Project Acronym: CO-CREATE

Project title: Setting up a network of COmpetitive MED Clusters with the contribution of CREATive industries

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Report on App for gamification methods addressed to cluster managers

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List of Acronyms and Abbreviations

Acronym/ Abbreviation	Resolution
CCIs	Creative and Cultural Industries
DD	Double Diamond
DT	Design Thinking
ERDF	European Regional Development Fund
MED	Mediterranean Area
ROI	Return On Investment
UX	User Experience

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1. Executive Summary

A gamification tool addressed to cluster managers was developed within CO-CREATE project, aiming to foster innovation and encourage the usage of design thinking methods.

This document presents the way the gamification tool was developed and the results obtained.

2. Theoretical Framework

2.1. Gamification Definition

Gamification is an innovative method that supports the modification of behaviours. This method is quite seldom used for training purposes, but also for raising awareness of the consumer to a specific product or service. Combined with other technologies, it opens the door to designing new scenarios in any area where human behaviour is the key issue to be considered.

"Gamification" is a term that was coined by the digital media industry. It has gained a widespread adoption since year 2010. The term "gamification" commonly refers to the use of game design methods as a means to "leverage games for business benefit" (Werbach & Hunter, 2012, p. 28). The general purpose of gamification as a way of organising collaboration is "to extract the game elements that make good games enjoyable and fun to play, adapt them and use those elements" (Dominguez et al., 2013, p. 382) in given contexts. The desired outcome are game-like sensations of fun and engagement even if these contexts are normally prone to more banal or boring experiences.

"When used in a business context, gamification is the process of integrating game dynamics (and game mechanics) into a website, business service, online community, content portal, or marketing campaign in order to drive participation and engagement".

"The use of game mechanics and game design techniques in nongame contexts to design behaviours, develop skills or to engage people in innovation".

2.2. Design Thinking Definition

Design Thinking is a methodology of innovation generation, human-centered and especially suitable for complex situations or with high levels of uncertainty. It includes structured, unconventional practices and unprecedented levels of adoption, because of the impact it has on business and people.

2.3. Gamification & Design Thinking in Business: Comprehensive guideline

Design thinking is about applying problem-solving skills, by means of associating design process to other areas, particularly in a business environment. Probably the least well-known term in communications circles and despite a relatively short existence, is now taking off by virtue of being hitched to another buzz-wagon: gamification.

Design Thinking was developed by Palo Alto-based innovation and design consultancy IDEO and applies a human-centre. Is empathy-based approach to integrate the needs of people, the possibilities of technology and the requirements for business success to create outstanding products and services. In a Design Thinking process the team tries first to understand the problem and goals, and then goes out to observe people interacting with the current product or service. The idea is to see the users in their natural habitat, understand what they try to achieve, observe the specific situation, and get a deeper understand of the struggles. By reflecting on what has been observed, and what the goals are, the designers then ideate and prototype and test in quick succession. This whole process is iterative and quick to approach the problem and solution step-by-step. In the focus are always the people and their goals.

Gamification Design Thinking process is based on Design Thinking, by applying the same principles of defining and understanding the problem, observing the users, and iterating on ideas and prototypes. There are several significant differences and enhancements that distinguish Gamification Design Thinking process. The list of different stages associated to design thinking processes follows below.

1. Understand the problem and the context;

2. Understand who the players are;

3. Guiding criteria and game mission;

4. Develop ideas for the game;

5. Definition of the game and its mechanics;

6. Testing on low, average and/or high fidelity;

7. Implementation and Monitoring;

8. Measurement and evaluation.

1. **Understand the problem and the context:** the one should consider three main aspects at this stage, namely:

   1.1. Company culture;

   1.2. Business objectives;

   1.3. Understand the user.

It is important to understand that the company culture has a major influence on how players interact and respond to gamification initiatives. So, we should identify at first which are the main aspects of the culture of the company in question, making sure that they will be taken into account in the next steps.

2. **Understand who the players are:** within this phase we need to fully understand who the players are, how their efforts may be employed to solve the problem, or which of their behaviours need

to be changed. In such a case, maybe a survey has to be created (age; gender; information about profession; type of player; hobbies; etc.).

3. **Guiding criteria and game mission:**

   3.1. <u>Guiding Criteria:</u> with a clear notion of the problem being dealt with and the players, set guiding criteria for the game. Examples of criteria: stimulate cooperation between players; stimulate exchange of information between players; players must learn by doing;

   3.2. <u>Game Mission:</u> the mission should consolidate the needs encountered in previous stages of development into clearly delineated, and therefore attainable, actions. We should try to be specific and measurable missions; rather than suggesting generic activities such as "increasing sales". We should try to be more objective and specific, such as "encouraging employees to exchange information on good selling practices on a daily basis".

