

D2.7 Report from ECSPM

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List of Acronyms

| API | Application Programming Interface |
|---------------|--|
| ECSPM | European Civil Society Platform for Multilingualism |
| ELE | European Language Equality (this project) |
| ELE Programme | European Language Equality Programme (the long-term, large-scale fund- |
| | ing programme specified by the ELE project) |
| EU | European Union |
| LT | Language Technology/Technologies |
| ML | Machine Learning |
| MRLU | Minority, Regional and Lesser-used Languages |
| QA | Question Answering |
| SRIA | Strategic Research and Innovation Agenda |
| | |

Abstract

This report presents and discusses the results of the "European Language Technology Users and Consumers Survey", in which ECSPM informants and respondents participated, providing information about the Language Technology (LT) tools and applications they use or work with in minority, regional, "lesser-used" (MRLU) and heritage languages spoken in Europe.

One set of these languages, each of which is used by a relatively small number of speakers, includes Aromanian, Carpato-Rusyn, Lezghin, Meskhethian (Ahiska), Romani and Ladin. The difficulty to locate informants and the even greater difficulty to locate respondents to the survey revealed, from the start, that the LT tools and applications in these languages are scarce or non-existent. This finding has been validated through the investigation that the ECSPM carried out, concluding that these languages are at a great risk of digital extinction.

The second set of languages, for which this report presents and discusses findings, are the official languages of countries and, therefore, they have national patronage. This set of languages includes Albanian, Bosnian, Macedonian, Moldovan and Turkish. It was challenging but much less problematic to trace, locate and convince users of these five languages to participate in the survey as informants or respondents. Even though a few of them had a problem with the survey being available only in English, as did most of the MRLU language activists approached for information regarding the first set of languages, they were digitally literate people who provided valuable information about the LT tools and applications they use when working with their language. It was obvious from the beginning that even if these five languages are at digital risk, they have developed a number of LT materials, and have great aspirations for the development of more LT tools and applications in their languages, knowing full well that language power and sustenance in our digital age depends on the digital support that a language has.

While the first set of lesser-used minority languages, autochthonous national minority and regional languages are important for the maintenance and cultivation of European culture, the second set of languages are important because they are spoken as heritage languages by communities of speakers in EU member states – some of which are substantial.

1. Introduction

This document reports on the findings of a consultation with representatives from the LT users and consumers community, conducted by the EU project European Language Equality (ELE). These results will serve as input for a strategic research, innovation and deployment agenda (SRIA) and roadmap, with a view to eradicate the striking imbalance between the languages spoken in Europe, in terms of the support they receive through Language Technologies (LTs) by 2030.

The ELE project sought to collect the views of European LT users and consumers and to consolidate their perspective on the differences in terms of technologies for the languages they work with and of the measures that need to be taken so that, by 2030, all the EU national/official languages are equally digitally supported, and so that the regional, minority and heritage/community languages spoken in Europe do not run the risk of digital extinction.

Due to the multi- and interdisciplinary nature of the field of LT, which stands at the intersection of Linguistics, Computational Linguistics, Computer Science and Artificial Intelligence, the ELE project brings together diverse groups of stakeholders, including researchers, representatives of communities of LT users and consumers, language professionals (e.g., translators, scholars in the field of Linguistics and Computational Linguistics), professionals from different sectors (e.g., banking, health), language advocacy networks, federations and associations.

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Even though the methodology and instruments utilised have been common to all ELE consortium members, this report covers and analyses the subset of responses of stakeholders contacted by the European Civil Society Platform for Multilingualism (ECSPM).

About ECSPM

Launched in 2009 by the European Commission, the purpose of the Civil Society Platform on Multilingualism, in which European networks participated in a structured dialogue concerning multilingualism, was to develop a coherent framework for multilingual policy in the EU, as part of a larger political agenda for "bringing Europe closer to its citizens and strengthening a pan-European identity in harmony with national and regional identities". In 2016, what is today the European Civil Society Platform for Multilingualism (ECSPM), became an independent, non-governmental organization, which functions as an alliance for the languages spoken in Europe, as well as for research, policies on and practices of multilingualism, making possible the cooperation between European, national, and international networks, organisations, federations, and research units, viewing multilingualism as a prerequisite for active citizenry, inclusion and social justice in Europe.

ECSPM has brought together full member organisations which are distinguished into (a) networks active in supporting the official/national languages, as well as the regional, minority and heritage languages of Europe; (b) organisations/associations striving for multilingualism and a plurilingual ethos in educational, social, and cultural affairs in Europe; (c) university centres carrying out research in language studies and multilingualism in all aspects of social life by way of focusing on people, their languages and semiotic repertoires, as well as the social contexts in which communication takes place.

The ECSPM has 25 members. Those of the first two categories described above are networks or associations which include many other organisations that amount to about 300 institutions.

