporting cultural institutions in educational and didactic roles, through participatory processes through contents also generated by consumers themselves.

Today, with the radical change of cultural sites due to technology, another change is emerging that we can rename the birth of culture 2.0, that is, people are no longer limited to watching or consuming

cultural content; they modify, look for new meanings, create original cultural contents, they are no longer simple visitors but real content promoters.

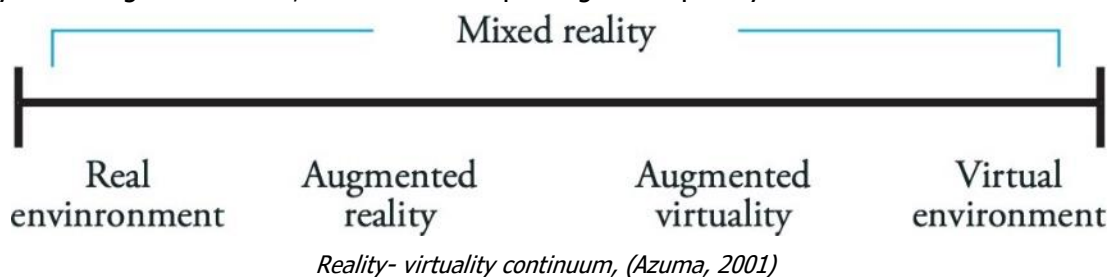
According to the model identified by the project, the user can interface with cultural contents in five ways: he creates them (creates), archives them (store), shares them (share), searches / finds them ( find ) and learns from them., that is, learn ( learn ). In a traditional cultural institution, the user is limited in actions being able to access only the last two and the type of cultural consumption oscillates between reactive consumption and proactive consumption (i.e. between a normal visit and a visit in which you consciously choose what to know and how to deepen it). A fundamental aspect, already mentioned, concerns the differentiation of the targets to which the project should hopefully address, developing intellectual perspectives with heterogeneous points of view for its audiences: the educational effectiveness of the cultural asset concerned in the involvement of users depends, on fact, on the presentation of cultural contents and detailed contexts, in which a specific topic is treated and it is not possible to classify the effect of the impact of the visit even on similar individual characters; rather, it is determined by the unique elements that each user finds in their own experience and the process of active participation in the experiences.

In a cultural site 2.0, on the other hand, the actions that the user can put into practice are varied, and the degree of participation of the user varies according to the number of tools made available by the cultural reality (collaboration on a wiki or a blog, free presence on social networks, participation on virtual platforms, creation of galleries or personal collections, creation and/or sharing of cultural content on common platforms, etc. ). Users can therefore independently create content for both private and public use, thus enriching the cultural experience of the company.

The co-participated planning will be carried out through kick-off events/workshops of the activities aimed at the presentation of the project and its purposes, the creation of permanent panels/forums with the use of digital technologies for the active and continuous involvement of citizens and focus organization group with the final user, extended to any territorial stakeholders.

The achievement of the goal will be pursued through the use of new technologies, in particular those related to Augmented Reality and Virtual Reality, capable of arousing curiosity and emotion in the visitor.

Augmented Reality (AR) or Augmented Reality is a variation of the so-called virtual environment (VE), commonly known as virtual reality, which consists of a fictitious environment in which the human subject has the opportunity to interact. The simulation would rarely be total as only some senses would be involved. The first tangible difference between virtual reality and the augmented reality environment is the possibility of enjoying the surrounding environment, more precisely, in the first case the person who is exploiting VR does not have the opportunity to see what surrounds him in the world. real, while AR is a virtual reality technique, through which information is added to the real scene. AR amplifies reality by enriching it with data, without ever replacing it completely.



