+RESILIENT- Mediterranean Open REsouRcEs for Social
Innovation of SociaLly ResponsIve ENTerprises

FUNCTIONAL ANALYSIS AND PLAN OF PLATFORM

Deliverable 3.6.3

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1   INTRODUCTION

This document will present the functional analysis for the development of the resilient platform according to the work that has already been implemented in the Studying Phase (WP3) especially taking into account the open data factsheets, open data stakeholders' needs, scoping workshops and use-case scenarios.

It will also take under consideration the available existing tools, data and platforms to accommodate the needs and requirements of the +Resilient project's partners and stakeholders.

1.1   Purpose

Connectivity has become the material and metaphorical wiring of our culture, a culture in which technologies shape and are shaped not only by economic and legal frames, but also by users and content. The emergence of social platforms is at the heart of a shifting dynamic, where various actors (technology, users, content, legal and economic actors) are building a connective space for communication and information (José van Dijck, 2013). The platforms serve as a pool of reusable capabilities, and in our case an open knowledge platform will be developed, in order to host, organise and diffuse knowledge about open data & social innovation. The ultimate goal is to foster the needs of the SVRC actors of +Resilient project, from public services to social enterprises and other SMEs that are socially responsive, to changing demographics and employment**.**

1.2   References

As mentioned above the functional analysis of the platform is dictated by the following deliverables (D3.3.1, D3.6.1 & D3.6.2)

The key findings of 3.3.1 Open data – availability of open data at regional and local level and stakeholders' needs are:

D3.3.1.a: Open Data resources fact sheet

- Overall there are several initiatives in both local and national levels around Open Data

- Open Data are available in several categories (employment, science and technology, education, environment, society, health, social services, citizenship, property   and citizen's participation and collaboration, transportation, agriculture, demography, housing, business, etc)

- The quality of such data is not always clearly proven

D3.3.1.b: Stakeholders' needs of open data

- Lack of awareness about Open Data and how they can benefit from them

- Specific requests about categories that are of interest for Social Innovation

- Training Required

- Data Providers are willing to open up data

The scoping workshops (D3.6.1) and the elaboration of the Use-case scenarios (D3.6.2) revealed the following results:

1. The scoping workshops and use-case scenarios cover all three macro-scenarios. (In table 1, a summary of the results);
2. The cases relating to the innovation of public services (or public-private delivery of public services) are connected to the main demographic trends (notably ageing in the case of the care service), but also to other global changes (mismatch of skills due to the gap between education and productive systems, new forms of poverty and exclusion etc);
3. Capacity-building, including training and upskilling of individuals and organizational competences to meet emerging social needs, is considered pivotal for the strengthening of social innovation. This also includes training and capacitating on the added value of open data which remain an unexplored resource for social innovation;
4. The multi-stakeholder approach (in some cases 3- helix, but in most cases 4-helix) is deemed central to all the scenarios and use-cases. However, the relationships are always complex to manage;
5. Open knowledge resources (creation of platforms, physical and virtual) to foster social innovation at territorial level represent one of the main strategies of the identified scenarios;
6. There are (in some cases, established) relations between social innovation and sectors. This is true for some sectors of the smart specialization of the involved regions, especially those linked to sustainable development such as smart agro-food, cultural and creative sectors also related to sustainable and accessible tourism, health;
7. Co-creation tools and involvement of beneficiaries in the design but also in the evaluation of innovative services is deemed paramount in the majority of cases.

Partner	Scenario 1: Delivery of public innovative services	Scenario 2: Support to SVR SME's	Scenario 3: Capacity building of social enterprises	Country – region

