D6.1: Analysis of the first field trial

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Executive Summary

In this work package, we evaluate the CASMACAT workbench in field trials to study the use of the workbench in a real-world environment. We will also integrate the workbench into community translation platforms and collect user activity data from both field trials and volunteer translators. This Deliverable covers Tasks 6.1 and 6.2.

Task 6.1: Field trials at translation agency.
Three annual field trials to evaluate the CASMACAT workbench in a real-world professional translation environment.

Task 6.2: Analysis of translator feedback and activity data.
Collect feed-back of translators self-estimation through retrospective interviews and correlate this with the activity data.

What are the actual needs of post-editors?
Feedback provided by Celer Soluciones' post-editors after using the CASMACAT workbench (Prototype-1)

Introduction

Over the last twenty years, the translation profession has felt a growing pressure to satisfy an ever-increasing demand for translations. This demand, stimulated in part by the new media of communication and the promotion of the value of multilingualism in modern societies, has motivated a quest for solutions that would help translation professionals to respond to these new challenges and would enable them to deliver high quality translation services at greater speed and lower cost. In the early years of PCs, the deployment of technology seemed one of the obvious choices for many language service providers and translation departments within organisations. Those early adopters of translator-support technology quickly demonstrated the benefits of using such systems and, as a result, triggered a massive uptake of the technology by any language service provider wanting to access similar benefits and, at the same time, enhance their competence edge.

Up until now translation memory (TM) systems have proved to be the finest example of translator-support technology as they represent a comprehensive solution that deals with most of the tasks involved in any translation process. Today TM technology is largely established in the language service industry as the mainstream translator-support technology. However, the possibilities of machine translation (MT) in combination with a subsequent phase of post-editing performed by professional translators is gaining momentum among language service providers addressing the actual challenges of delivering multilingual digital content to a wider audience in a shorter time span.

Major software development companies now pre-translate the source text using existing translation memories and then automatically translate the remaining text using a machine-translation engine. This "hybrid" pre-translated text is then given to translators or localizers to post-edit. Following guidelines the post-editors correct the output from translation memories and machine translation to produce different levels of quality. Gradually, post-editing is becoming one of the most requested activities in localization industry as opposed to scratch translation of new texts.

Improving and maximising the potentials of a post-editing workbench is thus one of the priorities set by both the industry and researchers when addressing the technological challenges faced by the language service industry. The motivation behind this research comes from a desire to know how such tools can be of greater support to translation professionals, and how technology can even empower them to make an unrestrained choice of the translation methods, strategies and tools they feel comfortable with and which bring out the best of their skills. Hence the importance of developing a tool for better assisting human translators in the task of post-editing MT outputs.

The development of a post-editing workbench is important from a social, economic and scientific perspective. The social importance of such a tool stems mainly from its ability to address pertinent and recent challenges faced by the translation profession. A post-editing workbench is essential for both the industry as a group and translation professionals as individuals, given that a fine-tuned tool can definitely provide assistance in the practice of delivering translation services. From an economic perspective, the benefits of maximising MT and post-editing technology is also of significant value since it has been proved to be an effective way to produce translations fast and at a lower cost without necessarily a corresponding drop in quality. Both language service providers and their clients can achieve significant cost savings and benefit from a streamlining of the translation process using a fine-tuned post-editing workbench. Scientifically, a post-editing workbench is important because it can serve as a testbed for the application and integration of knowledge deriving from different disciplines such as Translation Studies, Natural Language Processing and Software Engineering. The study of post-editing environments and its findings can conversely contribute to the theory of these disciplines and advance epistemic knowledge.

Motivation and background

The motive for pursuing the development of a post-editing workbench can be diverse according to the interest of each stakeholder who is engaged in language industry. For example, developers of commercial systems wish to improve their workbenches primarily in order to achieve business and financial gains from selling a high-quality product which helps to improve productivity. As researchers, our motive for pursuing the improvement of a post-editing workbench lies in the aspiration to see better translator-support tools that empower translation professionals, regardless of their organisational environment and its advantages or constraints. The CASMACAT workbench aims to be a tool with a greater scope of utility that will appeal to a wide section of the translation community, and that will help them overcome in a more flexible way some of the challenges facing the profession.