Virtual objects and real objects coexist at the same time and in the same place. The three main features of augmented reality are as follows:



- Combine real objects with virtual objects in a real environment;
- Real-time interactivity;
- 3D recording;

First, augmented reality is neither limited to particular display technologies such as a head-mounted display (HMD), nor a single sense such as sight, AR can potentially be applied to all senses, including hearing, touch, and smell. Finally, the removal of real objects by superimposing virtual ones approaches known as mediated or diminished reality, are still considered AR. In current archaeology, taking as a reference a specific sector in the vast set of Cultural Heritage, virtual reconstructions are acquiring ever greater importance. The possibility of being able to restore its integrity to what is in ruins, through original volumes and colours, without actually and physically intervening in the finds is certainly very interesting. Especially since these reconstructions are not only three-dimensional but can be experienced just as if you had real architecture in front of you.

Two different technologies but with the same purpose or the **involvement** of the whole body with effects generated by a computer, so realistic that they are welcomed as a real experience.

The levels of participation are how the good involves the public, from a state in which it was only receptive to content, it begins to interact with institutional initiatives until it becomes active and participatory in the creation of content and events. This shift also has a positive effect on learning which is transformed from linear to participatory, evolving thanks to digital tools. In the first level, the involvement of the user occurs during the experience of using the heritage. The visitor can provide personal contributions relating to objects and collections on display but the reinterpretation for the enhancement of these contents is conducted institutionally.

Advances in multimedia technologies have made it possible to create reinvented cultural displays, the new tools, if properly used, can make the user's enjoyment more interactive, increasing the level of participation and consequently of learning. Digital technologies represent a great resource that museums can exploit to create new attractions.

The project also adopts an inclusive design work model, based on dialogue and network cooperation between the multiple subjects involved in the process of generating and implementing the concept and project activities, which sees companies interacting in a coordinated form. research bodies, designers and the plurality of users with an interest. In addition, it offers the possibility of experimenting with new and creative ways of interaction, contextual to the experience, augmented reality and virtual reality are active technology that offers opportunities for "immersion" and involvement also on a cognitive, emotional and relational level.

The technologies used in the project will make it possible to guarantee effective experiences of knowledge and public enjoyment, in particular:

- website: increases cognitive accessibility to places of interest, allows the transmission of educational content for various targets, allows the adoption of a more accessible narrative style;
- social media: they favour 2.0 communication, enable the co-creation of content by the public, and allow the public to participate in the experiential life ;
- digital and immersive environments: 3D modelling and printing, Augmented Reality (AR), Virtual Reality (VR) and video mapping - offer new forms of learning, make knowledge accessible/usable and allow the visitor to personalize the visit;
- gamification: facilitate interaction between gamers and places of interest and its contents (involvement), facilitate learning in terms of edutainment and learning by doing, promote



iteration that enhances learning, and arouses emotions; offer storytelling and familiar interaction to millions of players;

- video footage in very high definition: they offer new forms of learning as you see details of works not visible to the naked eye, and increase the emotional involvement of visitors due to the incredible realism of the shots.

The effect produced can only be an intelligent cultural asset that, by adopting strategies for the active involvement of visitors, can successfully mediate between the work, artist and user, and therefore favour and facilitate the understanding of the work by the visitor. From the point of view of learning, emotional participation and involvement contribute to making the absorption and memorization of information in the long term much more immediate and direct.

In terms of audience development, the use of digital environments allows you to position the user at the centre and involve him actively and emotionally, reduces the sense of inadequacy and transforms visitors from a spectator into co-creator.

The expected results of the project can be divided as follows:

- Improvement of the conditions and standards of offer and use of cultural heritage in the various areas of attraction concerned;
- increase in the number of visitors and use by resident and non-resident citizens through the strengthening and diversification of the offer of major attractors; qualification and increase of the cultural offer of the great cultural attractions and so-called assets. minors connected to them;
- economic and social growth of minor cultural centres with potential for attraction, through a greater link between attractors and neighbouring territories through the enhancement of common cultural themes which also favours a better distribution and/or a potential increase in tourist flows;
- social inclusion, with particular attention to the youth population and people with disabilities, through the innovation of the methods of use and communication languages of cultural attractors.