Veneto Region	Community pf practice for innovative services against mismatch			Veneto Region(NUT 2) ITALY
ANCI	Civic monitoring of public services; Generativity pacts for social innovation (4helix)			Italy ITALY
ITANNOVA	Creation of open resources and data for 4 helix SVRC			Aragon (NUT 2) SPAIN
RDCI	Regional portal for social care			Alentejo (NUT 2) PORTUGAL
Barcelona Activa			Care sector upskilling and training	Barcelona (NUT 3) SPAIN
REMTH			Social enterprises training	Region East Macedonia and Thrace (NUT 2) GREECE
PRIZMA			Social innovation info points	Podravje Region (NUT 2) SLOVENIA
FOUNDATION-ISTRA REGION			Reginal centre for social innovation Portal for social innovation	ISTRA REGION (NUT 2) CROATIA
Chamber of Commerce TV-BL		Support for social innovation of SMEs (tourism and agrofood)		Belluno province (NUT 3)ITALY
UCCIAL		Support for social innovation of SMEs (tourism and agrofood)		TIRANA (NUT 3????) ALBANIA

Table 1: Overview of use-case scenarios that will be further adapted for the pilot actions of the testing.

The open data platform functionalities

The analysis of these deliverables sheds light on the main potential and criticalities concerning the value of open data and reinforces the main results of the qualitative phase of investigation and it gives indications for the creation of a + RESILIENT platform, which should contain tools/functions as follows:

- Understanding and contributing to the quality of data
- Links to existing open data resources (as per fact sheets provided)
- Awareness raising on open data, including training formats

- Examples of use of open data in the design, implementation and evaluation of social innovation

Functionalities

- non expert information for SVRC who have little time to go in-depth
- tutorials for use of open data
- training platform
- possibility to crowd-source and contribute to open data
- mapping
- links to the regional platform foreseen in pilot actions

1.3 Scope

The following table outlines a preliminary and very generic conceptual design of the Platform. This is a tentative representation of the platform which will be developed through WP4 and will be updated and adopted in order to reach its final stage throughout the implementation of the +Resilient project. The following, however, sheds light on the key features of one of the main artefacts that will be produced during the +Resilient project.

Table 1: Preliminary conceptual design of the techno-social digital platform

Basic pillars of the +Resilient tecnho-social digital platform		
Share Information, Learn, Find Solutions on Open Date	**Get in Contact**	**Business catalyst**
E- Library of solutions (a) A list of Open Data (b) A list of tools and services about Open Data (usage, visualization etc). (c) A list of examples of the use of open data in the design, implementation and evaluation of Social Innovation	**People/Communities** Find, join, and create communities around specific topics to initiate conversations, share experiences, discuss and share best practices, start collaborative projects, coordinate meetings.	**Success stories** Readable library about alternative organisational models and successful commons-oriented business ventures that can be used as best practices
News and Events A list of activities (workshops, events etc) for building awareness towards	**Map of stakeholders** A map indicating relevant stakeholders to social innovation etc.	**Funding Opportunities** Information about funding instruments related to social inovation

sustainable entrepreneurship. Information on legal framework about Social Innovation **Training** Educational Resources (webinars, learning modules, educational material etc).		
Other features		

Blog/News/Newsletter	Visualisation	Social media	Create an account
News of the week.	Visualise open data.	Links to platform's accounts on popular social media sites.	Info about users; favorites; follow other users etc.

The design of the entire platform will focus on providing a user friendly and responsive layout, will support multiple languages and employ and implement open standards in order to be adaptive and secure.

1.4   State of the art

Based on the preliminary conceptual design, the technical approach suggested for the design and development of the techno-social platform is the use as a core base platform of the joinup platform and adoption of its components when necessary. Joinup is a collaborative platform created by the European Commission and funded by the European Union via the (ISA) Programme.

Source: https://joinup.ec.europa.eu/

2 Design of the platform

2.1 Methodology

The methodology that we will use is user-driven, following the methodology of the "build-measure-learn" feedback loop, as first set out by Eric Ries in 2008 in his Lean Startup analysis (Ries, 2008). We have to make sure that we spend as little effort as possible developing a prototype that in turn will have the minimum set of features needed to get feedback from the users.

This is called the Minimum Viable Product (MVP). The MVP is a version of a new product or service that allows developers to collect the maximum amount of validated learning about it with the least effort. No matter how basic the first version of the solution is, we have to make sure that it suits users' needs, before we make any decision on further development directions.

