Living Lab approach for product innovation and sustainable development in the Cultural and Creative Industries

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Abstract.
Based on a case study, the paper describes the collaborative methodological approach used to realize a web platform for innovating and improving activities management in the performing arts sector. The living lab approach has supported the co-production process of the new solution by involving as final user the Distretto Produttivo "Puglia Creativa" and the cluster members operating in the performing arts sector. The case study shows how the interaction between the know-how gained in years of experience in the cultural and creative industries by companies and the specialized technical skills enhanced by the continuous research of university, has generated a pool of highly specialized resources. These resources have created a partnership capable of fully analysing the problem and then creating a highly innovative solution that can be used by any user. All this demonstrates how the combination of innovation and culture generates innovative solutions for problems of socio-territorial relevance. The final result is a platform for the management of cultural events.

Keywords: Co-production, User Engagement, Living Lab.

Introduction

Starting from the analysis of the literature that identifies the end user as a source of innovation during the production process of a product/service, the paper presents a Living Lab (LL) based methodology defined to enable cooperation between producer and final user in a co-production scenario. The reference context is the Cultural and Creative Industries (CCI) sector.
CCI is a wide sector with different specializations and application areas. It refers to the creation and distribution of services or product of a cultural or artistic nature. The principal purpose is the production or reproduction, promotion, distribution or commercialization of goods, services and activities of a cultural, artistic or heritage-related nature. In recent years, CCIs have been characterized by great income (US$2,250 billion of

global revenues in 2013) and are the target of many public and private initiatives (regional and European) to drive economic growth and create jobs. Despite their importance and potential value, there are few definitions about what Industries are part of the Cultural and Creative domain. One of these has been provided by UNESCO and includes the following eleven sectors: Advertising, Architecture, Books, Gaming, Music, Movie, Newspaper and Magazines, Performing Arts, Radio, TV and Visual Arts [1].

Whereas events represent one of the main source of income, there is a need to organize them more and more appealing and efficiently in order to attract the attention of media and as many paying spectators as possible. To fill this gap and begin a path towards digitalization, organizations need tools that support the event management during its entire lifecycle.

This paper describes the methodology used in the MYA project for the design and development of an innovative IT solution that provides new processes and methods to support artists and event managers in the integrated management of event management issues. Through the collaboration between proponents and end users, the MYA project's aim is to develop a software solution with four macro-areas of functionalities:

- Management of the event design phase. It refers to the pre-production phase, art direction and planning phase;
- Organizational and technical processes management that characterize events;
- Configuration process for the event structure management, infrastructures and used services;
- Communication management for the event promotion and data management collected in social network channels.

The aim of this paper is to enrich the existing literature by reporting a case study. The paper contributes to the literature by proposing the Living Lab methodology as an approach for the active user engagement during the design and production of an innovative solution.

After the introduction, the next Section 1 reports the literature review on co-production between end users and producers and introduces the Living Lab methods as a tool to improve the benefits of this approach. In the second Section part, the research context and the case study, i.e. the experience of a Living Lab for the production of an event management system, are described. The third and the fourth Sections describe respectively the methodology used by the MYA Living Lab and the results achieved. The final Section closes the work with some final considerations and implications.

1   Literature review

The following paragraphs cover the topics in which the research is conducted; after a brief examination of the figure of the user innovator, an overview of the Living Lab methodology is provided. Starting from these fundamentals, this work aims to introduce a further point of view regarding open innovation about collaboration between producer and user innovator. The case study reported will describe the methodology used by a team of users and producers working with the Living Lab (LL) methodology.