Finally, the maximum use of the technologies listed above will make it possible to convey an emotional story about the heritage of the cultural and natural riches of the respective geographical areas, highlighting the peculiarities and identity characteristics of the same and acting as the fil rouge of an ideal, suggestive and engaging journey of discovery and knowledge through time and space.

## **Sezione B2. Information system and site for managing the interaction model**

### **1. Abstract of the IMPACT project**

The basic idea of the IMPACT project is to install high-tech multimedia stations in some of the main crossroads of regional tourist flows, to promote 'minor' places, not only by providing information, but above all by involving users in an immersive experience in able to arouse curiosity towards less explored tourist routes, but no less interesting for this.

Through the co-design of themes and contents provided by the workstations, it will be possible to use the potential of new technologies as promotional tools for territories that, despite having significant points of interest, do not enjoy an adequate flow of visitors. The co-participated planning will be carried out through kick-off events/workshops of the activities aimed at the presentation of the project and its purposes, the creation of permanent panels/forums with the use of digital technologies for the active and continuous involvement of citizens and focus organization group with the final user, extended to any territorial stakeholders.

The co-design and research work will result in the creation of an effective, attractive and engaging final prototype, which is configured as a tool capable of generating a virtuous process in the medium-long term and stimulating positive effects on the socio-economic system. The achievement of this goal will be pursued through the use of new technologies, in particular those related to Augmented Reality and Virtual Reality, capable of arousing curiosity and emotion in the visitor. The experimentation of the project prototypes, fundamental to verify the correspondence to the expressed wishes, will be carried out in concert with the user to maximize the emotional effect on the users. The prototype will subsequently be presented to the public through the demolab mode that will be programmed in selected locations within the region.

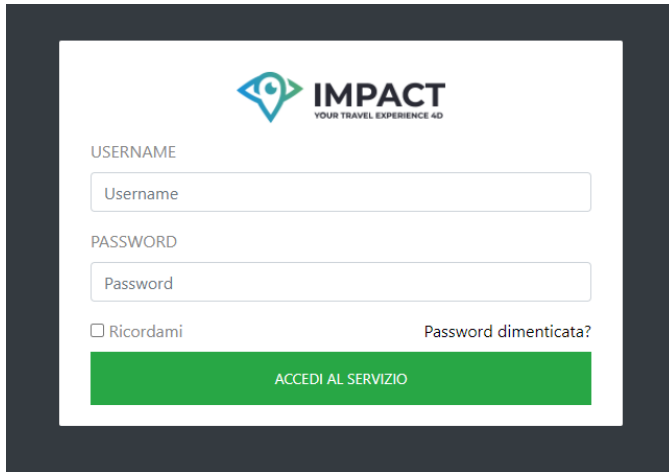
### **2. The support information system**

The system called "IMPACT KMS" consists of the following macro areas:

- Document repository;
- Storage for sharing prototype project files;
- PDP - SAL of the project;
- Partners area;
- Differentiated access for partners;
- Deliverables collector ;

The KMS aims to act as a reference system for sharing project data between various partners and end users. Furthermore, it allows the storage of those multimedia visible audio contents created for the project prototype.