Since user satisfaction and translation productivity are in the core of the CASMACAT project, the aim of this reports is to collect all the feedback possible from real post-editors in other to implement their wishlist in the second prototype of the system. Since a post-editing workbench is a tool in the hands of professionals rather than being mere works of engineering, such evidence cannot be provided by any other means than the users themselves. Unfortunately, rarely does a piece of research embark from evidence provided by the users concerning the actual limitations of an existing translation-support tool. Instead, relevant needs are discussed in an expeditious and casual manner, while user-related information appears to be based on assumptions.

It is often the case that the motivation that underlies most of the attempts is the technical improvement of translation-support tools and not how they can best meet the needs of its users. The perceived notion of how to improve TM systems seems already clear: improving processes like segmentation, alignment and matching. Indeed, an improvement in these processes may enhance the overall quality of the TM system. However, we assume that the needs and requirements of a post-editing workbench seem to be of a different nature. Research that involves a human evaluation of the implementation, capable of establishing a user-fed evidence, is thus required.

Any piece of research that does not start from real-world facts in order to propose technological directions, but departs from engineering challenges which call for solutions, is likely to be carrying several risks. Apart from raising the question of whether the proposed solutions are actually desirable, there is a real danger that technological advances become so remote from the post-editor's work practice that ultimately they will be perceived as irrelevant to the post-editing task as performed by human translators. Therefore, the main focus could be misplaced if it is not on how to advance this interaction between the human translator and the post-editing workbench, and how to identify ways of supporting the translator in a more effective way.

Overall, research on MT systems (in general, and not only on MT development) has traditionally focused on the tools themselves and, only recently, on productivity issues correlating with time and quality expectations. Not much research has been carried out on the use of a post-editing tool in a broader context. Thankfully, a slow but steady increase of interest in user issues has been observed, mainly amongst Translation Studies researchers and translation practitioners. This trend has been favoured also by a shift in focus in the discussion agenda of leading conference events (such as the ASLIB international conference *Translating and the Computer*) which have been encouraging the dissemination of MT user-oriented research over the past few years, and by the increased interest shown by industry associations (such as TAUS - *Translation Automation User Society*) in user aspects through their surveys.

The gap between social (user-focused) and scientific (technology-focused) research on MT systems is probably the main reason why the needs of the users struggle to find their way into development proposals. This first CASMACAT report is an attempt to bridge this gap by approaching the question of a post-editing workbench improvement from the social scientist's point of view and by offering an investigation of user needs which will supply the evidence needed by system engineers prior to engineering future versions of the CASMACAT workbench.

Aims

The overall aim of this piece of research is to identify, analyse and consolidate the needs of translation professionals with regard to post-editing services with a view to improving the CASMACAT workbench. It is our hope that these needs will reveal areas of improvement and point to ways of expanding the possibilities of the existing prototype. More specifically, the present report aims at describing circumstances in which particular needs emerge. Furthermore, it aims to discover which parts of the post-editing process call for greater automation and machine-based support.

The main aspiration is to bring the CASMACAT workbench prototype closer to humans by providing constructive input that will enhance software engineers' understanding of the operational context of the system. It aims at complementing the research conducted by the system engineers in this project toward the development of a user-adequate and need-oriented application in the field of translation-support technology.

Finally it is hope that this research will contribute to the body of literature on Translation Technology, advance the state of practise of post-editing by human translators and play an important role in shaping the future prototypes for the CASMACAT workbench.

