SOCRATIC, the Place Where Social Innovation 'Happens'

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Abstract. For many years, we've been growing the number and variety of innovation-related buzzwords by simply attaching different adjectives/attributes to such a keyword within Economics, and Engineering. Social Innovation (SI) and its associated conceptual framework are in its infancy. There are a lot of on-going efforts focused on its theoretical development, and at the same time a growing number and variety of empirical experiments aimed at extracting its characteristics. SOCRATIC is proposing its own SI methodology to be built on top of different test-bed scenarios, and a consistent technological platform. The experience from two of such scenarios will be mapped against the state-of-the-art conceptual frameworks for briefly presenting the baseline for SOCRATIC methodology and platform in this position paper.

Keywords: Social innovation · Innovation · Entrepreneurship · Sustainability · Citizenship

1 Introduction

According to Schumpeter [1], the economic development is a historical process of structural changes caused largely by Innovation; a process with four basic dimensions: invention, innovation, dissemination and imitation.

The rhetoric of Innovation has led us to prevail at all times a certain aspect, one of its particular dimensions. Far from recognizing it as a situation of complexity in which intervene organizational, technological, individual and processual-elements, we have decided to particularize such situations as Technological Innovation, Social Innovation

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[2], Open Innovation [3], etc., developing management methodologies and conceptual tools for each of them.

We approach Innovation as a process, with a considerable inner complexity: it involves organizational, individual, and technological dimensions; and the three of them have to be tuned according to the process specific requirements, coming from a variety of contextual or environmental conditions.

When dealing with specific Innovation projects, we are not so worry about the definition of Social Innovation, but mainly focused on how to manage a complex Social Innovation Process (SIP); and here comes the growing variety of scenarios where quite different organizations are embracing their own methodological approaches.

Aiming at developing our own methodology, we are adopting a systemic approach based on an Universal Framework for Modelling (UFM) [11] where we, as (Human) 'observateurs' (H) are using a handful of conceptual tools (innovation life-cycle management models) as our Interface (I) for visualizing our Object of analysis (O) i.e. the Social Innovation Process (SIP) supporting some of our partners' operations (EiT & AppLabs at NTNU, and cybervolunteers missions at CIB), defining our very own Image of the Object (IO), i.e. our own model.

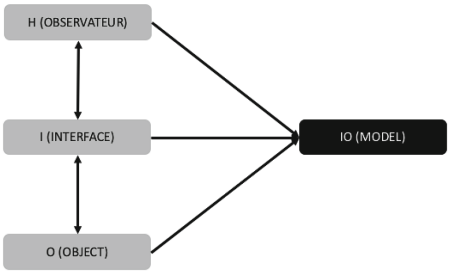

Fig. 1. Visual representation of a universal framework for modeling (Source: [11])

That's the dynamics of the UFM expressed by the synthetic formula H x I x O = IO (see Fig. 1) that is supporting our rationale within this brief position paper. Hence, the sections below will briefly present:

- Social Innovation term as a moving target.
- Managing the whole life cycle of Social Innovation Process (SIP) as an organizational ability supported by the right methodology.
- NTNU, and CIB as a way of 'exposing' such a methodology to the Innovation reality, for extracting the baseline of our SOCRATIC concept.
- Our architectural view for implementing SOCRATIC platform on top of such a concept.

2 A Moving Target

The simple exercise of searching for the term "Social Innovation" in any scientific publications database permits us going through a variety of well-established definitions

of the same term coming from well-known sources and institutions. Let's summarized a few of them that are supporting our own approach within SOCRATIC.

From the European Commission Guide to Social Innovation [2], we can highlight the following one: "*Social innovation can be defined as the development and implementation of new ideas (products, services and models) to meet social needs and create new social relationships or collaborations. It represents new, which affect the process of social interactions. It is aimed at improving human well-being. Social innovations are innovations that are social in both their ends and their means. They are innovations that are not only good for society but also enhance individual's capacity to act.*"

Reading the Stanford Social Innovation Review [4] we come across another well-known and accepted definition regarding SI: "*a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals*".

