

Innovative Business Model for Adaptive Reuse of Cultural Heritage in a Circular Economy Perspective

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ABSTRACT

This article aims to develop an innovative business model for adaptive reuse of cultural heritage in a circular economy perspective, and in line with the guidelines of the Historic Urban Landscape approach. Adaptive reuse of cultural heritage is considered today as key in urban conservation and sustainable development. This article addresses the relevance of adaptive reuse of cultural heritage to the circular economy objectives. It then suggests an innovative business model which can cope with specific issues of governance and financing processes of adaptive reuse. It is based on the Strongly Sustainable Business Ontology and its related to the Flourishing Business Model, which takes into consideration the multi-dimensional and multi-actors context of sustainability. By building on this model, the paper analyzes the different sections (How, What, For Whom, Why) under the framework of the circular economy.

Keywords: Urban conservation, Historic Urban Landscape, adaptive reuse, circular economy, Flourishing Business Model, positive impacts, Sustainable Development Goals.

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Part 1

Adaptive reuse in ever changing cities

With globalization, growing urbanization, climate change issues, and worldwide economic transformations, heritage conservation in urban context is challenged to provide sustainable

solutions. To better survive the destructive forces of rapid, merciless urban development, emphasis is put on the contribution of cultural heritage to social and economic transformations. In 2011, UNESCO adopted a recommendation on the Historic Urban Landscape (HUL) as a new approach to urban conservation (UNESCO 2011; Bandarin and Van Oers 2012;2015; Pereira Roders and Bandarin 2019). A policy and planning practice attentive to the multilayered human, natural and cultural values of historic cities. Values related to the human interactions with the built and natural environment as well as communities' perceptions and personal links to stories, memories and traditions embodied in their collective memory and everyday practice. This holistic and integrated approach aims at preserving the integrity of historic, social and artistic values while orienting the urban transformations of our rapidly changing cities. A guiding approach that leverages the uniqueness of historic environments within a sustainable development perspective (Labadi and Logan 2016; Larsen and Logan 2018; Throsby 2017). The HUL perspective was conceived as a new approach towards humanizing the city (United Nations 2015a; UNESCO 2016) by leveraging its cultural diversity, boosting the connections between the natural and the cultural tangible or intangible assets, enhancing the increasing role of the historic center as a creative and innovative hub and addressing the new social and economic challenges (Ost and Carpentier 2017; 2018; Saleh and Ost 2019a; Ost and Saleh 2021).

Under this integrated framework, historic cities are perceived as key players in the sustainable urban development of cities. UNESCO's recommendation on HUL is not only emphasizing a more holistic approach of the complex and hybrid network of urban realities. It is also a recommendation that deals with urban cultural policies going beyond cultural objectives, aiming to seize cultural opportunities as robust drivers for urban sustainability. If we analyze the founding elements of HUL (a European city perspective that extends to a global one), understanding the growing and complex diversity of cohabiting/interacting/conflicting cultures is key to ensure a viable pledge between a society and its past, present and future heritage.

Adaptive reuse of cultural heritage plays a central role in the urban conservation perspective. We perceive adaptive reuse as a collective empowering process where different stakeholders (public, private, civil society) are actively engaged in discussing and deciding together on the values to be preserved. Such values are predominantly cultural values shared among many urban stakeholders and documented as such through the multiple tools and regulations provided by international actors (UNESCO, ICOMOS...), national, regional, and local institutions. Although most of the recognized cultural values are attached to tangible built heritage (architectural, historic, aesthetic values), today's perspective on urban cultural heritage also considers natural and intangible assets (festivals, craftsmanship, knowledge, traditions...). The HUL approach takes into consideration all such heritage assets, putting emphasis on what the community cherishes most, and through attributes that give the sense of place and identities values. For example, in line with the contemporary urban transformations the role of refugees and migrants' intangible practices on changing perceptions of heritage values should be probed as well. In fact, this engagement process fulfills the first requirement of the set of policies and actions of the HUL toolkit.

In urban context, adaptive reuse is also intrinsically linked to the surrounding human, natural and cultural assets. An in-depth analysis of the existing layers of the natural, human and culture assets helps understand what potential future mixed uses might be relevant to the territory and to the communities, what are the existing urban assets that can leverage the adaptive reuse and what is missing for better integrating the cultural heritage in the urban context. Finally, adaptive reuse addresses the type of positive and negative impacts/benefits it might trigger (Gustafsson

& Rosvall 2008; Fusco Girard and Nijkamp 2009; Murzyn-Kupisz 2010; Throsby 2012; Ost 2016; 2018; 2019).

A concept of cultural capital

As explained above, the HUL perspective provides a holistic framework which includes not only tangible heritage buildings for adaptive reuse, but also all natural, cultural and human assets spatially integrated with the original building (Bandarin and Van Oers 2012; 2015; Pereira Roders and Bandarin 2019). By taking these urban elements which encompass cultural values on a landscape level (meso or macro), we identify the relevant cultural capital (Benhamou 2012; Ost 2016;2019; Throsby 2001;2002), as an economic expression of city's cultural potential made of several kinds of cultural assets that hold or yield a flow of goods and services over time. This definition of cultural capital aims to identify the amount and types of assets which are embedded in a consistent and systemic Historic Urban Landscape. Spatial integration of such cultural assets is essential to be documented through mapping in order to identify the efficiency of the urban cultural portfolio in a historic city. Accordingly, the cultural capital is what the community cherishes, and what the municipality manages in order to seize opportunities of adaptive reuse projects that may protect and improve their cultural capital in the long term.

Why adaptive reuse is relevant to sustainability and to the circular economy?

Adaptive reuse of cultural heritage is considered today as key in the implementation of sustainable development in the urban context (EC 2015; CHCfE 2015; Van Balen and Vandesande 2016; Labadi and Logan 2016; Larsen and Logan 2018). More recently, the H2020 project CLICⁱ, examined how cultural heritage adaptive reuse could contribute to the multidimensional productivity of the circular economy in European cities and regions, while stressing its contribution to the achievement of a human sustainable development. (Fusco Girard and Gravagnuolo 2017; Gravagnuolo et al., 2017; 2018). Based on the research carried out under the framework of CLIC, we propose the following definitions for circular economy and circular city (Gravagnuolo et al., 2018:28):

- *Circular economy* is the economy of natural bio eco/system that reduces entropy, increases resilience and stimulates cooperation between components (it starts from the search of efficiency, but it is based, and it stimulates cooperation / synergies). It is the economy of co-evolution, co-operation, co-ordination of actions for a common interest.
- *Circular city* is the concept of city as a living complex dynamic circular system: cities able to self-organize, self-manage, self-govern themselves.

Under the framework of the circular economy, adaptive reuse contributes to:

1-Tackling the growing challenges threatening cultural heritage and the risk of losing it. Thus, adaptive reuse preserves its authenticity and integrity and elongates the lifespan of the bequest to future generations in a sustainable way (Gravagnuolo et al., 2017; Plevoets and Van Cleempoel, 2019; Foster and Saleh 2021);

2-Reinforcing the conditions for sustainability by alleviating the pressure on natural resources, reducing the quantity of construction waste and landfill footprint, and preserving the ecosystem (Foster 2019a; Napoli et al., 2020; Potts 2021);

3- Putting emphasis on the urban intangible assets as well as tangible cultural heritage (Fusco Girard and Vecco 2021; Ost 2019b; Roszczyńska-Kurasinska et al., 2021). Implementation of circularization in the economy requires local and community-based approaches, as well as awareness-raising and capacity building.

We conceive the relationship between adaptive reuse and the circular economy as continuative processes of value regeneration and co-creation in which economic growth and heritage conservation co-exist. A continuous development cycle that preserves and enhances cultural and natural capital, optimizes and orient resource yields and co-management in a responsible way and minimizes entropy and negative impacts on multiple levels (social, cultural, economic and environmental) (Gravagnuolo et al. 2017). The circular economy focuses on closed loops especially in recovering and recycling in order to keep materials circulating through the economy (Ellen MacArthur Foundation, 2013, 2015; Wijkman and Skånberg, 2017; Ghisellini *et al.*, 2016; Kirchherr *et al.*, 2017; Korhonen *et al.*, 2018; Foster 2019b). Considering that cultural heritage is locally rooted, it can play a key role as communities' anchor, generator of jobs, income and well-being (Sacco et al., 2018; Grossi et al., 2019). The circular processes should take into consideration the intangible values by incorporating socially and environmentally responsible use and know-how (co-creation and social enterprises) (Prendeville *et al.*, 2017; Marin and De Meulder 2018), innovative sourcing and designing (co-creation and renewable energy systems) (Thelen *et al.*, 2018; Acharya *et al.*, 2018; Roemers and Faes 2018; Ellen Macarthur Foundation and ARUP 2019, The city of Amsterdam *et al.*, 2019) so as to address human needs and well-being (entrepreneurship and innovation) (WHO 2018; EU 2019). We thus, adopt a whole system perspective and consider multiple value regeneration in a broader view.

How to convey the shared vision?

Although not binding, HUL is a very useful urban conservation planning tool that recognises the urban transformations of our contemporary lived environment. However, it is deemed important to reflect today after almost a decade of practice on how it intersects/cooperates/co-creates with the new forms of governance of the commons like for example: citymaking, fablabs and creative communities? How it relates to the circular city perspective? What possible tool(s) are needed to reach out to a broader public that might have a stake as investors/users/makers/potential future visitors? What interventions to prioritize and how to set short and long-term implementation plans? How to extend the breadth and depth of determination, enthusiasm and support of stakeholders? Finally, at the operational level, how to represent a visionary vision that envisages a viable and contextualised urban governance and financial tool?

Value (co)creation is the key concept at stake. For the sake of this research, we aspire to propose a circular business model for adaptive reuse under the framework of the HUL approach. A blueprint that allows for multiple values creation and co-creation coupled with governance and financial tools. We believe that sound governance walks hand in hand with a solid business model and ad-hoc financial tools to transform ideas in implementable projects. We thus aim at developing an adaptive reuse model enabling the (re)generation of sustainable social and environmental values while being wary of the potential negative externalities and ways to avoid/mitigate/convert them.