Methodology: semi-structured interviewing

A widely acknowledged premise is that quality is achieved when the system successfully meets the needs of its users, thus creating user satisfaction. Needs identification is indeed considered as a costly process that can take a significant part of the product planning schedule and it is likely to bring delays in the software project. Usually, most of the challenges derive from the fact that user needs identification is a collaborative activity that requires the end-user involvement in the software development process.

Given that the aim of this report is the discovery of translation professional's actual needs with reference to the existing CASMACAT prototype, this research is geared towards an empirical investigation of needs, based on data that derive from the first field trial of the project (see Report *XX - Name of the other report describing the field trial*).

This investigation is thus close in spirit to the Grounded Theory. The Grounded Theory is a popular research methodology in social research, which could have been considered suitable for the purposes of the current report. Grounded theory begins with a research situation. Within that situation, the task of the researcher is to understand what is happening there and how the players in that particular situation manage their roles. It was offered by its inceptors (Glaser and Strauss in 1967) as a systematic way of generating a theory from real data by making use of different methods of data analysis. Its main doctrine is "all is data", and its strength lies in its open-ended, discovery-based orientation which relies on methods that, instead of forcing meaning on the participants, are interested in listening to their genuine meanings, grasping their perspectives and studying their concerns and motivation drivers (Glaser 1998: 32). This is mostly done through observation, conversation and interview.

For our purposes, the elicitation method used was an individual interview with each of the six post-editors taking part in the first field trial. The interviews were conducted at the company Celer Soluciones (Madrid) on the of 24th of July, 2012, and the interviewers were Roberto Silva (Celer Soluciones SL, Madrid) and Bartolomé Mesa-Lao (CRITT - Copenhagen Business School, Denmark). Generally, interviews are regarded as an effective method for gaining insights into the user's perspective and can provide a wealth of information on the nature of user-workbench interaction, as well as the perceived areas of potential benefits.

In-depth interviews are one of the main methods of qualitative data collection in market research as well as in requirements engineering. The interviewer spends time with the users of a system (i.e. the first prototype of the CASMACAT workbench) in a one-on-one interviews finding out about their particular circumstances and their individual opinions about the system. Interviews can be formal or informal, and depending on the information they aim to elicit they can be structured, semi-structured or unstructured.

The method selected in this study was a semi-structured interview with each participant since it was the type that best met our needs. For the structured part of the interview a series of predefined set of questions were asked to each participant, so all respondents could cover the same issues. The interviewers used a standardised interview schedule with set questions which were asked to all respondents. The questions tended to be

asked in a similar order and format to make a form of comparison between all answers possible. However, there was also scope for pursuing and probing for novel, relevant information, through additional questions often noted as prompts on the schedule. The interviewers frequently had to formulate impromptu questions in order to follow up leads that emerge during the interview.

The semi-structured interviews with the six participants lasted approximately 30 minutes each. The structure of the interview started with a set of questions drafted by the researchers themselves, which reflected a more clearly defined agenda for the interviews (distinction between functional and non-functional aspects of the first CASMACAT workbench prototype). The questions were, however, intended to guide the discussion to relevant resources of information, rather than restricting it to specific types of information. In fact, there was always enough room for supplementary questions to allow for emergent themes and ideas.

A maieutic method was applied to these interviews. As the users described their experiences with the CASMACAT workbench, the interviewers kept probing, searching for better and more complete descriptions of problems and solutions. Again, notes were taken of the key points made by the participants in addition to the answers given to the questions. During the interview stage, the interview script was being revised continuously through the feedback loop created by the participants and the interviewers.

See appendix 1 for an overview of the semi-structured interview script.