2. Methodology and Instruments

2.1. Online Survey

The survey was addressed to LT users and consumers, and it sought to elicit the respondents' views in a way that facilitates the analysis, consolidation and integration of the collected feedback into the ELE SRIA and roadmap.

The survey had 63 questions in total. 30 of these were the basic items, and 33 were followup items. As such, a respondent answered anywhere between 33 questions (minimum) to 63 (maximum). 46 of all survey questions were mandatory. 33 of these were closed-ended (multiple choice and either/or) and 30 were open-ended.

| Question types | Mandatory | Optional | Total |
|----------------|-----------|----------|-------|
| Closed | 20 | 13 | 33 |
| Open-ended | 26 | 4 | 30 |
| Total | 46 | 17 | 63 |

Table 1: Type of survey questions

Table 1 presents an overview of the types of questions contained in the survey. The survey was structured in four main parts. If any of the provided answers were not applicable, the



respondents had the option to enter a different answer through the option "if other, please specify".

- **Part A. Respondents' profiling:** the first part of the survey included 13 questions for the demographic profiling of respondents, with an emphasis on the following characteristics relevant to the task at hand:
 - Country respondents are based in
 - Name of the organisation/representative body respondents work for
 - Communities they represent (if applicable)
 - Type of organisation respondents work for
 - Sectors or domains that respondents are active in (if applicable)
 - Role of respondents in the organisation (if applicable)
 - Organisation's estimated revenue (if applicable)
- **Part B. Language coverage:** this second part inquired about the European languages the respondents work with and the languages they intend to include in their workflow. That is:
 - Languages that the organisations, associations, communities, professionals, and LT users work with
 - Languages that they plan to work with/support in the short- or medium-term future
- **Part C. Evaluation of current situation:** the third part asked respondents to evaluate the level of technology support for the official/national European languages they work with as well as the minority, regional or lesser-used languages. The aim of this part was to assess the current language situation in the EU and specifically:
 - The differences in availability of LTs between the official European languages they work with and, if applicable, differences in availability of LTs between the minority, regional or lesser-used languages they work with;
 - The gaps perceived regarding the LT tools or applications that respondents work with
 - Respondents' opinions in relation to the performance of LTs with regard to specific languages
- **Part D. Predictions and visions for the future:** the fourth and final part of the survey asked respondents to express their needs and wishes for the future of LTs so as to digitally support all languages and, in particular, they were asked:
 - About the policies or instruments that could contribute to speed up the effective deployment of LT in Europe equally for all languages
 - To predict future opportunities for LT in basic and applied research (scientific vision) and in innovation as well as in the industry
 - To state the expectations of the LT community with regard to the challenges an ELE Programme can address by 2030

Follow-up: The last items of the survey requested the respondent's permission to be contacted for an interview and, if so, to provide contact details. Finally, respondents were required to click on a confirmation question stating "By clicking on 'Submit', I agree that my personal data (email address and/or name) can be used according to the Privacy Policy of the European Language Equality (ELE) project". Once the survey had been prepared, it was set up and published on the EU Survey platform (see Appendix A).¹

The survey was distributed by ECSPM through emails to members of the 25 networks. The ECSPM announced the opening of the survey during its 2021 symposium, hosted by the Department of Linguistics, the Centre for Multilingualism of the University of Konstanz, Germany, 28-29 June 2021. The theme of the symposium was "Multilingualism in Higher Education", and it was attended by about 150 academics and young scholars researching issues in multilingualism.

The ECSPM informed its 25 member organisations by email, asking them to share information with their own member organisations, which are about 300 in all, and to circulate the survey. Emails were also sent out to institutions and individuals who are not members of ECSPM but attend its events and support its activities. In addition, information about the survey was also distributed via the ECSPM Newsletter, and posted on the ECSPM Website as well as on Facebook. It has additionally been advertised through the European Language Equality and European Language Technology websites, LinkedIn page and Twitter account.

The survey opened on 21 June 2021 and closed on 18 October 2021. In total, 246 responses have been collected, out of which 12 respondents were contacted by the ECSPM. This subset of responses, representing the views of the stakeholders contacted by ECSPM, is analysed in this report.

2.2. Interviews

Out of the 12 respondents, 10 agreed to be contacted following their participation in the survey for an interview to further investigate points not clarified in the survey.

Of the respondents that agreed to be interviewed, only one wished to have a face-to-face online interview, seemingly due to lack of proficiency in English. The rest preferred correspondence via email instead, which is the method used except for the one interview conducted via Zoom, as mentioned, and one through a phone call.

A Word document was prepared with the survey questions, marking any items that needed clarification, and sent to the respondents. Emails were exchanged, back and forth and in the end, the process provided the expected results for most of the items that were unclear. The interviews were conducted between October and December 2021.