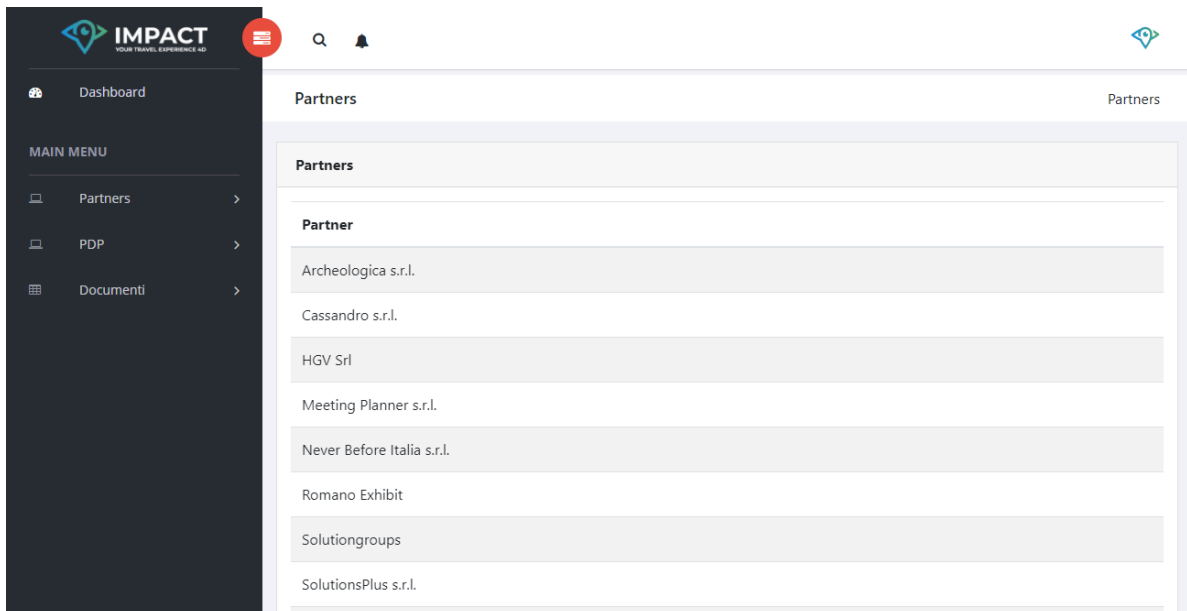
This area will contain files necessary for the configuration and updating of the multimedia workstations envisaged by the IMPACT project. The KMS system will retain the video and multimedia content updates necessary for the prototype to function.



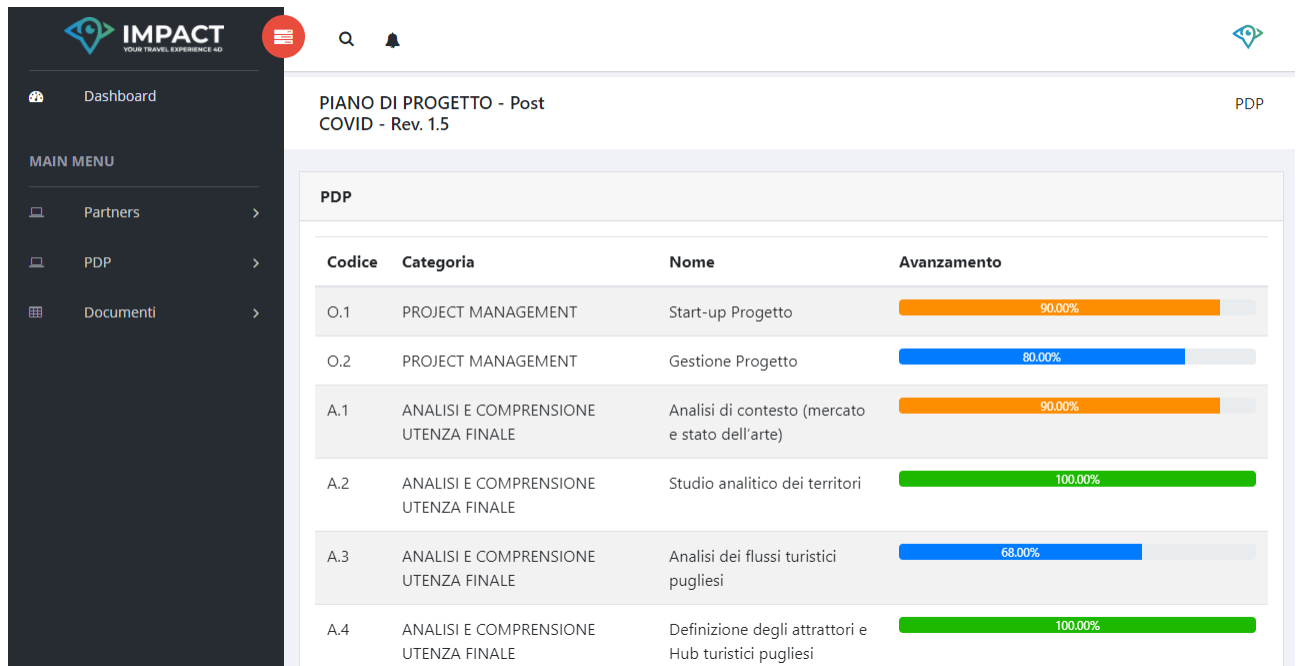
The login form for IMPACT features the logo at the top, followed by input fields for 'USERNAME' and 'PASSWORD'. Below these are checkboxes for 'Ricordami' and a link for 'Password dimenticata?'. A green button labeled 'ACCEDI AL SERVIZIO' is at the bottom.