Respondent's profile:

The six interviewees in the evaluation of the first CASMACAT prototype had the following profile as professional translators/post-editors working for Celer Soluciones SL (Madrid):

Participants	*P1*	*P2*	*P3*	*P4*	*P5*	*P6*
Gender	*F*	*F*	*M*	*F*	*F*	*M*
Years of translator training	*5*	*4*	*1*	*2*	*1*	*3*
Years of professional experience as translators	*7*	*7*	*+20*	*12*	*15*	*10*
Previous experience in post-editing	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*

Table 1. *Profile of the interviewed post-editors*

Findings

User needs, as identified within the present research, refer to both functional and non-functional aspects of the CASMACAT workbench. The functional aspects concern the functionality of the system, i.e. the operations that it is required to perform. These aspects are presented and discussed in this report. Non-functional aspects, on the other hand, include usability and utility issues, for example user interface design, system response time, precision, portability, and software resilience. The discussion of these aspects follows in section II. As already stated, the main aim was to raise awareness of the real need of the users.

Section I: functional aspects

Although user needs may be expressed at a high level of abstraction (i.e. stated in a way to avoid implying a particular technical solution), the idea was to work on the interface that post-editors have been using in the first field trial in order to suggest improvements for the first prototype of the CASMACAT workbench. Once the participants had commented on the different functional aspects of the interface (structured part of the interview), there was also room left for the participants to suggest and comment on other possibility and alternatives to put the developers in a position to generate new and innovative features with these descriptions.

Functionality

The need to largely expand the scope of functions currently present in the CASMACAT workbench was a wish that emerged in all the interviewees. The interviews revealed a great number of specific needs concerning functionality. These users' needs concerned mainly to the post-editing editor and its basic functions. Modules which are present today in many of the available TM software packages and help to organise the various functionalities that each translation project requires. According to the interviewees, any post-editor workbench should be a tool to automatise most of the repetitive and tedious editing work that fixing MT outputs involve. Post-editors often reported frustration and disappointment when having to go over and over again fixing the same kind of errors within the same project.

Being all of them regular user of TM systems, when asked for the particular functions that a post-editing workbench should have, many of them referred to particular TM systems where automatic segment propagation and quality assurance (QA) checks are constantly used by translators. Actually, four out of the six interviewees believed that any TM system interface, as they stand now, seems to be the best environment so far to perform post-editing tasks and they all agreed that it should be gold standard that the CASMACAT workbench should aim for in future prototypes. The reported applicability of current TM systems for post-editing tasks reveals how current post-editors prefer to work in environments where they can benefit from the existing TM functionalities.

As appears from the interviews there is a strong need for functions in the present CASMACAT prototype that can increase post-editors' productivity without depending on the repetitiveness of the text. Autowrite features, automatic segment propagation, search and replace functions, and quality control checks (see specific sections below) are the four basic functionalities that all the interviewees considered to provide real assistance for post-editors.

The following subsections will go through specific components of the CASMACAT prototype and the improvements suggested by the interviewees according to their needs as post-editors.

Post-editing environment (the editor)

The needs that concern the functionality of the post-editing editor (GUI) relate, above all, to the revision process that the user enjoys or finds more convenient to follow while she carries out the post-editing task. The interviews showed that post-editors have

different preferences in terms of the type of editor used depending on their personal circumstances, and also sometimes on their idiosyncratic work habits.

Only one of the post-editors would have preferred to work in a standard text processing environment because she would have been able to apply all the functionalities of such a tool. As pointed by the participant, "so far working in a text processor environment will facilitate the translator's text editing moves". Leaving the current CASMACAT prototype as it is, this particular post-editor didn't find any benefit in working in the workbench. However, the rest of the post-editors favoured working in the dedicated CASMACAT environment. Post-editing in a two-column format (left for source and right for target segments) is familiar to any professional translator, since this is also the environment that most of the TM systems offer as a translation editing environment in their latest versions. No radical changes should be foreseen in regard to the basic editor layout in future versions of the CASMACAT workbench.

Post-editing process

In terms of the post-editing process, interviewees agreed that the CASMACAT workbench imposes its own way of working through the text, with little flexibility given to the translator for customising the process. As it is also usually the case in TM systems, CASMACAT workbench makes translators work on a segment-by-segment basis.