3. Analysis of Responses

3.1. Survey Responses

3.1.1. Respondents' Profiling

• Countries covered:

One major goal of this survey was to bring the European LT users and consumers together and hence reach a wide and demographically distributed audience. Through our members, we were able to reach respondents in many countries. The ECSPM respondents are from Austria, Bulgaria, Croatia, Kosovo, North Macedonia, the Russian Federation, Serbia, Turkey, and the Ukraine. Figure 1 illustrates the percentages of the countries where the respondents who participated in the survey were based.

¹ https://ec.europa.eu/eusurvey/runner/LTusers-consumers



Figure 1: In which country are you based?

• Sectors covered:

6 of ECSPM respondents cover the domain of Education, 4 cover the domain of Information and Communication Technologies and 4 have stated that they cover Digital Humanities, Arts and Culture. 2 respondents state that they cover Media, and 1 states that they cover Publishing, Social Sciences, Industry and Manufacturing, Research and Energy/green economy/environment.²

• Organisations size and type

The size of the organisations is more or less even:

- 3 have 1-10 members
- 4 have 11-100 members
- 3 have 101-500 members
- 2 have 501-5000 members

The majority of organisations, i.e., 8, deal with Education and Research, while 3 are NGOs and 1 SME. Figure 2 shows the types of organisations that completed the survey.

² It is to be noted that our respondents have selected more than one domain, which gives a combined total exceeding 100%.



Figure 2: Which of the following best describes the type of organisation you work for?

• Roles of respondents:

5 of the individual respondents are professorial staff at universities, 2 are researchers. 4 of the respondents representing NGOs are serving as presidents, 1 is a council member.

3.1.2. Language Coverage

From among the languages which are on the EU official language list of the survey, out of 12 respondents, 5 work with English, 2 work with German and 2 with Croatian. All other EU official languages were selected by 1 respondent only.

Languages which are not on the language list provided in the survey are listed below:

- 2 respondents work with Turkish, 2 with Russian and 2 with Ukrainian
- 1 respondent works with Albanian, 1 with Bosnian, 1 with Macedonian, 1 with Montenegrin and 1 with Serbian
- 7 respondents work with MRLU languages: 1 with Aromanian, 1 with Carpatho-Rusyn, 1 with Lezghian, 1 with Meskethian and 2 with Romani. A further 1 respondent works with Moldovan as a minority language in Ukraine.

Figure 3 shows the distribution of languages selected by the respondents.



Figure 3: Which of the official European language(s) listed below do you or your organisation work with? if "Other", please specify.

It was ECSPM's suggestion to seek information on two additional languages to those above – languages which are used by large communities of speakers in EU Member States: Albanian, and Turkish. These languages, unlike the lesser used languages referred to above are official languages of nation states and, therefore, have national patronage, like Macedonian, as well as Bosnian which we were asked to add to the ECSPM list of languages at a much later date.

The breakdown of languages counts and percentages can be seen in Appendix B, Table 4.

Languages planned to be supported in the short- or medium-term:

Out of 12, 3 respondents reported that they intended to work with/support languages in addition to the ones they are already working with, that is, German 2, English, French and Spanish 1 each.³

³ The terms used to identify languages in the survey created a few problems and confused respondents as well as the report author, initially obscuring results.

Using the "minority/regional/lesser-used language" as a single category term prompted several respondents to include in this category languages such as Albanian, Bosnian, Macedonian and Turkish. While these may indeed be lesser-used languages on both a European and a global scale, they are not minority or regional languages. As a matter of fact, they are a category of their own. They are languages used as heritage/community languages in EU countries, but they are also national/official languages in European countries. As such, they are braced through status and corpus planning national mechanisms and enjoy national patronage. They are also much more likely to have some digital support, however insignificant, but indeed more significant than minority and regional languages.

Using different terms (i. e., EU languages, and European languages) for the languages used in Europe was problematic because Turkish, for example, is none of these, and because it is difficult for the lay person to distinguish between the two. Besides, these two are by no means exclusive categories.



3.1.3. Evaluation of the Current Situation

The biggest challenge the users of European LT are facing at the moment is the threat of digital extinction of minority, regional and lesser-used languages. There are striking differences in terms of LT support not only within the 24 official EU languages but also between these languages and other languages considered by respondents as minority, regional or lesser-used languages.

Two ECSPM respondents said they used LT tools in MRLU languages. One of them, uses multilingual search engines and computer-assisted language learning tools. The other, a speaker of Moldovan in the Ukraine, reported that they use proofing tools, translation tools, speech recognition tools and search tools, i.e., tools that are available in Moldova. Other respondents reported that there were no LT tools available in the MRLUs they work with, but they use LT tools/applications in other languages.

When asked to evaluate the level of LT support for the languages they work with, it is possible to see that the difference in LT support between the official EU languages is considerable. Respondents were asked to rate the level of technological support based on a four-point scale (where 1 = very poor, 2= poor, 3= good, 4= excellent). English gets the best score, followed by German, French, Slovenian, Bulgarian and Croatian. Romanian and Hungarian received the lowest scores in terms of LT support. Other languages were not ranked, as respondents selected the "I don't know" option. Figure 4 shows the comparison of mean scores (1-4) provided to the level of technological support between EU official languages.