4. **Develop ideas for the game:** relevant questions that can generate ideas for the game.

   4.1. <u>What story do you want to tell with the game?</u>

   4.2. <u>What will be the theme of the game?</u>

   4.3. <u>What will be the game aesthetic?</u>

5. **Definition of the game and its mechanics:**

   5.1. <u>Definition of the Game:</u> have clear definitions as to the duration of the game. It can end when a player achieves a goal, can occur at a certain time or be infinite. We need to keep players interested for longer periods by creating cycles or editions. In a game with cumulative score, incoming players may feel discouraged when comparing their progress with what has been achieved by the leaders. In that case, scoring cycles help bring these new players in. According to the participants profile and context, we need to try to define how often the player interacts with the platform. The frequency needs to be well thought out to keep the engagement level high without making the game tiring, and without disturbing the other activities carried out by the player;

   5.2. <u>The Mechanics:</u> have the purpose of making clear to the player what goals should be pursued and what happens after each action taken. There are several mechanics that can be used/adopted for a game, for example, restrictions, scores, achievements, followers, etc. Rules are what rule the game, from how it should be played to how the player should behave.

6. **Testing on low, average and/or high fidelity:** if we decide to do a prototype, to test our idea. Maybe the best option is to test while the platform is being created. We should run tests quickly and as early as possible during the process; do not get hung up on ideas, if during prototyping

better solutions come up, we should embrace them without hesitation, regardless of the alterations it implies.

7. **Implementation and Monitoring:** after implementing the game, it is essential to constantly manage and assess the possibility of implementing changes. This is why it is important to have well established metrics to validate the actions, motivation and engagement of the players.

8. **Measurement and evaluation:** concerning the measurements related to the assessment of metrics, some suggestions have better affinity with the purposes usually associated with corporate games.

   8.1. Regarding the engagement:

   - Average number of actions implemented;

   - Number of users implementing actions;

   - Number of users returning to the game;

   - Progress reached during an activity;

   - Level of satisfaction displayed by players.

   8.2. Regarding time spent in the activity:

   - Time players remain engaged in the game;

   - Frequency of visits to the platform;

   - Response time to the challenges proposed.

   8.3. Regarding the ROI achieved:

   - Number of active participants;

   - Productivity increase indexes;

   - Cost reduction achieved;

   - Increase in sales numbers.

Like in any other business project, the structuring of a gamification project requires careful planning and, at a later stage, diligent monitoring of its application «vis a vis» the final goals that were defined.

2.4. Key Words

Cross-fertilization, cross-innovation, gamification, design thinking, business innovation.

3. Methodological approach to the gamification tool

3.1. Idea/Concept

The game concept starts as an interactive map where each user will be given the chance of create its own path/journey. At a first stage, each user should create its own profile as well as its own avatar, which will identify him during the game. The profile of each user should contain information regarding his/her company CCIs or SMEs, organisation), sector of activity, staff category, among other (to be defined). Depending on the choice, the interactive map should provide different options of paths / journeys, resulting in a variety of gameplay which will make everything much more appealing, i.e., it would be interesting to be able to provide different experiences to each user, since each person has different selection and rationale choices.

The main objective is to identify the gaps that the user has, or needs to improve. For this, it is necessary to have challenges placed as you go through the game. These challenges can come in many forms, including quizzes (multiple-choice questions) on the subject matter that the user chooses; missions (these can be given by the interactive characters that existed throughout the game and the user can choose to interact or not) also related to the theme chosen by the user; as a winning prize, the user will have access to small didactic units offered in the form of videos/interviews with specialists from the various selected areas and successful entrepreneurs, as well as showcases of success cases from each country inherent in the project consortium.

The content of the challenges to be developed for the game will be based on surveys conducted with companies, in order to find out what skills/valences they would like to improve; Finally, a survey among experts will/can be carried out with a view to assessing the most important issues to be highlighted, based on the main objectives of the project proposal.

