Tiers-Lieu: Exploratory Environments for Service-Centred Innovations

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Abstract—**This paper introduces the concept of Tiers-Lieu, which is envisaged as an exploratory environment for service-centred innovations, and discusses its rationale within the context of the collaborative inter-disciplinary society. We present the approach facilitating discovery of initiatives as the result of the collaboration of actors from various domains: developing them in the process of negotiations and concretising them, in order to be further enabled by services. We discuss the difference between Tiers-Lieu and other types of collaborative environments, by illustrating its role in ensuring freedom in participation and semantic exchange for all creativity-oriented actors, independently from their domain, profession, and/or way of thinking.**

Keywords-Tiers-Lieu; service; initiative; service-centred innovation; interorganisational and interdisciplinary collaboration; collaborative environments.

I. INTRODUCTION

How may one characterise the current trends in Information Science and Service Science that have recently entered our world? Their growing importance reflects the requirements of the emerging world; a world transcending the familiarities of centuries past, due to the explosion of exchanges of every kind, in all its parts, the intermingling of cultures and the desire of individuals for cognitive freedom.

This emerging world requires the discovery of new cognitive environments, in order to organise different models for living together on all levels of Society, in all public, private and international sectors, in regional, national and international contexts. These cognitive environments will transcend those which we currently know. In particular, they will offer new answers to crucial challenges, such as disastrous hunger, epidemic cataclysms, poverty, energy deficits, and environmental, sanitary, medical, demographical, economic and financial crises.

This emerging world is born of a desire for universality to be facilitated by Internet technologies delivering an intensification of exchange that is without precedent in human history and has become one of the major factors defining the development of our society. It is remarkable that, despite a certain level of confidentiality and anonymity of Internet environments, they foster collaboration between the multitudes of initially unrelated actors and enable collective decision-making in innovation processes. In its turn, such collaboration ensures sustainability and coherent development of underlying processes, interoperability and

service orientation in different domains (e.g., Internet of services [3], public service innovation [13], etc.).

By underlining the role of service orientation at multiple levels of technology and business, it is essential to clarify its meaning. It is stated that everything (i.e., good or activity) is seen as a service, and is analysed by an interdisciplinary approach of Service Science that brings together study, design, and implementation of services in which specific arrangements of people and technologies take actions that provide value for others [5]. This allows thus to concretise one of the leading visions for the systems development and integration [6], thanks to the service-oriented architecture (SOA).

These services-oriented trends, characteristic for our emerging world, lead to the shift of the role of Information and Communication Technologies, which are traditionally structured around isolated or specific services, and allow them to overcome the limits of their initial domains and to spread over trans-disciplinary branches of science and business. In this way, they support the dissemination of interoperable scientific knowledge and contribute to the development of practical intelligence [18] in our society, in general, and throughout these domains, in particular.

This paper is structured as follows. In Section 2, we analyze the role of creativity and innovation in developing business-oriented services. Some aspects of collaborative environments related to innovation are also discussed. In Section 3, the Tiers-Lieu concept is introduced and its characteristics are described. In Section 4, we discuss the main principles of Tiers-Lieu organisation. Finally, Section 5 concludes with the acquired results of this exploratory paper, and the scope of future works for developing Tiers-Lieu is identified.

II. TOWARDS INNOVATION: FROM KNOWLEDGE TO SERVICES THROUGH COLLABORATIVE ENVIRONMENTS

It is impossible to overestimate the role of knowledge for the development of our society. From one side, it is the primary production of resource; from the other side, knowledge ensures the possibility of value co-creation in services [17]. This nature explains the interdependence of knowledge and services-based characteristics of our emerging world, supports a tight interconnection between the phenomenon of services innovation and the requirements of the emerging society and guarantees the consistency of sustainable co-creation of the fundamental concepts of innovation-based information systems and services [9].

With the increasing role of Information Technologies (IT) in its everyday functioning, our society benefits from new and expanding communication channels that foster knowledge production and nurture its creativity-focused characteristics.

Indeed, the new society encourages its members to enact their willingness and ability to innovate and create and in doing so, to increase the added value of the corresponding economic processes. The innovation in services is thus seen as a process, whose objectives include the efficient delivery of existing services, service quality, and the generation of new types of services. This process requires continuous collaboration between different people of different skills and responsibilities, from multiple organisations and – very often – within an international and multicultural context.