The goal of an MVP is also to test fundamental business hypotheses and to help developers begin the learning process as quickly as possible. This rapid iteration cycle allows teams to discover a feasible path towards product/market fit, and to continue

optimising and refining the business model after reaching product/market fit. This is an important aspect for our project because we strongly believe that all the tools and services the project is going to incorporate, design, develop and test must be sustainable after the lifetime of the project.

In our methodology, the build-measure-learn feedback loop is designed to ensure that the project outcome continuously improves. During the lifetime of our project we plan to repeat the loop at least two times. This approach can best be illustrated by the Deming Cycle methodology shown below.
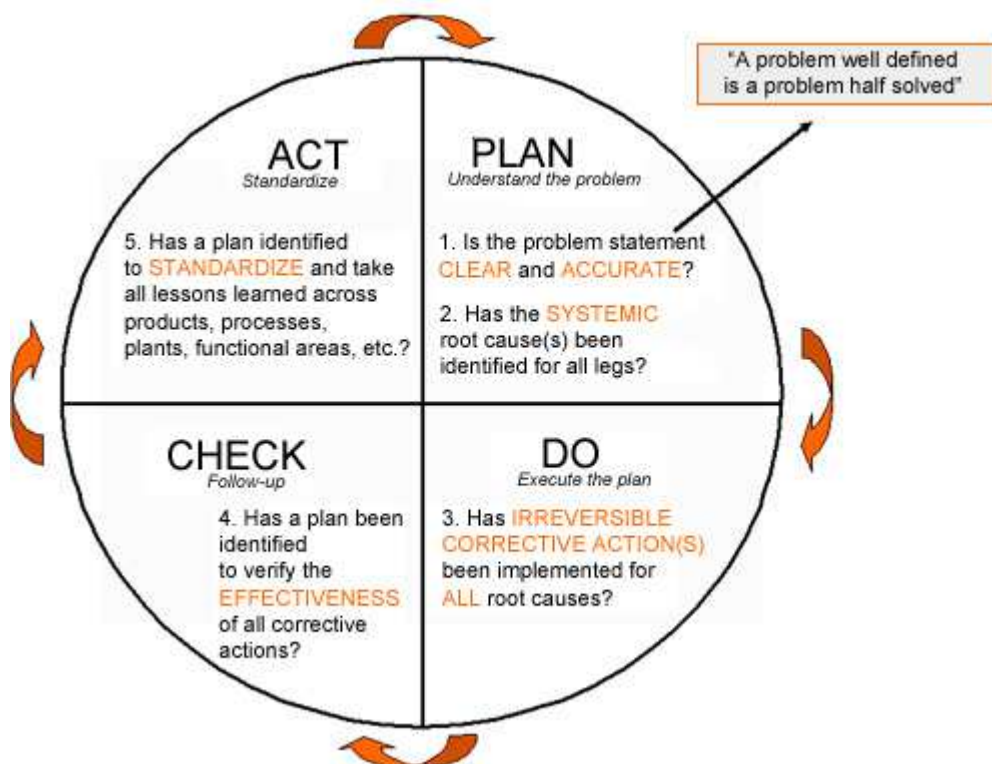
2.1.1.1 2.2.2 Design Concept

The target audience for +Resilient consists of stakeholders across Europe with varying levels of technology use and access. In order therefore to be able to reach the maximum number of these collaborative teams, it is important that we be able to provide all of the necessary components integrated into a single platform, while retaining the ability to use only those parts which they want to.

2.2 The Platform

As stated above, the target audience for +Resilient consists of stakeholders across Europe with varying levels of technology use and access. In order therefore to be able to accommodate their needs, it is important that we be able to provide all of the necessary components integrated into a single platform that will function as a single hub and point of communication.

This means the platform will need to provide tools for:

- Open Data and open data tools,
- E-courses,
- Document and file sharing,
- Knowledge base,
- Co-creation tools
- Mapping

As this platform will function as a central point of communication, it is important for all these functionalities to be integrated and act as components of a single system.