A detailed reading of [5] should point us to the definition from [6]: "*Social innovation as opposed to other narrower notions of innovation, is characterized by the following features: It contributes to satisfy human needs that would otherwise be ignored; It contributes to empower individuals and groups; It contributes to change social relations*".

Out from our own state-of-the-art review of literature, we have to conclude that there is no universally accepted definition of Social Innovation (SI) [7] beyond its meaning as **an innovation creating value primarily to society, making social impact**.

3 Social Innovation, Coming to an Organization Near You

Digging into the Open Book of Social Innovation [8] we can find a reference model we've found quite useful for clearly identifying the key stages within the innovation projects lifecycle (Fig. 2).

Fig. 2. Social innovation process (Source: Open Book of Social Innovation [8])

According to [8] these six different phases can be summarized as follows:

- **Prompts:** this step occurs before the SI process itself. In short it corresponds to identify and understand the social need(s) to be met by the social innovation. This identification serves as the base for the formalization of challenges to be addressed.
- **Ideation:** this stage is covered by many SI support process. It is the stage which would come after a societal problem has been observed, but a solution has not yet been found. It corresponds to more precisely identifying challenges based in the diagnose of the context of actions, choosing a challenge and generating and shaping an idea that can solve it.
- **Prototyping:** this stage is common to all SI methodologies, and in all of them it is described that the prototyping should be done fast and developed through multiple iterations, similarly to the 'Lean' philosophy. The rationale is that an innovation will

rarely be fully formed from its first idea and that it needs to be validated and tested early, so that it is mature when it reaches the market.

- **Sustaining:** this stage corresponds to bring the innovation to the market and being adopted by the end-users. It may require much iteration to get it right and it also requires the innovators to organize themselves appropriately.
- **Scaling:** this is the stage which allows the innovation to spread, to reach new markets, regions or levels of implementation. It may be done through the expansion of the organization behind the innovation or through licensing and other mechanisms to allow other organizations to explore it as well. It deals with increasing the supply and finding the demand for the innovation artifact.
- **Systematic Change:** this one maps to a long-term effect of change in the public or private sector triggering a change of social relationships and powers.

Once the basic stages we need to have in place for effectively manage a generic SIP, we retrieve our SOCRATIC heritage from Extreme Factories [9] an EU-funded project (FP7, GA 285164); and here comes the Agile Innovation Process we defined partly inspired by the Agile Development Methodologies that are placed in the core of our Software Engineering Capabilities.

Following this methodology, the SIP is an iterative process aiming at a social impact by means of introducing an innovative artifact. In the terms of Fig. 3, the Inception stage could directly match Ideation in [8] while Implementation could be the Prototyping stage. Differently from [8], our Agile Innovation Process requires a Prioritization stage to be splinted from the Ideation one. The sustainability, scale, and even systematic change capacity of our process are finally gathered in terms of following up our implementations; that is intended to be fed back into the process.

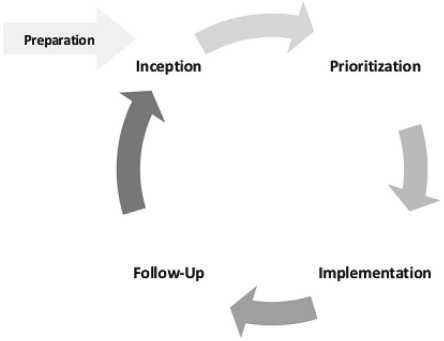

Fig. 3. Visual representation of the agile innovation process (Source: Extreme Factories)

4 The Reality Check

4.1 Southern Exposure

CIBervoluntarios (CIB) Foundation is a non-for-profit Spanish organization created and composed by 'social entrepreneurs', i.e. individuals passionate enough on using IT for

volunteering in solving social challenges. The members of CIB, 1,500+ 'cybervolunteers' mostly active in Spain and Latin America, work on a daily basis with the mission of using IT to boost Social Innovation enabling citizens' empowerment. CIB's vision is to increase everyone's rights, opportunities and capacities within their social context, by means of tools and technological applications.

These cybervolunteers play an active role achieving a true societal change by developing volunteer work, promoting the usage of technological tools among the population with low access to IT and training. These agents are a crucial link between a local demand from different target groups and global solutions in Information Society. They are continuously detecting existing needs and demands from such target groups, and proactively proposing innovative, creative solutions.