From a different side, the increasing complexity of its processes, the multitude of involved actors, and the interdependence of the related domains is largely based on multiple collaboration processes. Recently, one can witness how the importance of collaboration grows exponentially, as the result of the development of Information and Communication Technologies, social networks and thematic clouds, which seem to contribute to decision-making processes, concretise the decisional context for different actors and remove geographical boundaries.

It has already become a common practice that enterprises and societies require certain level of collective intelligence from their members. Indeed, to ensure that a group of individuals successfully act together in a certain concrete environment [7], they should possess the ability to learn and reason, being willing and capable to act collectively thanks to their competences.

There have been numerous works aiming to support collaboration and collaborative group decisions. In [2], it is suggested to model collaboration by identifying its layers: goals, products, activities, patterns, techniques, tools and scripts, and by integrating all these layers into an organizing scheme, a conceptual representation of the next generation of collaboration support systems.

Another aspect of collaborative group decisions is studied in [8]: Keeney introduces a collaborative group decision model based on decision analysis techniques. The accent is put here on the explicit knowledge differences of judgments and values among group members, and an approach for taking them into account in the decision process is debated.

Some works specifically address the methods and techniques to improve group ideation [14]: to balance between the quantity and the quality of ideas generated and analysed during the process of ideation. Reinig and Briggs particularly note how cognitive inertia and scarcity of solution space may affect the ideation process and suggest the ways to overcome the possible negative effects.

In our previous research, we also address the problem of collaborative decision-making and discuss some challenges typical for collaborative environments [24]. This work presents the initial classification of the corresponding risks and introduces our approach for decision-constructing by the cross-pollination space, a collaborative environment for innovation in services.

The diversity of profound research aiming to encourage different aspects of innovation in services corresponds not only to the sectors of activity, but also the rationale for organisations, their business models, their relationships with their environments, especially in the international context. It becomes obvious that interdisciplinary work is required, which is to be translated into trans-disciplinary services and built using information technology. It is focused on combining human and collective knowledge with the computational capabilities of informatics, as well as combining human and collective activities with services. This will allow decision makers to move from a default position of reacting to events in their organisations to a more active one of anticipating them.

More concretely, on the level of the European Union, there has been achieved a significant success in the projects supporting innovation in services. For example, the set of initiatives facilitating public support for innovation and increasing its effectiveness is presented by the European Commission [12], whilst the measurability of innovation policies and their impact on productivity, quality and employment of services are analysed by Rubalcaba [F15]. Despite the acquired positive results, there are still important service innovation challenges to be addressed in services economies of our society. There are still a variety of obstacles that might stand on the way of the sustainable service innovation growth: e.g., market and systemic failures, over-regulation, market fragmentation and competition, to mention but a few. Probably less obvious, but more serious obstacles lie in the sphere of cognitive barriers and fears of all kinds (e.g., unemployment, professional non-security, unwillingness or incapacity to adapt to new types of organisations, etc.).

III. TIERS-LIEU: COLLABORATIVE ENVIRONMENTS FOR INNOVATIONS

The complexity of business, academic and social processes of our society, as well as the increasing role of collaborative creativity in development and innovation, require new advanced approaches and forms of organisation. To answer these challenges, we introduce the concept of Tiers-Lieu, study its characteristics and analyze its potential benefits.

A. Concept of Tiers-Lieu

Initially, the concept of Tiers-Lieu ("third place") was introduced by Roy Oldenburg [10] who identified third places, or "great good places", as new places intermediate between home and work, which are adapted to the new lifestyle with its elements of urbanisation, mobility and individualism and are central to local democracy as well as community vitality.

Such third places are neither private, nor public, and they offer the extended possibilities to work in a more informal environment, a certain hybrid between a personal and an open space. These are coffee shops, cultural centres, smoking lounges; the third places are largely the product of

human relationships, creative interaction and modes of social organisation and professional dominant contemporary societies [1].