When the interviewees were asked if they would have preferred to have alternatives ways to go through the text (sentence by sentence, paragraph by paragraph, or seeing the whole text), they all seemed to favour the idea of keeping the sentence-by-sentence format with an alternative option for proof-reading the post-edited text from a monolingual view.

Many other functions were brought forward by the interviewees in order to enhance the revision process of the target segments. Future versions of the CASMACAT workbench should incorporate new functionalities such as:

- **Visual track of changes**: the workbench should incorporate a change-tracking mode to route editions on the text. Changes could be thus visually displayed giving the option to accept or reject some of the changes proposed by the post-editor.
- **Comments**: Offer a space for notes of queries and uncertainties on specific segments.
- **Monitor the post-editing progress by real-time word counters and progress bars**: For example, a participant proposed a small field on the status bar of the browser that shows how many words the current document has, with the number being updated as the translator proceeds with the post-editing. Another participant proposed a counter showing an ongoing percentage of how many words/segments there are to go in the project.
- **Collection of indicators of work performed**: This feature would include accurate reports on the number of keystrokes used, time spent in every session, or percentage of editing performed, so that billing could be done in a reasonable manner.

Productivity enhancement features

Apart from the previous needs regarding the functionality of any post-editing workbench, the interviewed professionals showed interest in various tools integrated in an editor that they believe would enhance their productivity. The most popular ones were those that would enable users to:

- **Systematic search and replace**: Performing global replacements for any text. The workbench could present to the post-editor, once she corrects or edits a word/phrase, all the occurrences of this word/phrase throughout the target text, in order to correct it in all other instances. This functions should be included making a distinction between searching in the source or in the target segments.
- **Copy text from source to target segments**.
- **Sort segments alphabetically** in order to group exact or similar segments along the same project.
- **Record of editing patterns**: Detection of editing patterns in a way that the workbench is able to remember certain patterns of fixes and write reports on them so that the MT engine could be modified accordingly to produce better outputs next time around.
- **Macro support**: In connection with the above mentioned feature, it could also be very helpful to have an integrated macro recording tool for which the user doesn't have to have any knowledge of computer syntax. Thanks to a macro support feature, post-editors would have to fix a certain error, record it, save it, and then repeat it to their liking to fix similar problems.
- **Autowrite functions**: An automatic write function could be implemented so as, while you start to edit a piece of text, the system automatically proposes a series of terms, phrases and sentences that are mined from existing TM or other translation alternatives offered by the MT. As the post-editor types, the system would dynamically predict alternative TM/MT translations that best complete the part of the sentence being post-edited. Separate areas of the editor could present all the different matches. This autocomplete feature is believed to speed up writing time by limiting the number of keystrokes and avoiding mistype errors.
- **Automatic segment propagation**: The autopropagation in the post-editing grid would help to instruct CASMACAT to automatically insert the translation one have just post-edited in a particular row into all targets rows where the source is identical.
- **Translation memory (TM) module**: The ideal post-editing workbench should include a TM module so it can easily store and reference formerly fixed segments. Translation units (TUs) in such a TM module should make a distinction between normally translated segments (i.e. segments resulting from scratch human translation) and post-editing derived segments (i.e. segments resulting from a post-editing project), because often the specifications of post-editing are less stringent with quality and consistency. This, in turn, might mean that while I still want to be able to reference formerly post-edited TUs, TUs from other projects might be preferred.
- **Full glossary and black lists integration**: A termbase should be deeply integrated into the editing process in order to make sure that the prescribed terminology is being followed. This feature will ensure a consistent use of white lists (must-have translations) and black lists (may-not-have translations) by automatically highlighting inconsistencies.

1 *Quality control*

The quality of the end product is of paramount importance to all post-editors and maintaining a high level of quality is in the interests of every translation professional. This is why virtually all TM systems nowadays come equipped with different types of quality assurance (QA) tools.