Part 2

The rationale behind the choice of the model

The existing Business Model Ontologies (BMO) represent diverse prospects and are designed for fulfilling peculiar objectives (D'Souza et al. 2015). However, an open question endures on whether the BMO could inform the design and evaluation of Sustainable Business Models? Bocken *et al.*, (2014:48), conducted a research that led to classifying SBM in eight different business model archetypes grouped in three innovation categories: technical (i.e. manufacturing process or product design), social (i.e. consumer offering, changing consumer behavior) and organizational (i.e. hanging the fiduciary responsibility of the firm). These archetypes represent

the tendency of the SBM to emphasis on a more technical, social or organizational approach of sustainability. However, there is no agreed upon definition of a Sustainable Business Model (Upward and Jones 2015, Schaltegger *et al.* 2016). More recently, there is a thriving debate on the need to develop circular business models (Lewandowski 2015; Kirchherr *et al.*, 2017; Carra and Magdani 2018) and the need for using them as tools for monitoring value co-creation and capture (Reichel, 2016) and more recently as enablers of the circular economy (Kirchherr *et al.*, 2017; WBCSD 2017; WBCSD and Climate-KIC 2018; Thelen *et al.*, 2018, EpE and INEC 2019; The EIB 2019). In 2018b, Geissdoerfer *et al.*, published a meticulous review of literature in reference to the definitions of: business models; sustainable business models; business model innovation; and sustainable business model innovation. The authors state that there are four types of sustainable business model innovation that are expected to aim at implementing certain sustainable business model types and strategies (2018b:408). The authors provide different sustainable business model types (four) and strategies (nine). The circular business model is considered one of the sustainable business model types.

Cities, companies, entrepreneurs, and prosumersⁱⁱ are the forerunners in experimenting in practice what a circular business model is. However, the discussion is still blossoming, and it is very much centered on specific loops; case-studies; or strategies (Van Renswoude *et al.* 2015; DSGC 2015; Lewandowski 2016; Reichel *et al.* 2016; EIT RawMaterials circulatorⁱⁱⁱ, Geissdoerfer, *et al.*, 2018a).

For the sake of this research, we will depart from the Business Model Canvas framework. The reason behind this choice is because it is a widely employed and recognized tool (Lewandowski, 2016) and it is considered a viable systematic approach to structure a business model. *“Until the ground breaking work of Alexander Osterwalder...and its subsequently commercialization... business model designers did not have any tools to help them efficiently design high quality (reliable, consistent and effective) monetarily profitable business models, i.e. business models that explicitly use our best available knowledge to reliably increase the likelihood of profitable outcomes”* (Upward 2013:11). From our perspective, it is a tool to further speculate on our adaptive reuse circular model to be. We will thus start by defining what a Business Model is:

“A Business Model describes the rationale of how an organization creates, delivers and captures value” (Osterwalder and Pigneur 2009:14).

Osterwalder and Pigneur described their Business Model Canvas, through nine blocks covering four main areas of business, namely: customers, supply, infrastructure, and financial viability. This Business Model Canvas is broadly spread and applied. It was also adapted by Ellen MacArthur Foundation (EMF) as a Circular Business Model. By adding some questions related to the circular economy context, the EMF aims to help companies use a circular lens for their business. However, these articulated four areas of the Business Model Canvas provide tools for an organization to generate value in monetary terms only with no consideration of other possible values. But how can a society and its related organizations attain the sustainable development goals without addressing the cultural, social and environmental values in an integrated manner? Schaltegger *et al.* (2016:6) provide the following definition of a Sustainable Business Model: *A business model for sustainability helps describing, analyzing, managing, and communicating (i) a company’s sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries.*

In their speculation about a tri-impactful and tri-profitable Business Model, Upward and Jones (2015) build on the Business Model Ontology and develop a Strongly Sustainable Business Model. The two scholars base their speculation on questioning whether a successful business can be defined as such based on monetary returns only? More importantly, they query the aspired outcome in terms of sustainable performance. Their meticulous research leads to the development of an ontology for a Strongly Sustainable Business Model SSBM composed of Four Formative Propositions (FFP)^{iv} and Five Instrumental Principals (FIP)^v. On the one hand, the FFP depict, according to the scholars, the lacking concepts in the classical Business Model Ontology BMO (Osterwalder 2004). In tandem, it also sets the scene for the proposed new ontology. Additionally, the FIP portray the concepts and relationships within the new proposed ontology.

Definition of a Strongly Sustainable Business Model (SSBM):

“a strongly sustainable business model must provide the organization a foundation for guiding the co-creation of value with all an organization’s stakeholders: customers, shareholders, social, and environmental constituents and indeed any and all actors in the organization’s value constellation, ... Thus, the business model is reformulated as a systemic model of necessary and sufficient concepts that both describe and guide the business as a social system within its containing systems of economy, society, and environment” (Upward and Jones 2015:10).

One of the initiatives of the SSBM is the Flourishing Business Canvas. It is based on Upward and Jones’s vision of a world where enterprises commit not only to do less harm but also to sustaining human flourishing under the framework of the Sustainable Development Goals. According to the scholars, the flourishing model aims at “not only do no harm but do well by only doing good”. Thus, this module is calculated on a tri-profit metric, namely: economic viability, social benefits and environmental regeneration.

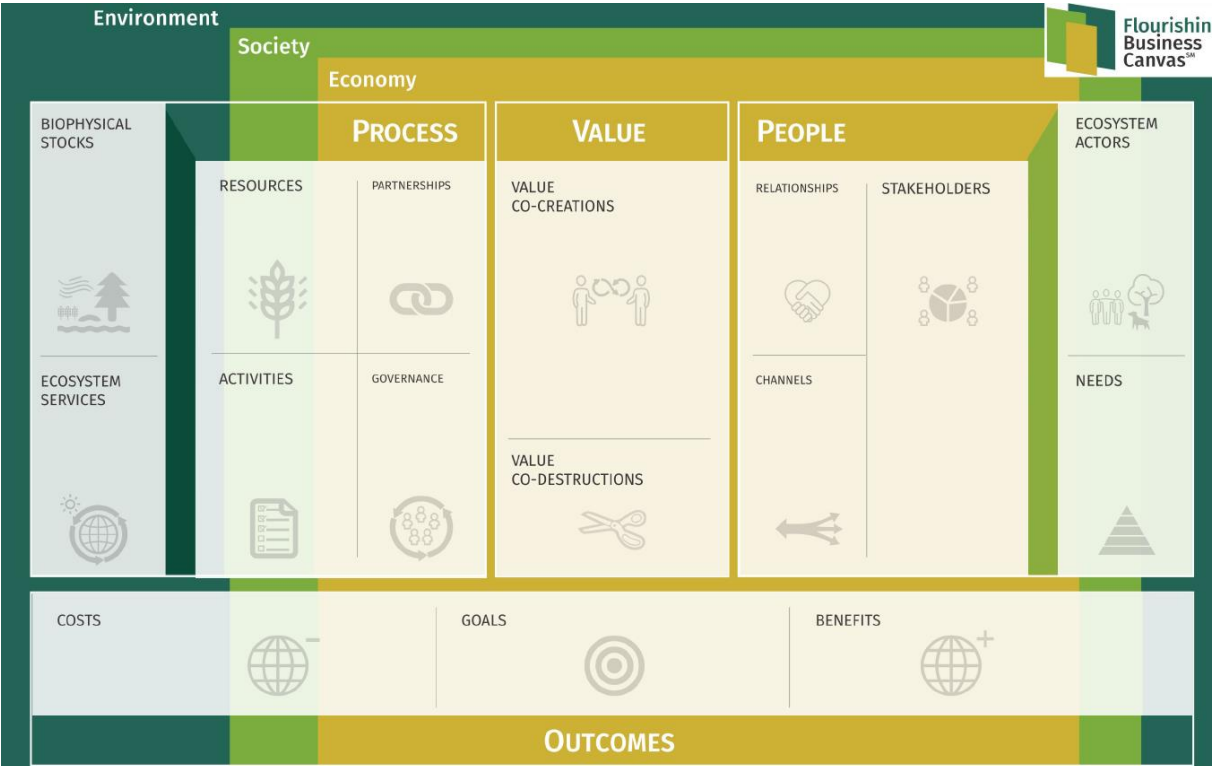


Figure n.1: The Flourishing Business Canvas ©Antony Upward / Edward James Consulting Ltd., 2014 All rights reserved.

Part 3

Innovative Circular Business Model (ICBM) for adaptive reuse of cultural heritage

Adaptive reuse is about adapting existing architectural local resources to the needs of the community, through a wise decision-making process between multiple urban stakeholders, and without compromising the cultural values of such resources. An ICBM aims to address cultural related issues such as protection, conservation, and adaptive reuse. Hence, such model must tackle key features of the field of cultural heritage:

- The definition of cultural heritage, made of tangible (built heritage) and intangible heritage (traditions, knowledge, arts and crafts, performing arts), and natural heritage. The definition of values for the heritage (architectural, historic, aesthetic, social, etc...), and principles of conservation (authenticity, integrity) (Riegl, 1902; Lipe, 1984; English Heritage 1997; Feilden and Jokilehto 1998; ICOMOS 1998; Klamer and Zuidhof 1999; Mason 2002; Council of Europe 2005; Throsby, 2006; Ost 2009; Throsby, 2012; Klamer, 2013; Ost 2019)
- The identification of stakeholders involved in the protection and conservation of cultural heritage (visitors, heritage administrators, conservation specialists, site managers, local, regional authorities, tourism managers, staff and employees, residents, owners, local businesses, craftsmen, investors, local communities, future generations) (Benhamou 2003; Ost 2006; 2009; Throsby 2001);
- The multi-disciplinary approach of heritage conservation, and in particular tools and principles of heritage economics (public good, cultural capital, use and non-use values, multi-criteria analysis) (Ost 2006; 2009; 2019; 2021; Throsby 1999; 2002);
- The Millennium Development Goals, and overarching sustainability objectives from social, economic, environmental, and cultural pillars (Dessin et al., 2015; UNESCO 2013; 2016; United Nations 2015; 2017)

- The holistic approach of Historic Urban Landscape that provides a matching between heritage conservation and urban development, with participatory approach and engagement tools (UNESCO 2011; Labadi and Logan 2016; Bandarin and Van Oers 2012; 2015; Pereira Roders and Bandarin 2019)

Building on the Strongly Sustainable Business Ontology and the Flourishing Business Canvas, we attempt to develop an innovative business model for adaptive reuse of cultural heritage in a perspective of circular economy. It is a first tentative towards developing a tailor-made operational management plan for the integration of abandoned, underused, or not in use cultural heritage assets within the framework of the circular economy. This enables a holistic vision which addresses the uniqueness of values, the network of actors and stakeholders, the processes, and sustainable outcomes. In terms of circularity, this model aims at conserving the common goods (abandoned, underused or not in use cultural heritage assets), elongating their lifespan and incentivizing the co-creation and regeneration of new sustainable values within our ecosystem limits.

