ViMM Virtual Multi-Modal Museum

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H2020 – COOP8 - CSA - Project Contract Number 727107

OUTPUTS OF THE THEMATIC AREA 5: DEMAND – WORKING GROUP 5.2

TA5-Demand (https://www.vi-mm.eu/ta5-demand/) looked at ways in which Digital Heritage in general, and VMs in particular, can support economic and social development by identifying key stakeholders and drivers of demand across sectors (WG 5.1); defining adapted strategies of sustainable development (WG 5.2); and gathering tools and methods for impact assessment (WG 5.3)

WG 5.2 aimed to explore new models of governance of Virtual Multimodal Museums and to discuss the challenges and transformations in the structure and processes of the organization's operations, resources, personnel skills, know-how and structure their objectives with external experts and social economic actors. The intelligent governance and the step-by-step management of virtual multimodal museums as digital cultural projects may include: concept and content design; choice of technologies; elaboration of operational method; setting up of the business plan; conciliation of interests from internal and external stakeholders; financial sustainability; investment and operation costs; renovation of technologies and maintenance; training of staff and adaptation of the institution structure; reuse of resources; choice parameters; decision-making process tree.

The step-by-step process identified 4 phases, that are further described below:

1. Idea generation/concept
2. Elaboration of the design, study, planning
3. Development and implementation
4. Operation and maintenance

I. Idea generation / Concept

Internal Actors possibly involved	Curators, educators, technology experts, policy makers, marketers, media (and social media) experts, volunteers, all staff members.
External Actors possibly involved	Curators and cultural heritage professionals, educators, technology experts, policy makers, social actors (unions of professionals in relevant sectors, non-for-profit organizations), private companies, educational organizations, scientists and researchers, simple citizens.
Process of access of the various actors to the decision-making body or person (formal, informal)	In some cases, upper administration levels of the project owner organization it is formal (official meetings for brainstorming, ideas presentation, reports). In most cases informal. This is considered a major obstacle to innovation and the introduction of new digital approaches to CH, because the process is not sufficiently clear and transparent either inside the organization either from external persons. The difficulty for each one of the possibly involved actors to reach the decision-making person/s that could consider the idea, is considerably different for each group. The existing process of governance at this stage appears mostly exclusive, lacks transparency and clear rules, resources (time of the decision makers, motivation of the proposers). Some axes of improvement, research and institutional policy actions have been proposed and are presented in the next chapter.
Level of analysis of the project to be achieved in this stage in order to be considered for the next stage by the decision-making person	The concept should be brought at a level including: overall objectives on specific cultural assets valorization and digital technology idea, initial estimate budget, estimate time frame of implementation and operation, main challenges and risks, description of the study and design needs. The overall objectives should include the cultural assets to be used, the expected scientific value, the commercial and public benefit estimation, draft requirements for the detailed study and design. Estimate overall cost of implementation, and general description of the operation process (internal external, public, etc.). The proposer/s, who is not always an expert in all the fields, should be guided through the process, have easy access to general relevant information and resources to develop his/her idea, and be motivated to invest effort in the elaboration of the idea.
Decisions to be taken in this stage	-To invest further to the design stage and allocate resources for the design of the project. -The actors to be involved in the design stage.

Obstacles and resources requirements	-Unspecified process of contact between possible idea´s generators and decision-making person or body. -Lack of institutionalized resources and incentives to cover time and effort of the generator. Uncertainty for the fate of the idea (even if it is going to be considered). Lack of information and resources generally available, training, skills and networking, particularly for middle and low-level staff of the organizations. -Lack of institutionalized resources (worktime) of the decision-making body and/or persons to properly evaluate, reject and further process the ideas. -Lack of knowledge and openness of the decision-making persons and bodies concerning digital heritage issues. Lower priority of innovation and digital culture in many traditional cultural assets owners.
Proposed improvements	-Make available through web platforms internally and externally a simple and defined form to the fill in the basic data of the idea by the idea generator´s, create processes such as standard continuous open internal and external calls, competitive calls with prizes for new VM ideas. -Create incentives for the internal and external idea generator´s (prizes, professional evolution, involvement in the next stages of the project if approved, etc.) -Educate and improve skills of decision making persons and bodies by training, networking, to develop a culture of digital innovation in the cultural heritage and improve their understanding of the process of change -Dedicate resources (mainly institutionalized time) in the governance process of the decision-making bodies and persons to evaluate new ideas.
Conclusions	The importance of this first stage is generally underestimated and bottleneck situations are created impeding to achieve a high level and quality of new digital concepts in cultural heritage. Significant improvements are required in various fields of action: organizational, culture of governance, training and education of decision makers, access to information, resources and networking for involved actors, adequate institutionalized process, and motivation.

