

## SHORT TERM SCIENTIFIC MISSION (STSM) – SCIENTIFIC REPORT

The STSM applicant submits this report for approval to the STSM coordinator

**Action number:** CA16105

**STSM title:** Design of a survey for crowdsourcing practices

**STSM start and end date:** 12/02/2018 - 16/02/2018

**Grantee name:** Alice Millour

### PURPOSE OF THE STSM/

The aim of this STSM has been to design a questionnaire and organizing it in a survey format. The survey concerns everything out there related to crowdsourcing: applications, approaches, platforms, workflows, evaluation practices (of both the platform and the crowdsourced data).

The purpose of this survey is to get an overview of crowdsourcing practices and more specifically to:

1. get to know the actors of crowdsourcing in each country,
2. bring to the foreground inspirational crowdsourcing practices (regarding the ability to motivate a vast and continuous workforce, or to develop innovative retribution or evaluation methodologies for instance),
3. ease the identification of projects of interest as to the Action's purpose.

For that matter, we built a survey that is not limited to the practical parameters of a crowdsourcing project (aim, task, number of participants). In accordance with the Action's concerns, in particular regarding the need to balance the coverage across languages, and its Open Access, Open Data and Open Science policy, the survey also questions potential adaptability and ethical practices.

The questionnaire is aimed at being filled in by one person participating in the enetCollect action per country. The survey should be completed for every crowdsourcing project developed in the country they represent. Finally, the results of the survey will be compiled, summarized and reported as part of the first deliverable of WG1 and WG2. Optionally, it will be considered if there is sufficient material to prepare a survey paper on crowdsourcing for language learning materials.

### DESCRIPTION OF WORK CARRIED OUT DURING THE STSM

The work carried out during this STSM has been inspired by the Guide to the Design of Questionnaires (Brugges, 2011) and has consisted of the following tasks:

- 1. Pool all possible questions regarding crowdsourcing**

A brief overview of the use of crowdsourcing in the field of NLP for language learning in recent years (see the ACL Workshops on Innovative Use of NLP for Building Educational Applications proceedings) was of interest regarding the variety of tasks that can be crowdsourced.

## **2. Study existing taxonomies of crowdsourcing to identify the most significant features of such processes.**

(Quinn and Bederson, 2011) built a taxonomy based on a study of 46 Web-based crowdsourcing projects commonly accepted as such in the literature. Their classification features four characteristics: the preselection of contributors, the accessibility of peer contributions, the aggregation of contributions and the remuneration.

The taxonomy proposed by (Hosseini et al, 2015) is based on the systematic study of 113 research papers involving crowdsourcing in various disciplines. This taxonomy is organized along four axes: the crowd, the crowdsourcer, the crowdsourced task and the crowdsourcing platform.

We have used these two studies as an inspiration for the structure of the survey, as well as a control tool for the exhaustiveness of the topics we addressed.

## **3. Design the questionnaire (structure and wording)**

One of our main concerns has been to limit the necessary time to fill in the survey. We have thus favored, whenever possible, close-ended and binary questions over open-ended ones. We have aimed at ensuring the exhaustiveness of the proposed answers, systematically providing a back-off answer to the multiple choice questions, as long as a mandatory “Please specify” free text box.

Moreover, and considering that the respondent most probably will not be the designer of the crowdsourcing project, we favored questions which could be answered by performing a quick review of the project’s website or main publication. Therefore, answering the survey should not require either personal experience in crowdsourcing or extensive investigation about the project. The only (optional) question that may require some additional research regards the data evaluation practices.

## **4. Filter out the questions that were either too hard to answer, or answers that could be inferred from other answers.**

We have for instance rejected questions about the evaluation of the platform itself, as this information is very seldom made public, if ever such evaluation is performed. Moreover, whether the purpose of the platform is (or it is not) a side effect of the task performed by the participants can be deduced from questions belonging to the “Objective and Task” and “Participants” sections. The transparency of the approach is addressed in the Ethics section.