The surveyed post-editors, apart from asking for a integrated spell checker within the CASMACAT workbench, also suggested various options for running QA checks. According to their needs, a post-editing workbench should include several levels of consistency checks between source and target segments, as well as different targets segments so inconsistencies can immediately be flagged. QA features proposed by post-editors would concentrate on terminology, numbers, omissions, punctuation, brackets or double spaces.

Any QA check, as it is already the case in many TM systems, should be done in real-time while working on the segment. Such QA checks should be adjustable and should have different levels of severity. Some errors (such as end-of-segment punctuation or correct numbers) might have to be fixed for sure, while others, such as double spaces or differences in length of segment, should be flagged as optional fixes.

Section II: non-functional aspects

In the previous section, the needs of post-editors concerning functionality of the CASMACAT workbench were discussed. This section concentrates on non-functional aspects of the system and needs in that respect. The understanding of non-functional aspects by software developers is just as important as a correct description of functionalities and it plays a critical role in the design of quality software. Unlike the functional aspects, which describe specific and concrete functionalities, the non-functional ones refer to the general properties that the system or parts of it should exhibit. The responses of our post-editors in the first field trial revealed needs relating to several non-functional aspects, including usability, efficiency, portability, extensibility and reliability.

Usability

The concept of usability in the context of a post-editing system denotes the ease with which human translators can employ the system as a tool to carry out post-editing related task. Furthermore, it refers to the clarity and elegance with which the interaction between the system and its user is designed. Since the focus of this research is on the post-editor professional and the optimisation of the use of the CASMACAT workbench, needs in this area are particularly important. For the sake of clarity, they are broken down into more specific usability aspects: user interface, customisability, learnability, and supportability of the workbench.

User interface

Any post-editing workbench should be an interface-intensive application in the sense that it should offer a rich visual environment where the available functionalities and the various options are clearly displayed, and in which post-editors feel comfortable working. Interviewed post-editors attached great value to the experience that the interface of the system creates for them.

The post-editors in this field trial favoured the idea of a customisable layout for the user interface with at least the following visual components: a menu, main tool bar and search and replace areas. As it is already the case, the source and target two-column layout should synchronise and allow the user to scroll them down simultaneously. Post-editors commented that all areas in the workbench should be resizable and displaceable while working. The proposed CASMACAT toolbar should be powerful and receptive to single post-editors needs by allowing them to select and centralise all the activities and functionality that they commonly use.

The following needs emerged from the comments of the interviewees on user interface problems and suggestions for improvement:

1. *More ergonomic user interaction:*

Four out of the six post-editors complained about having problems to scroll from segment to segment at some point even when they were applying the correct keyboard shortcuts (Alt + arrow down, for instance). They would have also benefited from no constraint use of the mouse.

2. *Visible navigation:*

Post-editors appreciate a navigation that is clear and natural, with the help of which they quickly see their range of options, grasp how to achieve their goals, and do their work. The navigation should present the illusion that users are always in the same place with the work brought to them offering a greater sense of mastery and autonomy.

3. *Reversible actions and allowing "undo".*

Users explore in ways beyond navigation. Sometimes they autocorrect their post-editing options. By making actions reversible, users can both explore and make mistakes without worrying about not being able to recover the original raw MT segment. The possibility of undoing any action is also very important for correcting mistakes.

4. *Use of colour:*

Using colours in a post-editing interface is believed to enhance the aesthetic appeal of the environment and to make it resemble any of the current TM editing environments. Indeed, a post-editing system that uses colours to mark segments edited or not edited would be helpful for post-editors when it comes to know which segments have need manual work.

Customisability

When a post-editing system grants customisation facilities to its users, they can adjust the functionality of the system to suit their preferences and their work style. The need for customisation is apparent from many of the participants in the field trial. (e.g. "I'd like to see a docking user interface that allows me to configure my editing environment the way I like. Configurable font sizes would have made my work way easier and faster.").

