

## NEW SCIENTIFIC INFRASTRUCTURE FOR INNOVATIONS ON THE CREATIVE AND RECREATIVE INDUSTRIES

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### INTRODUCTION

Cultural heritage can be seen as an essential resource for developing and implementing new technologies in the creative and recreative industries (Dimitrova, 2009, 2012). International experts in the recreative field confirm the high potential of the water influences mixed with wellness food in support of the human health prevention (Dimitrova, 2011, 2014; Trendafilov, 2013; Nesheva, 2014, 2015, 2016, 2016a, Polimenov, 2011, 2014; Staneva, 2016).

There have been many implemented initiatives already but a large number of already developed projects in the fields of CH have not yet led to a comprehensive result demonstrating its actual place in the "past - present – future" chain or the "knowledge - application - added value" chain. CH is seen mostly as a "perfect entity", which in itself is of a high value and even priceless, but not as a foundation for future development. From this perspective, the construction of the new and specific scientific infrastructure can be demonstrating a new approach and to generate opportunity to reach new results both in research and in the social sphere and the economy. The same is directly related to increasing the level and market orientation of the research activities of the leading scientific organizations if the conditions attract highly qualified researchers for conducting high level research. As a result, a significant improvement in the potential for applied research, experimental development and innovation can be expected. Some expected contributions can be as follows: (1) an implementation of a cohesion policy at a national and community level; (2) enhancing the effect of investment in science and research; (3) a development of integrated research and innovation in different areas of science. A special added value can be expected in improving the quality of research and development innovation research in priority areas of Innovative strategy for smart specialization (ISSS) through the creation and maintenance of complex distributed research infrastructure of the highest tech-level.

### METHODOLOGY

Investments in modern research infrastructure are, in essence, investments in a high-level scientific complex that conducts research in line with good world standards. In this connection, an integrated system of facilities, resources and related services should be set up to be used by the scientific community to conduct interdisciplinary research in five scientific fields:

- Humanities and Arts (philology; history and archaeology; philosophy; religion and theology; theory of arts; art; music and dance; theatre and film);
- Social, economic and legal sciences (sociology, anthropology and cultural studies; psychology; public communications and information sciences; administration and Management; economy; tourism; pedagogy of (...));
- Natural Sciences, Mathematics and Informatics (informatics and computer science);
- Technical Sciences (architecture, civil engineering and geodesy);
- Health and sports (wellness).

Integrated system may include: (1) appropriate facilities, (2) science-based equipment, (3) toolkits and knowledge based resources (collections, archives, structured scientific information, support infrastructures), (4) ICT (networks, computer equipment, software and communication tools) and (5) all other resources of a unique nature allowing the conduct of scientific research.

The development of research infrastructure and institutional capacity can be the result of achievements in these scientific fields and areas: (1) Natural Sciences, Mathematics and Informatics (Informatics and Computer Science); (2) Social, Economic and Legal Studies (Administration and Management); (3) Technical Studies (Architecture, Construction and Geodesy).

The actual planning need to undergo three stages: (1) Identifying the needs for substantial modernization of the existing research infrastructure; (2) Designing new research infrastructure; (3) Determining specific activities for construction, equipment and use of the research infrastructure.

**Stage 1.** Identifying the needs for substantial modernization of the existing research infrastructure. At this stage is performed a critical assessment of existing infrastructure, which is currently being used as well as of real needs of completing the capacity for advanced R&D. Based on this assessment, is proposed a set of measures to modernize infrastructure. The leading criteria for assessment of current infrastructure are: (1) availability of resources for implementing the research activities (available or missing); (2) sufficiency of the necessary resources to the implementation of research activities (sufficient or insufficient); (3) quality of available resources needed for the implementation of research activities according (corresponding to modern conditions or not corresponding to modern conditions); (4) need for new resources to implement research activities (defined parameters, unit, unit price).

**Stage 2.** Designing new research infrastructure. This stage undergoes three sub-stages: (1) Specification of restrictions on construction of new research infrastructure; (2) Definition of the model and category of research infrastructure; (3) Formulation of a vision for innovative interpretation and use of CH through the infrastructure and activities. The planned research infrastructure is based on the "knowledge triangle" - education, research and innovation because it will have a critical mass of advanced scientific equipment and scientific capacity with new competencies and skills.

**Stage 3.** Definition of the construction, equipment and use of research infrastructure. The planned activities tailored to the purpose and conditions of use of the scientific infrastructure are aimed at:

- significantly improving the development potential of advanced and market-oriented research;
- carrying out independent research and development for more knowledge, which are not affected by the economic interests of individual enterprises;
- implementing joint R&D where the research infrastructure is involved in effective cooperation;
- disseminating research results widely while respecting the conditions for entitlement to inclusion, equal access and non-discrimination;
- providing education to a greater number of human resources with better qualifications;
- providing teaching in different educational levels and forms, free access to databases, open access to publications, development of open source software;
- maintaining a quality knowledge transfer system by building a sustainable environment/system for sharing them with users from different social and economic sectors consisting minimum two subsystems
  - a knowledge hub (to coordinate various sources of knowledge and to promote knowledge in all relevant communities) and knowledge webs (to sharing the experiences as an informal network to provide conditions for interaction between different user groups with common values and beliefs).

The ultimate goal in implementing the three stages should be to create the conditions for developing, implementation and maintaining of a new business model, centred around CH as an effective factor in production.

