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Developing hybrid business models in the reuse and repair sector: a case study

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Abstract: The on-going race towards innovation and growth, continuously sustained by new products, has shaped a “throwaway era” overwhelmed by waste. To overcome this logic, various repair workshops are developed in order to support citizens in giving a second life to products through a reuse or repair strategy. These repair workshops are generally small structures, with few employees and do not reach a critical size to develop a reuse and repair culture in territories. This paper relies on a practical case study, the development of the IKOS reuse, repair and recycling ecosystem in Bordeaux. IKOS is a collective composed of five partners with different economic and legal models (social companies, NGOs, etc.) on different core sectors (textile, furniture, books, building).

Through this case study, the paper raises the question of understanding how to support the development of an ecosystem with various organizations and consequently the development of a new economic, social, and governance models, which respond to economic imperatives, and social or environmental demands. This paper presents the first steps of this research action project.

Introduction

In a context of circular economy, reuse and repair issues are fundamental levers for the European Parliament to reinforce social economy sector and develop a sustainability policy. Similarly, many actions are now implemented to promote the extension of the life of products: development of reuse and repair networks (RESTART in England, RREUSE in Belgium, “le réseau des ressourceries” in France), development of the French NGO HOP to fight against planned obsolescence or development of a reparability index, etc.

In line with these actions, repair and reuse workshops are amongst the main opportunities for promoting circular economy and local resources. They offer the possibility to value territorial resources, while creating local jobs. In other words, they can be considered as promising models in order to make the circular economy attractive and promote local resources (resources, skills, means of production, training).

Nevertheless, there are still many obstacles to effectively promote this sector, above all in the early stage of the project development: development of specific supports by public actors, waste policies, land use in city centers,

funding, lack of knowledge and negative perception by consumers. Moreover, their economic models are often economically unsustainable and consequently, a diversification of the stakeholders’ network, of their objectives, and an increased pooling of resources is necessary.

The purpose of this paper is to describe the process to support the early stage development of a reuse and repair ecosystem – IKOS - taking into account the external events (political events, modification of the aim of the project, etc.). First, we propose a short state of the art about reuse and repair ecosystems, sustainable business models and repair issues. Secondly, the context of development of the IKOS ecosystem is described. The third section focuses on the design process developed to support the IKOS project. Finally, some feedbacks and perspective are drawn.

Literature background

The development of a reuse and repair ecosystem requires a systems-level change and a strong collaborative value creation. Fontell and Heikkilä (2017) define ecosystem according to Moore’s definition (1993) as “an economic community supported by a

foundation of interacting organizations and individuals [...]. The economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organisms also include suppliers, lead producers, competitors, and other stakeholders. Over time, they coevolve their capabilities and roles, and tend to align themselves with the directions set by one or more central companies." Therefore, in line with Gorissen et al. (2016), the development of such an ecosystem requires to mobilize networks and to explore "future roles, collaborations and new organizational arrangements" (Gorissen et al., 2016).

In terms of the organizational model development of re-use / repair ecosystems, a large and recent literature has shown how the introduction of new economic and social models can accelerate the transition of organizations (Boons and Luedeke-Freund, 2013, Bocken et al, 2014). Many sustainable economic models have been identified (Bocken et al., 2014), some incorporating the principle of reuse and repair. Urbinati et al. (2017) classify circular business models, underlying that these business models require a high cooperation with the different stakeholders of the supply chain, in particular between companies and customers themselves as well as a new way to perceive the buying process.

Moreover, the implementation of an ecosystem (of reuse and reuse) can generate specific practices and skills (Le Boterf, 2005) that have been previously ignored. Thus, such ecosystem can both stimulate organizational innovation (in terms of the development of a pooling of resources, of a change of employees' workstations ...), technical and social innovation for designers (exchanges on reuse practices) and institutional innovation (potential modification of local waste management policies). The construction of such business models and governance is therefore complex in a "volatile and uncertain context" (Gorissen et al., 2016) and it raises the question of how territorial stakeholders networks can benefit from this ecosystem.