Furthermore, some users thought it would be helpful if the post-editing grid (the two-column layout) could be exported from and reimported into the worbench in an RTF format, so that it allows for the possibility to work across different environments.

Learnability

The need for easy of use and easy to learn software may seem obvious to everyone and one can assume that it has been at the top of their priorities. Current TM systems, for instance, seem to be suffering from a complexity that results in a steep learning curve. Unsurprisingly, the difficulty of learning how to use a system is usually mentioned as one of the most common reasons for not using it.

When it comes to using a post-editing interface, what users would like to see is software that is "user-friendly". In particular, users believed that extra attention should be paid to the simplicity of the user interface which should permit the user to start using the workbench right away without extensive training. Users also expect developers to work on ways that enhance the learnability of their systems, such as offering better documentation and help.

Supportability

Supportability refers to the ability of the system to help users overcome problems when they occur. The inevitability of software problems is well understood among post-editors. In the event of errors, they should always have access to documentation and help. Another proposal by one of the post-editors was the possibility of sending a message to the developers from within the post-editing tool for either a persisting problem or a new feature request.

Efficiency

Efficiency in any system refers to how well they perform their function and at what cost in terms of computer resources. Our field trial showed that different translators had different priorities while post-editing in terms of efficiency. Efficiency in speed of the system was an issue that appeared repeatedly in the interviews. Some users pointed out that their system's speed and responsiveness appeared to "slow down when the document being post-edited reached a certain size". Others seemed to be particularly irritated by the slow speed of crucial functions like navigation from segment to segment in some of the session they ran. Navigation problems slowed down the whole post-editing process and sometimes drove users to think if it would have been easier and faster to post-edit without the help of such a tool.

Extensibility

Extensibility means that the system is designed to include hooks and mechanisms for expanding/enhancing the system with new capabilities without having to make major changes to the system infrastructure. For example, a software system may have a public Application Programming Interface (API) that allows its behaviour to be extended or modified by people who do not have access to the original source code. The most powerful way of rendering an application truly extensible is allowing access to its source code, so that its users can improve or fix the code as the need arises. Real

customisation of the tool helps to achieve greater reliability and have more flexibility. A post-editing system that supports plug-ins has many advantages for developers too. These include enabling third-party developers to create capabilities to extend an application, supporting features as yet unforeseen, and reducing the size of an application.

When asking post-editors to think of possible plug-ins for the CASMACAT workbench, one of them came out with the idea of integrating speech recognition tools to enhance productivity.

Portability

A frequent criticism by language professionals, as appears from previous research, is that a particular tool is not portable from one platform to another. Web-based applications, as it is the case of the CASMACAT workbench, inherently overcome this problem of platform dependence. The only portability issue reported by the post-editors would be the current limitation to run the CASMACAT workbench in a particular web-browser, i.e. Mozilla Firefox. Only one of the translators in the field trial asked for the possibility to run the CASMACAT workbench from a different web-browser not being Mozilla Firefox. Google Chrome would have been the browser favoured by this particular post-editor.

With the rise of small-screen devices (tablets and smartphones), a need seems to be emerging for mobile systems, so that translators can take texts an edit them anywhere. Two out of the six interviewees commented on the possibility to try running the post-editing workbench in a portable device such as a tablet.

Reliability

The reliability of a system is apparent from its ability to perform and maintain its functions in routine circumstances, as well as under hostile or unexpected conditions. Defects are inherent in every application and they can destroy the trust of users. The goal of the development team must then be to reduce the occurrence of defects to a level where trust can reasonably grow, by investing in defect reduction strategies such as extensive testing and continuous user feedback.

Two of interviewed post-editors reported frequent occasions where their system crashed unexpectedly resulting in the lost of time (hence productivity) when having to restart the working session because of the tool itself. The system should ensure that users never lose their work as a result of errors, the vagaries of internet transmission, or any other reason other than the completely unavoidable, such as sudden loss of power to the client computer.

