RECHARGE Participatory Cultural Business Models.

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1. Introduction

The purpose of RECHARGE is to develop new participatory business models for cultural heritage institutions. This deliverable gives background on the process of deciding and developing a set of models for further testing in the sector.

RECHARGE is innovating business modelling for cultural heritage institutions (CHIs), based on the adaptation of existing business models to the sector and a participatory Culture 3.0[1] approach.

Nine business models were originally proposed for the project. These have had additional desk research under the auspices of WP1 and been studied in the context of practical feasibility by the participants of WP2. Additionally, the models were discussed and developed by the RECHARGE project partners at the second Consortium Meeting in Tallinn in June 2023. Three business models have been directly applied with modifications by the three partner museums and another five have been developed in the course of discussions over the last twelve months.

The models are not new in themselves but they do apply the lens of the cultural heritage sector and make use of participation as a primary form of 'income'. Capturing the huge volunteer input that is integral to the modus operandi of cultural heritage institutions alongside a capitalisation of the knowledge and capability within the sector. The three pilots also informed the development of the new Participatory Business Model Canvas.

2. Introduction to Participatory Business Models

The key distinguishing characteristic and primary objective of the Participatory Business Model (PBM) is the incorporation of the perspectives of multiple actors, who can present their needs and advocate for their share of the benefits during the ideation and development of new business model configurations. The PBM is based on Open Innovation principles which assumes that organisations can and should use both internal as well as external ideas and knowledge to accelerate innovation.[2] The elements included in the PBM have been summarised in the Participatory Business Model Canvas (PBMC), based on and inspired by the Business Model Canvas developed by Alexander Osterwalder[3] and tested in the three Living Labs being implemented by the Hunt Museum in Limerick, Textile Museum in Prato and Estonian Maritime Museum.
The PBMC can be presented as follows (work in progress):

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[1] Sacco, P. (2011). Culture 3.0: A new perspective for the EU 2014-2020 structural funds programming, European Expert Network on Culture.
[2] Chesbrough, H., Vanhaverbeke, W. and West, J. (2006). Open Innovation : Researching a New Paradigm. Oxford: OUP Oxford. *Available at: https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=211623&site=ehost-live (Accessed: 15 September 2023).*
[3] Osterwalder, A. (2010). Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. John Wiley and Sons. The Business Model Canvas available at https://www.strategyzer.com/library/the-business-model-canvas.

PARTICIPATORY BUSINESS MODEL CANVAS FOR CULTURAL HERITAGE INSTITUTIONS

KEY PARTNERS AND STAKEHOLDERS

Who are our key partners and stakeholders?

How can they participate in the value generation and at what stages of the process?

LEVELS OF PARTICIPATION

What is the level of participation for different partners and stakeholders?

(1) Inform
(2) Consult
(3) Involve
(4) Collaborate
(5) Empower

KEY ACTIVITIES

What key activities do our value propositions require?

What activities can be done externally (outside of the organisation) and what can or needs to be done internally (within the organisation?)

KEY RESOURCES

What Key resources (human, intellectual, financial, physical) do our value propositions require?

How can the CHI acquire additional resources from its partners and stakeholders?

SOCIAL VALUE PROPOSITION

What value do we deliver to the society, communities, individuals?

Why is the value generated by the CHIs desirable to others?

Why is the value generated by the CHIs desirable to themselves?

What value is delivered to end users (B2C) and what value is delivered to other CHIs and companies (B2B)?

RELATIONSHIPS

What type of relationship does each user / customer / beneficiary segment expect us to establish and maintain with them?

MARKET CHANNELS

Through which channels CHIs reach their user / customer / beneficiary segments?

How to develop a continious feedback loop with our users / customers / beneficiaries?

USERS/CUSTOMERS/ BENEFICIARIES

For whom are we creating value?

Who will be able to access and experience CHIs products and services?

COST STRUCTURE

What are the most important costs inherent in our business model?

SOCIAL COSTS   ENVIRONMENTAL COSTS

REVENUE STREAMS

For what value are our users / customers willing to pay?

How to make our business model financially viable and sustainable?