1.1   User engagement in innovation

The opportunities for innovation practicable by users, both individually and in collaboration, have increased over time (Baldwin and von Hippel 2011). It is possible to consider the User like a partner in development and innovation process; the Consumer evolves from a container of needs to a Skills bearer; he is aware about his own abilities. Furthermore, the consumer is able to integrate its resources with those offered by the market, assuming a leading role in the relationships between companies and market players [2]. Von Hippel claimed that the Users able to innovate are consumers with very strong needs and high awareness level (von Hippel 1976, 1986, 1988) [3]. According to this point of view, users innovators are people or companies who directly use the product or service they create. The knowledge formalisation and sharing with IT tools play a relevant role and design rules can be defined together with users [4]. Traditionally, it was thought that users innovators could only help to develop incremental innovations. This was based on the supposed inability to understand complex technologies or lack of user desire to innovate [5]. Recent studies show that users are able to develop their own solutions for radical innovations (Røtnes and Staalesen 2009) [6]. One of the reasons behind this is the social, economic and cultural evolution of consumers. The consolidated trend places the consumer at the centre of the design process as a direct contributor to product creation. This makes it possible to translate consumer needs into product requirements. This awareness, combined with the innovative solutions propose, makes the product able to meet the needs for which it is developed and increases the profit margin on the manufacturer's sales. Co-designing between users and producers can take place in many ways: between public sector and citizens, between private sector and consumers and between public and private sector. The most recent trend is to create mixed groups that work together to create innovative products, with positive effects on the economy. According to Gambardella et. Al [7], two variables influence user-driven innovation. The first refers to the presence of users innovators in the target market. The second refers to two innovation archetypes adopted by the producer: (i) normal R&D activities and (ii) R&D activities combined with user-driven innovation. According to the study, the commercial value comes from the innovations developed with final user or user innovators and this strategy (ii) is more profitable than one focused exclusively on research and development (i).

Nowadays Users innovators are present in all sectors and the inability of producers to find them represents a missed opportunity to support user innovation. Gambardella et. Al [7] were the first to integrate user and manufacturer paradigms by providing a microeconomic model to find in market demand an innovation source. Generally, this work reviewed the concept of work division between users and producers, who now have a wider margin of manoeuvre in the design. If users' innovation skills are expanding in many areas, as Baldwin and von Hippel (2011) [8] said, innovation activities must focus on the demand side. In order to remain competitive, companies need to carefully observe market trends, particularly regard to potential user innovators, and be ready to switch to user-driven innovation.

1.2   The Living Lab approach

The LL methodology belongs to the family of user-centred approaches to innovation. The definitions provided by the literature on LLs are numerous and have several factors in common, but the most recurrent element is cooperation. In this work is chosen the perspective that describes LL like a "an environment of an experiment" [9] to test, e.g., "newly invented information technology" [10] and to include "design, applications development, prototyping, training activities." [11]. Besides testing, the LL is considered to be a driver for innovation and joint value creation [12]. However, it is possible to harmonize all the various definitions in the following: "Living Labs are cooperative environments that follow a user-driven and cross-stakeholder approach in order to provide a shared space for experiments and tests of innovative products and services in a real-life environment. Living Labs offer digital infrastructure and can be perceived as a research approach, which includes design elements to support collaborative innovation processes. Living Labs can operate on different scales and purposes, e.g., for public discussions on sustainable transition or companies' product testing" [13].

The macro phases of an LL process are the following: (1) Identification of needs (2) Definition of challenges and opportunities, (3) Idea Generation and testing, (4) Ideation and prototyping, (5) Detailed product and service development, (6) Validation and impact assessment and (7) Market Launch and post-marketing. Innovation processes for product/service development are typically also following the so-called innovation funnel approach. The basic idea of the innovation funnel is that the number of item within each stage reduces the number of items approaching the end-of the funnel (i.e. the innovation process proceeds step-by-step from the start to the product/service launch and commercialization). In practice this mean that a company has numerous opportunities to proceed.

The approach is based on a quadruple helix, involving the interaction between the public and private sector, research institutes and citizens, with effects on local and regional development through innovation. It is the quadruple helix that allows the creation of an Open development environment thanks to the transversal skills of LL actors. The LL methodology allows the systematic use of multiple methods in real or simulated environments. This research method requires a strong motivation from end users and key stakeholders, who are progressively involved in the activities. Therefore, the actors in LL have a deep collaborative relationship with various types of stakeholders. The initial activities aim at presenting a project proposal to meet the customer's needs; End users and key stakeholders are involved in LL activities during the phases of a planned innovation process. The Living Lab process is based on iterative processing and the improvement of the solution based on the feedback received from end users. Therefore, the action plan may need to be modified. For example, tests may reveal unexpected insights, and make further developments unnecessary. Therefore, the project plan can and should be adjusted if necessary. Finally, the LL innovation process is flexible and can be started from any phase of the process based on the maturity of the solution and the feedback received from the end users [14].