CIB has been managing their activity through 'boots-on-the-field' missions (i.e. training sessions, workshops, seminars/webinars, and awareness actions) that are carried out mostly by self-organised teams supported by a quite lean infrastructure (CIB management team) offering a handful of on-demand services, resources and capabilities (mainly logistics, and documents/collaterals provision and delivery).

Hence, we've been translating CIB's ad-hoc, bottom-up, Social Innovation Process into the conceptual framework and modelling coming from [8, 9].

4.2 Northern Exposure

Norwegian University of Science and Technology (NTNU) will be from 2016 the largest university in Norway with 30,000 students. NTNU currently runs two innovative programs for their students: Experts in Team (EiT) and AppLabs.

The EiT Project is a disruptive study program at the NTNU that runs in the Spring semester over 14 weeks. EiT is taken by 2,000 students every year, divided in approximately 70 classes (called "villages") of 30 students each, who are composed into 6 teams of 5 students from last year courses of different disciplines/studies. Each village is supervised by a professor, who has described a fairly open ended challenge for that village. The students in that village have to provide specific ideas for that challenge that will also implement in teams.

AppLabs purpose is to stimulate innovation through inspiration, collaboration, new knowledge and relationship building. The program is intended for especially motivated students with knowledge in programming, app development and innovation who are impatient and want to do something "for real". The program runs for six months with several mandatory objectives. At an end, a Beta version of the app launched on the stores. Along the participants will get close monitoring and professional input of AppLabs team, which consists of selected business actors, professors, etc.

These programs offer us a systematic, top-down, case study for managing the Social Innovation Process; a quite different approach than the one from CIB. SOCRATIC platform will support the combination of both programs, EiT and AppLabs, aiming at covering the whole life-cycle of social innovation according to our own SOCRATIC methodology, from ideation and proof of concept (carried out within the EiT program) to implementation and exploitation (carried out within the AppLabs program).

4.3 The SOCRATIC Concept

Roughly mapping our experience against the previously presented conceptual models, we can identify the following stages (see Fig. 4, and Table 1):

- **The Challenge/Prompts:** A challenge is an invitation to solve a social need. In SOCRATIC, a challenge addresses a need entering in the themes supported by the following three UN goals selected by the project:
  - "Ensuring healthy life and promote well-being for all at all ages" (UN's Goals 3);
  - "Ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all" (UN's Goals 4); and,
  - "Promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" (UN's Goals 8).

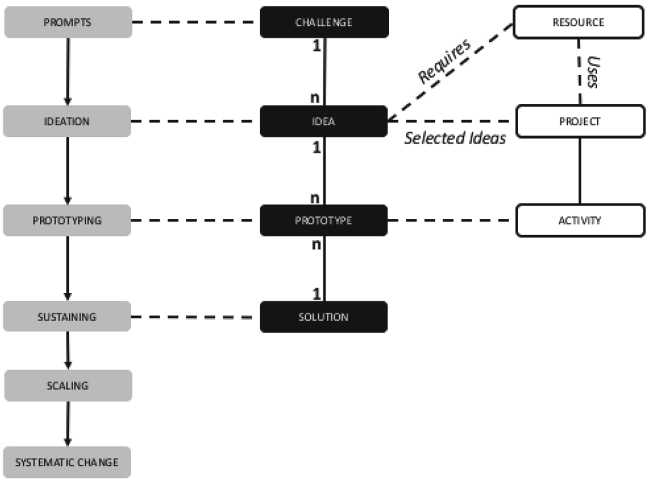

Fig. 4. Mapping SOCRATIC scenarios against a generic social innovation process

Table 1. Mapping EiT and CIB scenarios against SOCRATIC social innovation process

SOCRATIC	CIB	EiT
Challenge	Project (Coming from a larger challenge)	Challenge
Idea	Mission	Idea
Prototype	Development and organization of the material, courses, training, …	Prototype, mock up
Solution	The material courses, training, …	Solution

- **The idea:** The idea is the first step towards a solution to a particular identified challenge.
- **The project:** A project corresponds to the formalization of the uptake of the idea by the project team, which is based on those who were involved in the ideation. Within the project, the team elaborates a plan for bringing the idea towards a prototype,

solution, scalable solution and systematic change; in other words, to follow the Social Innovation Process.