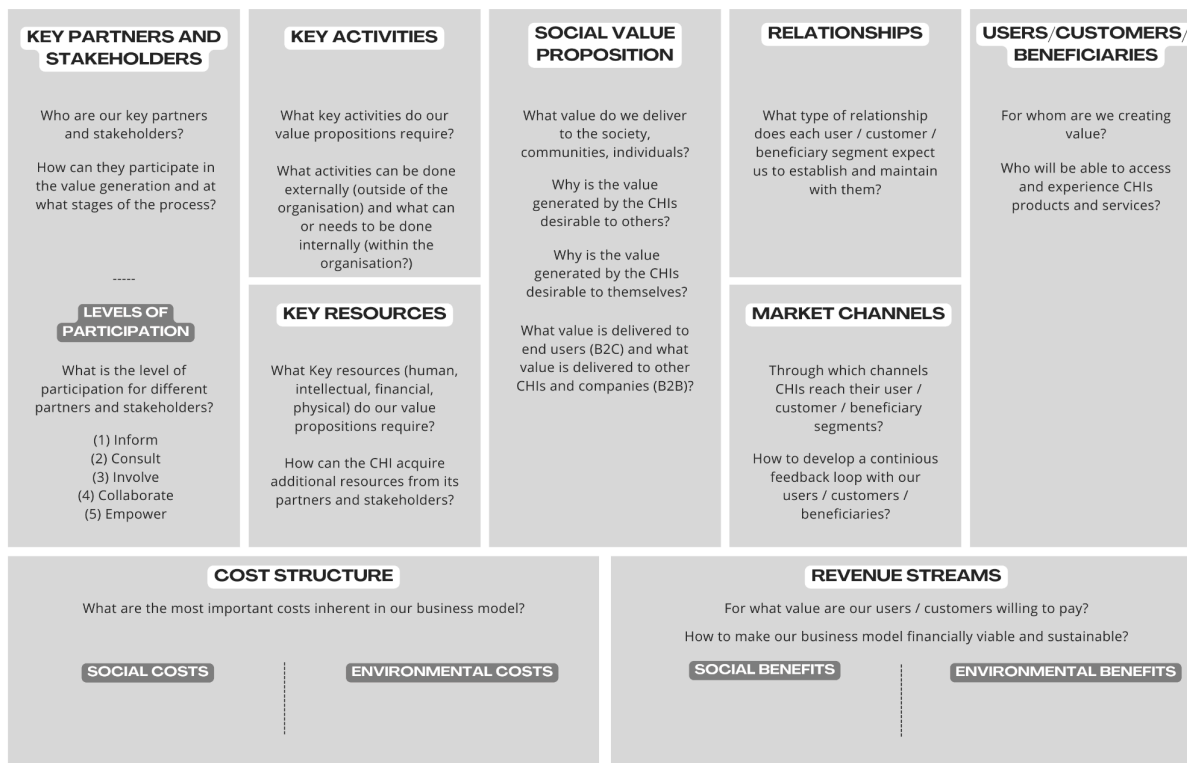SOCIAL BENEFITS   ENVIRONMENTAL BENEFITS

Figure 1: Participatory Business Model Canvas for Cultural Heritage Institutions

The PBMC follows the Business Model Canvas logic and its relations between different aspects of the business value chain, but it adds two layers relevant to the RECHARGE approach. First, it includes the relevant terminology concerning a participatory approach, including types and levels of participation, types of customer relationships, and feedback loops. Second, it adopts the general business approach of the cultural heritage institutions (or cultural institutions in general), adding the social value proposition, specifying the types of customer segments, and highlighting social and environmental costs and benefits.

The PBMC can be useful in different ways, including: (1) highlighting the role of participation and engagement of different stakeholders throughout the entire business modelling; (2) linking different aspects of a business model into one coherent approach for cultural heritage institutions; (3) guiding the participatory innovation process in cultural institutions; (4) allowing the communication of the participatory elements of the institution's business plan to stakeholders and wider audiences.

3. Shortlist of Participatory Business Models

Under the RECHARGE project, nine Living Labs are to be created to test new replicable participatory business models that contribute resources and funding streams to CHIs and harness the social and economic benefits for their communities. This report proposes eight distinct participatory business models plus one hybrid model combining elements across different models. Three have been tested on Value Propositions in the pilot Living Labs, and it is proposed that others will be tested under new Living Labs tendered for by non-RECHARGE CHIs. It is not mandatory for the tendered Living Labs to narrowly follow one of the shortlisted participatory business models presented in this document, rather they are created to serve as a source of inspiration. CHIs are welcome to use and combine elements from different PBMs or propose new models altogether.

The PBMs represent different focus areas for business model innovation in cultural heritage institutions. The shortlisted PBMs can be summarised as follows:

No.	Participatory Business Models	Social value proposition
1	COLLABORATIVE E-COMMERCE MODEL	An online shop is shared by several CHIs, products and services are developed in collaboration with the local creative community.
2	REVENUE SHARING INNOVATION MODEL	The CHIs are co-creators and co-owners of innovative products or services and adopt appropriate revenue-sharing mechanisms to create long-term financial benefits.
3	CSR CULTURAL HERITAGE COMMUNITY MODEL	Companies use their corporate social responsibility (CSR) or environmental, social, and governance (ESG) programs to benefit both CHIs and communities.
4	COMMUNITY CROWDSOURCING MODEL	Communities are involved in content creation, ideation, implementation, and financing of CHI products and initiatives.
5	PARTICIPATORY DISTRIBUTION MODEL	The CHIs products and services are disseminated and distributed by an open community network.
6	ASSET AND RESOURCE SHARING MODEL	The CHIs are using external shared assets for their core activities and provide their own assets for community use.
7	OPEN-SOURCE SERVICE MODEL	The CHIs provide licence-free open access to their services and content for community use.
8	ON-DEMAND SERVICE MODEL	The CHIs offer tailor-made content and service solutions addressing specific needs of users, including communities, organisations, and other stakeholders.

9	*EXTRA: HYBRID MODEL*	A hybrid model in which the CHIs mix different elements of some or all previously mentioned participatory business models.