	II. Elaboration of the design, study, planning
Internal actors possibly involved	Board of Directors, cultural managers, operational managers, project managers and coordinators, curators, technology experts and administrators, marketing experts or departments, media and social media experts, financial departments.
External actors possibly involved	-The designers: Independent experts in digital heritage and designers, subcontracted companies, IT and digitization companies, architects, economists, research organizations -Other actors involved: local and public authorities, educational organizations, tourist industry, external cultural assets owners, research institutions and researchers
Process of Involvement (formal, informal)	-Formal (through contract): External: in case of direct contract to a company or individual experts for the design and study purposes. Or in case of organized process of input provision (such as with local authorities, cultural assets stakeholders), researchers. Internal: (through established process and allocated resources) to be clearly formalized in the process of involvement of various departments and persons of the institution. -Informal: for other know-how and information providers, beneficiaries of the operation of the new museum, tourism system, educational system (in most of the cases).
Level of analysis of the project to be achieved in the design / study	-Detailed objectives of the project (cultural, operational, technological, economic) -Definition of expected benefits for the organization -Detailed operational plan including, organizational structure, IPR issues, business plan, marketing and promotion plan and relevant costs and efforts, income and expenses of operation, requirements of resources and skills for the operation, the update and the maintenance in larger time periods (i.e., 5-10 years), draft maintenance and update long term contracts with the technology developers including liability and guarantees. -Technologies to be used: stability, robustness, innovation -Detailed implementation and development plan of the digital heritage project: technology, hardware and software, time frame, implementation process and collaboration with owner´s internal structure and personnel departments required, training of operational and maintenance personnel, risk management and alternatives.

	- Modular and transparent detailed budget, contingency budget -Tender documents in case of external development, following the legal framework of the country and organization.

Decisions to be taken in this stage (risks and challenges)	-Negotiate and accept the detailed objectives of the design including the level of detail of the deliverables of the study.
	
	-All the major decisions in a step by step design to be taken by the project owner in collaboration with the designers in the following order:
	
	-A. Cultural Assets to be developed through digital application (tangible, intangible) and operational objectives and business plan. Taking into account
	
	  -A1. Various possibilities of technological solutions and respective costs and requirements
	
	  -A2. Cultural, added value of each technological solution
	
	  -A3. Operational added value of each solution
	
	  -A4. Marketing and business added value of each solution
	
	  -A5. Other social benefits of each solution outside the organization
	
	  -A6. Other economic benefits and returns of each solution outside the organization and returns
	
	-B. Revise and accept the details of the study, provide feedback to the designers
	
	-C. Evaluate and accept the final study

Resource requirements and obstacles	-Underestimate the importance of the design stage and precipitate in the implementation intuitively without a complete a detailed study. The main obstacle is the fake impression of the decision makers that the resources spent in the design could be invested the implementation and operation. The various examples that the experts presented prove the contrary. That lack of investment of resources, time and effort in the design raises the cost of implementation and could undermine a sustainable operation. -Lack of sufficient resources (personnel and funding) for the design. -Lack of internal expertise and understanding for adequate monitoring and coordination of the design with internal and external stakeholders. -Lack of internal collaboration and multi/trans-disciplinary vision of governance

Proposed improvements and solutions	-Establish clear requirements of detailed design before any digital projects is approved for the implementation phase. -Elaborate internal policies to dedicate resources in the design / study phase. Establish adequate budget lines and personnel resources for the design phase. Establish independent assessment processes for the design produced. -Change public policies and regulations, standards, incentives and investment in the design and study of digital heritage projects. -Establish clear rules for the evaluation and approval of the studies including ethics of responsibility of experts designing digital cultural projects and applications following their professional standards. -Establish structured processes (including priorities between the various project objectives) for the communication between designers/experts and various internal and external stakeholders. Establish a pool of experts in the field to be consulted in the stage of design for additional know how. -Extend networking and increase participation in professional networks such as ViMM platform and any other opportunity to increase know-how and awareness. -Educate decision makers in the digital project risks and requirements and the possibility to reduce the costs and the risks through a well-defined study and design process. -Develop a multi/trans disciplinary governance and multi/transdisciplinary profiles of decision makers and managerial teams in the cultural asset's owner's organizations, in the technology and expertise providers and in the public-sector policy makers.