In the spirit of Tiers-Lieu, several places of co-working have been recently developed. They are, for example, La Cantine [20], Festival Temps d'Images [21], tiers_lieu{x} [22]; all share the idea of open and creative co-working. As a different example, one can witness the work around meetings of Autrans 2012 [19], which gather international researchers and entrepreneurs interested in innovative Internet-related issues, open data, Tiers-Lieu, collaborative consumption new usages, etc.

It is important to note that this initial definition of Tiers-Lieu has significantly evolved during the recent years, and is no longer limited by geographical boundaries of places of co-working.

In our approach, we envisage Tiers-Lieu as an open environment of "third place" that motivates collaboration, intellectual creativity and surpasses the limits of traditional disciplines-defined collaborative spaces, by allowing defining new services.

B. Tiers-Lieu: What is different?

By its origin, Tiers-Lieu has an exploratory nature and creates the environments where transformations and changes are institutionalised and enable movements of innovations. We note also that Tiers-Lieu benefits from the work of the people from different organisations, but does not belong to any of them.

Tiers-Lieu aims to go beyond the creation of an environment when actors (professional or not, individuals or groups, formal or informal) gather around a discussion table, in order to exchange their ideas about a situation, an identified challenge, or a proposed initiative. In the majority of the existing collaborative environments, the skills of involved actors are to some extent pre-defined, according to the discipline of the discussed idea. Such a pre-definition ensures a certain level of consistency in these discussions; however, it seldom overcomes the cognitive closeness of the discussed idea, and is not truly trans-disciplinary.

It is the ambition of Tiers-Lieu to overcome the limits of such semantic closeness and to give the actors the possibility not only to discuss the problem but also to be able to understand it in terms of their own professions and beyond them. In this context, it is not merely the question of understanding the conceptual framework, technical principles, or usability of an innovative idea but beyond this, Tiers-Lieu aims at ensuring the acceptance of this idea by the actors, despite their possible resistance, lack of knowledge or foreseen expectations.

This way, Tiers-Lieu differs from traditional collaborative environments, as they are themselves the creators of values. This means they generate activities common for creative participants, independent from and not belonging to any participating organisation. Also, compared to traditional environments, the successful functioning of Tiers-Lieu relies on a higher level of interaction between non-professional actors and openness to their networks. By allowing such heterogeneity, Tiers-Lieu is boosting

"cognitive interaction" between project leaders, managers and just interested people, the project leaders will develop their knowledge and skills to implement their entrepreneurial project. At the same time, it also encourages the democratisation of the action undertaken by accepting a wider audience.

As a result, Tiers-Lieu allows achievement of the unity of the idea, so that it must be concretised as a service. By answering this challenge, Tiers-Lieu thus proposes not only the creativity-oriented environment fostering innovations, but also the way how it can be concretised by services. It means that, in addition to the achieved results of traditional collaborative environments, Tiers-Lieu also ensures the development of services – either on the meta-level (by offering a methodology to propagate the discussed knowledge between and beyond the involved actors, e.g., how knowledge related to smart medicine is widespread in medicine and other involved domains), or for the concrete complex situation, which is the objective of this Tiers-Lieu (by offering a set of services aiming at solving this problem, e.g., usage of smart phones in the context of smart medicine).

C. Objectives of Tiers-Lieu

By summarizing the ideas towards the development of Tiers-Lieu, we can briefly describe its objectives as follows:

- Tiers-Lieu represents an utility, which is created to *develop a service*,
- Tiers-Lieu aims at *supporting an activity*,
- by *enabling initiatives*, suggested by involved actors and oriented to improve this activity;
- which can be achieved thanks to a *collaborative platform*,
- *concretised*, according to the requirements of sustainability of this activity and the general "*common sense*" vision;
- and which is developed upstream of the projects improving this activity.

In other words, Tiers-Lieu can be seen as a certain meeting that leads to service creation. As the result of its functioning, coherent and sustainable services will be developed. We note, however, that management and governing of such created services can remain within the scope of the initial Tiers-Lieu but can also overpass it, by extending their existance in other domains of business, government activities, private sector, etc.

D. Initiative as Key Concept of Tiers-Lieu

Tiers-Lieu is envisaged as an environment supporting innovations, which are concretised thanks to initiatives.

Let us study in more detail the phenomenon of the initiative, classically introduced at [4], and developed in the context of Service Science by [11], by analysing it in the context of Tiers-Lieu.