The structure of any business model aims to address the central core of the activity: (*What are the values being co-created* in order to achieve the vision that we have and *Why are we building the model?* This is nothing but simple, because it relies on the intrinsic link between *What* and *Why* and makes us reflect on which are the intermediate and ultimate goals in our project. Both types of goals refer to values, and it is a remaining question to decide which goals/values are the instrumental ones, and which goals/values are the final ones. In fact, the discussion is about what comes first: heritage conservation or sustainable development?

The current aim of UNESCO is to integrate sustainable development into heritage conservation, on the basis of the four pillars for sustainability: cultural, economic, social, environmental (UNESCO 2015), an agenda that is consistent with the United Nations Development Goals specifically, Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable; Target 11.4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage (UN 2015; 2016). Still, this integration has different interpretations: culture as fourth pillar to the three initial pillars of sustainable paradigm, culture mediating between the three initial pillars, or culture as embedding the three initial pillars (Soini and Birkeland 2014; Dessein *et al.* 2015). And so is the discussion about what comes first. Besides, the term 'value' is a challenge in itself, frequently misused or mixed up with 'impacts', and 'outcomes'.

A new cultural paradigm is addressing large transitions that the world is experiencing today. It is embedded in a narrative that goes beyond the contribution of heritage to cultural goals. With globalization, growing urbanization, climate change, and economic transformations, heritage conservation is challenged to provide sustainable solutions.

Through a new 'up-stream' paradigm that starts with global challenges and considers cultural heritage as a resource subject to the creativity of contemporary cultural production, and as a driver for smart specialization strategies, 'conservation' will have a better chance of surviving the destructive forces of rapid, merciless urban development. 'Up-stream' refers to the fact that emphasis is put on the contribution of cultural heritage to social and economic changes, to convince policy makers to invest in the conservation of cultural heritage.

So there is a shift from an intrinsic approach of cultural heritage to a more instrumental one (today, it is not enough to legitimate culture by its own ends), from top-down to bottom-up approach, from heritage by designation to heritage by appropriation, from emphasis on tangible to emphasis on intangible, from considering monuments to considering vernacular heritage, from an expert perspective to its role as mediator, from static to dynamic conservation in the perspective of Historic Urban Landscape.

As a result, in the proposed business model, we define sustainable development as the ultimate goal, and heritage conservation as an instrumental way to achieve sustainability without compromising heritage values. In brief, the model is a canvas that analysis the interrelationships between economic, social and environmental values embedded in a contextualized historic and cultural setting described above, in particular as per the recommendation on Historic Urban Landscape approach.

Hence, the structure of our innovative business model aims to address the central core of the activity (***What** are the values being co-created and **What** is the vision behind co-creation or co-destruction values?*) through a supply-driven reflection (***How** to process? And **How** can we co-accomplish what we want? Using which resources?*) and a demand-driven reflection (***For whom** building the model? Who are the customers and users? The community at large?*), which are reconciled with the ultimate goal to achieve sustainable development (***Why** are we building this model? With which means shall we evaluate how successful it is?*)

Finally, we would like to pinpoint that the idea of developing an ad-hoc ICBM nourished during our work in the four pilot cities/region of H2020 project CLIC. Our epistemological research was carried out in two cities, Rijeka in Croatia and Salerno in Italy. In one rural area in Västra Götaland Region, in Sweden, namely: Fengersfors and in Pakhuis de Zwijger in Amsterdam. Since this is an iterative process, in order to co-design the Business Model, we ran Circular Business Model workshops in Fengersfors, Amsterdam, Rijeka and Salerno. Due to the

outbreak of COVID19 pandemic, only the workshop in Fengersfors took place physically. The four workshops took place in the second quarter of 2020 (between February 2020 and June 2020) and following their implementation, the authors published a project deliverable in which the results of the pilot testing were shared. It's worth mentioning that every ICBM was tailor-made according to the specific needs of each pilot (Saleh et al., 2020).

The available data was collected under the framework of work package 3: supporting circular governance through informed decision-making. While the perceptions mapping workshops were hosted by the Heritage Innovation Partnerships (HIPs) process. "CLIC established four Heritage Innovation Partnerships (HIPs)...each convened by a tandem of local partners, one academic and the other from the city-region ecosystem (either the local authority in the cases of Salerno and Rijeka, the regional authority in that of Västra Götaland, and an NGO in that of Amsterdam)" (Garzillo et al., 2018:18).

In the next pages, we will develop the theoretical speculation of how the four core components of the Flourishing Business Model Canvas (What, How, For Whom and Why) can accommodate adaptive reuse in a city macro-perspective or in an individual micro-perspective (a building, a monument, a site, etc...).

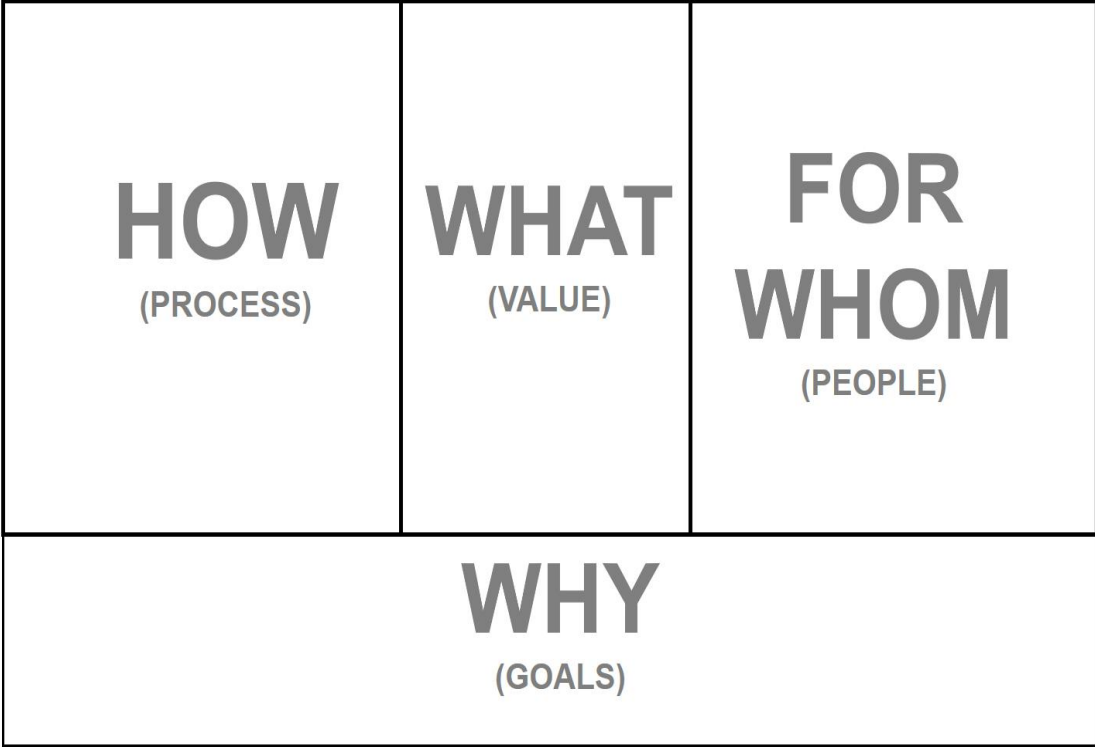


Figure n.2: Flourishing Business Model core components. Adapted from ©Antony Upward / Edward James Consulting Ltd., 2014 All rights reserved

1-WHAT

The process starts with the question of the main activity to be conducted, and the values behind it. The activity is to make use or reuse of abandoned, under used, or no more used cultural heritage assets. In urban context, cultural heritage is considered as cultural capital, made of multiple assets in the form of monuments with attached intrinsic heritage values and/or perceived values; heritage buildings; public spaces; natural assets and landscapes; intangible assets like knowledge; traditions; festivals; arts and crafts activities, etc.

One of the main questions at stake is the recognition of cultural heritage. In urban context, cultural capital is made of officially recognized heritage (UNESCO world heritage, national, local listed buildings), together with urban features which bring all assets together (like public spaces, urban furniture, design...), and also items or buildings that have a perceived recognition of values as expressed by the community.

1.1 Values of co-preservation and co-creation

Processing conservation and adaptive reuse of cultural capital enables the preservation of cultural values, and the co-creation of new values through participatory approaches, which guarantee co-preservation and co-creation of benefits for all. Furthermore, circularization of the process is applied to conservation works (materials, skills, energy, land infill, etc.) and to new uses (direct and indirect outcomes for urban stakeholders) (Gravagnuolo *et al.* 2018). The Historic Urban Landscape is an appropriate urban conservation tool that allows us to connect all these elements and conduct a holistic and integrated mapping.

In order to orient our mapping towards circularity, the following issues need to be addressed:

- What kind of values are we aiming to achieve? Which are the criteria for identifying circularization and sustainability of addressed values?
- How to enhance existing values in revitalizing the city?
- What kind of products/services/subsectors are related to such activities?
- What is so UNIQUE in what we are proposing (visionary vision)?
- How will we co-create a shared and inclusive narrative about our value proposition?

Co-preservation and co-creation of values in urban context are linked to spatial considerations. The perspective of Historic Urban Landscape that encompasses the definition of cultural capital requires to identify relevant areas for the process of circular economy. A single heritage building can of course provide outcomes from the new use on site (micro scale) and off site (meso scale). But taking circularization into consideration requires also to identify outcomes from the activity of adaptive reuse (and also values) in a broader neighborhood (macro scale). The definition of a macro scale (in parallel to micro and mesoscales) is similar to the description of a protected area, a buffer zone, and an economic Hinterland.

Values mapping

Co-designing and nourishing a visionary vision depends also on shared values. As a first step, we used the perceptions mapping methodology (Ost and Saleh 2021) to map values that participants attached to cultural heritage in CLIC pilot cities/ region. The next step was to ask the stakeholders during the ICBM workshops to define shared values to which all stakeholders'/players can remain committed and from which they could co-generate new related ones in order to keep the vision alive in the future. For this purpose, the ICBM workshop participants were provided with relevant data and maps beforehand.