Table 1: Participatory Business Models and their social value propositions

The list of participatory business models targets cultural heritage institutions interested in implementing participatory business model architecture. These institutions may be seeking innovative approaches to overcome funding limitations and enhance accessibility to cultural heritage. They are open to exploring new ways of engaging their stakeholders and communities, and they recognize the value of participatory management in creating social, cultural, and economic impact. These institutions are willing to embrace a holistic approach that integrates participation as a fundamental element in sustainable financing. They are motivated to collaborate, share insights, and learn from the experiences of other Cultural Heritage Institutions to develop and refine their own participatory business models. These cultural heritage institutions are forward-thinking, adaptable, and eager to leverage participatory approaches to drive their business models and achieve better long-term sustainability. All the proposed business models depend on strong relationship capability within the CHIs, building and maintaining such relationships regardless of personnel changes.

3.1. COLLABORATIVE E-COMMERCE MODEL

Social value proposition: An online shop is shared by several CHIs, products and services are developed in collaboration with the local creative community.

The Collaborative e-Commerce Model explores solutions for collaborative online shops co-developed and administered by a consortium of CHIs and local creative professionals and enterprises. The focus is on developing new products and services that can be effectively marketed and sold. This is done in collaboration with local artists and creative enterprises, thus the shop also acts as a sales and communication platform for the local creative economy. Although gift shop retail is a known revenue stream, it is not a major income generator for small CHIs. Challenges such as fulfilment costs, promotion, and the lack of retail skills have to be addressed.

The Collaborative e-Commerce Model introduces revenue generation and risk sharing as integral components, leveraging the collective strength and mitigating risks associated with individual institutions. The financial requirements to initiate the model will depend on the number of participating CHIs, which would need to be determined through detailed financial analysis. The decision-making process, marketing strategies, and order fulfilment logistics present additional challenges that require careful consideration. The circular economy aspect of the model leads to better environmental outcomes and more sustainable consumption.

To support the model, initial funding is necessary to cover the costs of a retail platform, and governance mechanisms need to be established to ensure effective use of the resources. Leveraging existing platforms that CHIs already possess can help reduce costs and streamline operations, resulting in significant savings. Furthermore, three key factors contribute to the success of the Collaborative e-Commerce Model:

1. Offering unique and authentic items specific to each CHI, ensuring they are tied to the CHI's collection in a meaningful way.
2. Maintaining high-quality standards across the value chain.
3. The access to consumers and their willingness to pay.

Collaborative e-Commerce Model addresses primarily the following challenges based on the RECHARGE Business Model Canvas approach:

Desirability *Offering what people want*	Feasibility *Being capable to deliver*	Viability *Having financial sustainability*
Key Challenges: How to turn a shop as a commercial tool into a collaborative platform that provides social value to different stakeholders, including other CHIs, local creative businesses and the community at large? How to build an online shop that serves both end-users (clients) as well as providers of unique products and services (B2B model)?	Key Challenges: How to set up an administrative, technical and logistical model to lower the risks associated with online commerce, i.e.: product quality control, the set up and ongoing supply-chain (e.g. delivery and return systems)? How to address competition vs collaboration with other CHIs, creative businesses and existing online shops?	Key Challenges: How to set up a profit-sharing system that would guarantee the financial viability for the operating CHI and at the same time incentivise other participating CHIs and producers? How to select and manage cost-sharing mechanisms, including risk leverage systems, e.g. fee-based models vs percentage-per-sale models?

Table 2: Desirability, feasibility and viability challenges of the Collaborative e-Commerce Model

The Collaborative e-Commerce Model is currently being developed and tested by the Textile Museum in Prato.

3.2. REVENUE SHARING INNOVATION MODEL

Social value proposition: The CHIs are co-creators and co-owners of innovative products or services and adopt appropriate revenue-sharing mechanisms to create long-term financial benefits.

The Revenue Sharing Innovation Model recognizes that valuable and innovative ideas can originate outside of a cultural heritage organisation, and not all ideas should be exclusively developed within the confines of the organisation. In this model, CHIs develop cross-sector partnerships by actively involving diverse stakeholders from both the public and private sectors in the process of co-ideating, co-creating, testing, and implementing new products and services for CHIs.

Using this model, CHIs can explore the valuable contributions of expertise from corporations, universities, local businesses, and other stakeholders in the co-creation of CHI products or services. This model fosters collaborative partnerships where participants leverage their expertise and company resources to jointly develop and co-own a product or service.

As highlighted in the model's name, in this process the CHI is not merely buying in new products or services (including digital solutions), but it becomes a co-developer, and thus a co-owner, which in turn leads to the possibility of new revenue-sharing mechanisms being adopted. The most obvious area of interest in this regard involves digital solutions, including VR and AR solutions, games, digital platforms, etc., which can be jointly developed (based on CHI's content expertise and IT-company's technological competence) and jointly monetised.

The Revenue Sharing Innovation Model addresses primarily the following challenges based on the RECHARGE Business Model Canvas approach:

Desirability *Offering what people want*	Feasibility *Being capable to deliver*	Viability *Having financial sustainability*
Key Challenges: How to develop new products and services (including technological solutions) that better fulfil the CHI's specific needs? How to engage all relevant stakeholders in the development process?	Key Challenges: How to change the cultural heritage institutions' position from buy-in to co-author and co-developer. How to develop necessary skills and competences within the CHIs to have a meaningful contribution in commercial development processes?	Key Challenges: How to develop revenue sharing models which are acceptable and incentivising both for CHI's and tech companies? How to mitigate new types of risks of being a co-owner instead of a client?