The scenarios that will be developed must encompass two aspects, namely the peripheral vision of the entire interactive map so each user can choose where to go (see **Figure 1**), and the individual view of each place, that is, the interior of a company or other type of organization that will be present in the game as well as all the characters involved.
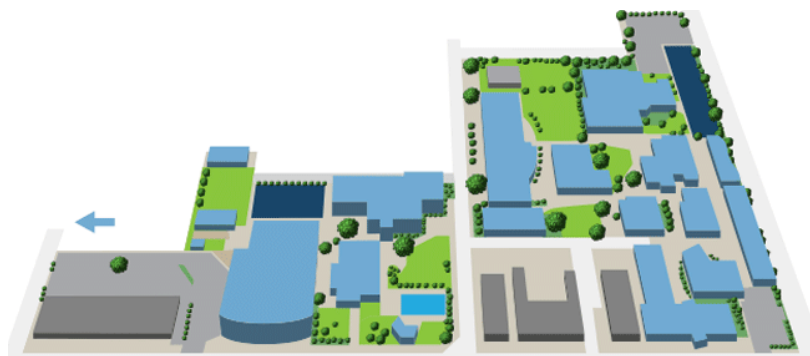

Figure 1 – Interactive Map

There should be 3 different types of profiles, namely, CCIs, SMEs, Organisations (partners within the consortium). All avatars will be interactive, as well as be available to provide help, information and knowledge whenever required. This will help the user along the game in the different paths/journeys available. Another type of interactivity that will be interesting is among the various users that will be playing; this will allow the exchange of valences and contacts and move faster in the acquisition of

new skills / valences. This type of interaction between each user will also allow exchange of contacts in the real world and cooperation between different companies/employees/intra-organisational, etc.
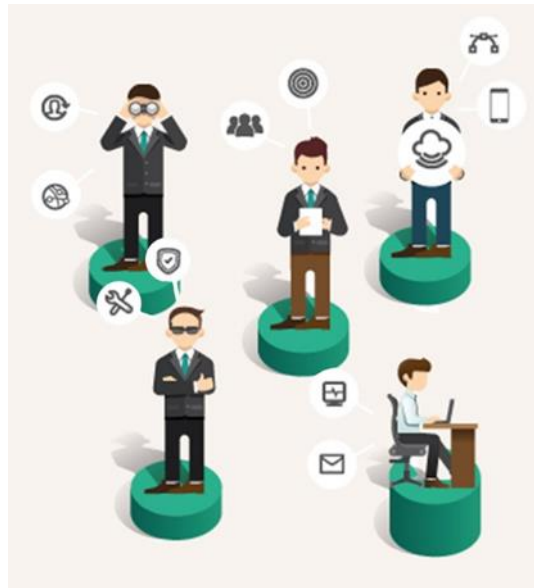
Figure 2 – Avatars examples.

Avatars will be customisable by users. Each one will be associated with their own CV and other relevant information (contact, diplomas, training, personal and professional capacities, and languages). This information will be public to all players, so that other users can consult and thus exchange knowledge between them.

A pre-study is expected on what companies think, they require of their workers, failures and valences that need to be improved in order to create the game challenges / surveys, which complement the profile of the individual, and that can be consulted by other users. The exchange of services between companies could be done through the suggestion of didactic challenges of gamification (examples: cross-fertilization, cross-innovation, cross-actions, etc.).

An individual focus allows that, alongside to exchanges about professional content, there is also the possibility for exchanges of experiences, personal projects, valences, etc., between the individuals themselves. Those can be added to their profile/avatar. Enriched each user profile/avatar with new competences/skills and knowledge, will engage them to continue playing.

3.2. Why a gamification tool for CO-CREATE?

As it was said before, gamification software is either a tool or a platform that makes use of game mechanics to be applied to non-game contexts, aiming at to boost engagement and successful end-results. The most common uses the one can identify consist of customer loyalty, e-learning, employee engagement, performance management, etc. In the specific case of CO-CREATE project, the work plan comprised the development of such a tool in order to raise awareness of cluster managers and key people in general about new paradigms leading to business creation. These paradigms are rooted on design thinking methodologies that are the driving force beyond the

processes of co-creation, cross-fertilisation and cross-innovation between business people heading from different sectors of economy, albeit coupled with representatives of the CCIs sector.

The overall assumption is that by means of promoting the contact as well the engagement of those entrepreneurs in a safe, rich, creative and participatory environment, it will be possible to come up with innovative and/or disruptive new business ideas and hence innovation takes place. Under this context, innovation can be seen in terms of radical innovation, incremental innovation and also innovative design.

4. CO-CREATE Gamification tool

4.1. Overall methodology and key dates

The Gamification tool was planned to be part of the training materials that would help cluster managers and their members learn new ways to foster cross innovation and cross-fertilisation by means of using Design Thinking methods.

This tool was under the responsibility of Madan Parque, being actually a subcontracted task. The final output turned to be a responsive website instead of an APP. The decision-making about the output is based on the resources available to support its development (financial and time resources). Moreover, the developer has followed an innovative approach to web design that makes web pages render quite well on a variety of devices and window or screen sizes, therefore facilitating the overall development tasks, its duration and obviously the final cost for the procurer (the project, but under Madan's budget).