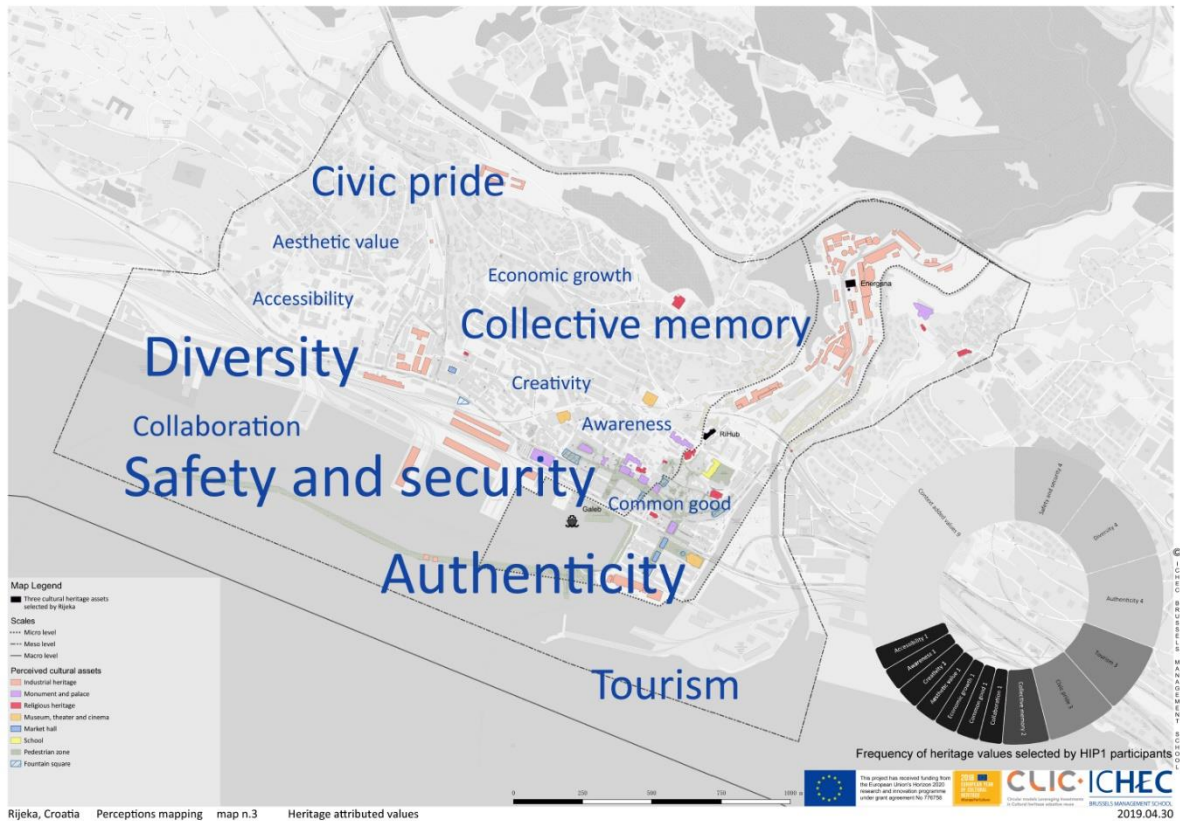


Figure n.3: Perceived cultural heritage values, Rijeka. Source: Authors.

1.2 Values of co-destruction refers to loss of values on micro, meso, and macro scale, due to the adaptive reuse decision (loss of authenticity and integrity), negative side-effects (gentrification, mass tourism, loss of intangible assets; social conflicts, etc.), opportunity cost of the decision of adaptive reuse (loss of local jobs and commerce, loss of biodiversity, etc.). The dismantlement of some heritage buildings and the succeeding new development projects on the same ground raise the common questions of ‘new’ vs. ‘old’ and the concomitant issue of comparing co-creation and co-destruction.

Co-destruction mapping

As a first step, we used the perceptions mapping methodology to map weaknesses and threats and highly conflictual areas/disliked areas to be erased according to participants. For the latter, participants bombed either single building/s or an entire area. The bombed buildings/areas represented negative side-effects related to loss of intangible assets and/or public space. The next step was to ask the stakeholders during the ICBM workshop to draw lessons from previous development projects and make projections on how to avoid negative spill-overs in the future based on the proposed adaptive reuse.

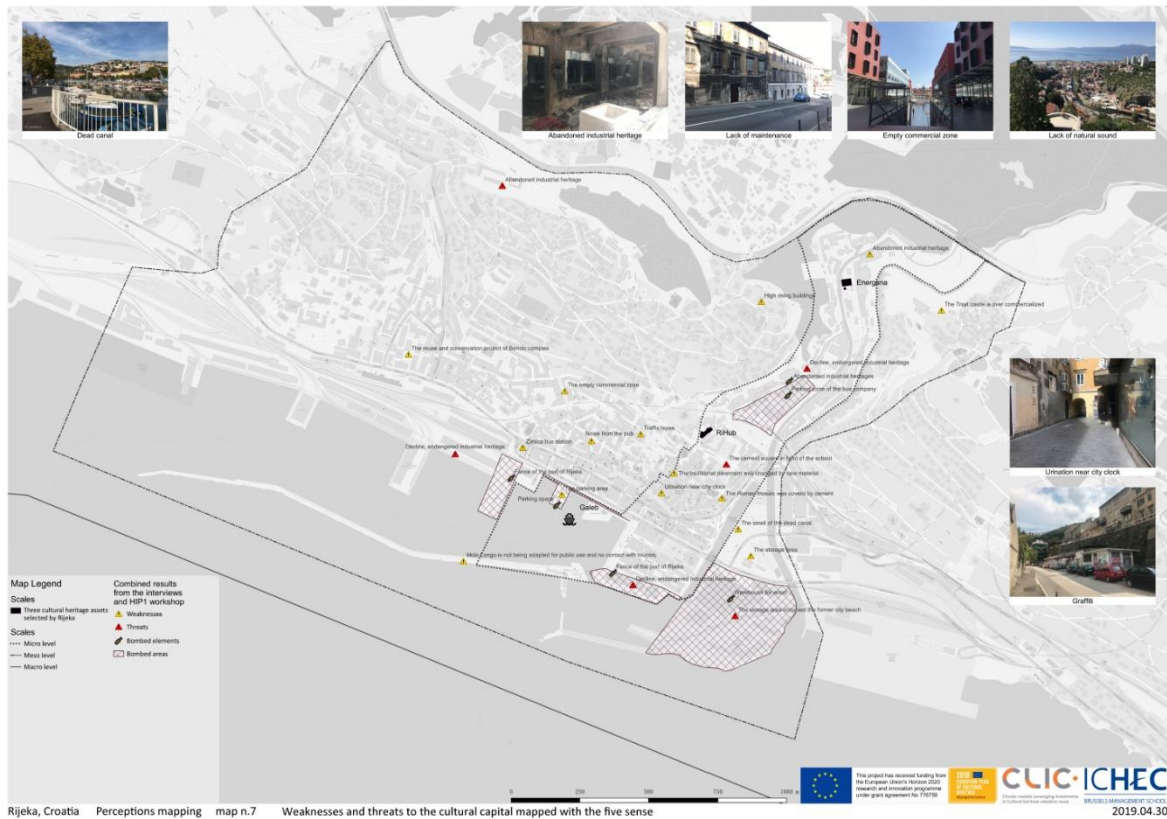


Figure n.4: Perceived weaknesses, threats and conflictual areas, Rijeka. Source: Authors.

2-HOW

The supply-driven process of adaptive reuse (question HOW?) is about the amount and types of resources being needed for making the products/services. The process is identified in terms of available resources allocated to selected activities, and made possible with partnerships, governance and financial models. Hence, the sought process is a sustainable matchmaking aimed at transforming the available input (human, natural and cultural assets) into a tri-impactful output (products/services).

2.1 Cultural capital

Technically speaking, a museum located near a building to be reused generates interactions and the sharing of common cultural values. This is about activating cultural capital or making the urban ensemble a driver for sustainable development.

2.1.1 Cultural Heritage Resources include cultural heritage assets (abandoned, under used, not in use), with attached intrinsic heritage values and/or perceived values). Such assets can be identified on micro or meso scale (buildings, blocks, protected areas, etc.), embedded in a broader urban framework.

As a first step, we used the perceptions mapping methodology to map the perceived abandoned, under used, not in use cultural heritage assets. The next step was to work with the stakeholders during the ICBM workshop on a specific abandoned, not is use or underused asset and identify an adaptive reuse with mixed uses.

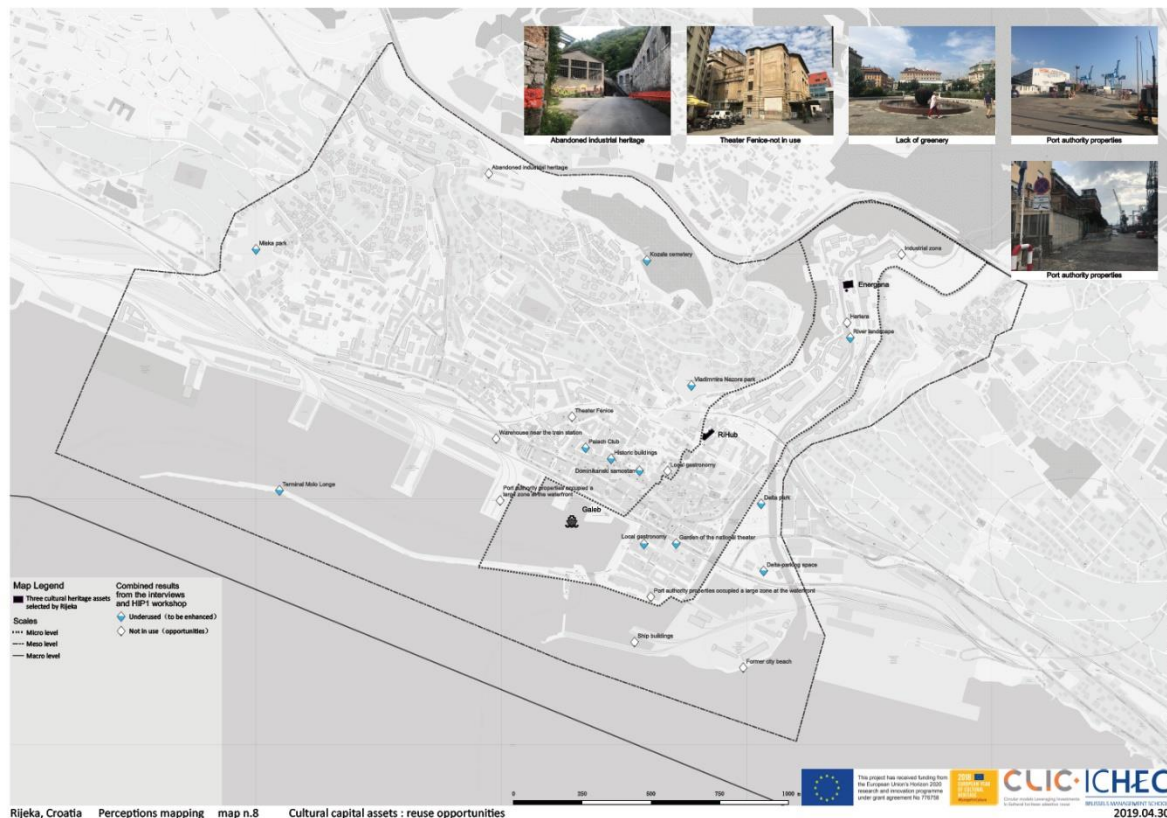


Figure n.5: Perceived underused and not in use cultural heritage assets, Rijeka. Source: Authors.