Differentiated login for partners with different access privileges.

A privilege-based system allows you to enable different areas and features for KMS users.

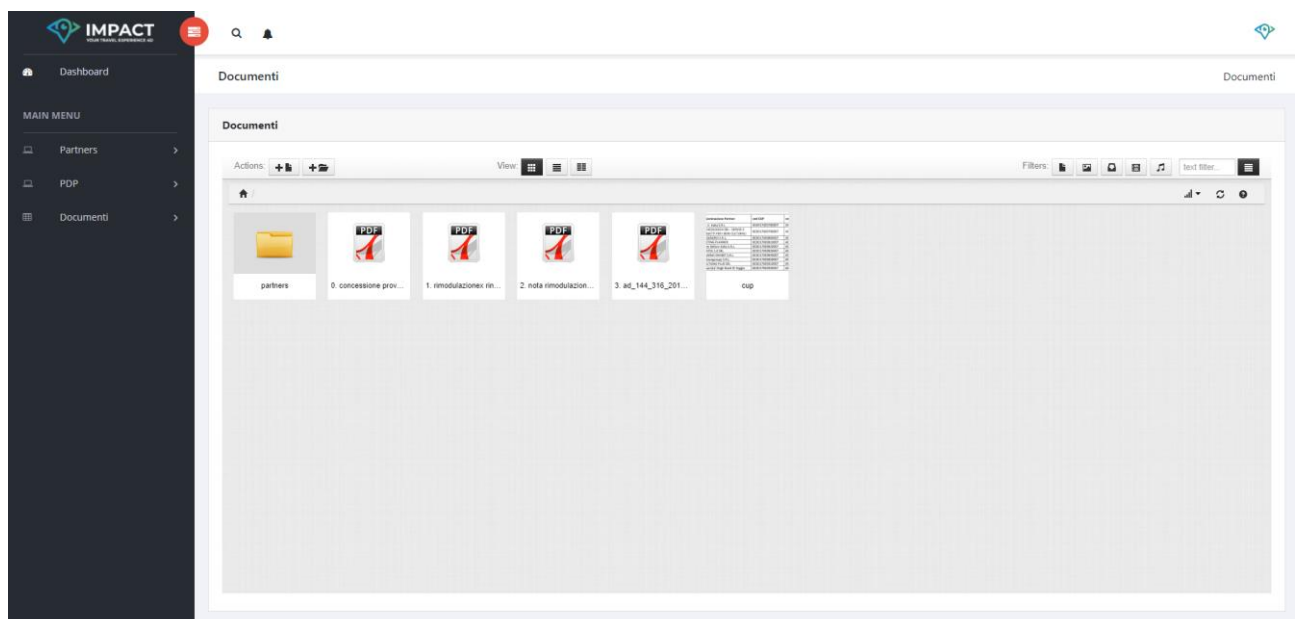


Project partners area for sharing information between the various partners.



### PDP Area - Work progress status

This feature allows you to view in real-time the work progress of the tasks identified by the PTO.



### File Sharing Area between Partners

## 3. Coordinated image

The IMPACT project involves the study of a brand and a coordinated image for online and offline use, for marketing campaigns.