The presence of heterogeneous profiles is a strength. There are users, researchers, organizations and actors from Public sector; these users actively participate in all co-design and co-development phases, which needs be repeated over time through effective methods and tools. Every time the aim is to collect and analyse results and feedback. The involvement of potential end users starts from the first stages and continues throughout the various steps of project design and development. Therefore, Users become prosumers: consumers that share their knowledge, actively participate in companies' business processes, and create innovations [15].

2   Research Context

The object of analysis is the "MYA (Manage your Arts) Living Lab"; operating in CCI sector. The MYA LL has been financed with regional funds from the Innolabs call for proposals, supported by the Apulia region (Italy). The project, concluded in February 2020, had the aim to reduce the complexity related to the production of a cultural product such as a live event (e.g. concert, festival, theatre performance, etc.). From the user's point of view, the MYA LL is established as a collaborative space for open and participatory innovation processes, where research and innovation are integrated. The actors involved, as well as partners of the MYA project were:
- Four organization active in CCI: Cantieri Teatrali Koreja, Officine Cantelmo, BassCulture and CoolClub.
- The CORE Lab, innovation engineering research laboratory of the University of Salento;
- Organizations associated to "Puglia Creativa" Cluster.

The final objective was to provide an IT system able to reduce the complexity within the Performing Arts sector. The production of an event has its own life cycle; its conception and planning begins before its realization and continues with the collection and analysis of audience feedback. The phases of the event life cycle not only start at different times and have different durations, but also tend to overlap with each other. Numerous actors work together in the production of a live event; they provide artistic, managerial and / or technical contributions; the event managers have to coordinate a series of professional profile and high quantity of data and information, necessary to produce the required documentation. The MYA LL has responded to the need of companies by providing a tool that allows them to manage the complexity effectively. The tool has been designed to optimize and innovate organizational and technical processes and data management. The event has its own life cycle and specific processes characterizing activities. The solution designed allows the integration, sharing and reuse of information, making processes efficient and supporting the life cycle of the event as a whole, from conception and design phase to planning, production, execution and monitoring. To add value to the final result, represented by the IT solution, a methodology has been formulated to support the integrated management of the event life cycle. The activities of analysis, study, co-design and co-creation, carried out according to the LL procedures have made it possible to formalize and apply a methodology for the creative participation of users for the purpose of creating a product of which they are the end

users. On the one hand, the presence of university researchers has guaranteed the methodological rigor and scientific drive thanks to the specialists involved; on the other hand, the organizations of the district, based on their skills and needs, have participated in various ways during the co-design and co-creation phases, up to be the testers of the Mya software in its various phases of innovative development. All the actions described below were aimed at the design of the IT solution and the definition of a recognized methodology for event management.

3 Description of the applied methodology

Before explaining the application of the methodology, the composition of the LL actors and the main methods used for the interaction between them are explained below.
The MYA Living Lab is composed of the following actors:

Partners. This category is composed of the four organizations (Cantieri teatrali Koreja, Bass Culture, Officine Cantelmo and CoolClub), which together constitute a representative context for CCI at regional level (Apulian region). CORE Lab researchers and developers belong to this category; the organizations are final users of the developed solution.

Experts: They are reference models of various sector and fields. They are Professors, Managers, Artists, and Practitioners that have been selected as key figures and have been involved in the various phases of the project to provide significant feedback for development.

Final Users: the final users of the solution are part of this category. Mainly, they are members of the Puglia Creativa Cluster, but there are also small-medium organizations independent from it. In addition, there are young event managers, emergent artists, researchers and students.

Enlarged Audience: this category refers to scientific community, public administration and citizens.

These categories of users have interacted with each other during meetings such as:

Seminar: Seminar meetings have been scheduled since the beginning of the activities. These were aimed at sharing different professional skills within the LL and were "open door". The meetings organized had specific themes and all related to the Performing Arts sector.

Focus Group: The Focus Group is a qualitative data collection technique used in social research that is based on the information that emerges from a group discussion on a topic that the researcher wants to investigate in depth. The focus group is a listening tool; its aim is to connect the different participants and to receive ideas and suggestions on important topics from the target group most related to the project. This process tends to activate a constructive confrontation and discussion in the group.

Workshop: the workshop was conceived as a discussion space with the aim of involving a more varied audience. It is presented in the form of single event days and its purpose is to collect feedback on software design, development, validation and marketing activities.

Demolab: Demolab are events organized for the presentation of intermediate and final results with the target audience. They are medium-scale events and involve not only the actors who have gradually participated in the project activities, but also potential new stakeholders.