We envisage an initiative as a breakthrough proposition, which is inter-organisational, inter-disciplinary, inter-domain, aiming the creation of human-oriented and/or economic value and that concretises the semantics and leads to the realisation of one or several corresponding services.

We particularly note that an initiative with the related knowledge is not an object of protection (by copy-right, for example). It does not have the nature of consulting or project management; neither is it an instrument of education.

In Tiers-Lieu, initiatives are seen *upstream* of projects or services, which help to create the services for commercial products, research or business-oriented methodologies.

To conclude, the activities of Tiers-Lieu are thus regrouped around its initiatives, which respect the following conditions:

- An initiative of Tiers-Lieu must be *inter-organisational*: it should not belong to the only one organisation, but it must represent a general interest;
- An initiative of Tiers-Lieu must be *inter-disciplinary*: it should not be related to the only domain, but naturally aims to address interdisciplinary situations;
- It should take into account international aspects;
- It should create values in human, social and economic aspects;
- The initiative must be concretised in the form of one or several *trans-organisational* and *trans-disciplinary* services.

The results of an initiative could furthermore generate partnership agreements, internal or inter-organisational projects, new forms of organisations, innovative start-ups, especially in the context of interconnected services, net-ups, or other forms of value-creating organisations. Naturally, an initiative of Tiers-Lieu can give a start for new initiatives of the same – or different – Tiers-Lieu.

IV. ORGANISATION OF TIERS-LIEU

Tiers-Lieu is envisaged as an environment supporting innovations, which are concretised thanks to initiatives.

The activities that are supported by Tiers-Lieu are naturally discussed during the meetings of co-opetative nature concerning strategic questions typical for complex competition-based environments. Despite certain contradictions between the objectives of each actor, such environments require nevertheless a high level of collaboration in achieving common objectives. For example, while introducing new forms of bank services, IT standards or compliance norms, the necessity of coherent collaboration between direct competitors (e.g., leading companies in the sector), standardisation organisations and other interested parties have become a crucial factor.

There are no special limitations on the form of such meetings: they can be face-to-face, diffused by Internet, supported in real-time or asynchronous, or the mix of different forms.

In many cases, the main actors taking part in Tiers-Lieu are top executives of enterprises or non-commercial organisations, or – in general – decision-makers. However, the participation is open for other contributors: actively interested people, and is highly beneficial if various interesting – and multi-domain – ideas are exchanged.

In this context, it is important to underline that the participation in Tiers-Lieu is based on the acceptance of its members of the main principles of team creativity, their desire and ability to create collectively, to share the expert knowledge and the acquired results, to avoid innovation resistance [16] and to ensure participative safety, to improve the quantity and quality of attempts to introduce or develop new ideas [23].

It is agreed between the actors that innovative ideas are represented through initiatives which can dynamically change, according to the discussions. Before being selected and approved by all actors, initiatives can be modified, reorganised, abandoned, etc.

This implies the necessity for a formal definition of a protocol for such a meeting, allowing tracking the history and dynamics of ideas exchange, some principles for regulating roles and access of actors. In other words, the whole Tiers-Lieu infrastructure supporting creation and implication of initiatives for services creation should be established (Fig. 1).
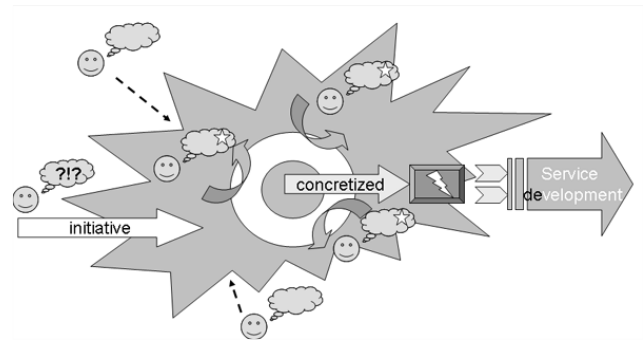

Figure 1. Tiers-Lieu: from initiative to service.

Since Tiers-Lieu represents creative collaborative environments that involve a lot of multidisciplinary actors, the organisation of Tiers-Lieu should respect certain principles.