Madan Parque assumed a first presentation of the gamification tool, by means of a visual document named mock-up. The first document was presented to all partners during a partners meeting held at Seville (mid-March 2018). A revised mock-up was developed just after the Seville meeting, been used for handling the public tender referring to the gamification tool development. Several insights were provided to Madan Parque during the CO-CREATE steering committees, as well as via skype calls and exchange of emails. After some delays regarding the start of the developments of the gamification tool, the final mock-up for the gamification tool proposal was presented and validated during May 2018. This document was the basis for the development work that was sub-contracted to an IT company based in Portugal (**BLUE – Technology and Innovation Services**). The link to their institutional website is the following: **http://positiveblue.pt/?lang=en**

As it can be inferred by the previous narrative, it was necessary to develop the idea of the gamification tool almost from scratch albeit taking into consideration the various inputs collected during the interaction between Madan Parque and all partners (besides the great coordination of task leader, TVT). The gamification tool development required then new implementation dates, as it is summarised along the next paragraphs.

- **1st Mock-up presented during Seville meeting:**   14 March;
- **Iteration of Mock-up (after Seville meeting):**   29 March;
- **Approval of the revised Mock-up (to tender):**   Early April;
- **Public Tender with proposal by company:**   April;

- **Proposal revision by Madan Parque (dates, etc.):** April;
- **Business Proposal closed:** End of April;
- **Final Mock-Up and approval:** May;
- **Preparatory work with developer company:** Second half of May;
- **Development work (core):** Mid-June and July;
- **Demo Launch:** August;
- **Feedback from partners:** August/September/October.

4.2. Gamification tool concept. The metaphor

Concept behind the gamification tool is the concept of the «double diamond». Each user has to register herself/himself, therefore creating a personal profile. The user is invited then to perform a set of activities within 1st diamond. After progressing and completing these activities (random selection of questions about «design thinking» and «user experience» distributed within 3 levels of increased complexity), it is possible then for the users to proceed from the first diamond to the second one. The later consists of a large set of online tools and literature about topics above (the efforts of TVT-team were again instrumental at this stage). It is very much the concept of «further reading» and «further testing» after having dedicated some time to learn the basics and its consequent reasoning.

The overall approach to the gamification tool is based on a small set of metaphors related to design theory and also creativity as a whole. On one end, we are speaking about the «diamond» which is a beautiful expensive object. The raw material consists of a rare diamond cubic crystal structure of Carbon atoms that were subject to very high temperatures and pressure within Earth's mantle. It is needed then to make the discovery, move on with the mining efforts and finally to polish the raw material, before obtaining the final product which is going to enter the market.

With our tool it is proposed to make a scavenger effort in the sense of discovering a rare material consisting of valuable business ideas. Generally speaking, there are many ideas available in the outside world (as there are plenty of rocks and minerals within Earth), but it is just a few that are suitable for being worked out (mining effort), developed, improved and perfected (that is the polishing), before we can move on into the market (a brand new product/service brought up after an enduring process of ideation, based also on designers approach to problem solving).

On the other hand, we have moved to a structure of «double diamond». Double is plural (plurality) and could be seen also as a COoperative effort, leading to a COcreation process that benefits from a sharing of ideas, contributions and efforts between all actors involved.