Table 3: Desirability, feasibility and viability challenges of the Revenue Sharing Innovation Model

The Revenue Sharing Innovation Model is currently being developed and tested by the Estonian Maritime Museum.

3.3. CSR CULTURAL HERITAGE COMMUNITY MODEL

Social value proposition: Companies use their corporate social responsibility (CSR) or environmental, social, and governance (ESG) programmes to benefit both CHIs and communities.

The CSR Cultural Heritage Community Model places a strong emphasis on community participation and co-creation by forging connections between CHIs, engaged communities, and socially responsible companies. It seeks to actively involve companies to use their corporate social responsibility (CSR) or environmental, social, and governance (ESG) programmes in innovative ways for the benefit of both CHIs and their communities.

By facilitating collaboration, this model aims to develop innovative products and services that cater to local needs. It brings together vibrant CHI communities and companies that are eager to achieve more meaningful and long-lasting outcomes from their CSR budgets and programs.

Together, they work towards creating a product or service specifically needed or designed for a CHI, fostering a sense of co-creation and community participation.

The model recognizes the importance of engaging active communities and acknowledges the potential for socially responsible companies to contribute significantly to CHI initiatives. By harnessing the collective creativity and resources of all stakeholders involved, this model looks to generate innovative solutions that go beyond traditional approaches, ultimately benefiting the CHIs, the communities they serve, and the socially responsible companies involved.

The CSR Cultural Heritage Community Model addresses primarily the following challenges based on the RECHARGE Business Model Canvas approach:

Desirability *Offering what people want*	Feasibility *Being capable to deliver*	Viability *Having financial sustainability*
Key Challenges: How to involve socially responsible businesses/corporations with their existing CSR/ESG budgets in co-creation of impactful products or services for achieving a meaningful change for their communities? How to engage local communities and existing CHI networks with the process of social value creation?	Key Challenges: How to innovate participation in the CHI by combining the participation of local communities and companies with CSR resources? How to develop necessary skills and competences within the CHIs to offer impactful CSR solutions? How to maintain sustainable partnerships between the CHI, the corporate and the community?	Key Challenges: How to diversify CHI's revenue streams by corporate investment through available CSR/ESG funds?

Table 4: Desirability, feasibility and viability challenges of the CSR Cultural Heritage Community Model

The CSR Cultural Heritage Community Model is currently being developed and tested by the Hunt Museum.

3.4. COMMUNITY CROWDSOURCING MODEL

Social value proposition: Communities are involved in content creation, ideation, implementation, and financing of CHI products and initiatives.

The Community Crowdsourcing Model embraces the Culture 3.0 paradigm[4], where cultural heritage organisations transition from a traditional top-down patronage model to become co-creative shared platforms that foster community engagement and meaning-making. The primary goal of the model is to experiment with innovative crowdsourcing and crowdfunding approaches within the CHI context, leveraging platforms such as Goteo and Patreon. By harnessing the power of crowdsourcing, CHIs can effectively involve communities in various

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[4] Sacco, P. (2011). Culture 3.0: A new perspective for the EU 2014-2020 structural funds programming, European Expert Network on Culture

aspects, including content creation, ideation, implementation, patronage and even the financing of CHI products and initiatives.

The Community Crowdsourcing Model aligns with other PBMs as a source for open innovation, and it also taps into the extensive expertise available beyond the CHI's internal resources. This model enables the validation of new products and initiatives through collaboration with external contributors before their introduction to the market. Moreover, crowdsourcing serves as a valuable tool for promoting, marketing, and raising awareness about CHIs offerings.

Recognizing the invaluable contributions of community members, the model places a strong emphasis on inclusivity and co-creation. By actively involving diverse stakeholders, museums can tap into a wealth of knowledge, perspectives, and talents. This collaborative endeavour not only enhances the quality and relevance of the content but also strengthens the bond between CHIs and their communities. The model is based on reciprocity, thus allowing CHIs to build more long-term and personal relationships between the CHIs and their communities and users.

Implementing the model requires a combination of technical know-how and other assets such as start-up capital (for software systems, etc.) to ensure its successful execution. The model incorporates numerous participatory elements that encourage active involvement and co-creation from the community. Financially, implementing the model can be beneficial by creating additional revenue streams, mobilising external resources and sharing costs with its community.

The Community Crowdsourcing Model addresses primarily the following challenges based on the RECHARGE Business Model Canvas approach:

Desirability *Offering what people want*	Feasibility *Being capable to deliver*	Viability *Having financial sustainability*
Key Challenges: How to form new types of customer relationships (from user to co-creator) and apply participatory approaches to a wide range of CHI activities?	Key Challenges: How to utilise largely voluntary external resources for delivering a high-quality service, including human, knowledge, and financial capital?	Key Challenges: How to mobilise extra funding by engaging users and communities through crowdsourcing platforms?

Table 5: Desirability, feasibility and viability challenges of the Community Crowdsourcing Model

3.5. PARTICIPATORY DISTRIBUTION MODEL

Social value proposition: The CHIs products and services are disseminated and distributed by an open community network.

The Participatory Distribution Model focuses on participatory and collaborative ways to disseminate, distribute and communicate CHI offerings. While other business models are mainly concentrating on the co-creation and the co-ownership aspects of the business models, the Participatory Distribution Model looks at how CHIs can use their extensive networks that consist

of other cultural institutions, CHIs, teachers and schools, community partners, volunteers, etc., to share, introduce and distribute the CHIs products and services.