Various hypotheses have been developed for the colours, style and logo of the IMPACT brand.



The logo chosen by the partners for the brand is



The logo is the union of two vectorized symbols: an eye that recalls the visual experience that the user will live with immersion in a 360 ° video experience and a pinpoint (a drop in reverse) often used in the Industry software as a symbol of technology and geolocation.

The dominant colours used for the coordinated image are blue and green (sky and nature) which recall the journey between the natural parks and tourist destinations of Puglia.

#### 4. The project website

The address of the project website is [www.impactpuglia.it](http://www.impactpuglia.it)



The IMPACT project, with a strong focus on the use of innovative technologies, finds natural space for its promotion and dissemination on the web and social networks.

In this regard, the development of the web portal, the business card of the IMPACT project, and the development of social pages on the most important social networks are of great importance.

The web portal, indexed on search engines, will allow the dissemination of information regarding the project, news, information on installation and use of the prototype, online events, dissemination of project deliverables, and information on partners and financiers.

A dedicated area allows end users to contact the project partners.

## 5. Analysis of the requirements of the web portal [www.impactpuglia.it](http://www.impactpuglia.it)

Following an analysis of the requirements with all the IMPACT project stakeholders, it emerged that the areas of interest to be developed are:

- **home page**

The main page of the web portal contains images and basic information about the project useful to understand, at first glance, the scope of the project. The "action calls" serve to simplify the use of the site and guide the visitor to the internal pages that detail the various areas.

The home page of the site shows the points of greatest interest and the attractors interested in the virtual tour of the IMPACT project.

To immediately provide important information about the project, the FAQs have been prepared directly on the home page of the site, which answers the most frequently asked questions of visitors in a few lines.

The logos of the lenders (European Union, Ministry of Economic Development, Puglia Region, FESR-FSE 2014-2020) make up the " footer " of the site.

Menu, Cookies Policy and Privacy Policy, together with links to social networks complete the footer and are repeated on each page.

- **Description of the project**

The first internal page of the site is related to the brief description of the project. Simple and concise texts give the visitor a general overview of the project, immediately defining IMPACT's Mission and Vision.

- **Information on Partners**

Descriptions, logos and links to the respective websites of all the partners involved in the project. Each partner will provide a brief description of their company/institution and area of work within the IMPACT project.

- **Analysis of Attractors**

This section of the portal is dedicated to the cultural attractors of the Apulian territory, points of interest subject to the analysis of the IMPACT project.

The attractors identified are:

- The Dauni Mountains
- The Ionian Arch

For both points of interest, the analyzes carried out by the project partners are available on the portal:

- Naturalistic analysis
- Monuments analysis
- Tradition analysis

- **Repository for storing documents and deliverables**

At the end of the IMPACT project, all the deliverables will be published in this section and then made available to the public. The papers will be published in 2 languages, Italian and English.

- **News section**

This section will contain all the latest news regarding the IMPACT project.

- **Video section**

A selection of videos was made during the prototyping and DemoLAB phase. To maximize the dissemination of content, these videos will be uploaded through the YouTube platform.

- **Frequently section Asked Questions**

FAQ section is useful for providing useful information quickly and accurately.

- **Contacts**

Contact form.

## 6. Technical information

The KMS system is made according to the following technologies:

- PHP 8.0;
- DB PostgreSQL 13;
- Proprietary development framework;
- VM Server Linux CentOS - cloud 1Gbit upload / download;

The proprietary framework guarantees maximum flexibility and security in terms of vulnerability.

The web portal was created with the following technologies:

- PHP 8.0 ;
- MySQL DB ;
- VM Server Linux CentOS - cloud 1Gbit upload / download;

The server and the data are stored in an IT infrastructure in Italy.

To allow a constant and simple update, by all the interested partners we proceeded with the use of a CMS based on the WordPress framework. Simple to use and common use tool.

Layout and functionality have been “customized” according to the specific needs of the project and according to the guidelines dictated by the coordinated image.