Firstly, Tiers-Lieu is motivated by the spirit of the PPPP approach: they support and are oriented to private (P), public (P) partnerships (P) and people (P).

Secondly, to ensure the smooth organisation of discussions and the effectiveness of taken decisions, there should be a system of roles within Tiers-Lieu.

We start by identifying the following 6 roles:

- Initiators: actors, who come with a new innovative idea, define an initiative and invite other actors to discussions. Initiators are those who take the final decision, once the initiative is discussed and developed by others.
- Participants: actors, who actively contribute in discussions and help to develop the proposed initiative.
- Moderators: actors supporting the process of Tiers-Lieu functioning.
- Observers: actors, who assist at discussions and follow them, but are not actively participating in

them, i.e.,, the ones who do not have a word. Observers might have educational purposes (e.g., students) or just share the general interest for the discussed subject, without offering any concrete solutions (e.g., public).

- Historians (or secretaries): actors who play a supporting role: helping to register and track discussions and contributions of participants, introducing required information, keeping in order the agreed planning, etc.
- Developers: actors, whose aim is to develop a service, once the initiative has been defined and validated.

The role of the initiator is characterised by a high level of responsibility and is crucial for functioning of Tiers-Lieu. Indeed, it is the initiator who not only introduces a new initiative as a subject of innovation, but also defines the scope of participation within the scope of Tiers-Lieu. The initiator is also the one who evaluates the expressed ideas and has the final word on accepting or refusing them.

To facilitate the discussion procedure and to minimise the uncertainty in discussions, the initiator has a set of measures to keep the discussions fruitful, by attributing the participants a yellow card (warning about the semantic inconsistency or non-respect of the ethics of Tiers-Lieu) or a red card (serious breach of the rules or consistent contradiction with the main idea of the current initiative; this leads to the exclusion of the participant from this Tiers-Lieu). Analogically to football rules, two yellow cards in the same meeting constitute a red card.

A participant with a red card (or in fact any participant at any time) may leave this initiative and eventually launch an alternative initiative and a different Tiers-Lieu, which might have the same participants of the initial Tiers-Lieu. All initiatives are launched under the Creative Commons License, used when an author wants to give people the right to share, use, and even build upon a work that they have created.

It is remarkable that there are no limitations for the participants to contribute for multiple initiatives, as well as to leave them at any time.

It is important to develop a balanced system of ethics principles concerning the supported activity, and, consequently, the ethics principles defining the developed service.

Despite the self-motivation of the actors to participate in Tiers-Lieu, there should be developed a balanced approach for supporting their interest in sharing and increasing their knowledge about the complex situations, which require common effort, even under the risk of competition. Tiers-Lieu is becoming thus a good choice of a neutral environment, which can put together various actors for their "winning-winning" collaboration.

V. CONCLUSION AND FUTURE WORK

This exploratory paper addressed the challenge of supporting creative development of services with the help of collaborative environments. To answer the new requirements of our emerging society, it seemed insufficient merely to support existing working relationships between organisations, enterprises and academic institutions but necessary to offer them an independent "third place", Tiers-Lieu, which would help to people from different organisations to work together for and in benefit of their organisations. We noted that the results of their collaborative work should be concretised by the development of a service (or several services), might lead to defining a new project, and are, for example, supported by Creative Commons License.

In this paper, we introduced the concept of Tiers-Lieu, discussed its characteristics and analysed its role as an exploratory environment, allowing creativity-oriented actors freedom in participation, yet concretised by a system of rules. Such conceptual architecture reflected the idea that initiatives should not be limited to bottom-up or top-down ones but might come from everywhere, beyond the limits imposed by a certain form of organisation and/or conventions accepted within certain professions. This also meant that Tiers-Lieu was defined in the way to enable freedom of semantic exchange, and to overcome the limits of one domain, one profession, and/or one way of thinking.

Our future work is focused on formal definition of codes and principles of functioning of Tiers-Lieu. We also explore the role of the University, identify the risks and challenges of its current form for innovation-oriented discovery and services development, and analyse its potential improvement in the context of the vision of Tiers-Lieu. We envisage this approach to become a profound base in our work on exploring the phenomenon of the university, and its consecutive extension as a result of the new challenges our society has been currently offering.

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