2.1.2 Historic Urban Landscape mapping (aka geomorphology) aims to identify the urban broader context where heritage resources are located. As far as heritage assets are concerned, the appropriate perspective must be considered in line with UNESCO’s Recommendation on Historic Urban Landscape, which takes into consideration all cultural, natural and human assets that contribute to the identity of the place, but also to the strengths and weaknesses of the place when it comes to activate such assets in adaptive reuse activities. It is by embedding the required activities into the processes of value regeneration and co-creation, that the cultural capital lifespan is elongated and persevered for future generations.

2.1.3 Cultural capital portfolio

Before launching the documentation process, we defined with our pilot CLIC cities/region three levels of intervention: micro (building level), meso (historic center level), and macro (city level). The micro level was set by the cities/region when each designated between 1-3 immovable heritage for adaptive reuse. The meso and the macro level were drawn in close cooperation with the pilot cities/region.

In order to identify the multilayers and interconnections between the human, natural and cultural (tangible and intangible), international and local values present in our CLIC pilot cities/region, the HUL methodology was adopted. The documentation phase of the state of the art was structured in three different moments. Firstly, we asked our CLIC pilot cities/region to provide us with data related to the Urban component at the macro level (geological and topographic mapping, environmental mapping, regulation mapping, historical and cartographic mapping, mobility mapping and current land use mapping). Secondly, we asked our CLIC pilot cities/region to provide us with data related to the heritage component at the meso level (boundaries and identification of the cultural capital). Finally, CLIC pilot cities/region were asked to provide us with data related to the selected sites for adaptive reuse at the micro level

(characteristics of the cultural heritage, economic and management aspects, conservation status, potentials and constraints for its reuse, accessibility/ proximity, and existing ideas of adaptive reuse).

Thanks to the richness of the collected data by CLIC pilot cities/region and interns' fieldwork, the authors were able to map the cultural capital.

Moreover, HUL is related also to people's perceptions, personal connections and sentiments. In order to capture this specific aspect, a two-step methodology was developed and put into practice. Firstly, during the month of September 2018, four interns undertook a one-month internship at Rijeka municipality, Salerno municipality and Vastravet in Gothenburg, and Pakhuis de Zwijger in Amsterdam in tandem^{vi}. During the one-month internship, the interns conducted random and selected interviews in relation to people's perception of the cultural heritage at the meso level. Secondly, an interactive workshop was carried out in Rijeka, Salerno and Gothenburg, during which stakeholders' perceptions were mapped in relation to values, weaknesses, threats, opportunities and desired future urban development at the meso level (Saleh and Ost 2019; Ost and Saleh 2021).

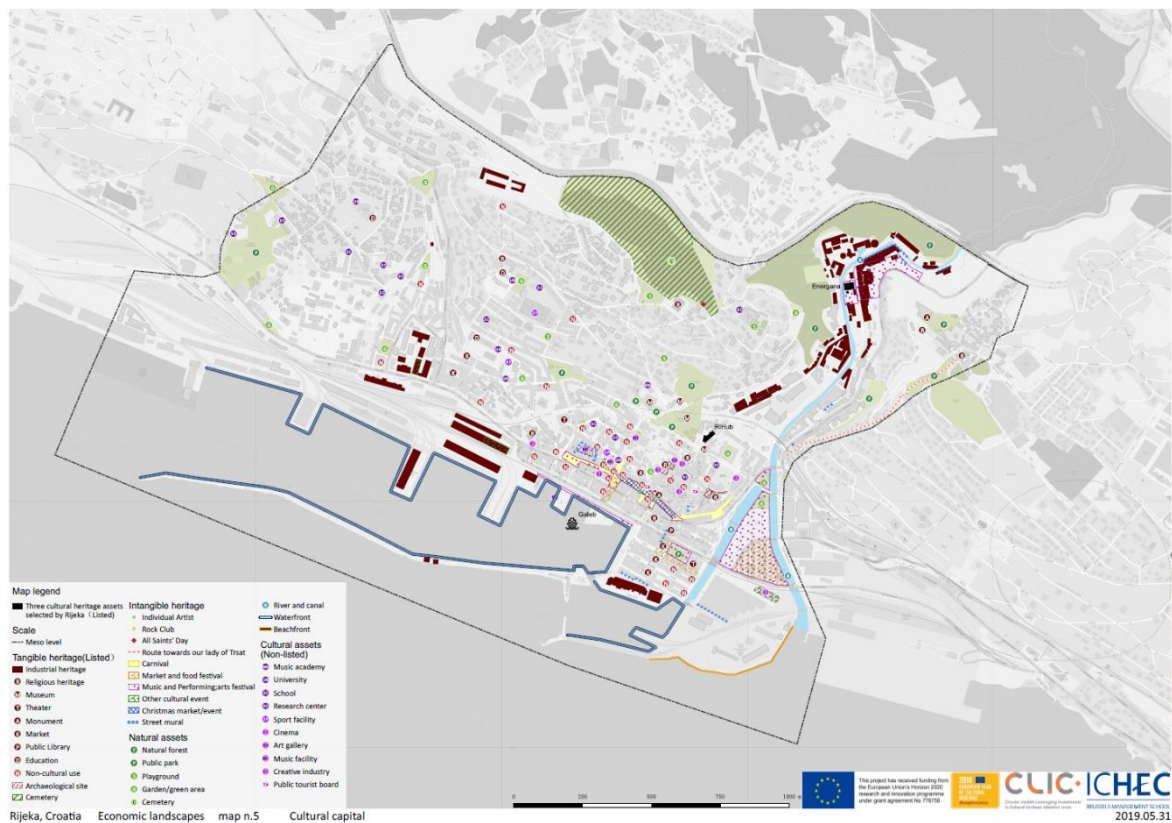


Figure n.6: Cultural capital, state of the art, Rijeka. Source: Authors.

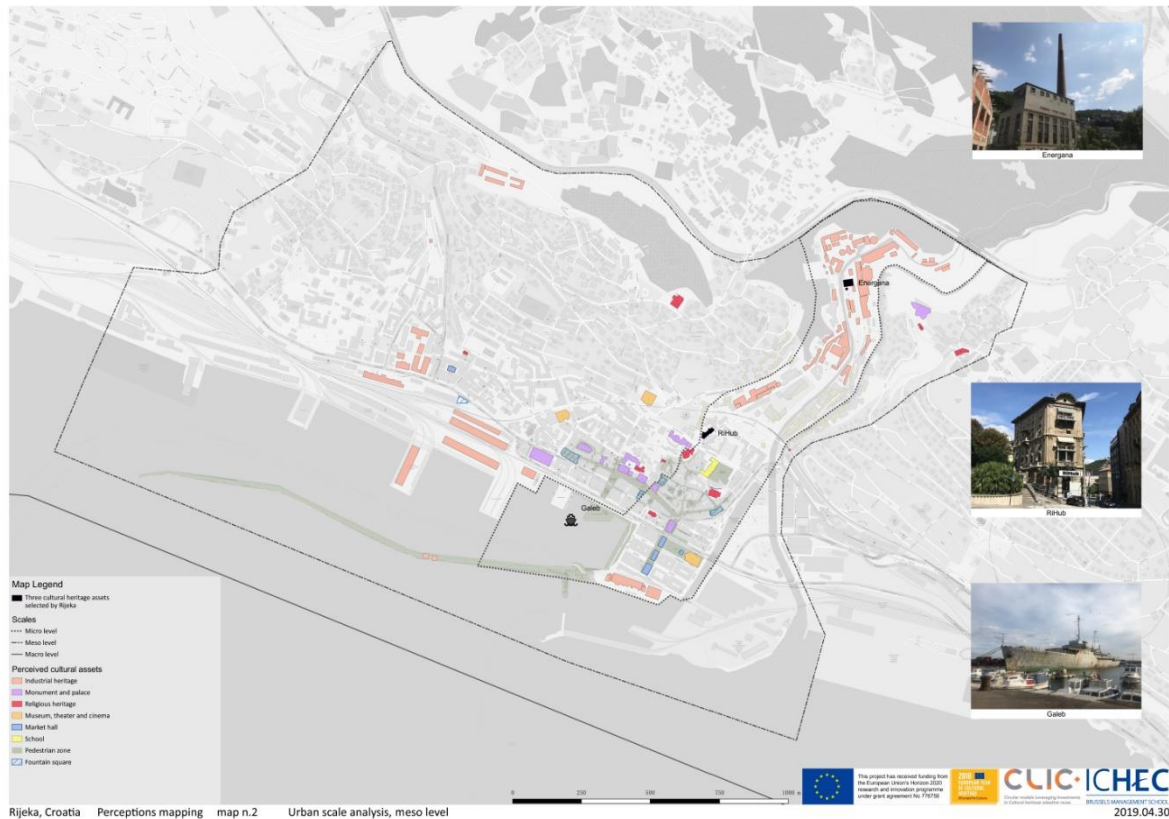


Figure n.7: Perceived cultural heritage assets, Rijeka. Source: Authors.

2.1.4 Adaptive Reuse (Activities) include all kind of processes of adaptive reuses of cultural heritage in order to maximize values co-creation and to minimize values co-destruction. On micro level, making use of some heritage buildings for the purpose of existing or new urban needs, requires efficient circularization of local resources in a closed-loop perspective, and through a regenerative process. This means that the core activities of adaptive reuse is not just to protect heritage values, but to operationalize also the processes of a circular economy. Here again, the identification of circularization of adaptive reuse is at micro level (how conservation works are circular?), but also at meso and macro levels (how the new use is consistent with other urban uses in the city?) is crucial (Gravagnuolo et al., 2017; 2018).

The input/output processes of adaptive reuse need to address the following questions:

- What reuse might achieve our value proposition? How to monitor and design out any negative externalities?
- How to enable circular flows of materials (construction/demolition/waste); How to further valorize/ less waste assets? (embedded energy, local skills, techniques and knowledge, environmental / social capital)
- How to create and foster heritage community network(s) and provide feedback mechanisms (exchange; physical and digital interactions and dissemination)?
- How to provide a shared, resilient and nimble reuse vision in the short term (testing through temporary activities) versus long term achievements?