4.3. Tool description. Key features
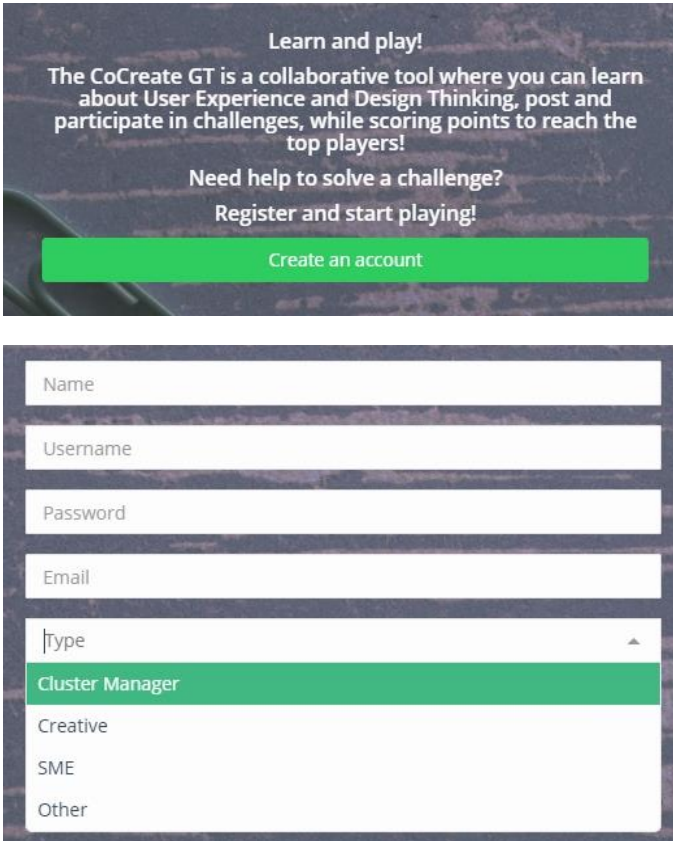
4.3.1 Link to the Demo

http://cocreate.positiveblue.pt:88/login

The gamification tool shall be moved onto a dedicated server whenever all contents and functionalities will be stabilised, after a final testing and evaluation phase to be performed by project partners and even external users not acquainted at all with CO-CREATE, its approach and its core topics.
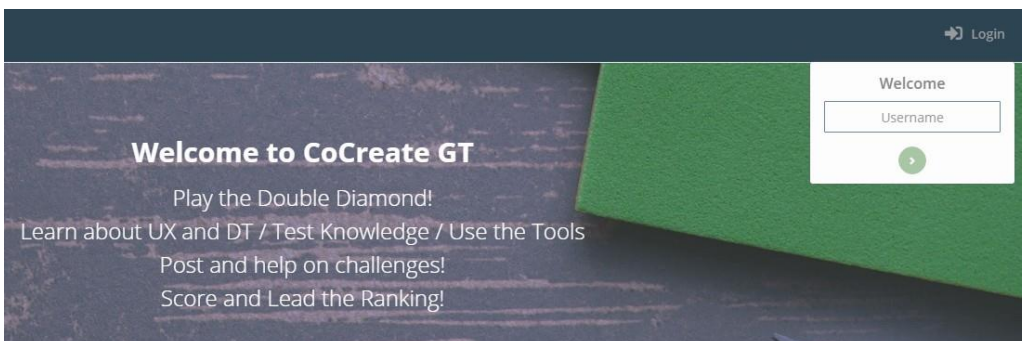
4.3.2   First step

User registration, by means of filling in a simple form:

The access to the gamification at a later stage is made at top right corner, by means of inserting "username" and "password" (it was developed a companion database that stores all data about all users of the tool).

4.3.3   Approach followed

Double Diamond (DD). This gamification tool shall assist users to learn the basics about Design Thinking (DT) and User Experience (UX).

The inner structure of DD is due to the fact that users shall go first through a Research Phase (the 1st Diamond) and then move on to the Prototype Phase (the 2nd Diamond).