The model highlights the alternative and innovative approaches to reach wider audiences and increase the visibility of the CHIs offering by using existing networks. The Participatory Distribution Model could be applied across the CHIs activities, including using the teachers' network to carry out educational programs in schools (programs or tool kits designed for classroom use) or training and engaging teachers in delivering cultural heritage programs within the CHI (educators contracted within the institution).

The Participatory Distribution Model has connections with other models, including Collaborative e-Commerce Model (in which the participatory distribution element can be used to decentralise the channels to market and build new types of relationships with users, customers, and beneficiaries), and Community Crowdsourcing Model (in which the involved communities are not only co-creators of content, but also take an active role in distribution and communication efforts).

The Participatory Distribution Model addresses primarily the following challenges based on the RECHARGE Business Model Canvas approach:

Desirability *Offering what people want*	Feasibility *Being capable to deliver*	Viability *Having financial sustainability*
Key Challenges: How to innovate CHI's channels to market by decentralising and democratising the dissemination and distribution activities?	Key Challenges: How to build a strong community around the CHI that acts as ambassadors for the CHI's mission, as well as a network of professionals involved in delivering key activities?	Key Challenges: How to set-up a financial model to support the open distribution and dissemination model that also is rewarding to the involved stakeholders?

Table 6: Desirability, feasibility and viability challenges of the Participatory Distribution Model

3.6. ASSET AND RESOURCE SHARING MODEL

Social value proposition: The CHIs are using external shared assets for their core activities and provide their own assets for community use.

The Asset and Resource Sharing Model is based on the circular economy principles of sharing, leasing, reusing, repairing, refurbishing and recycling existing materials, physical space and products for as long as possible. CHIs that adopt this PBM will have to focus on finding means of production and distribution that improve resource efficiency. One of the core areas is asset- and resource-sharing to provide communities a wider access to available resources and to use available assets within the CHI's community.

The Asset and Resource Sharing Model can be combined with most other business models. The shared assets and co-use of resources can be applied from physical assets (technology, infrastructure, venues, etc.) to human and intellectual assets (people, knowledge, solutions, etc.).

The model highlights the importance of environmental thinking and sustainable innovation in the CHI's operations, but is not limited to ecological aspects. It includes initiatives to create joint platforms to share, exchange, and loan existing materials needed for the CHI's activities (e.g., producing exhibitions, organising events, etc.).

The Asset and Resource Sharing Model addresses primarily the following challenges based on the RECHARGE Business Model Canvas approach:

Desirability *Offering what people want*	Feasibility *Being capable to deliver*	Viability *Having financial sustainability*
Key Challenges: How to apply circular economy principles in developing CHI products, services, and initiatives?	Key Challenges: How to use external resources, including those needed for temporary use, to carry out the CHI's core activities?	Key Challenges: How to address the existing cost structure, including environmental costs, by sharing available resources? How to create sustainable financial models that include both sharing of risks as well as sharing benefits from asset sharing?

Table 7: Desirability, feasibility and viability challenges of the Asset and Resource Sharing Model

3.7. OPEN-SOURCE SERVICE MODEL

Social value proposition: The CHIs provide licence-free open access to their services and content for community use.

The Open-Source Service Model is inspired by open-source software solutions that are made publicly freely available to increase the number of users as well as allowing developers to innovate with new products and services.

CHIs have opened up their digital collections, shared tools and platforms and experimented with digital solutions that allow users to add or create their own content, develop their individual routes, or for the companies to use the CHI's resources to develop games based on CHIs collections. The use of this open source collections and services model can be for augmented and virtual reality solutions, gamification based on collections, digital content including educational materials and tools, as well as linked with the Collaborative e-Commerce Model.

The upside of the model is wider outreach and visibility for the CHI and its products and services. It also feeds into open innovation by using external resources for diversifying available tools and solutions.

The key challenge is finding an appropriate financing model that generates income for the CHI without the need to licence or limit the use of CHIs services.

The Open-Source Service Model addresses primarily the following challenges based on the RECHARGE Business Model Canvas approach:

Desirability *Offering what people want*	Feasibility *Being capable to deliver*	Viability *Having financial sustainability*
Key Challenges: How to allow communities to use and modify solutions developed by CHIs, free of charge?	Key Challenges: How to support the users throughout the product or service life-cycle? How to set up an appropriate legal structure that would allow licence-free use of CHI's developed resources.	Key Challenges: How to develop a financing model that allows for long-term viability for CHIs and creates alternative revenue streams, both in terms of monetary and non-monetary benefits?

Table 8: Desirability, feasibility and viability challenges of the Open-Source Service Model

3.8 ON-DEMAND SERVICE MODEL

Social value proposition: The CHIs offer tailor-made content and service solutions addressing specific needs of users, including communities, organisations, and other stakeholders.

The On-Demand Service Model focuses on the means for the cultural heritage institutions to develop and provide tailor-made products and services that cater to the users', customers' and beneficiaries' specific (and changing) needs.