Activities like conservation and adaptive reuse must be embedded themselves in a broader framework where strengths and weaknesses are considered at macro level. In brief, a systemic approach which is totally consistent with the Urban Historic Landscape approach.

As a first step, we used the perceptions mapping methodology to map adaptive reuse proposals for some of the abandoned, not in use, or underused assets. However, in order to embrace a shared vision and develop an in-depth framework, a viable adaptive reuse project was developed for each ICBM.

2.1.5 Spatial integration and economic landscape (Ecosystem Services) include urban factors which may benefit to current and future cultural capital as the result of adaptive reuse. The production of goods and services through activities include the improvement of cultural capital as the result of conservation works, and the provision of new urban uses for stakeholders. It addresses spatial integration of the heritage building and surrounding urban functions, mobility, public services, city regulations, businesses, points of attractiveness in macro area, walkability, utilities, infrastructures, land uses, etc...

Cultural capital spatial integration was developed from two different perspectives. First, people's perceptions of the most enjoyable routes and places within the meso level. Practically speaking, people mapped the assets according to their level of accessibility/ proximity/ walkability. Second, the state of the art, cultural capital was overlapped with mobility, tourism amenities and land-use layers in order to assess cultural capital and its current level of spatial integration.

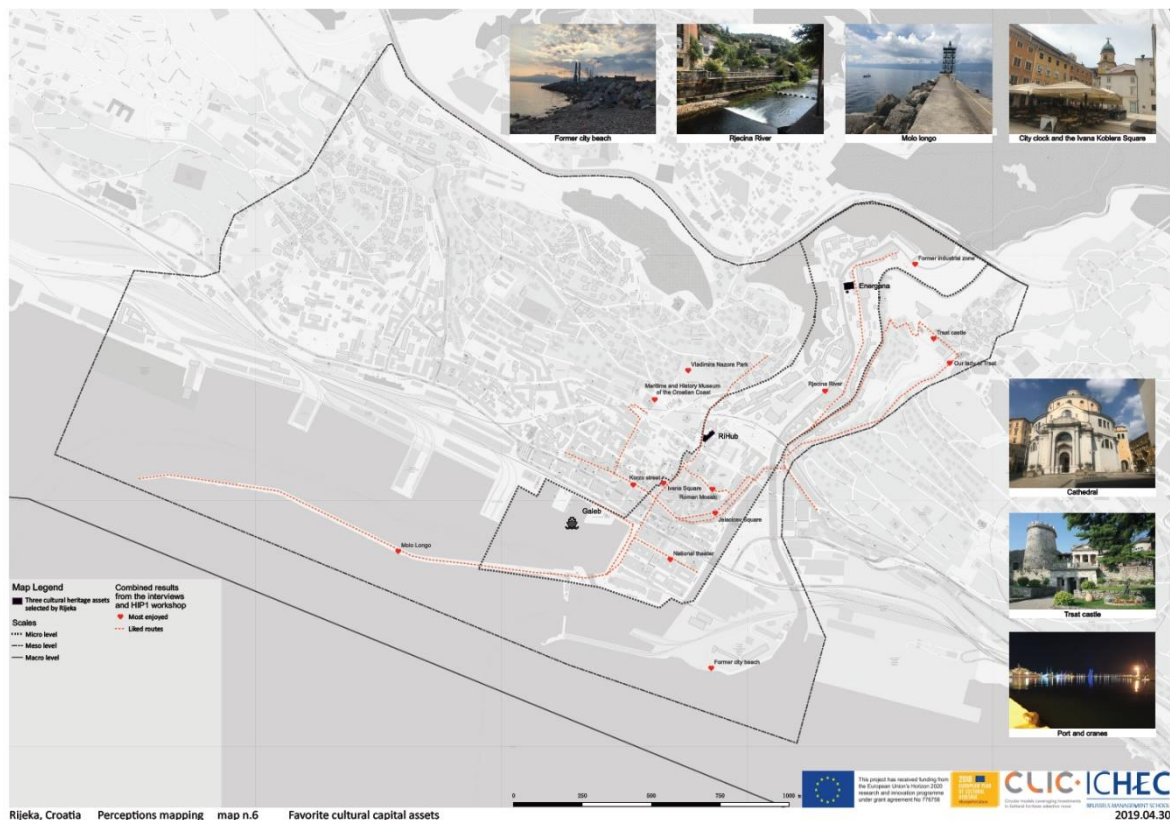


Figure n.8: Perceived spatial integration, Rijeka. Source: Authors.

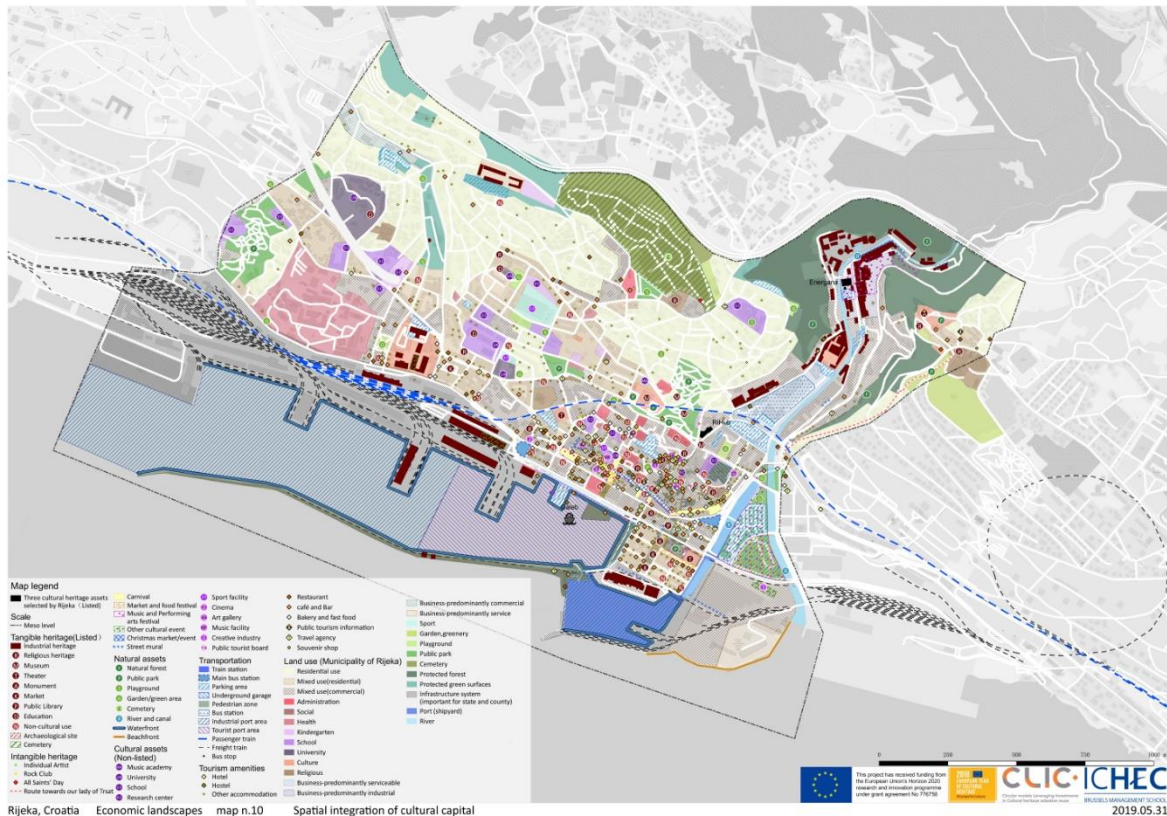


Figure n.9: Cultural capital and its spatial integration, state of the art, Rijeka. Source: Authors.

2.2 Tools

The HOW process requires many innovative tools, techniques and forms of co-organization to make adaptive reuse of cultural heritage a successful practice and best example of circularization of the local economy. Such elements may be broken down into new partnerships, innovative solutions, and circular channels.

As complement to the *how process* of the business model, we need to assess the existing or potential partnerships which could maximize efficiency of resources allocation. In brief, conservation and adaptive reuse is never an isolated process but must be considered as a multi-disciplinary task with a wide range of urban stakeholders.

2.2.1 New partnerships may include structures and organizations of cooperative, solidarity, sharing, communing and circular economy (Maria Ramos 2016, Bradley and Pargman 2017; Shareable 2017; Patti and Polyak 2017; Bauwens and Onzia 2017; Bauwens and Niaros 2017; Mossay and Kemmeter 2017; CO-CITIES OPEN BOOK 2018; Jonker *et al.*, 2018)

Some relevant questions to address are:

- What are the formal stakeholder relationships required to deliver your value propositions i.e multi-actor agreements?
- Who are the partners organization's and what agreements for resources and activities should be made with them?
- Which partnerships with circular organizations' (flows of materials, information and capital) are put in place so that the circular / closed loop dimension is feasible ?

2.2.2 Innovative solutions(s) reflect the value proposition and incorporate circularity by developing:

- The main features/components of the idea/solution; and

-What do users, customers and other stakeholders have access to (products, services, activities, etc...)?

During the ICBM workshops, solutions were tested through polls and random and/or selected interviews. Based on the testing, only desirable solutions were developed further.

2.2.3 Circular channels aim to identify closed loops of communication, sharing information, and giving local visibility to the solution. The main questions at stake are:

- What channels are used to communicate, give access and deliver value propositions?
- How do your services/products/ solutions reach end users? What are the channels (physical and virtual) used to make your offer a) known b) available?
- What are the channels that you put in place to stay in touch with your end-users? to get their feedbacks re their satisfaction & needs / expectations?
- How far does your supply chain integrate the "reduce, recycle, reuse" principle?

3. FOR WHOM

The demand-driven process of adaptive reuse (question FOR WHOM?) encompasses all actors being involved along the decision-making, management, and monitoring of any project of conservation that aims to preserve heritage values, while providing adaptive reuse for the urban community. Like the analysis of HOW to conduct the project, the question of FOR WHOM to conduct a project requires a broader framework. Although projects are identified on a micro (building) or meso scale (heritage area), beneficiaries of the project may be only relevant on macro level (the city) and beyond.