There are 3 different levels to be considered for all components of the "Research Phase", by taking into consideration the increased complexity of the respective learning path (beginner, intermediate and experienced).
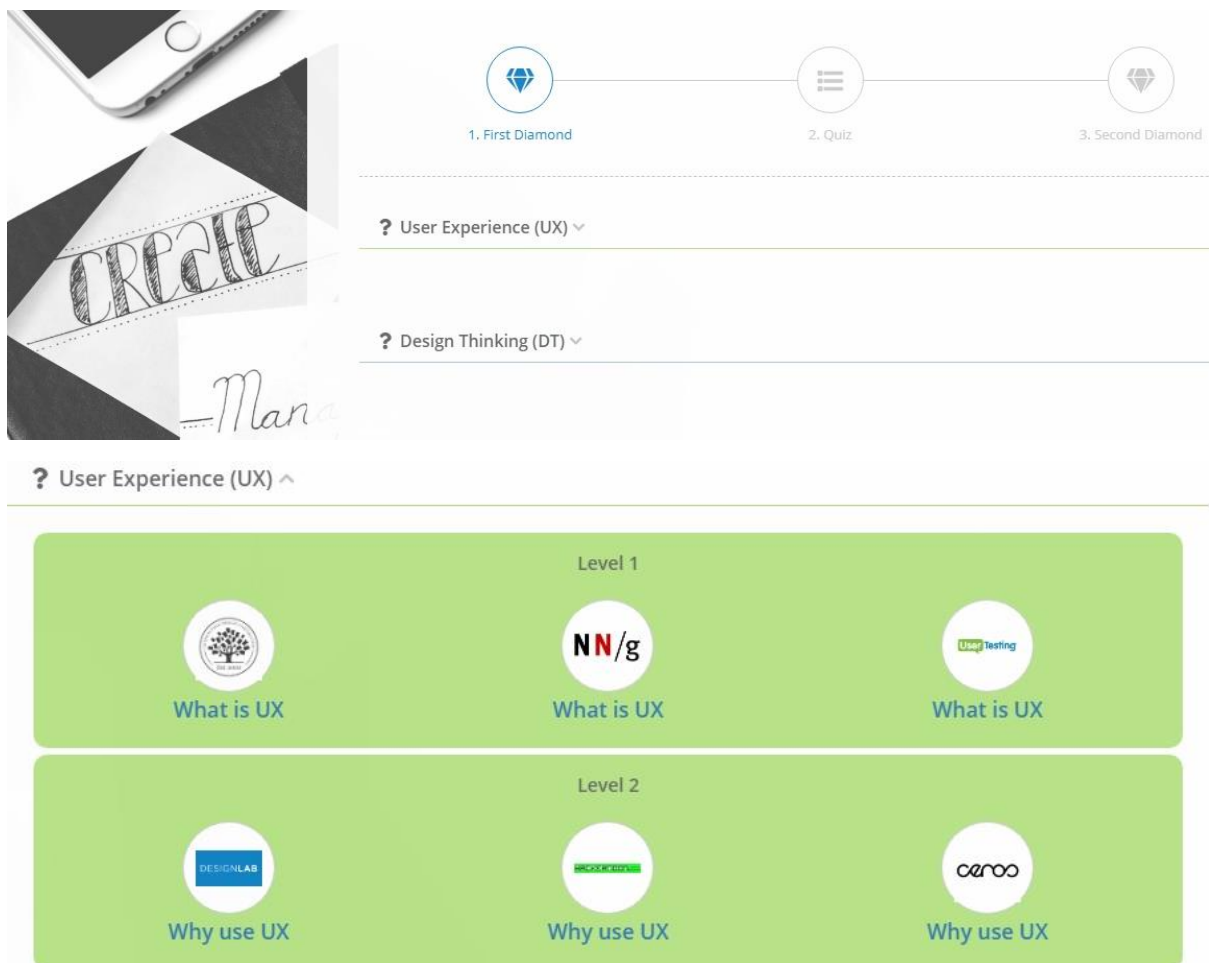
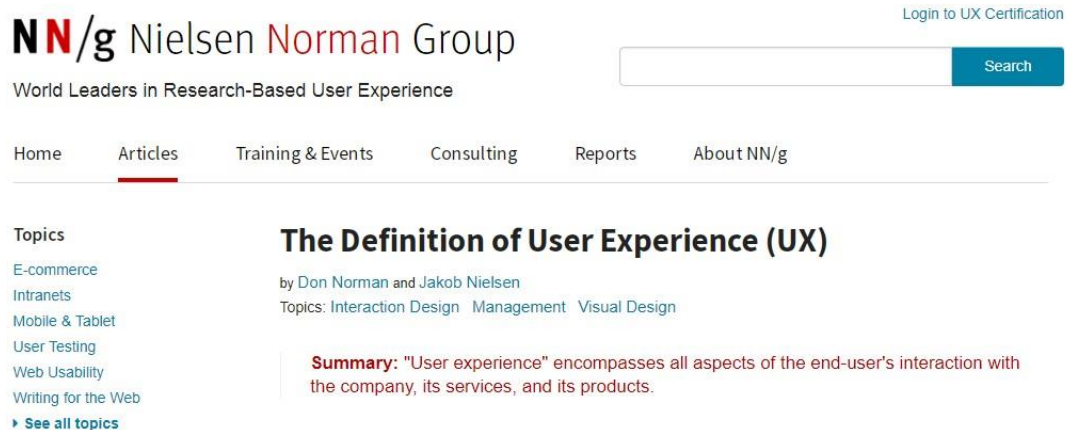### 4.3.4   Components associated to the "Research Phase"

Quiz

Several dozens of questions about "DT" and "UX" selected randomly out of the respective database, with different degrees of complexity.
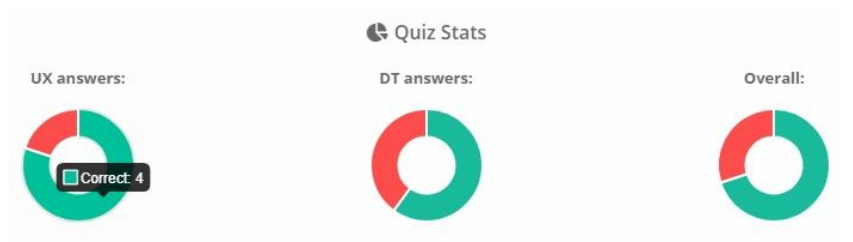
Documentation