These on-demand products and services can cover a wide range of CHI activities, including programming and events, interest-based physical tours or virtual exhibitions, modular educational programs, or the development of products based on CHI collections (e.g., on-demand printing based on collection items, etc.). This model can be combined with other models, where the on-demand element can support the implementation of different aspects (e.g. collaborative e-commerce solutions, CSR solutions for corporations, community crowdsourcing activities, or open-source approach to CHI's services).

The model involves a two-directional approach to participation. Firstly, offering on-demand services and tailor-made solutions allows CHIs to increase their social impact and to offer more value to its users, customers and beneficiaries (including communities) by swiftly reacting to the changes in their surroundings. Secondly, on-demand services also act as a feedback and validation channel for the CHIs allowing them to further invest into services with higher potential, and, if necessary, pivot from the original course. Additionally, as providing on-demand solutions requires readily available resources and flexible resource management, this approach also depends on a strong network of partners and stakeholders which can contribute to the process of delivering value.

The key challenges include quality control and risk mitigation, setup of flexible production value-chains, and managing seasonal fluctuations. By successfully implementing the model, CHIs

can reduce costs and manage their cash-flow, e.g., by reducing overproduction and by flexibly reacting to market needs.

The On-Demand Service Model addresses primarily the following challenges based on the RECHARGE Business Model Canvas approach:

Desirability *Offering what people want*	Feasibility *Being capable to deliver*	Viability *Having financial sustainability*
Key Challenges: How to create a portfolio of products and services based on actual market needs and customer feedback? How to build new types of customer relationships and develop new channels to market?	Key Challenges: How to sustain an on-going delivery process and internal value chains to offer on-demand solutions (standardised vs tailor-made approach)?	Key Challenges: How to make on-demand products and services financially sustainable?

Table 9: Desirability, feasibility and viability challenges of the On-Demand Service Model

4. Conclusion

The list of Participatory Business Models presented here represents a participatory approach to creating income streams and developing cultural heritage institutions. These innovative models emphasise the active involvement of diverse stakeholders and communities, fostering co-creation, social impact, and long-term financial sustainability. As we move into Phase 2 of the RECHARGE project, these models will serve as a valuable resource for the tendering process of establishing six new RECHARGE Living Labs.

Phase 1 has seen the successful testing of three of these models in real-world scenarios, with notable progress made by the Textile Museum in Prato, the Estonian Maritime Museum, and the Hunt Museum. The Collaborative e-Commerce Model, Revenue Sharing Innovation Model, and CSR Cultural Heritage Community Model have demonstrated their potential to create social, economic, and environmental value. Descriptions of these pilots and images of the Participatory Business Model Canvas in use by each Living Lab can be found in the appendix.

This list of Participatory Business Models offer a holistic approach to cultural heritage institutions seeking sustainable financing, enhanced community engagement, and innovative business practices. These models encourage adaptability, collaboration, and the integration of participation as a fundamental element in the pursuit of long-term sustainability.

Appendix

Descriptions of the three RECHARGE Living Labs in phase 1. These Living Labs have either already completed testing or are currently in the process of testing a Participatory Business Model from this list.

Living Lab by Textile Museum in Prato

The Collaborative e-Commerce Model is currently being developed and tested by the Textile Museum in Prato.

The Textile Museum in Prato held a co-ideation workshop with small Tuscan museums, local small companies, designers and artisans working with sustainable material or processes, and local research and educational institutions. This workshop defined their e-commerce pilot's value proposition: *Museum e-shops are cool, edutaining, go-to places for locally and ethically sourced, sustainability-oriented quality products.* Through ongoing co-creation sessions, both online and in-person, with creative stakeholders, 43 products collaboratively were developed, inspired by museum objects, all produced sustainably or in line with sustainable practices. These products will be featured on the museum's e-shop, with equal emphasis placed on the narrative of their creation as on the items themselves. In tandem with these co-created products, the online retail platform development was a crucial aspect of this model, requiring investment in an off the shelf online shop platform, terms and conditions, product partner agreements, payment methods, shipping logistics, and the e-shop's visual identity.