3.1 End users, customers and other stakeholders are all types of social, cultural, economic, and political actors involved in the project, either as direct beneficiaries or as being indirectly impacted by the outcomes of the project. It is noteworthy that heritage issues reveal a list of quantitative and qualitative outcomes which impact individual, as well as collective stakeholders. Non-marketable heritage values, (described as non-values in the economic literature) are often identified as collective feelings and group preferences towards the social return of the project. Externalities are to be considered because of the commonly agreed definition of heritage items as economic public good. Examples of option, existence, or bequest values aim to measure the satisfaction of beneficiaries, sometimes remotely to the place. Projects of adaptive reuse reveal or generate connections between end-users, urban stakeholders and decision-makers to create synergies, cooperation, collaboration that enhances participatory approach for monitoring the adaptive reuse and its impacts. Urban stakeholders include direct actors of the project, but also all urban stakeholders inside and outside of the meso area, like visitors, heritage administrators, conservation specialists, site managers, local, regional authorities, tourism managers, staff and employees, residents, owners, local businesses, craftsmen, investors, local communities, future generations...etc.

Three relevant questions about end-users, customers and other stakeholders (beneficiaries of adaptive reuse) are to be addressed here:

- What are the end-users of your project? The customers?
- Who are the other stakeholders of the project (producers, users, consumers, decision makers, policy makers, investors, supporters, etc...) besides users and customers?
- Who are the 5-8 most important stakeholders?

As indicated above, there is always a broader macroeconomic system which enable ecosystem actors to interact in the process of conservation, adaptive reuse, or in the outcomes of such project. Identification of the needs, willingness, and perceptions of the community is essential.

Stakeholder mapping

A first screening of stakeholders took place before the workshop. During the workshop, a stakeholders' mapping was carried out. The aim was to understand who will benefit from/ be affected by what, measure their level of power/influence and try to create synergies/cooperation/collaboration.

3.2 Needs can be identified through common in-field qualitative assessment of the urban stakeholders. Each adaptive reuse project aims to benefit the various stakeholders and more specifically the local community. Therefore, the main questions at stake are:

- What are the key needs and pain points of your main stakeholders?
- What are their expectations towards the project?
- Which needs do you intend to address?

To get an answer to the 'for whom' question, it requires additional information about the outcomes of the project in order to maximize the embedding of the project in the whole city. This could be a time-consuming process explained by the common values of heritage. Relationships between stakeholders, and between project actors and the rest of the city, are major factors, as well as the channels of communication and implementation the project is going to adopt.

Needs mapping

As a first step, needs and initial ideas/projects were mapped through perceptions mapping. In preparation for the ICBM workshop, a PESTEL analysis based on the state of the art was carried out and stakeholders were requested to validate/amend/reject the analysis during the workshop.

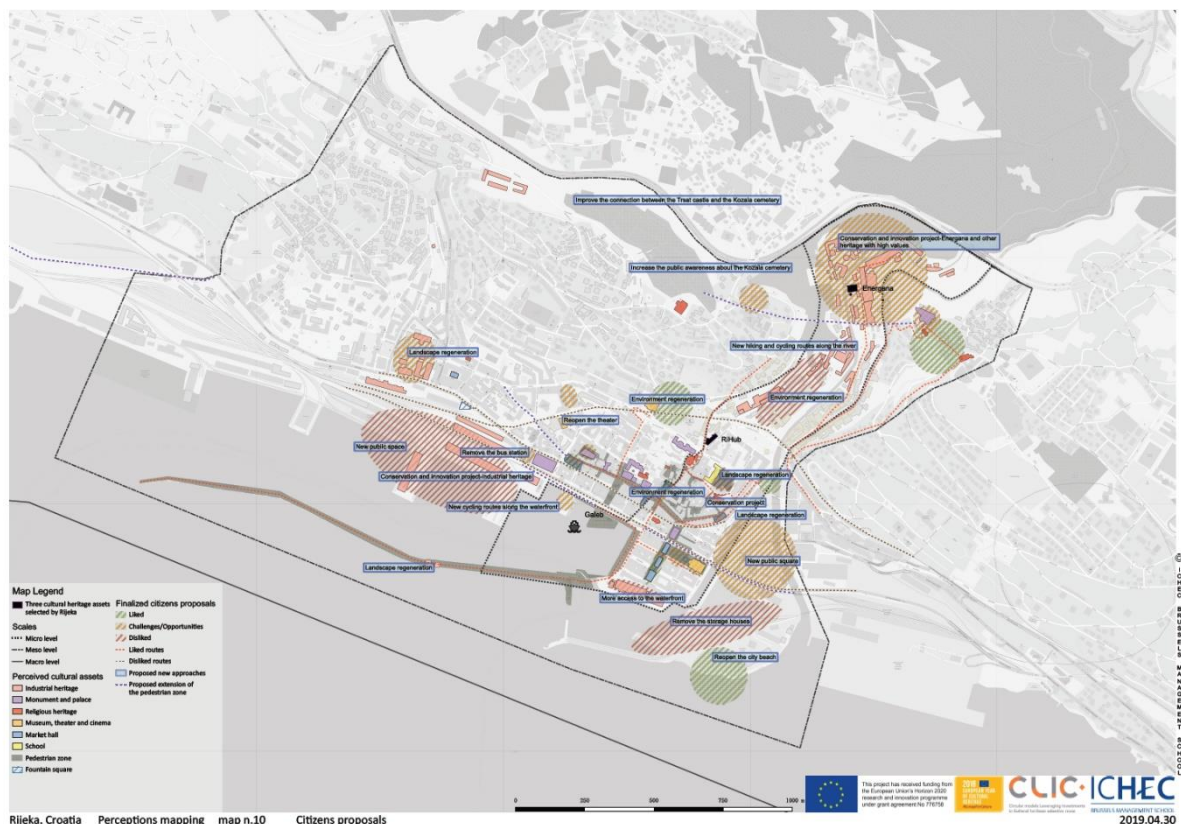


Figure n.10: Perceived needs and proposed ideas/projects, Rijeka. Source: Authors.

3.3 External factors can be described through opportunities i.e., levers for the success of the project and risks/threats i.e., aspects that can adversely impact the project. Needs and

constraints can be measured through community preferences on the basis of a PESTLE analysis (Political, Economic, Social, Technological, Legal, Environmental, opportunities and threats) aimed at preparing the strategic vision of the city and clarifying the framework in which circularization is taking place. Basically, there is less chance for developing a circular project in a single building if the macro environment is not providing positive fundamentals to such initiatives. This indicates also how circularization at city level requires some organizational collaboration between urban stakeholders and city authorities to be successful. It is noteworthy to keep in mind that stakeholders do not possess the same capability to transform the city, or to take and implement decisions. Therefore, it is important to understand:

-Which need(s) are we unable to satisfy and explain why through a PESTEL analysis (politics, economics, social, technology, environment, legal).

3.4 New governance models refer to public-private-civic agreements to decide upon, manage, co-create and share benefits, costs, risks, and responsibilities of adaptive reuse. It covers several questions among the others:

- Which stakeholders get to make decisions about what the organization does, where and how activities are undertaken and how resources are transformed?

In other words, who makes decisions about:

What to conserve and reuse

Managing the common good (public, private and community)?

Setting priorities: where (which area first) and when (high priority, medium priority, low priority)?

- How are local communities actively involved, mobilized, involved in the governance?

Based on Rhodes proliferating and evolving work on network governance (Rhodes 1997; 2007;2017; Rhodes and Bevir 2006,), we attempt to provide a first definition of circular governance as:

A fluid coordination and cooperation process between a network of public-private-civic stakeholders who co-create, co-manage and co-implement policies and co-provide/exchange services and/or products within an interdependent relational process.

Circular governance consists of interactions between a multiplicity of networks of public-private-civic stakeholders who are self-managed and self-organized at the operational level while interconnected and interdependent at the structural level in terms of responsibility, accountability, transparency and trust. The interdependence should apply to the shared and exchanged cultural heritage assets and/or services to achieve full circularity.

Governance as self-organizing networks is gaining more and more momentum in light of the speeding up of the state's withdrawal from the welfare system; the scarcity of available urban resources and the growth of populism which endangers the common goods. The proliferating of civic initiatives of city-making, fablabs and Peer to Peer production is a new frontier of urban governance (Foster and Iaione 2016; Maria Ramos 2016; Bauwens and Onzia 2017; Bauwens *et al.*, 2019). Indeed, a myriad of different actors: individuals, citymakers, NGOs, entrepreneurs, private businesses, civil society organizations, associations, neighborhood committees, social innovators, research institutions etc., are playing more and more a vital role in taking care of abandoned resources. Thus, practically, governing the commons for satisfying common needs. Our main challenge is to embark on a sensemaking process (Weick 1995) so as to decode the different intersecting interactions between the networks at different levels and scales and most importantly, assess the outcomes.

Foster and Iaione (2016), identify the raw and vacant urban lands as commons and consider some of the abandoned or not in use public and private structures and buildings in the urban environment as “open access commons”^{vii}. In order to co-govern the city as an economy of commons, the scholars propose a set of democratic design principals (2016:326): horizontal subsidiarity, collaboration, and polycentrism.

I-Horizontal subsidiarity describes the enabling and empowerment process. It refers thus to the promptness of governments, at different hierarchal levels, to facilitate the initiatives/actions/projects of proactive citizens (individual and/or collective) who are willing to take care of a common good for the benefit of the society. This means that the citizens are conceived as city-makers and not as city-consumers who share the responsibility of preserving but also for generating inclusive values for the benefit of everyone.

II-Collaboration is a founding principle of the democratic design. It is conceived as the medium through which heterogeneous networks of individuals and institutions interact proactively, co-govern common resources and co-create shared values or collective goods.

III-Polycentrism: Polycentrism builds on Elinor Ostrom’s framework for polycentric governance (2010) where not only the state and the market are the governing bodies of the common goods in terms of production of goods and services. Ostrom’s framework encompasses as well other forms of governing the common goods and how heterogeneous groups of users coexist independently with autonomous center of decision making and can cooperate, co-create rules for co-managing the common goods.

In the polycentric approach each of the players/actors have its own rules and collaborate and interact interdependently in order to co-provide products and services.