- **Prototyping:** As presented in the previous phase, the prototyping of the solution takes place through different activities, in search for the most adequate solution to the problem exposed by the challenge.
- **Solution and Sustaining:** Irrespective of the adopted development methodology, the social innovation is iterative where the development process periodically releases a prototype, collates feedback from beneficiaries and plan the subsequent prototype based on the data provided. In this phase, the purpose is reach a solution consisting of either a product or service that is deployed in the desired environment.
- **Scaling:** At this phase, the focus moves beyond sustainability and towards scale. There are many different ways to facilitate scalability of the social innovation. However, irrespective of the adopted methodology, the SOCRATIC process relies on the use of KPIs to evaluate the how the social innovation is growing in terms of number of beneficiaries or communities addressed.
- **Systematic Change:** In this phase of the SOCRATIC process, the solutions are considered sustainable and have scaled in dimension such that it attracts stakeholders with societal influence, thus changes to the underlying systems underpinning society are subject to change.

5 Technology Is not Enough, IT's a Must

SOCRATIC is a research project funded under the Collaborative Awareness Platforms for Sustainability and Social Innovation (CAPS) [10] program of Horizon 2020. The initiative was first started under the EU FP7 ICT Work Program. CAPS initiative aims at designing and piloting online platforms creating awareness of sustainability problems

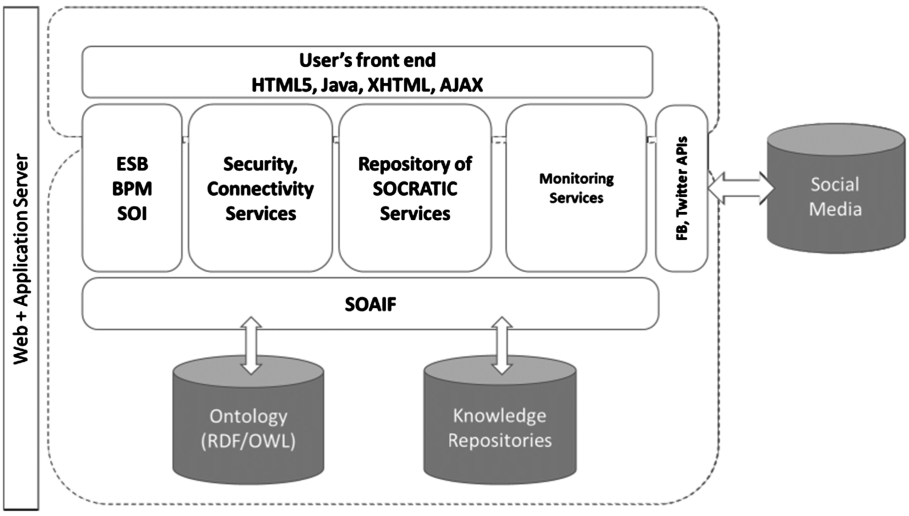

Fig. 5. SOCRATIC Architecture (as it presented in the Description of Action)

and offering collaborative solutions based on networks (of people, of ideas, of sensors), enabling new forms of social innovation. SOCRATIC will make use of existing Service Oriented Architecture Implementation Frameworks (SOAIF), specifically the one used for the implementation of Extreme Factories [9].

These frameworks implement all the necessary components in a service architecture (see Fig. 5 below), such as the Enterprise Service Bus paradigm (ESB, communication channel for enterprise and external applications), Business Process Model (BPM, services implementing business processes), Service Oriented Integration (SOI, to guarantee interoperability inter and intra applications), standard services for security (LDAP, TLS), service connectivity (J2EE,.Net, Web Services), communication through Java Messaging System (JMS), etc.

The architecture already integrates a service/component to search, raise and make available the knowledge bases, including the SOCRATIC ontology, modelled with RDF/OWL notation via Web Protégé. Regarding the user's front end, accepted standards will be used, such as HTML5 artefacts to ensure the validity of the portal in any type of device.

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