The following Table (**Table** *1*) summarizes the MYA LL development steps. The structure allows to highlight the methods and tools used and the type of user involved during all stages.

The steps implemented for the IT solution development in the MYA LL are described below.

1.1 Discover. In the first phase, the needs of the CCI sector were explored and the resulting opportunities established. The partners organized two Kick Off Meetings, events similar to Workshop, to align with each other. The events were aimed at informing the scientific and industrial community of LL initiatives. The two Kick Off Meetings were held in two different contexts and this allowed to reach different actors, including a higher number of members of the Puglia Creativa Cluster and representatives of Public Administration. In this starting step, seminar meetings were also scheduled with the aim of sharing the different professional skills within the LL and creating a shared knowledge base; these meetings covered topics related to the Performing Arts sector such as the management of different event format. The seminars also included topics related to (BPM) Business Process Management and ICT (Information and Communication Technologies). Experts were involved in some of these seminars. A scientific research was immediately launched to define the status of the ICC. The research has been an activity transversal to all the actions of the Project. The research, in addition to the analysis of the available literature, was supported by interviews, questionnaires and moments of sharing within the LL Partners. Thanks to these initiatives, the operative context was defined and the main IT tools usually used in the performing arts management scenario were identified.

1.2 Definition. In this step, a focus group were organized in order to validate the research results emerged from the *discovery* phase. The meeting was attended by all the subjects interviewed in the previous months. Through guided debates, the problems and needs of cultural operators emerged. Subsequently, a strategic benchmark study was carried out to determine the strengths and weaknesses of the IT tools already available on the market and considered by the partners as the best available solutions.

2.1 Co-Creation. Subsequently, the co-creation phase with the user began; the objective was to identify the new solution requirements. Thanks to the analysis of the interviews and research, the target audience of the MYA solution was identified. For more reliable results, the focus group was followed by a Workshop involving an urban laboratory expert. The audience was composed of partners and cluster members. In addition to a guided debate on the functionalities that the MYA platform should provide, questionnaires were administered in order to clarify the relationship between ICC and Technology. The analysis of the results has defined the features that an all-in-one solution

should be provided according to the preference expressed by the final users. This was the starting point for the prototyping process, where partners have worked constantly with developers for the co-design phase of the software.

The coexistence of target users, developers and researchers characterized the Development Team that continued its activities throughout the entire duration of the project. In times like these, the maximum strength of participatory co-production with the user is expressed.

2.2 Idea selection. At this phase, the first features of the platform were shared and tested with users. In order to validate the designed features, a Focus Group was organized and feedback was collected through guided discussions. The objective was to verify that the designed functionalities supported managers during the entire lifecycle of the event. The information that emerged from interviews and questionnaires highlighted the activities implemented to create an event. These data were modelled in BPMN (Business process management Notation) standard notation. This allowed to reconstruct and formalise the event life cycle.

3.1 Co-Creation. Based on the collected feedback, a new co-creation phase for development was started; this new co-creation phase included the definition of the end users and of the relative needs to be met and the release of a first version of the working prototype. In order to achieve the objectives more effectively, the activities of the previous focus group have been extended to a wider audience. Here, a workshop was organized to demonstrate how the prototype works. The requirements of the MYA solution were shared with an audience of industry professionals, who help to improve the product through their participation in the activity and feedback. Some features of the MYA IT solution were corrected in the subsequent development stages using the workshop feedback. The first version of the prototype was presented in the Demolab, with a demonstration to an under 30 audience; the aim of this initiative was to create a comparison and collect feedback and the point of view of young event managers. To make the meeting more functional, the production of a live event was simulated. Thanks to this business game, participants had the opportunity to use the MYA solution verifying the functionality and seeing how they can support the event design and manage the complexity of its life cycle.

3.2 Proof of concept test and prototyping. The first release of the prototype made it possible to start the testing phase. In order to obtain feedback to improve the final developments, focus groups were scheduled to test and validate the solution. The Focus groups were carried out in several phases. During these test sessions, the partners tested subsequent prototype releases. Feedback and opinions were collected using the "Thinking Aloud" method. User Experience tools and guided simulations were used to facilitate the collection of information. In addition, the "MYA Usability Lab" was set up, to carry out regularly usability tests. The data collected were crucial for the final release and allowed the development and integration of new functionalities.