Figure 4: Please choose the option that best describes the level of language technology support for the official European language(s) you or your organisation work with.

When respondents were asked to select the LT tools used in the EU languages and other European nation state languages they work with, the results show that, 6 of the ECSPM respondents use LT tools and applications in languages other than their MRLU language. Of these, all 6 use language learning tools, 4 use proofing tools and translation tools, 3 use search

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tools, 2 use parsing tools and 1 uses speech recognition tools. Figure 5 illustrates the categories of tools selected by respondents.



Figure 5: Which language technology tools/applications listed below do you or your organisation use with the official European language(s) you or your organisation work with?

The respondents that use LT tools in both official EU languages and MRLUs report that the performance of the tools available for the EU languages is significantly better than for the MRLUs, and that there is a greater variety of tools. The tools they use most in the EU languages are proofing tools, translation tools and search tools but they report these are either not available in the MRLUs they use or that they are deficient, i.e, they perceive that there are significant gaps in basic LT tools used in the MRLUs such as proofing tools and translation tools. They also point out that, compared to the EU official languages, terminology resources are few and syntactic parsers are not precise enough.

The answers show that raising awareness for the LT potential in Europe on a political level is more important than ever. The European LT community is in a place where change is needed to compete with innovative systems and tools built overseas. On a political level, this involves more commitment from the European Commission as well as the Member States.

A detailed list and more exhaustive summary of all answers with the breakdown by language and tools can be found in Appendix B, Table 5 and Table 6.

3.1.4. Predictions and Visions for the Future

The answers of our respondents show that there is indeed a significant need for LT tools and applications in the MRLU languages and in the languages spoken as heritage languages by communities of speakers in EU members states. When asked what resources would increase the use of language tools:

- 11 believed that a wider range of LT tools for the languages they work with would be helpful
- 9 thought that higher-quality tools for the languages they work with would help
- 9 said that more training of personnel dealing with such tools would be beneficial

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- digital translation tools
- mobile cell phone applications
- parsing tools, proper taggers
- sentiment analysis datasets and opinion analysis tools
- text summarization and text mining tools
- virtual reality, augmented reality, and mixed reality applications

Also, the respondents mentioned QA tools, multilingual resources and supporting tools (including APIs), computational semantics, speech systems and language learning systems. A detailed list and more exhaustive summary of all answers can be found in Appendix B, Table 7. When asked to describe their vision for the future of LT, on the basis of the questions put forth in the survey:

- 6 agree, 3 strongly agree and 3 are undecided or disagree that "In the next 10 years, there will be higher-quality language tools that deal with all the languages that concern me, including minority languages"
- 5 strongly agree and 7 agree that "In the next 10 years, there will be a wider range of language tools for European Languages"
- 4 strongly agree, 6 agree and 2 are undecided or disagree that "In the next 10 years, language technology tools will help prevent the loss of linguistic diversity"



In the next 10 years, there will be higher-quality language tools that deal with all the languages that concern me, including minority

Figure 6: Please indicate the best option that describes your vision for the future of languages technology

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The majority of our respondents strongly believe that there are benefits in improving the LT they work with. More specifically:

- 8 think that LT will increase individuals' exposure to these languages
- 10 believe that improved LT tools and applications will prevent MRLU languages from disappearing
- 9 think that LT will increase the number of speakers of MRLUs
- 6 believe that LT will improve communication between native speakers
- 8 are convinced that LT will improve literacy in MRLUs
- 4 think that LT will improve conditions for people with disabilities
- 5 believe that LT will increase engagement with social, leisure and work activities in their own languages
- 3 think that LT will improve online trade with countries in which the languages they work with are spoken
- 2 believe that LT will improve offline trade in countries in which the languages they work with are spoken

3.2. Interview Responses

During interviews, ECSPM informants and respondents expressed their appreciation for the ELE project, because it has given them hope, hope which interviewers cultivated, that it might lead to MRLU languages securing the support needed, so as to develop LT tools and applications which will help them prevent their digital extinction and, consequently, LT may help to secure natural language survival.

Over 90% of the informants and respondents were willing to be contacted for follow up questions but not in the mode of on-screen exchange. They wished to respond via email messages, mainly because they did not feel comfortable with using oral English. The fact that the survey was in English only created a problem for those who might have been willing to meet on-screen, if it were in a language in which they were proficient.

The respondents' and informants' initial questions concerned details about the project as a whole and there were queries about technical details of the survey. When they were responding to the questions, several thought they should classify languages that are official national languages such as Albanian and Macedonian in the category of "lesser used languages". Also, the way the question about the LT tools and applications that they use was articulated was confusing for them. They were unsure as to whether they should respond specifically about the language they were filling in the survey for or about all the languages they use LT tools and applications for.