Some methodological tools to support the implementation of new economic and social models (Joyce and Pacquin, 2016), or to support the integration of stakeholders' networks in the innovation phase (Tyl et al., 2015) have been developed. However, in line with Gorissen et al. (2016), our research

reveals that organizations have still difficulties to implement these models, especially when it comes to hybridizing them to create a collaborative model anchored in the territory. Consequently, few cases illustrate how to implement collaborative and hybridized business models at a systemic level, above all in repair and reuse activities.

Through the case study of the development of a reuse and repair ecosystem (IKOS), this paper will present some issues to support such development.

Description of the reuse and repair ecosystem IKOS

This section aims at describing the IKOS project as well as its context with some geographical and political issues.

IKOS description

Five project holders develop the IKOS ecosystem project: Le Relais Gironde (textile sorting), L'atelier d'éco Solidaire (a creative repair workshop), R3 (platform of sorting), les Compagnons Bâtisseurs Nouvelle-Aquitaine (a structure dedicated to the building improvement and a mutual aid network) and Le livre vert (company dedicated to the reuse of books). The ambition of the IKOS ecosystem project is to bring together the different activities of its members within the same place: production (sorting and processing center), sales (re-use and repair of products), pedagogical (behavior change) and to develop new activities such as the development of a research activity dedicated to repair and reuse.

Context of development of the IKOS ecosystem

The city of Bordeaux is the ninth largest city in France with 249,712 inhabitants, but its agglomeration is ranked seventh with 904,359 inhabitants in 2015. Bordeaux benefits from a strong power of attractiveness and is at the top of the list of cities in the world to visit in 2017 according to the ranking of the guide editor Lonely Planet.

The IKOS project was first integrated into the A.I.R.E. operation which aimed to develop 10 sites of the Bordeaux metropolis. The site chosen to take IKOS' land requirement into account was finally recalibrated due to a serious problem of soil pollution, thus making the land non-compliant with the intended use.

Therefore, the services of Bordeaux metropolis proposed a plan of withdrawal by reassigning the project on the metropolitan urbanization operation of the district of Jallère, a site of 95 hectares in the north of the ring road composed today by (1) half of private land tenure hosting more than 3,800 tertiary jobs (large headquarters in the areas of public administration, health, social action, finance, insurance, real estate) (2) half of land owned by Bordeaux Métropole. The entire site, while maintaining a strong economic orientation, is destined to become a mixed neighborhood whose environmental wealth of the sector (Jalles Park in the North, Lake Bordeaux upgraded, 13 hectares of wetlands on site) will be preserved and strengthened.

The problem of this site is that it concerns the last wetland of Bordeaux. A symbolic and political outcry was therefore organized against this project and materialized through the creation of an alternative project led by the Ecologist politics group.

Bordeaux Métropole's online public consultation and the scope of the Ecologist alternative project have pushed for the project to be modified. The new orientation goes towards a project that should be exemplary in terms of eco-responsibility. It also has to be considered as a demonstrator of the best practice that a public authority can do in a responsible urban planning project reconciling the ecological with the social and the economic. Thus, the territorial and political context around IKOS leads us to identify two points that make the project sensitive: (1) The status of IKOS in the project changes and gives much more visibility and highlighting to the collective who becomes the central actor of the project, guarantor of the eco-responsibility approach of the overall project. (2) The political context is that this urban planning project will be the first project of the new mayor in a territory otherwise accustomed to be administered by a national-sized city councilor.

The early stage of the IKOS' development process

The analysis of IKOS was performed through a participatory research action, as the two authors are deeply involved in the development process. The process was designed to support a collaborative process between project's holders to answer to three main questions: (1) What are the new activities/synergies that can be created through the development of IKOS?

(2) What is the IKOS's stakeholder network, to favor a strong territorial anchoring of the ecosystem?, and (3) What is the economic and social business model of IKOS, with a specific focus on the governance of the project?

The front end of this collaborative process can be split into three main stages (see table 1). Each step corresponded to a specific external event, leading to new needs from the project holders and consequently the introduction of some design tools to help the team to answer to these needs. It consisted in five sessions of 2h30 with the different project holders (i.e. around 5/6 people).

In the first phase the process answers to the initial need of the project holders, i.e. to specify the main activities and to link them to the different external stakeholders. To do so, a discovery matrix was introduced. Developed by Abraham Mole, it helps to stimulate the design team by developing relationships between two sets of problem variables. In this specific case, the first set describes the activities of the ecosystem (collect, valorization, sensitization, learning, research) and the second set describes the different stakeholders identified for the IKOS ecosystem (visitors, students, NGO, public actors, environments society, employees, etc).