Process stage		Key activities	Aim of the phase	Method and Tool		Output	Users involved
1 Need challenge and opportunity identification	Discover	Identify various market demand, user needs, challenges, and competitive landscape including ecosystem conditions to get inspired and empathize with end-users.	Hypothesize solutions through collective information on the market and on the end user	kick off meeting; Seminar about Music live event; Seminar about Teatrical event; Seminar about Themed event; Seminar about ICT e BPM; Seminari abiout Festival	Brainstorming; Group Interview; Individual Inteview; Scientific Research; Survey; Questionnaire.	Operative context definition; Competitive context definition.	Partners, Experts, Final Users
	Definition	Analyse prior discoveries to understand the users and market niche. Select the most potential opportunities and define clear challenge(s) to be solved or vision(s) to be achieved.	Choose the best solutions by analyzing the previous analysis results	Focus group Design.	Guided debates; Questionnaire; Software and benchmark.	Definition of strengths and weakness of the existing softwares.	Partners
2 Idea generation and idea testing	Co-creation	Formalization of high-level ideas, with end-users and stakeholders, that could solve the defined challenge. Use the insights from the previous phase as input for the design of the innovative solution.	Improve the solution by identifying relevant elements with the end user and stakeholders	Interactive workshop to sharing requirements.	Guided debates; Questionnaire; Design Thinking tools.	Solution's feature identification; End users identification.	Partners, Experts, Final Users
	Idea selection	Selection of the best ideas with end users and other stakeholders to continue with further development. Keeping the possibilities to undertake different development paths open.	Decrease options by selecting the best ideas based on collected feedback	Focus group "Development".	Brainstorming; Guided debates; Individual interview; Questionnaire; Processes modelling.	Solution's features definition; Event life-cycle formalization.	Partners, Experts
3 Concepting and prototyping	Co-creation	Definition with end-users of user needs to be met and how prototypes allow limited end-user interaction in a real or simulated environment.	Clarify idea by explaining the core features of the suggested solutions	Interactive work shop; Demolab.	Business Game simulation; Hackathons; Prototype demonstrations; Guided debate; Questionnaire; feedback collection.	Solution prototyping	Partners, Experts, Final Users, Enlarged audience
	Proof of concept test and prototyping	Low technology and high fidelity prototype testing with real end users and other stakeholders. Selection and implementation of the best feedback to the final development phases.	Make decision wich concept is going to be fully developed	Focus Group; Thinking Aloud.	Prototype demonstration; Guided debate; UX Tools; Usability test.	First software release	Partners, Experts
4 Detailed product and services development	Detailed design and development	Development of products and services based on input from end users and other stakeholders.	Develop fully funcional slutions	Interactive Workshop	Usability and integration testing; User Acceptance testing Experts opinions.	Second software release	Partners, Experts, Final Users
	Small sclae real life test and piloting	Execution usability tests and validation tests on a small scale in real life or simulated environments.	Verify that everyting is working before heading to large scale or final impact assesment	Panel	In house testing; Unit testing; Expert opinions.	Third software release	Partners, Experts, Final Users, Enlarged audience
5 Validation and impact assesment	Impact assessment and largescale pilot	Validate full-scale and fully functional products or services at system level in real environment with real end users.	Validate value, reliability and scalability with end users	Focus Group; Interactive Workshop;	Personas; Market segmentation.	Oppotunity cost definition	Partners, Experts, Final Users
6 Market launch and post market	Market acceptance	Make products or services available to potential customers through the creation of distribution channels. Establish a post-market surveillance system and, if necessary, evaluate the solution performance market performance.	Collect feedback for next version revision and tracking solution performance in the market	Interactive workshop; Demolab	Interviews; Demonstrations; Feedback collection.	Sharing results; Final software release.	Partners, Experts, Final Users, Enlarged audience

Table 1. MYA Living Lab Process Stage, Key activities, Aim, Method and Tool, Output and Users involved.
Sources: adapted by Santonen, T.,et al, 2020.

4.1 Detail design and development: The test activities have been replicated during workshops to a wider audience. During these meetings, the prototype was presented to the final users, who provided valuable feedback. The aim was to start the development of the complete functional solutions.