From the interviews it became clear that the MRLUs which enjoy no state patronage or the local support of large groups of speakers have little or nothing to show in terms of LT tools and applications. A couple of the respondents said they had tried and had actually started to create LT tools, but they found it impossible to finish without any funding. The Moldovan speaking respondent in Ukraine tried to use some LT tools available from Moldova, but the attempt was unsuccessful. A respondent in Serbia had a little more success again with neighbouring language tools, even though they did not work as well as they had hoped. Both these respondents commented on how important cross-border projects might prove to be. One Aromanian speaking respondent reported that online dictionaries were being created, but

these are still under construction and development and that funding was urgently needed. Another tried to explain that through digital resources "young people might become interested in their heritage language, and hopefully also in the cultural treasures of their people" but that the few textual resources are old and dated, not easily available online, almost impossible to search and they do not have a particularly attractive interface. The Romani speaker responded that translation, language learning and search tools can only be built when proper taggers have been created and sufficient data sets developed. However, since even basic material is scarce, it is impossible to create such tools.

4. Conclusions

Our findings confirm the disquieting assumption that there are almost no LT tools and applications for regional and minority languages – that there is little to no digital support for the languages which need it urgently because they are at serious risk of digital extinction.⁴

On the other hand, the lesser used languages investigated through this survey and specifically Albanian, Bosnian and Macedonian, as well as Turkish (a bigger language, at least in numbers of speakers), which are all used as community languages and taught as heritage languages in Europe, have been developing LT tools and applications, however, minimal in comparison to those of EU Member States whose digital transformation progress is monitored and facilitated.⁵

The most apparent conclusion that one may draw from the data collected through this survey is that languages which enjoy state patronage (being official languages of sovereign nations) do have a degree of support to develop LT applications and tools, but it seems that sponsorship is linked to the economic and political power of the country in question. Therefore, for example, there are more LT tools and applications for Turkish than for Albanian. This is probably also linked to each language's cultural heritage. So, for example, there are more LT tools and applications for Turkish than for Mich have a very short history as languages in their own right and official languages of nation states. Before the fragmentation of Yugoslavia, citizens of that Southeast European region generally spoke the official language of the former Socialist Federal Republic of Yugoslavia, known as Serbo-Croatian, and it was only after states which were part of Yugoslavia gained independence, that the local linguistic versions of languages were renamed.

Nevertheless, even for the national languages that ECSPM is responsible for, very few LT tools and applications have been developed, and those that exist need improvement to sustain languages and in turn have languages play a role in the digital economies. As explained on the European Commission website⁶ it is through language technologies that we "teach computers how to understand and process written and spoken human language, build fit for purpose applications and deploy them widely". Of course, as it is pointed out in the aforementioned website: "Language technologies go far beyond machine translation. They offer applications for text analysis, such as named-entity recognition and anonymisation, dialogue systems, search engines, automatic text summarisation, speech-to-text and more. Language technologies can be developed and customized for any specific scenario where human language is processed."

The languages that lack support of LT tools and applications require long-term funding and coordination of projects, not only within the country that perhaps sponsors them but also across borders. Stakeholders, whether in politics, civil society or business need to work together. It is vital to raise their awareness regarding the potential of Language Technology.

⁴ https://www.europarl.europa.eu/EPRS/EPRS-Briefing-589794-Regional-minority-languages-EU-FINAL.pdf

⁵ https://www.ospi.es/export/sites/ospi/documents/documentos/Sstudy_Shaping_the_digital_transformation_in_ Europe_Final_report_202009.pdf, https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_1022

⁶ https://digital-strategy.ec.europa.eu/en/policies/data



A. LT Users and Consumers Survey

Figures 7 to 24 show the complete LT research and developers survey.

| Europea with Euro | n Language Equal | ity: Consultation |
|--|--|--|
| | | echnology users |
| Fields marked with | * are mandatory. | |
| | | |
| This questionnaire | is delivered by the European Language E | Equality (ELE) project, a pilot action that |
| addresses an appe primary goal of EL | al by the European Parliament resolution E is to prepare a Strategic Research and Ir | "Language equality in the digital age". The nnovation Agenda and a Roadmap, in order to |
| tackle the striking i | mbalance between European languages ir | terms of the support they receive through |
| To prepare the stra | utegic agenda and roadmap, ELE is reachi | ng out to the European stakeholders involved |
| in Digital Language | e Equality through a series of consultation | rounds. This questionnaire is specifically |
| addressed to user Artificial Intellige | s and consumers in the field of Langua nce. | je Technology (LT) and Language-centric |
| The questionnaire | takes approximately between 10 and 15 m | ninutes to fill in. Questions with an asterisk |
| You will be reques | ted to evaluate the current situation with re an languages, to indicate relevant challend | spect to the level of Language Technology uses and to share your needs and expectation: |
| for the future. | | , |
| Your contributions and roadmap. This for the next ten yes | will be carefully taken into account when d is a joint pan-European effort that will imp ars and beyond. Join us and be a part of it! | rafting the envisaged ELE strategic agenda act developments in the field of LT in Europe |
| Personal data pro | tection | |
| Personal data, i.e. e. to invite respond personal data of th The names and er | name and email address, will be used for a lents to follow-up interviews or to the ELE a e respondents will be made available to an nails of the respondents will not be reported | contact purposes only during the ELE project, conference or other project events. No ny third-party, beyond the ELE consortium. d in any project public document. The |
| respondents' views the project's delive | and opinions, as expressed through this of rables or in other public documents, e.g. so for encoded to the individual's personally identication of the individual's personally identication. | questionnaire, will be reported anonymously in cientific publications, dissemination material |
| etc., without any re | iorenee to the marriadar o personally ident | maple information. |