Links to external websites where the one can find information about "DT" and "UX", again distributed into different levels of complexity.
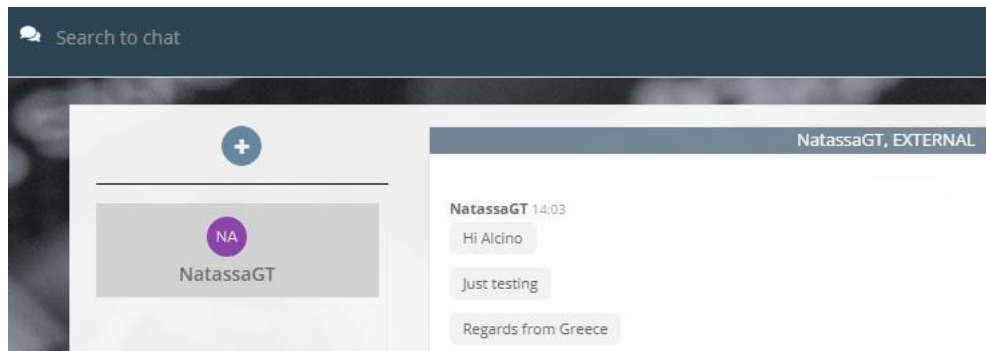

Online tools

Links to external websites where the one can have access to tools that can facilitate the IDEATION process that leads to the PROTOTYPE (Business Model Canvas, Mind Maps, etc.).

### 4.3.5 Components associated to the "Prototype Phase"

Chat

It was under testing last August, but functioned on perfection whenever I tried. Users can interact with each other, share ideas and get knowledge from creative people who might be available at the time.

Challenge

It appears as a thread list of challenges to be proposed by creatives and/or other users. Everyone willing to follow a challenge can reply to the respective thread, pose questions, share files (PDF only, even if the contents to be shared are images).
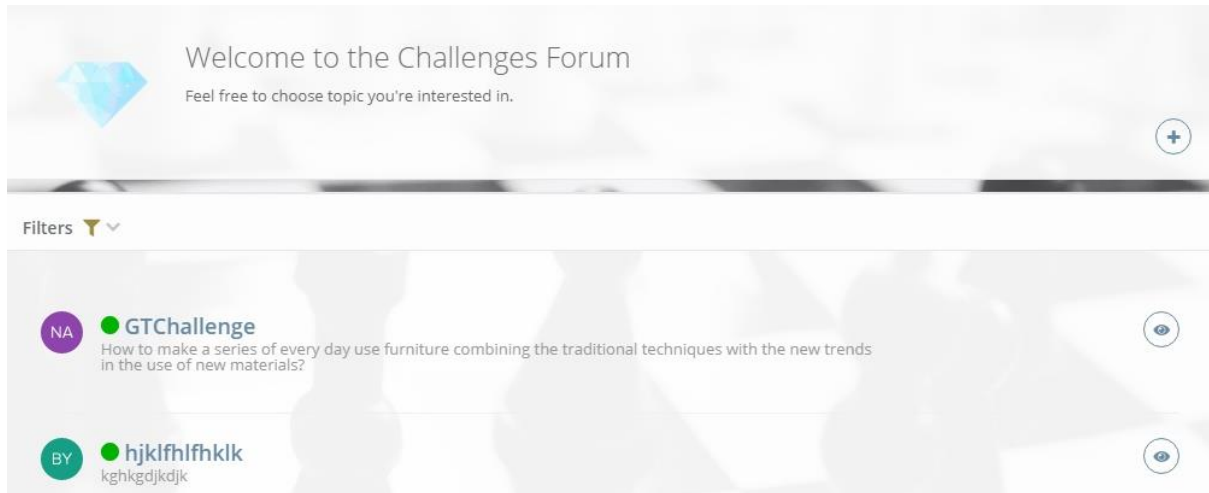
Ranking

Every creative and user gets points whenever working with challenges. This feature is not associated to the "Research phase" components, in view of the difficulty to track all interactions of all users and to store this information to the database.

4.3.6 Additional remarks

Points can be earned in 3 different ways:

A. By replying to an open challenge launched by somebody else;

B. By setting up a challenge;

C. By closing a challenge by means of uploading the final result (graphical evidence of the prototype).

Whenever in the top-3 of the ranking, the concerned users can be associated to the BRONZE, SILVER and GOLD labels. Experienced users (creatives) need more points in order to reach the top-3 positions of the ranking, if compared to the less-experienced users (cluster managers, companies, etc.)

