

## Destination Management Organization in the Digital Era: A Data Framework to Leverage Collective Intelligence

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**Abstract :** In the post-pandemic recovery phase of tourism, the role of a Destination Management Organization (DMO) as a coordinated management system of all the elements that make up a destination (attractions, access, marketing, human resources, brand, pricing, etc.) is also becoming relevant for local territories. The objective of a DMO is to maximize the visitor's perception of value and quality while ensuring the competitiveness and sustainability of the destination, as well as the long-term preservation of its natural and cultural assets, and to catalyze benefits for the local economy and residents. In carrying out the multiple functions to which it is called, the DMO can leverage a collective intelligence that comes from the ability to pool information, explicit and tacit knowledge, and relationships of the various stakeholders: policymakers, public managers and officials, entrepreneurs in the tourism supply chain, researchers, data journalists, schools, associations and committees, citizens, etc. The DMO potentially has at its disposal large volumes of data and many of them at low cost, that need to be properly processed to produce value. Based on these assumptions, the paper presents a conceptual framework for building an information system to support the DMO in the intelligent management of a tourist destination tested in an area of southern Italy. The approach adopted is data-informed and consists of four phases: (1) formulation of the knowledge problem (analysis of policy documents and industry reports; focus groups and co-design with stakeholders; definition of information needs and key questions); (2) research and metadatation of relevant sources (reconnaissance of official sources, administrative archives and internal DMO sources); (3) gap analysis and identification of unconventional information sources (evaluation of traditional sources with respect to the level of consistency with information needs, the freshness of information and granularity of data; enrichment of the information base by identifying and studying web sources such as Wikipedia, Google Trends, Booking.com, Tripadvisor, websites of accommodation facilities and online newspapers); (4) definition of the set of indicators and construction of the information base (specific definition of indicators and procedures for data acquisition, transformation, and analysis). The framework derived consists of 6 thematic areas (accommodation supply, cultural heritage, flows, value, sustainability, and enabling factors), each of which is divided into three domains that gather a specific information need to be represented by a scheme of questions to be answered through the analysis of available indicators. The framework is characterized by a high degree of flexibility in the European context, given that it can be customized for each destination by adapting the part related to internal sources. Application to the case study led to the creation of a decision support system that allows: •integration of data from heterogeneous sources, including through the execution of automated web crawling procedures for data ingestion of social and web information; •reading and interpretation of data and metadata through guided navigation paths in the key of digital story-telling; •implementation of complex analysis capabilities through the use of data mining algorithms such as for the prediction of tourist flows.

**Keywords :** collective intelligence, data framework, destination management, smart tourism

**Conference Title :** ICST 2022 : International Conference on Smart Tourism

**Conference Location :** Paris, France

**Conference Dates :** September 20-21, 2022