Figure 7: Full survey as published (page 1/18)



| | hich country are you based? Austria Germany Belgium Greece Bulgaria Hungary Croatia Ireland Cyprus Italy | land rtuga mani ovak l | l a Republic a | | |
|--------------------------|---|---------------------------------|--|-------|---|
| | Ozechia Latvia Sp Denmark Lithuania Sw Estonia Luxembourg Oth Finland Malta France Netherlands | ain /eder ner | 1 | | |
| * If "oth | ner', please specify. | | | | |
| | | | | | |
| * Whic repre | h association(s)/community(ie esent? se, select as many as apply Agriculture and fisheries Digital Humanities, arts, culture | es)/o | rganisation(s)/sector(s) of use Finance/banking Health | ers a | and consumers do you Publishing Research |
| * Whic repre Plea: | h association(s)/community(ie sent? se, select as many as apply Agriculture and fisheries Digital Humanities, arts, culture and other services Broadcasting | es)/o | rganisation(s)/sector(s) of use Finance/banking Health Industry and manufacturing | ers a | and consumers do you Publishing Research Security (threat detection in conorce) |
| * Whic repre Plea | h association(s)/community(ie esent? se, select as many as apply Agriculture and fisheries Digital Humanities, arts, culture and other services Broadcasting Business services | es)/o | rganisation(s)/sector(s) of use Finance/banking Health Industry and manufacturing Information and Communication Technologies | ers a | and consumers do you Publishing Research Security (threat detection in general) Social Sciences |
| * Whic repre Plea: | h association(s)/community(ie sent? se, select as many as apply Agriculture and fisheries Digital Humanities, arts, culture and other services Broadcasting Business services Construction | es)/o | rganisation(s)/sector(s) of use Finance/banking Health Industry and manufacturing Information and Communication Technologies Insurance industry | ers a | and consumers do you Publishing Research Security (threat detection in general) Social Sciences Tourism, accommodation and food services |
| • Whic repre Pleas | h association(s)/community(ie esent? se, select as many as apply Agriculture and fisheries Digital Humanities, arts, culture and other services Broadcasting Business services Construction eCommerce Education | | rganisation(s)/sector(s) of use Finance/banking Health Industry and manufacturing Information and Communication Technologies Insurance industry Justice and legal Media | | and consumers do you Publishing Research Security (threat detection in general) Social Sciences Tourism, accommodation and food services Trade and repair Transportation, logistics and storage |
| • Whic repre | h association(s)/community(ie esent? Se, select as many as apply Agriculture and fisheries Digital Humanities, arts, culture and other services Broadcasting Business services Construction eCommerce Education Energy/green economy /environment | | rganisation(s)/sector(s) of use Finance/banking Health Industry and manufacturing Information and Communication Technologies Insurance industry Justice and legal Media Public administration | | and consumers do you Publishing Research Security (threat detection in general) Social Sciences Tourism, accommodation and food services Trade and repair Transportation, logistics and storage Other |

Figure 8: Full survey as published (page 2/18)





Figure 9: Full survey as published (page 3/18)