In a second stage, the project holders were informed that the IKOS project could be located in the heart of a future district (La Jallère). Therefore, it was imposed to open the system to new external stakeholders (such as inhabitants, neighbor companies, etc.) and to identify the added value of this project for the community. To do so, we introduced the Value Mapping Tool, developed by Bocken et al. (2013). This tool proposes to consider and identify the different forms of value for a high variety of stakeholders (value captured; value missed, destroyed or wasted; and value opportunity) (Bocken et al., 2013).

In a third stage, external organizations were invited to candidate to integrate the project as projects holder of the IKOS project.

Due to divergence between initial project holders, it was proposed to develop a set of common criteria to be fulfilled by candidates.

To do so, the impact canvas tool developed by Saari et al. (2017) was used to identify such criteria. This tool is an early-phase tool which aims to support the involvement and the collaboration between many stakeholders

through various issues: the vision of the system, the customers, the solution proposed by the project, the competition (alternative solutions), the initial resources, the involvement of key stakeholders and the team.

The following table summarizes the first three steps of the design process, according to the external events, the resulting need and the tool used to answer to the need.

Event	Needs	Tools
Initial demand of project holders	Support the development of IKOS	Discover matrix to identify the different activities proposed by the project holders according to the main stakeholders
Identification of a new location for the ecosystem IKOS, in the heart of a new district	Need to open the system to new external stakeholders (such as inhabitants, companies, etc.)	Value Mapping tool to identify the potential created value and destroyed value by IKOS for all the stakeholders
Proposal to integrate new project holder in the IKOS project	Need to develop criteria to select relevant project holders who fit with IKOS's value	Impact canvas tool to identify common value shared by the initial project holders

Table 1. Overview of the first stages in the development of the IKOS ecosystem

Feedbacks: a dialogical approach

There are many factors why the development of a business ecosystem (specifically in the reuse/repair sector) may success or fail. We propose to classify some feedbacks of our research-action project following a dialogical approach, i.e. a set of antagonistic but complementary issues (Morin, 2007)

The first strong issue is the difficulty to develop a collaborative project and to go beyond individual organizations. Each project holders has their own business models or activities, with different statutes (from NGO to companies), and presents difficulties to identify which activities can be mutualized, shared, commonly developed and until which point

each project holders can be “dissolved” in the IKOS project. Some explanation can be drawn. Firstly, some project holders are part of a national network and therefore there is a contradiction between a local project and a national perspective. Secondly, this IKOS project was developed with a time pressure, because of the need of some project holders to quickly enlarge their area of production. Therefore, they did not take time to identify common values and a common view of the project.

The second issue is the position of each project holders in the reuse/repair value chain. Some project holders are only business to business oriented, without any kind of interaction with customers and citizens, where other are only customer-oriented. This antagonism raises the question of a common understanding of the value of the IKOS ecosystem and of the interest of some project holders to be part of such an ecosystem. The hybridization of the different business model is consequently more complex and uncertain.

To finish, a last issue, well known in the repair sector, is the difficulty to mix public actors point of views with private point of views. This project is strongly dependent of local policies, in particular concerning the access to land. Policies can bring new constraints, in potential opposition to the project holder's view. In the project IKOS, local public actors want to create a new district in the city with IKOS in its heart. Consequently, IKOS becomes a real living area and new stakeholders must be integrated (citizens, neighbors, etc.).

Conclusion

This paper is an early stage research and exposes some feedbacks identified during the first step of the development process. It must be considered as a description of a case study – IKOS – within a research action project, and as the identification of challenges to overcome in the future.

This paper is the initial step of a future 2 years research project, TERROIR, founded by the French environmental agency (ADEME), which will question the development and the modification of local stakeholders' network, and the territorial anchoring of the implementation of a reuse/repair ecosystem (IKOS) in a territory. In parallel, this project will propose an operational design process to support the development of such an ecosystem.

To do so, three scale of analysis will be mobilized to understand the development and the deployment of this ecosystem: (1) the project holders scale, (2) the future district scale and (3) the metropolis and its stakeholder network scale.

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