For example, consider the following use-case (based on the Treviso - Belluno Chamber of Commerce use case scenario – Job Placement for disadvantaged people):
The Chamber of Commerce will need to map SMEs and social cooperatives operating in the agrifood and responsible tourism sectors, with help of open data-sets and tools; it will perform an analysis of the situation of the companies in the sector. With the help of e- courses training courses wil be provided and a model will be introduced that will then be presented to interested SMEs and other parties. The use case can also be documented and re used by other interesting parties.

The platform will need to handle use-cases such as the above seamlessly and in a user-friendly way. For example the user should only need to log-in once, and be able switch between functionalities without losing the context of their work.

Our design concept is therefore based around using interoperability standards wherever possible to mediate the communications between components. For example, the Learning Tools Interoperability standard (LTI) is designed to allow Learning Management Systems (LMSs), among other tools, to authenticate with and integrate external interactive learning tools and to transfer student achievements and progress bi-directionally between them without compromising user experience.

The design of the entire platform will focus on providing a user friendly and responsive layout, will support multiple languages and employ and implement open standards in order to be adaptive and secure. All components used and created for this platform should be open-sourced under an appropriate license.

3 Architecture

3.1 +Resilient Platform Core

As mentioned above, the platform needs to provide a seamless user experience and retain a common context for the user regardless of the task they are actually performing. For example, every page in the platform should have a common menu with an indication of which tool the user is currently using, but with the option to quickly switch between different tools when needed.

For this reason, the proposed architecture is the following:
The user will interact with only a single front-end application, that we will call the +Resilient Platform Core (RPC). The RPC will then in turn connect with a number of **backing services** (using REST APIs or other technologies) in order to integrate their functionalities. For example, if an LMS will be, the user would not directly access its front-end at all. Instead, a module would be developed as part of the RPC that would communicate with the LMS via its and expose a graphical interface to the user. The LMS would therefore be considered a backing service.

Since the RPC will be a central platform that integrates a number of different content types, we propose that it should be implemented using a Content Management System. In the Appendix A, we propose a number of suggested technologies for the components of the system, and for the PPC specifically we recommend **Drupal 8**. If Drupal is used, the integration with the third party services should be implemented as **Drupal modules** (either utilizing existing open-source modules or creating custom ones where needed).

3.2 User Accounts

Users will sign-in, using their social media credentials (e.g. Facebook) or their emails. Another Option is via SAML. SAML is an XML-based protocol that uses security tokens containing assertions to pass information about a principal (usually an end user) between a SAML authority, named an Identity Provider, and a SAML consumer, named a Service Provider. SAML 2.0 enables web-based, cross-domain single sign-on (SSO), which helps reduce the administrative overhead of distributing multiple authentication tokens to the user.

3.3 Learning Management System (LMS)

A Learning Management System (LMS) will be used for course creation. It is a system which supports, as the name suggests, the management of learning. An LMS will typically have the ability to represent courses (and learning materials within them), assignments, student registrations and timetables, results, and so on, and will usually provide interfaces for both educators and learners. Moodle and other LMS's are able to integrate via LTI Standard. Moodle platform is a very widely used and supported LMS, as well as it provides good support for interoperability standards such as LTI. Moodle has also an extensive set of available core and third-party plugins, which enable the user experience on both desktop and mobile devices to be customised and extended with a wide variety of features, giving a future scope to tailor what users see according to use cases.

The LMS will be integrated with the +Resilient Platform Core and interoperate with a number of other features. The LMS must be able to utilize the **existing core platform accounts** and sessions (regardless of their sign-in method) and not require separate account creation or sign-in.

The minimum features that the LMS will need to provide are:

- Course creation and organization of the content into subjects
- Ability to organize content into subsections
- Ability to upload files such as PDFs, PPT, zip as well as link to external files
- Ability to link videos from popular providers such as youtube and have them displayed in an embedded player
- Allow tutors to create assignments with deadlines and other restrictions
- Students should be able to upload the solutions to their assignments from within the platform
- Discussion forums for students

Technologically, the LMS can be implemented utilizing an existing popular LMS platform as a backing service (such as Moodle), or it can be implemented directly in Drupal using its specific content types.