| • Which of the official European language(s) listed below do you or your organisation work with? If you represent an organisation/community of users and consumers please select the languages this organisation/community work with. Otherwise, please select the languages you work when using language technologies. Bulgarian German Norwegian Croatian Croatian Greek Polish Codennian Dutch Irish Slovak English Italian Slovak English Italian Slovak Other • If "other", please specify. • Visc If other ", please specify. • Which language(s)? • Which language(s)? • Which language(s)? • Bulgarian • Greatian Greatian • Visc • Which language(s)? • Bulgarian • Greatian • Creatian • Creatian • Store • Which language(s) • If "other", please specify. • Universe • Universe • Universe • Universe • Which language(s)? • Which language(s)? • Bulgarian • Greatian • Greatian • Greatian • Greatian • Store • Dotability • Creatian • Greatian • Store • Store • Dist • Creatian • Greatian • Store • No • Not sure • Which language(s)? • Dist • Dutch • Irish • Store • Store • Datish • I trainal • Dutch • Irish • Store • Store • Datish • I trainal • Dutch • Irish | | |
|---|--|--|
| | Language | Coverage |
| Estonian Latvian Spanish Finnish Lithuanian Swedish French Maltese Other If "other", please specify. Do you or your organisation plan to include additional languages in your workflow in the next 3 years? Yes No Not sure Which language(s)? Bulgarian German Norwegian Croatian Greek Polish Czech Hungarian Portuguese Danish Icelandic Romanian Dutch Irish Slovak English Italian Stovenian Estonian Latvian Spanish Finnish Lithuanian Swedish French Maltese Other | if you represe /community w Bulgari Croatia Czech Danish Dutch English | tran organisation/community of users and consumers please select the languages this organisation work with? tran organisation/community of users and consumers please select the languages this organisation rk with. Otherwise, please select the languages you work when using language technologies. n German Norwegian Greek Polish Hungarian Portuguese Icelandic Romanian Irish Slovak Italian Slovenian |
| Finnish Lithuanian Swedish French Mattese Other If "other", please specify. Do you or your organisation plan to include additional languages in your workflow in the next 3 years? Yes No Not sure Which language(s)? Bulgarian German Norwegian Croatian Greek Polish Czech Hungarian Portuguese Danish Icelandic Romanian Dutch Irish Slovak English Italian Slovenian Estonian Latvian Spanish Finnish Lithuanian Swedish French Maltese Other | Estonia | n 🗌 Latvian 🔲 Spanish |
| If "other", please specify. Do you or your organisation plan to include additional languages in your workflow in the next 3 years? Yes No Not sure Which language(s)? Bulgarian German Norwegian Croatian Greek Polish Czech Hungarian Portuguese Danish I celandic Romanian Dutch I trish Slovak English I talian Slovenian Estonian Latvian Spanish Finnish Lithuanian Swedish French Maltese Other | Finnish | Lithuanian Swedish |
| Which language(s)? Bulgarian German Norwegian Croatian Greek Polish Czech Hungarian Portuguese Danish Icelandic Romanian Dutch Irish Slovak English Italian Slovenian Estonian Latvian Spanish Finnish Lithuanian Swedish French Maltese Other | • If "other", plea | se specify. |
| Which language(s)? Bulgarian German Norwegian Croatian Greek Polish Czech Hungarian Portuguese Danish Icelandic Romanian Dutch Irish Slovak English Italian Slovenian Estonian Latvian Spanish Finnish Lithuanian Swedish French Maltese Other | If "other", plea * Do you or yo years? Yes | se specify. ur organisation plan to include additional languages in your workflow in the next 3 |
| Which language(s)? Bulgarian German Norwegian Croatian Greek Polish Czech Hungarian Portuguese Danish Icelandic Romanian Dutch Irish Slovak English Italian Slovenian Estonian Latvian Spanish Finnish Lithuanian Swedish French Maltese Other | If "other", plea If "other", plea * Do you or yo years? Yes No No No | se specify. ur organisation plan to include additional languages in your workflow in the next 3 |
| | If "other", plea Do you or yo years? Yes No Not sur | se specify. ur organisation plan to include additional languages in your workflow in the next 3 |

Figure 10: Full survey as published (page 4/18)





Figure 11: Full survey as published (page 5/18)

D2.7: Report from ECSPM





Figure 12: Full survey as published (page 6/18)

| | Amount and variety of available applications | Quality of the tool/application (delays in responding, difficulties with special characters, language-related errors in the output etc.) | Variety of linguistic phenomena /text types covered | Adaptability to systems (e.g. adaptability to iOS system) | Other |
|-----------|--|--|---|--|-------|
| Bulgarian | | | | | |
| Croatian | | | | | |
| Czech | | | | | |
| Danish | | | | | |
| Dutch | | | | | |
| English | | | | | |
| Estonian | | | | | |
| Finnish | | | | | |
| French | | | | | |
| German | | | | | |
| Greek | | | | | |
| Hungarian | | | | | |
| Icelandic | | | | | |
| Irish | | | | | |
| Italian | | | | | |