Conclusions

The running of this first field tried proved to be largely successful in addressing the search for post-editors needs when it comes to working with the first CASMACAT prototype. In this sense, it delivered information of sufficiently high quality and details to enable further implementation of features in the CASMACAT workbench regarding real post-editors needs. Operating across disciplines (Translation Studies, Social

Studies, Requirements Engineering and Product Design) in order to analyse and interpret the collected data, showed that it is fruitful to follow an interdisciplinary approach to the problem of user needs identification.

This research has addressed the challenge of delving into the post-editing world and revealed needs that are guided by practical experience and interests. It has established current user needs and has provided design directions from the user's perspective on both functional and non-functional aspects of the CASMACAT workbench.

Three key concepts corresponding to a post-editing tool appeared to bear the greatest importance to post-editors, as they emerged again and again throughout the interviews: flexibility, simplicity and ease of access.

- *Flexibility* seems to be attained when the system offers the possibility to the user of customising and defining the settings for most of its features. This way it can be adaptable to each user's personal needs. It is also achieved through the option of enabling or disabling certain features according to the different tasks performed by certain groups of users. A system is flexible when allowing the user to deactivate certain features when they are not required or deemed useful.

- *Simplicity* is perceived in different ways by different user groups. For users with little or no experience in using a system and with an average level of IT skills, simplicity would be the opposite of "featurism", meaning that the more features a post-editing workbench has, the more complicated it is to use. For translators, a feature-rich application does not necessarily mean an overbearing one, as long as the workflow that ties all features together is simple. All post-editors seem to agree on the idea that simplicity can be achieved by organising all features under the umbrella of a single simple process that supports the post-editing workflow from the beginning to the end.

- *Ease of access* related to the affordability of the system, not only in terms of purchase cost but also in terms of upgrade, support and training costs.

Overall, these interviews revealed a large number of needs that are not yet met by the post-editing tool being developed. Some respondents formed their requests out of their current problems as post-editors. Others visualised future versions of the CASMACAT workbench by imagining what would make their job easier. A key finding of this research has also been the attitude of translation professionals towards post-editing automation. The most frequently discussed tasks that users believed needed greater automation in the CASMACAT workbench was the autopropagation of already fixed segments.

Some of the ideas and suggestions in these interviews were definitely foreseen within this project and they will find their way into improved versions of CASMACAT tool. Research in software engineering and natural language processing is evolving at a rapid pace, surmounting programming limitations of the past. The question at the moment is not whether it would be possible to develop some features, but whether they would bring any real benefit to the daily work of the translation professional and therefore would justify the development effort.

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Appendix 1

Interview script

Date: July 24, 2012.
Interviewers: Roberto Silva and Bartolomé Mesa-Lao.
Venue: Celer Soluciones SL (Madrid, Spain).
Time assigned: 30 minutes for each of the six post-editors.
Language: Spanish (mother tongue of all the post-editors).

[STRUCTURED PART OF THE INTERVIEW]

- Welcome and introduction.
- Signature of infomed consent in order to be able to record the interview.
- General comments on the first field trial performed with the CASMACAT workbench prior to the interviews.
- CASMACAT workbench – Prototype 1:
  Funtional aspects:
    - The editor
    - The process of post-editing in the workbench.

- Comments on the implemented functionalities:
  ¦ two-colum layout;
  ¦ keyboard shortcuts;
  ¦ text formating (font size and formating).
- Comments on the desired functionalies to be implemented in future versions: *Departing from previous experiences in any TM system, which specific functions would you like to see implemented in a post-editing tool?*

Non-functional aspects:
- Report on the usability, customisability, learnability and supportability of the GUI.

[UNSTRUCTRED PART PART OF THE INTERVIEW]

¦ Room for open comments and feedback from the participants in regard to any post-editing isssues that may arouse.

Note: Comments were welcomed at the end of the structured part of the interview or in combination with that structured part of the interview depending on the natural flow of the post-editors comments.