There is a help video available embedded within the tool and within the Youtube channel of Madan Parque. Its length is of 3:44, comprising the most relevant features users should be aware of. The direct link to Youtube is this one: **https://youtu.be/yYC5o1VAHes**
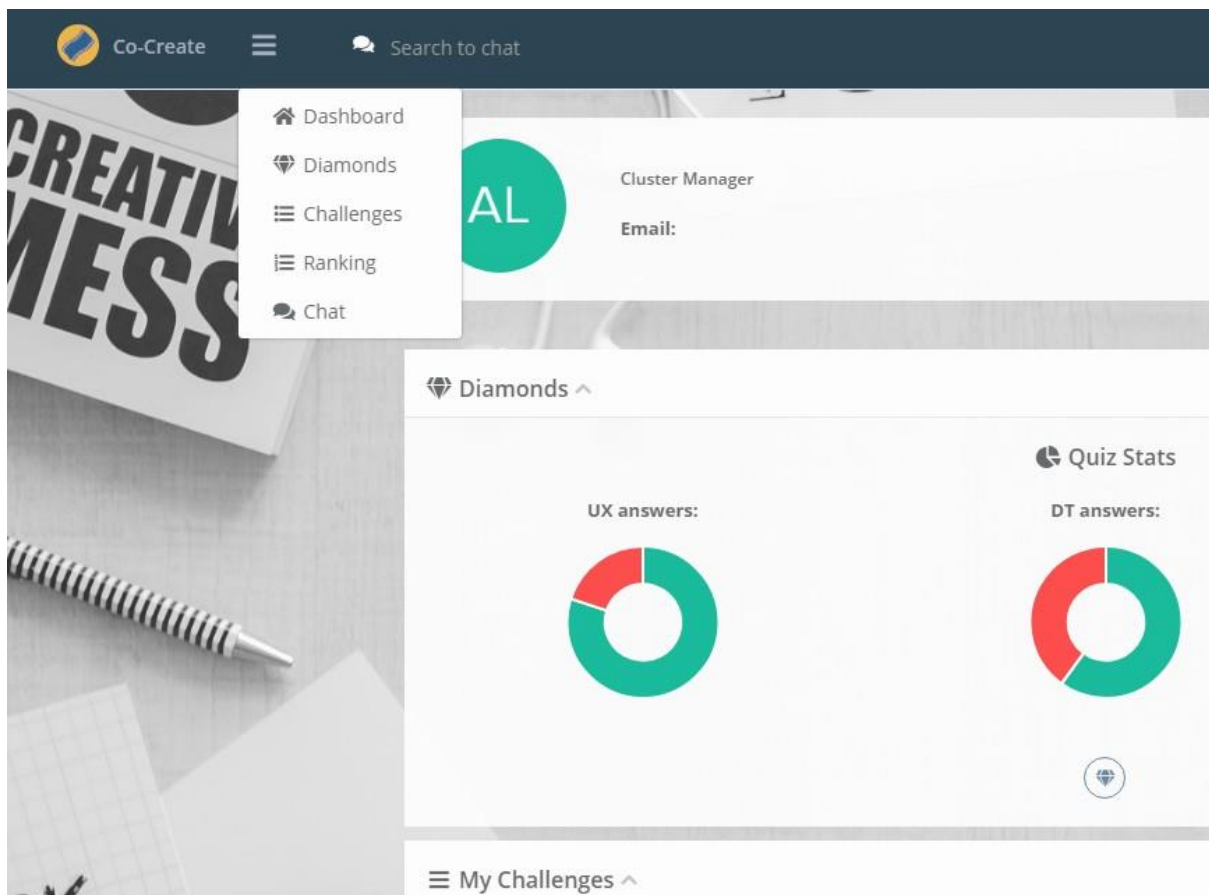
5. Expected results and contribution

Our project is looking at promoting the competitiveness of traditional sectors of the economy within several regions of MED territory, with a strong and fundamental contribution of CCIs. This is somehow a recent trend within Europe. Accordingly, the various financial instruments available

(ERDF in our specific case) have reserved some funding lines to support the testing of these new paradigms whenever it comes to business creation, by means of the development of new business ideas to be generated via an alternative path.

If considering the outcomes of CO-CREATE project which comprise as well an intense work with policy makers in the sense of suggesting the adoption of specific funding lines for sustaining co-creation processes for business creation, it was needed to have upstream a creative tool specially designed to shake people's minds and draw the attention to these new methods/approaches/methodologies.

The critical recipients for this process are obviously the cluster managers, who can easily perform as our ambassadors to a brand new world that is characterised by creativity and cooperation whenever it comes to business development within specific contexts. Our tool is thus instrumental for making the difference, for raising awareness and to testify the handful of new possibilities that are available for fostering new endeavours.

On one side, there is a trend of Industry 4.0 and the huge efforts leading to the digitalisation of the economy with a focus on traditional sectors economy and non-technological companies. The other side of the coin is indeed the new businesses to be nurtured from co-creation processes.

6. **Annexes**