4.2 Small-scale real-life test and design: Once the prototype was fully functional, the simulations turned into usability tests to verify correct operation in real life contexts. The partners, establishing permanent panels at their headquarters, started to use the MYA solution for their daily activities, filling the databases with their data and using the various functions provided by the tool. The partners managed the organization of the events through the tool that they helped to developed and test. At this stage, it was considered appropriate to involve a Lean Management and PLM Expert, who examined the potential applications of PLM (Product Life-cycle Management) for the management of the lifecycle of a cultural product. Another relevant aspect was the application of the Lean approach for a better allocation of resource. The meeting with this expert contributed to the growth of the MYA project. This allowed the evaluation of the Opportunity Cost resulting from the use of the tool.

5.1 Impact assessment and largescale pilot. The next step was to validate the product in real environment with real end users. To achieve this goal, a further focus group was realized. A fully integrated software demonstration took place and market access strategies were considered. This phase also involved the active participation of end users, who provided a truly honest overview of the target market. The aim was to verify that the solution was in line with the value proposition that had started the activities.

6.1 Market acceptance. In the last phase, the goal was to make the product available to potential customers by designing distribution channels. To do this, a team was created to carry out marketing activities and to intercept the main trends in the event management software market. During the final phase, two workshops were organized to gather feedback for commercialization. The first one was attended by an audience of potential end-users who had expressed their willingness to adopt the solution in previous meetings. During the workshop, feedback was collected to define pricing strategies and policies. Subsequently, the workshop was replicated to an under 30 audience to collect a new base of information. The main final outputs were: the final release of the MYA solution and the definition of the related Business Plan.

At the end of all phases, a final Demolab was organized to share the scientific and technological results obtained. The event was attended by Partners, representatives of the Public Administration, the academic community, members and representatives of the District Puglia Creativa and all stakeholders who gravitated around the MYA project. The event also attracted new figures, who have configured themselves as new potential end-users like cultural entrepreneurs, who have shared their experience about new application technologies in the cultural field.

4   Lesson Learned

Involving users with different backgrounds during the co-design and co-production phases allowed the full achievement of the initial objectives:

- The development of an innovative IT platform for event management;
- The Formalization of the event life cycle.

Moreover, the LL methodology has allowed the achievement of unforeseen results, which complete the range of services offered by the LL:

- A process framework for the management of CCI processes;
- A tool for measuring the level of maturity of the processes in CCI sector.

To support the value of the methodology adopted, the MYA Living Lab has been recognised and officially admitted within the ENoLL (European Network of Living Labs) community. The MYA LL is a Living Lab certified by ENOLL since 13 May 2019.

5   Conclusion

In the paper, the Living Lab approach is proposed as an effective methodology for sustainable co-production through the involvement of users in product and service design based on participation and User engagement. The case study presented shows how, starting from a need expressed by users, the LL approach leads the team to the development of an innovative and integrated product. In the MYA Project, the partners were themselves the target of the product. This increased the commitment in the design and development phases. The adoption of the Living Lab methodology has eliminated the distance between industry and end users, especially thanks to the numerous opportunities of engagement of users with different background. The active involvement of the end user in the design has generated innovation through the creative contribution of the users, thanks to their different experience and know-how. This has increased the possibilities to undertake innovative development paths. The living Lab approach has also created significant business opportunities. Indeed, following commercial agreements, the IT tool will be available on the market. Based on this case, *innovation* and *collaboration* are key words on which Living Lab is focused. This has triggered what is called" Cross Fertilization": the result of collaboration between people with different experiential backgrounds and heterogeneous knowledge.
The aim of this work was to contribute to the existing literature by enriching it with a case study. The aim of the study was to analyse the relationship between producer and user during the co-design of a product/service and possibly propose methodologies to unleash the maximum potential for innovation. The final consideration is that placing the end user of a product/service at the centre of the development and innovation process leads to an increase in the degree of effectiveness of the product itself. User-driven

innovation is possible and more effective than traditional R&D processes, and the Living Lab approach can amplify the benefits of this type of open innovation by using a variety of methods and tools that can be used within it. The repetition of the design and development phases ensures robust results and the possibility to adjust the process in itinere; this translates into reduced development costs.

The approach is suitable to be replicated for the introduction of innovative IT solutions in contexts, such as ICC, which still make little use of innovative technologies. Thus, the objective of future research is to replicate the approach used to define a structured method able to introduce tools and methods for product and process innovation in those sectors whose users represent a potential source of innovation but are unaware of it.

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