The above model allows the partner state (Bauwens 2016) to play the role of an enabler (Foster and Iaione 2016; Iaione, 2016; Bauwens and Onzia 2017; Bauwens et al., 2019) that connects the various networks engaged in the production and/or co-management of the common goods. As enabler, the partner state should also put on the table the “open access commons” and facilitate the discussion about a vision for urban conservation development. Once agreed, the public, through open calls for reuse, gives the possibility to networks of active citizens, private sector and civil society organizations and representations etc., to propose reuse projects. In this sense, the reuse of common goods and in this case, cultural heritage assets, would be collaboratively co-managed by users but not owned. In order to implement the proposed reuse and activities the civil society organizations could opt for working hand in hand with the private sector (small and medium enterprises, social enterprises, etc) each in his/her capacity to regenerate the common good (cultural heritage asset). Communities co-organizing and co-implementing new and mixed uses co-create and generate new values. These values improve the quality of the lived environment and the wellbeing of the community because of the fostered and regenerated relationship with the common good. Activating the common good and in this case, the multidimensional productivity of cultural heritage (Gravagnuolo *et al.*, 2017; Bosone *et al.*, 2021) through shared new uses, not only satisfies needs but it also fosters social cohesion. The partner state has also to play a sustaining role through regulations and collaborative public policies that incentive and foster innovation and value co-creation by civil society. In the case of cultural heritage, the public should put into force regulatory mechanisms that incentive adaptive reuse of cultural heritage. This activity should aim at preserving the intrinsic value, regenerating values and sharing the cultural heritage resources/s while assuring inclusive access and sustainable use. Avoiding in this way monopolistic exploitation and management of common goods for the benefit and enjoyment of a restricted/niche group of the society. Thus, the partner state should promote and sustain commons-based Peer Production where People cooperate voluntarily on an equal footing in order to achieve a common goal (Bauwens 2016; Bauwens *et al.*, 2019).

The polycentric framework in the CLIC cities

The above delineated process of co-governance of the “open access commons” evolved under the framework of the Heritage Innovation Partnerships in the CLIC pilot cities/region. The two coastal cities of Rijeka and Salerno have prepared an open call for the reuse of the commons and both municipalities are committed to the role of enablers. Networks of active citizens, private sector and civil society organizations proposed reuse projects and participated in the ICBM workshops. In the meantime, in Salerno following the first HIP meeting, stakeholders started meeting spontaneously. The municipality played an enabling role by providing human resources and support. The three principals of democratic design were put into practice. First, the municipality of Salerno played the role of enabler by facilitating the initiative of proactive stakeholders of transforming the HIP meetings into a permanent lab in the city. Second, cooperation between heterogeneous networks of individuals and institutions to co-govern the common resources and co-create shared values or collective goods is on-going. Indeed, an NGO (Giardino della Minerva¹), the municipality, H2020 project CLIC coordinator IRISS-CNR² and a cultural association (Erchemperto³) developed a plan for the adaptive reuse of the commons under a shared framework.

4. WHY

The last question relates to the goals of the project (Why do we embark on such a project?).

Heritage conservation addresses its own cultural goals, while adaptive reuse makes cultural goals compatible with development goals, and circular economy makes such projects compatible with sustainability, as confirmed by the Millennium Development Goals (2015b), the UN-Habitat Agenda (United Nations 2017), and UNESCO’s Declaration of Hangzhou (UNESCO 2013). The ‘Why question’ addresses goals and the assessment of how projects achieve expectations. Accordingly, the follow-up is to describe and measure costs (costs assessment in terms of financial and social costs; negative impact on stakeholders from conservation works and adaptive reuse in the short and in the long-run; efficiency test and monitoring through criteria and indicators), and benefits (benefits assessment in terms of financial and social benefits; positive impact(s) on stakeholders from conservation works and adaptive reuse in the short and in the long-run; efficiency test and monitoring through criteria and indicators).

Under a sustainability framework, we may reflect on how to define a tri-profit success (environmental, economic & social), being the difference between social benefits and social costs. The final outcome represents the aspired result in terms of preservation of human, natural and cultural resources and attaining human well-being within the limited resources of our cities. More practically, the reflection is made as a trade-off between social impact and financial return. Taking into consideration the cultural values of heritage, and the broader perspective of the ICBM, any Circular Business Model should aim to address the social impact (non-marketable) with the assumption that there is a correlation between financial and social returns. To capture social impact, together with private individual return on investment, the suggestion is to rely on appropriate measures of a continuum that extends from fully commercial investments to philanthropic grants, along a risk-adjusted evaluation of return on investment. For example, the Omidyar Network has a long history in investing in social projects with expectations of balanced financial returns (Bannick and Goldman 2012; OECD 2015; Bannick *et al.*, 2016; Ost 2009;2016;2019). It suggests a framework where the continuum of investment

¹ <http://www.giardinodellaminerva.it/>

² <https://www.iriss.cnr.it/en/>

³ <https://www.erchemperto.it/>

return is a ratio between expected financial return and expected social impact, and setting categories of tools, from commercial, to sub commercial, and grants (Bannick et al., 2016).

New financial models aim to achieve a trade-off between financial return and social impact. The question is how to combine these two financial objectives, and if we need to sacrifice part of the financial return in order to maximize the social market. In terms of risk, the trade-off is between straight return on investment (risk-adjusted market rate) and social-oriented return (risk-adjusted below market rate). The way is to measure a continuum between fully commercial investments and philanthropic grants. On one end, investors act as they do in fully commercial investors and expect market-based return for their investment. Bringing together co-investors with different perspectives on how the project achieve both financial and social impacts, financial consortiums could share among their members the expected risk and return of the projects. By accepting that projects in conservation have major social impact, investors do attach a lower risk (and expect a lower return) to any investment.

The Omidyar Network suggest such continuum of financial models, starting with fully commercial models (with and without co-investors), sub-commercial investment (with expectations of below market return, or just capital preservation), and philanthropic grants that are expected to cover some of the cost of the investment. It is noteworthy to mention that in any case, investors require from the project a sound managerial process, a robust business model, and strict monitoring of activities and results.

As far as the above characteristics are concerned, innovative financial techniques and tools can be of different natures: crowdfunding and co-funding (for example D'Artagnan platform^{viii}), local micro-financed projects, recycling funds (revolving funds, Blockchain, NFTs & other Cryptos), and private-public financial partnerships (matching grants, etc...).

4.1 Costs (-)

In terms of costs, the issues at stake are:

-What are the financial costs of the project in terms of the conservation work and adaptive reuse?

-What are the capital expenditures and operational costs associated to the solution?

-What are the negative externalities of the project in non-financial terms:

social (i.e gentrification, mass tourism, loss of intangible assets; social conflicts, decreased happiness, illness)

environmental (i.e harm/depletion of natural resources)? What are the short term or long term sustainable costs?

opportunity costs of the decision of adaptive reuse (loss of local jobs and commerce, loss of biodiversity, dismantlementt of the buildings and new development projects, etc.).

loss of authenticity and integrity coming from the adaptive reuse decision

4-What can you do to mitigate / neutralize these adverse impacts? Which costs could be shared or lowered through other users and partners? How can negative externalities be 100 times less impactful?

4.2 Benefits (+)

In terms of benefits, the issues at stake are:

- How is the financial sustainability of the project guaranteed? What are the business models that can generate enough revenue streams to increase the economic viability of the project and ensure its resilience thanks to revenue diversification?

- What are the financial vehicles used for the project? How are ethical and local investments stimulated? How is civil economy stimulated?

- What are the non-financial benefits generated by the project: social (i.e. happiness, wellbeing) or environmental (i.e. reuse and regeneration of resources)? What are the short term and long-term sustainable benefits?
- How can the positive societal impacts of the project be amplified 100 times?

ICBM workshop

During the ICBM workshops, tri-profitable costs and benefits were carefully assessed.

City/site/building:							
Team:							
Date:							
Context	Process			Value propositions	People		External environment
HUL Mapping	Resources	Solution	Channels	Value co-preservation & co-creation	End users, customers & other stakeholders	Needs	External factors
Spatial integration	Adaptive reuse		Partnerships		Governance		
Outcomes							
Costs (-)			Contribution to the Sustainable Development Goals		Benefits (+)		

Figure n.11: Proposed circular business model for cultural heritage adaptive reuse. Ost & Saleh 2019

Conclusions

Cities with tangible and intangible heritage possess not only a legacy of cultural values, but resources that, when properly used and highlighted, can be real assets for sustainable development. In particular, cities can achieve sustainability goals by putting in place circular economy processes in all aspects of adaptive reuse of the heritage. The implementation of this ambitious but realistic program can be done under conditions of innovation and creativity for all actors: public, private and all forms of active citizenship.

From a managerial point of view, it is clear that this situation presents massive opportunities for economic actors, as long as they recognize the cultural values of heritage, and at the same time find the means to prepare it for the best urban possible reuse. A business model is a way of describing how it is possible to create added value on the basis of existing resources and means, in order to meet aspirations and needs from a community and potential users' perspective.

This article is a first attempt to describe the business model framework adapted to this new situation. The ICBM is inspired by the Flourishing Business Model Canvas which takes into account also the social and environmental impacts of projects, public and collective benefits, as well as individual and private outcomes. This business model is thus, also in line with the desired objectives, in this case a careful balance between the conservation of cultural values, with economic, social and environmental outcomes.

The description of the ICBM aims to stimulate a reflection on what could be achieved in the urban field, between different interests among actors. It is thus an iterative process that assesses at every stage the desirability of the proposed feature(s); the feasibility (is it feasible? do we have the technology, resources and capabilities to fulfil it?); the viability (is the project economically sound? What possible revenue streams and BMs to adopt?) and impact (does it respond to societal challenges? does it generate positive economic, environmental, social and cultural impacts?).

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ⁱⁱ Since we speak about active citizenship and co-creation, we prefer to use the term prosumers which depict the active citizen willing to be part of the reflection, design and customization of the services and/or products according to his/her needs.

ⁱⁱⁱ The circulator is a web tool providing an overview of relevant Circular Business Models and applied case-studies: <http://www.circulator.eu/about>

^{iv} FP1: definition of a strongly sustainable firm; FP2: Definition of value; FP3: Definition of a business model; FP4: definition of Tri-profit (Upward and Jones 2015:9-11)

^v IP1: conception of an SSBM; IP2: Boundaries of an SSBM; IP3: validation of a SSBM; IP4: necessary financial viability of a sustainable model; IP5: Modelling social benefits and environmental regeneration (Upward and Jones 2015:11-14)

^{vi} The four interns were conducting their internship at ICHEC Brussels Management school under the framework of H2020 project ICHEC. In the Netherlands the perceptions were mapped in relation to an industrial heritage building (Pakhuis de Zwijger), thus at the micro level. Since this pilot is not a local authority as in the case of the other three pilots (Rijeka, Salerno and Vastra Gotaland Region), a different methodology was used for mapping perceptions.

^{vii} "...some abandoned or underutilized public and private structures and buildings in the city should constitute commons. Some of these resources, under certain conditions, mimic the conventional characteristics of an open access commons—subject to rivalry and overconsumption or degradation—and giving rise to classic commons management and governance dilemmas" (2016:291).

^{viii} Dartagnans (Préserver le patrimoine grâce au crowdfunding, <https://dartagnans.fr/>) is a crowdfunding platform exclusively dedicated to the promotion and preservation of heritage, art and culture in France.