III. Development and implementation	
Actors involved internally	Board of Directors, cultural managers, operational managers, project managers and coordinators, curators, technology experts/departments, data administrators, technical support, HR management, marketing experts or departments, media and social media experts, financial departments.
Actors involved externally	-Subcontracted companies, independent experts, researchers and universities/research centers, for implementation know-how and problems solving, and monitoring process, local communities and external cultural assets stakeholders, business community (through business involvement, tourism, advertising, donations).
Process of Involvement (formal, informal)	-Formal: External through subcontracting and various contracts and established procedures of collaboration / acceptance with internal departments. Through procedures and framework agreements with other organizations. Internal through procedures of management, monitoring, and final acceptance procedures, collaboration and feedback provision to external contractors. -Informal: Through contacts and communication (business community, market approach, network of experts like Vimm's).
Completion of the project and acceptance	-Verification of achievement of a full operational level, as foreseen in the design, following testing, pilot operation, adjustment and acceptance, before mass launching.
Decisions to be taken in this stage (risks and challenges)	-Technical decisions. -Changes due to deviations, failures, technology changes, to be examined and approved. -Commercial and operational planning adaptation. Selection of the operational personnel, training and implementation of the operational structure before the completion of the project implementation.
Resource requirements and obstacles	-Changes and evolution in the technology affecting compatibility, competitiveness, costs, sustainability, comparative performance of the digital cultural application. -Design deviations and failures (software and/or hardware). -Lack of adequate personnel for training for the operation.

	-Failures of external contractors. -Insufficient internal knowhow for monitory and acceptance. -Changes in external stakeholders' policies and priorities such as political authorities. -Misrepresentation or incorrect expectations of members of the governance body/members
Proposed improvements and solutions	-Adequate mapping of internal resources needed to be allocated timely. -Development of extensive network of collaborations in digital heritage (technologies, humanities, social sciences) as a pool of knowledge and expertise. -Well designed contracts allowing flexibility for adaptations in risks and challenges. -Effective internal monitoring and acceptance system. -Make an effort to make a good pedagogy about the project to the internal team and involve adequately and motivate all internal stakeholders

IV. Operation and maintenance	
Actors involved internally	Board of Directors, cultural managers, operational managers, project managers and coordinators, curators, technology support departments, HR management, marketing experts or departments, media and social media experts, financial department.
Actors involved externally	-Business community (tourism system, educational system), local or national authorities. -Independent experts, researchers and research organizations, for extending, integrating, experimenting or reusing running digital applications -Other cultural organizations, cultural assets owners or digital heritage operators
Process of Involvement (formal, informal)	-Formal: Internally through the operational process (user-oriented operation, support, financial management, business promotion, further research). Externally through framework agreements for technical support, maintenance and update, through funding and income generation (i.e. local authorities, donators, tourist operators, educational system advertisers, research and development funding). -Informal: Externally: through exploration of new collaborations and ideas for promotion and extension, restarting new project's cycles.
Financial and technical sustainability issues	-Income / expenses balance follow up. -Income management and provisions for maintenance updating. -Marketing and promotion planning and adaptation (continuous investment). -Measure and prove the direct and indirect economic and social impact and transform it into financial return to the digital application owner.
Decisions to be taken in this stage	-Allocation of time and management process the operation personnel (day-to-day operation, marketing and support). -Allocation of operational financial resources. -Operation objectives and operation monitoring. -Updates of hardware and software. -Technical support proves and maintenance issues

Resources: requirement and obstacles	Insufficiently competent personnel. Failure to achieve income foreseen. Faster than expected outdated software/hardware. Problems of the content standardization selected in the design phase, making it unadaptable or adaptable at very high cost. Changes in the external economic and social environment impacting the business plan.
Proposed improvements and solutions	Multi-income generation strategy in order to minimize impact of changes in some of them. Well designed and long-term maintenance and update contracts. Internal know-how development for management and maintenance. Networking of the team with the digital heritage community to improve information to face challenges. Engagement of independent external experts for precise problems. Operational personnel skill development. Structure and reinforcement of permanent links with business community and public authorities, through permanent collaboration and framework contracts. Conceive the digital heritage application as a never-completed product. Rather like a base for a continuous new idea generator (stage I), than a fully completed project, that evolves through time and be prepared and open to interlink it with new ideas, research and/or business.