The site is built according to W3C standards. Compatible with any modern browser and with a responsive layout to be used from any device, including mobile.

The servers have an automatic backup system to ensure system security and stability.

Backup

- Daily DB dump ;



- Daily VM backup;

Desktop version template



Mobile version template



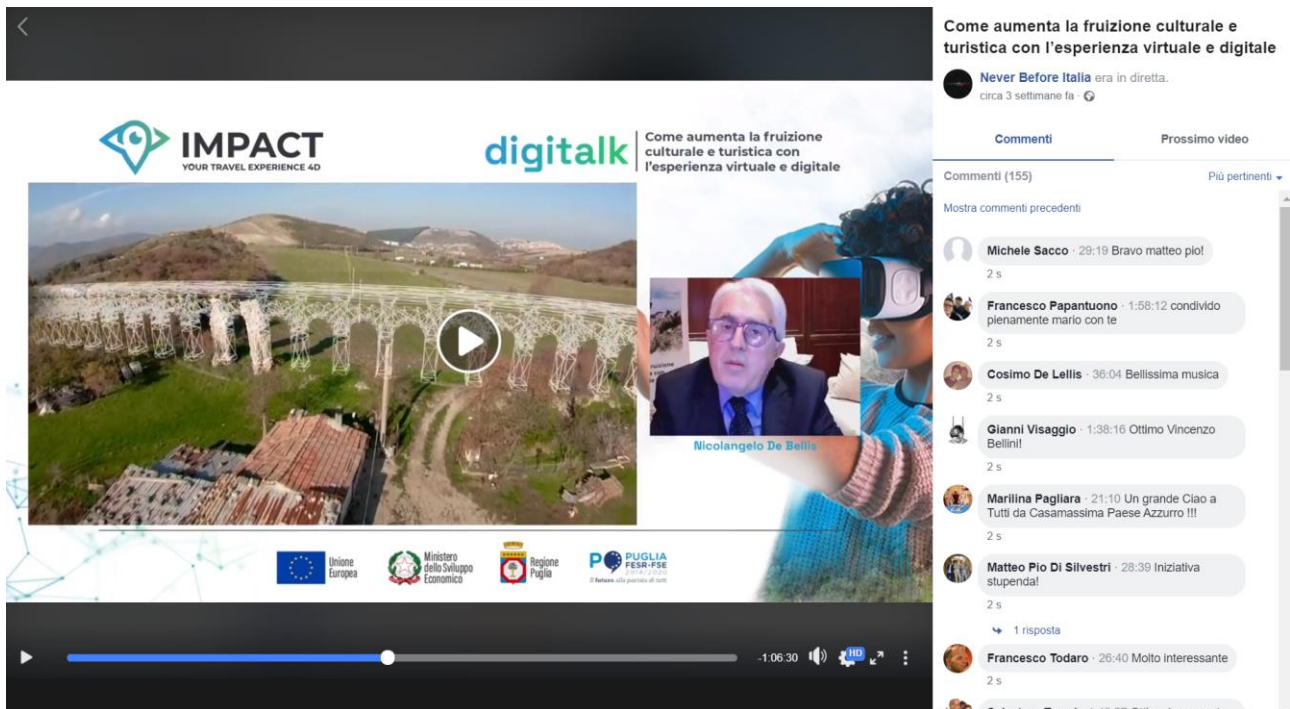
## 7. Dissemination via social networks

The dissemination of the news and initiatives of the IMPACT project has also been largely entrusted to social tools. To this end, a dissemination plan has been prepared through the major platforms.

Project social profiles have been created on the portals:

- **Facebook** - <https://www.facebook.com/events/746805019586450/>

Following the COVID19 emergency, it was also necessary to organize video streaming events for which social networks were of fundamental importance.



Link to the event :

<https://www.impactpuglia.it/come-aumenta-la-cultura-e-il-turismo-attraverso-lesexperience-virtuale-e-digitale/>

<https://www.facebook.com/events/746805019586450/>