This implementation of the Collaborative e-Commerce Model by the Textile Museum in Prato has yielded significant social impact by fostering collaboration between the museum and local artisans thereby strengthening social bonds and preserving cultural heritage. The financial impact will come from the sale of the sustainable products through their e-shop, and will not only generate revenue for the museum but also support local artisans and promote ethically sourced, quality products, contributing to long-term sustainability.
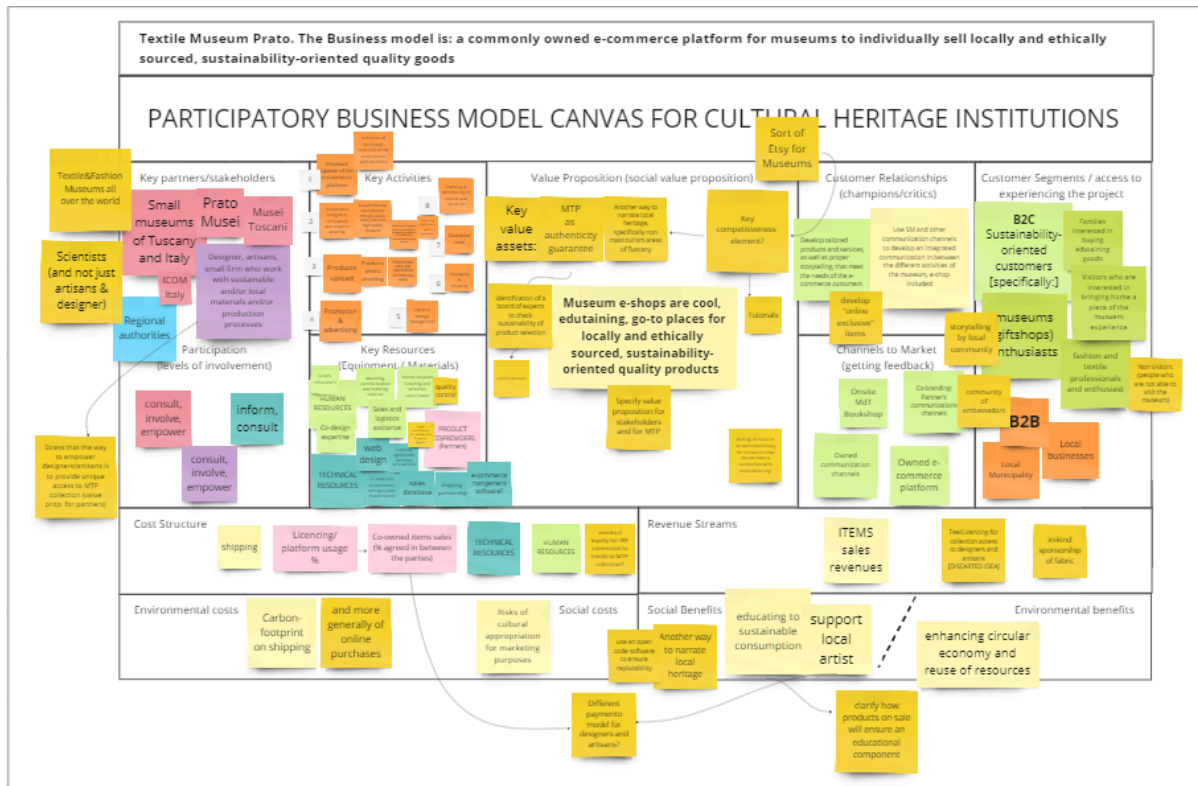
Image 1 depicts one of the iterations of the completed PBMC being used by the Textile Museum in Prato for the purpose of shaping their participatory business model.

Living Lab by the Estonian Maritime Museum

The Revenue Sharing Innovation Model is currently being developed and tested by the Estonian Maritime Museum.

EMM engaged in a co-ideation participatory process with museum professionals, librarians, and tech company representatives. This workshop defined their e-commerce pilot's value proposition: *Museums are valuable partners for collaborative innovation for digital innovators in education* and the co-creation of an Augmented Reality solution designed to bring museum content into classrooms in a captivating and educationally effective manner.

The revenue streams for this pilot project have yet to be tested but should derive from sources such as: subscription-based use of content by end users such as educational institutions, one-off content purchases by individual users, Cultural Heritage Institutions (CHIs) paying for the use of the platform or service, sponsorships and partnerships, Additionally, the partners aim to sell similar solutions to other establishments within and beyond the sector.

The social benefits of this initiative are fostering a co-creation mindset within and across sectors, spreading the wealth of museum and educators knowledge. The commercial benefits for software developers includes access to user communities, Furthermore, it contributes to

environmental benefits by providing a better digital service offer, reducing the need for travel by student groups, and ultimately diminishing the environmental footprint of educational activities.
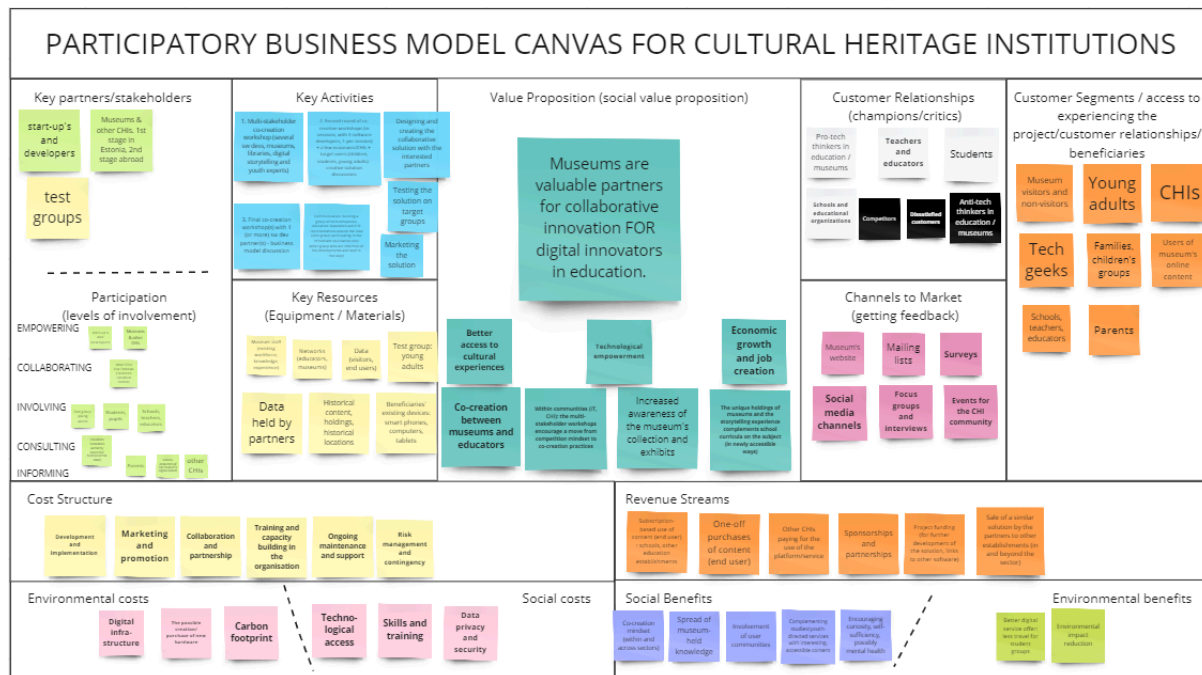