## RESULTS

From a business point of view, the development and implementation of a new business model, centred around CH as an effective factor in production is an innovation in itself (in terms of the innovative use of cultural heritage)<sup>1</sup>. Such an approach to CH may contribute to smarter, socially inclusive and sustainable development of the country and Europe. We shall emphasize that so far CH has traditionally been viewed as an object of public expenditure. CH should be seen as an integral component of economic growth, of competitiveness and well-being of societies. CH must be singled out as a production factor for economic and wider social development.

Traditionally, the economic benefits of CH have mostly been related to tourism, but today it must be seen as an innovative stimulus for many traditional and new industries. Many countries in Europe have successfully exploited these benefits of heritage to create wealth, jobs and an improved living environment.<sup>2</sup> It is these aspects of CH which are among the main reasons for forming tourist flows or export of services and products. In a nutshell, in a European context, CH has started seen as a factor contributing significantly to EU GDP. It is recognized as an essential part of the underlying European socio-economic, cultural and natural capital. CH and related services not only generate economic benefits, but enrich the environment and improve the quality of life of European citizens, contribute to their well-being, sense of history, identity and belonging. Undoubtedly, this is an important change in views on a European level, insofar as CH has until recently been regarded only as “costs”.

From a social point of view, however, an innovative use of specific CH or its integral components is required to promote integration, social inclusion and participation in the democratic processes - all elements of smart, inclusive and sustainable development. The main objectives here relate to: (a) a greater awareness and understanding of culture; (b) attracting consumers from all social groups to using new and innovative products and services derived from CH; (c) attracting consumers from all social groups for management and conservation of CH; (d) developing cultural and social capacity through education and public initiatives.

From a nature perspective, the focus must be on an innovative use of CH to achieve sustainable development of the environment. The main objectives are: (a) the inclusion of CH as part of the assessment of environmental, impacts on the quality of life, examining the relationship between immovable heritage and environmental infrastructure; (b) the contribution of CH for the welfare of urban areas; (c) new models of local management of local cultural heritage; (d) integrated management of natural and cultural heritage; (e) implementing a spatial planning approach - where CH should be positioned. The prevailing understanding is that the environment is directly related to various CH material objects such as artefacts, historic sites, architecture, etc., intangible cultural features such as traditions, stories, legends, arts and others. The “environment – CH” system is dynamic and multi-layered, but it is a system of public goods and resources. Such complex dynamic systems require appropriate means, methods and approaches to planning and management.<sup>3</sup>

Given the above one of the main results to which the activities should be targeted is to build the research infrastructure and institutional capacity, to significantly improve the potential of applied research activities related to promoting sustainable, smart and inclusive growth in competitive markets

<sup>1</sup> EC (2015). Getting cultural heritage to work for Europe Report of the Horizon 2020 Expert Group on Cultural Heritage. Directorate-General for Research and Innovation. pp. 5- 6.

<sup>2</sup> For more details: Ibid, pp. 7-9.

<sup>3</sup> For more details: Ibid, pp. 19-20.

through excellence in the following scientific areas: (1) Natural Sciences, Mathematics and Informatics (Informatics and Computer Science); (2) Social, Economic and Legal Studies (Administration and Management); (3) Technical Studies (Architecture, Construction and Geodesy).

The new infrastructure, on the one hand, can be based on innovations in the formation of a new technological complex (Cloud Computing, Data Center, Virtual Reality and others). On the other hand, can be innovations based on the pooling of expert teams in interdisciplinary areas for interdisciplinary research and practice in a sphere that is currently fragmented and closed as a product within the narrow boundaries of specialized institutions and teams.

The contribution to the development of the thematic area can be expected at several levels: for science itself and its development, community development, modernization of established practices and the introduction of new, etc. At the level of development of science, they provide: the introduction of new research approaches and practices; formation of new knowledge about CH; conducting research at a high level through an interdisciplinary approach; significant publications in international journals; formation and development of digital humanities; etc.

### DISCUSSION

To build a new research capacity, to achieve the commercialization of scientific products and to link the results to the real needs of the social sphere and business, the specialization of research and development teams should be enhanced by interdisciplinary activities at two levels: (a) between different fields in the same science; (b) between scientific fields from different science.

The results from an interdisciplinary research based on a modern research complex will be directly applicable in practice associated with the life cycle of processes in science, education, social sphere, business sphere. Real contributions are expected to derive from forming a corpus of new knowledge or of significantly improved knowledge, the development of applied products and electronic service, which in turn are associated with the scientific fields mentioned above.

A key advantage of the new integrate research infrastructure can be related to its interdisciplinary and the capacity building for research in the specific scientific fields, in the frontier areas of science and in the interdisciplinary areas. The efforts of the teams that will work in border areas will contribute to the formation of new scientific and applied fields such as digital humanities. It is realistic to expect another major outcome, namely added value of the “knowledge – product – commercialization” chain.

### CONCLUSIONS

In conclusion, on the basis of our survey, we propose conclusions, as the following:

1. On European level, the Recreative industry has needs for well-educated Staff and researchers;
2. The Bulgarian scientific model has one new accredited program on doctoral level for Wellness”-health promotion and the new requirements for a high level scientific innovations in the field of Recreative&Wellness industry and niche tourism;
3. In Europe and the Balkans will be created the first Centre for Excellence for “Creative and Recreative Industries”;
4. The innovations for the Wellness Industry and Tourism require interdisciplinary knowledge and research combined with an understanding of the Wellness Culture.

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