## **5. Choose a survey tool**

To ensure that the privacy of the respondents would be respected, we chose to set up a “FramaForm” survey (see: <https://framaforms.org/>). To our knowledge, this French solution is the only free alternative to Google Forms that authorizes up to 1,000 answers per survey and that enables conditional fields.

## **6. Run a pilot survey**

We asked 5 researchers (three from the IXA Group, one from Sorbonne Université and one from Université de Tours) to fill in the survey for different projects. We used their feedbacks to correct and improve the questionnaire. The estimated time for filling in the survey across all tests have been of less than 10 minutes.

## **DESCRIPTION OF THE MAIN RESULTS OBTAINED**

The resulting questionnaire is available here: <https://framaforms.org/enetcollect-survey-for-crowdsourcing-practices-1518450949>. It contains between 27 and 40 questions depending on conditional fields. It is structured in seven sections of which some elements are commented below. To facilitate answering the survey, we chose questions that could be answered by a quick review of the platform rather than integrating technical vocabulary such as “chose between “integrative” or “selective” aggregation strategy” or “between “context-specific” or “qualification based” preselection” (Quinn and Bederson, 2011) etc.

### 1. General Information

As we believe that providing an extensive list of the potential tasks that can be crowdsourced is unrealistic, we ask in this section for a one-sentence description of the project. Together with the final comment section, this is the only open-ended question in the survey.

### 2. Objective and task

This section complements the open-ended question mentioned above. It focuses on the motivation to resort to crowdsourcing, and some task-specific elements such as its estimated complexity.

### 3. Participants

This section aims at getting an overview of the recruiting practices as well as the incentives used to motivate the participants, e.g., belonging to a community, earning some money, etc.

### 4. Platform

This section aims at identifying the projects based on a specifically developed platform, and their potential for adaptability regarding both the crowdsourced task and the languages (if applicable).

### 5. Evaluation

This section aims at getting an overview of the data evaluation practices.

### 6. Ethics

In this section, we focus on the ethical issues raised by (Mason, 1986) and detailed by Jean-Yves Antoine in their relationship with crowdsourcing (see: <http://www.ethique-et-tal.org/wp-content/uploads/2017/09/BOLZANO.pdf>): Privacy, Accuracy, Property, and Accessibility. The questions thus address: the use of the participant’s personal information, the transparency of the intentions of the crowdsourcer, and the accessibility of the crowdsourced data.

### 7. Comments

In this final free text question, we ask the participants to highlight any specific aspects of the crowdsourcing project reviewed that are considered to be the most interesting ones.

Quinn, A. J., & Bederson, B. B. (2011). Human Computation: A Survey and Taxonomy of a Growing Field. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (pp. 1403–1412). New York, NY, USA: ACM. <https://doi.org/10.1145/1978942.197914>

Hosseini, M., Shahri, A., Phalp, K., Taylor, J., & Ali, R. (2015). Crowdsourcing: A Taxonomy and Systematic Mapping Study. Computer Science Review, 17, 43–69. [http://eprints.bournemouth.ac.uk/21925/1/Mahmood\\_Hosseini\\_et\\_al\\_CSR\\_Elsevier\\_Crowdsourcing\\_A\\_Taxonomy\\_and\\_Systematic\\_Mapping\\_Study.pdf](http://eprints.bournemouth.ac.uk/21925/1/Mahmood_Hosseini_et_al_CSR_Elsevier_Crowdsourcing_A_Taxonomy_and_Systematic_Mapping_Study.pdf)

Burgess, T. F. (2001). A general introduction to the design of questionnaires. Guide To The Design Of Questionnaires. <http://iss.leeds.ac.uk/downloads/top2.pdf>

Mason, R. O. (1986). Four Ethical Issues of the Information Age. MIS Quarterly, 10(1), 5. <https://doi.org/10.2307/248873>

#### **FUTURE COLLABORATIONS (if applicable)**

The grantee will collaborate gathering the answers to the survey and UPV/EHU will be in charge of writing the deliverable report based on the retrieved data.