Image 2 depicts one of the iterations of the completed PBMC being used by the Estonian Maritime Museum, Tallinn for the purpose of shaping their participatory business model.

Living Lab by the Hunt Museum

The CSR Cultural Heritage Community Model is currently being developed and tested by the Hunt Museum.

The Hunt Museum Living Lab began with co-ideation and co-creation between the Irish Museum community and companies from Limerick wishing to use their CSR programmes in a meaningful, impactful and sustainable way, and local community groups interested in collaboration with the museum. Out of these participatory processes the pilot idea 'weaving willow' was formed. The value proposition being tested for 'Weaving Willow' was: *'Weaving Willow generates mutual cultural and social value through museums and companies working together.'*

The 'Weaving Willow' pilot within the CSR Cultural Heritage Community Model has delivered a range of significant benefits to its stakeholders. For the corporate partner Cook Medical, it aligns with their CSR objectives, actively contributing to environmental improvement, engaging staff in creative thinking, and enhancing their well-being while promoting team building and providing diverse challenges. It also serves as a 'good news' sustainability story and contributes to their biodiversity goals. The Hunt Museum benefits from increased community engagement, alignment with its climate action plan and access to CSR programmes, including funding and corporate partnerships. The project extends the museum's brand reach, uses garden space for biodiversity

and art, and enhances Limerick's liveability. For the local communities involved, 'Weaving Willow' provides exposure to Irish traditional craft skills, educates about heritage and horticulture, promotes physical activities, enhances mindfulness, encourages creativity, improves social skills, and fosters community pride; contributed to mental health and well being; thereby making long lasting impact.
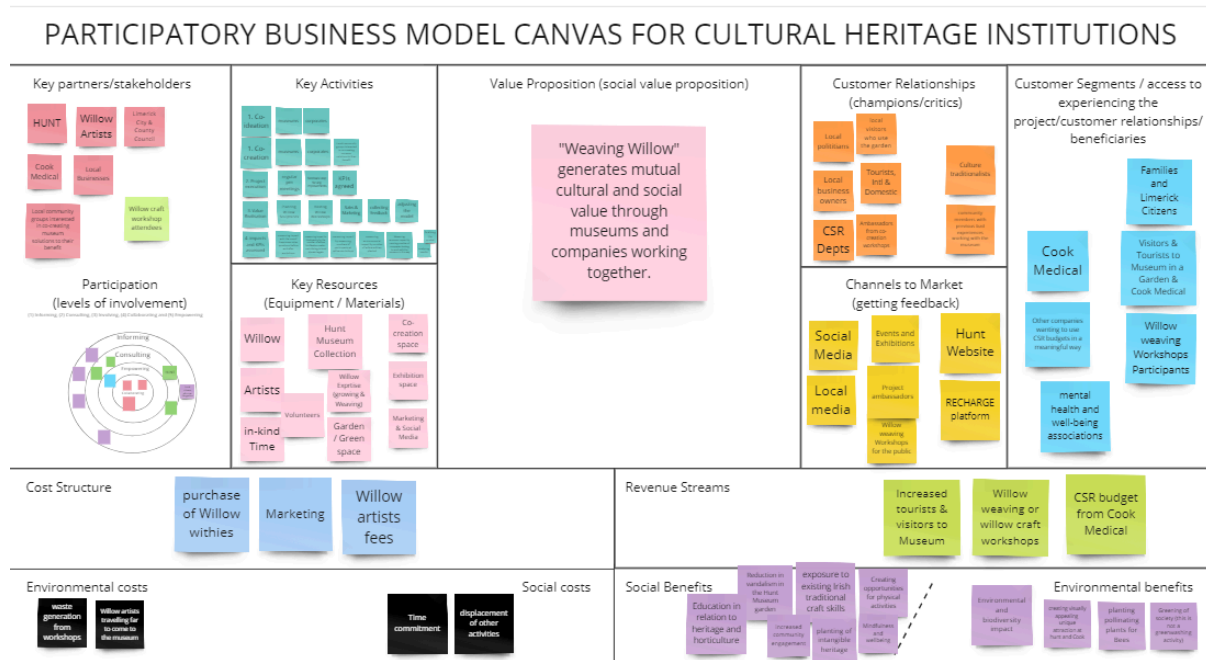

Image 3 depicts one of the iterations of the completed PBMC being used by the Hunt Museum, Limerick, for the purpose of shaping their pilot within the participatory business model.