| Figure 13: Full survey as published (page 7/18 | 3) |
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| LatvianIIILituanianIIIIIIMalteseIIIIIIINorwegianIIIIIIIIIIIPolishIIIIIIIIIIIIIIIPortugueseIIIIIIIIIIIIIIIStorakIIIIIIIIIIIIIIIStorahIIIIIIIIIIIIIIIStorahIIIIIIIIIIIIIIIIStorahIIIIIIIIIIIIIIIIStorahIIIIIIIIIIIIIIIIStorahIIIIIIIIIIIIIIIIStorahIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | | | | | |
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| LithuanianIIIIMateseIIIINorwegianIIIIIIPolishIIIIIIIPorlugueseIIIIIIIStovakIIIIIIIIIIIStovahanIIIIIIIIIIIIStovahanIIIIIIIIIIIStovahanIIIIIIIIIIIIStovahanIIIIIIIIIIIIStovahanII | Latvian | | | | |
| MatteseIIIIIIIIINorwegianIIIIIIIIIPolishIIIIIIIIIPortugueseIIIIIIIIIIIPortugueseIIIIIIIIIIIStovakIIIIIIIIIIIStovakiII | Lithuanian | | | | |
| NorwegianIIIIPolishIIIIPortugueseIIIIPortugueseIIIIRomanianIIIISlovakIIIISlovenianIIIISlovenianIIIISlovenianIIIISlovenianIIIISwedishIIII | Maltese | | | | |
| PolishIIIIIIIIIPortugueseIIIIIIIIIIIRomanianIIIIIIIIIIIIIISlovakIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | Norwegian | | | | |
| PortugueseImage: Image: Im | Polish | | | | |
| RomanianImage: Image: Imag | Portuguese | | | | |
| SlovakIIIISlovenianIIIIIISpanishIIIIIIISwedishIIIIIIII | Romanian | | | | |
| SlovenianIIISpanishIIIISwedishIIII | Slovak | | | | |
| Spanish Image: Constraint of the spanish Swedish Image: Constraint of the spanish | Slovenian | | | | |
| Swedish | Spanish | | | | |
| | Swedish | | | | |
| | | | | | |

Figure 14: Full survey as published (page 8/18)



* If "other", please specify. In general terms, how do you evaluate the performance of the tools you use for the official European language(s) you work with? Please evaluate based on a four-point scale. Please, evaluate as many tools as apply. If you do not know one or more tools, please select non-applicable (N/A). 5. 2 3 4 1.Verv Ν poor Poor Good Excellent /A \bigcirc \bigcirc ۲ \bigcirc ٢ Proofing tools (e.g. Spell checkers, Autocorrect) ۲ \bigcirc ۲ ۲ ۲ Translation tools (e.g. Google Translate) 0 0 \bigcirc ۲ ۲ Speech recognition tools (e.g. Siri, Alexa) ۲ \bigcirc ۲ ۲ ۲ Parsing (e.g. PoS taggers) ٢ ۲ ٢ ۲ \bigcirc Search tools (e.g. Google search) ۲ \bigcirc ۲ \bigcirc ۲ Sentiment analysis and opinion analysis tools ٢ \bigcirc ۲ ٢ ۲ Text summarization (e.g. Quillbot) Text mining (e.g. IBM Watson) ۲ \bigcirc ۲ ۲ \bigcirc Language learning (e.g. Duolingo, thesaurus, \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc bilingual dictionaries) \bigcirc ۲ ۲ ۲ ۲ Other * If "other", please specify. Please choose the option that best describes the level of language technology support for the official European language(s) you or your organisation work with. Please, choose as many languages as apply. 1. No 2. Poor 3. Good 4. Excellent 5. I do not support support support support know \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc Bulgarian \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc Croatian \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc Czech 9

Figure 15: Full survey as published (page 9/18)

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Figure 16: Full survey as published (page 10/18)

D2.7: Report from ECSPM

| Speech recog | inition tools (e.g. Siri, Alexa) | | | 0 | | |
|---|--|---|--------------------------------|--|--|--|
| Parsing (e.g. | PoS taggers) | 0 | 0 | 0 | 0 | 0 |
| Search tools | (e.g. Google search) | 0 | ۲ | 0 | 0 | 0 |
| Sentiment and tools | alysis and opinion analysis | 0 | 0 | 0 | 0 | 0 |
| Text summari | zation (e.g. Quillbot) | 0 | 0 | 0 | 0 | 0 |
| Text mining (e | e.g. IBM Watson) | 0 | 0 | 0 | 0 | 0 |
| Language lea thesaurus, bil | rning (e.g. Duolingo, ingual dictionaries) | 0 | 0 | 0 | O | 0 |
| Other | | 0 | 0 | 0 | 0 | 0 |
| ase indicate fo plications liste ase, select as m | or which language(s) you ed below. any tools and languages as Proofing tools (e.g. Spell checkers | or your orga apply. Translation | | n use the langu Speech | Search | tools (e.g |
| ase indicate fo | or which language(s) you ed below. many tools and languages as Proofing tools (e.g. Spell checkers, grammar checkers) | apply. Translation t (e.g. Goog Translate | nisation tools gle e) | n use the langu Speech Recognition too (e.g. Siri, Alexa | Is Googl a) W | tools (e.ç e search, ikipea) |
| Bulgarian | or which language(s) you ed below. hany tools and languages as Proofing tools (e.g. Spell checkers, grammar checkers) | apply. Translation 1 (e.g. Goog Translate | nisation tools gle e) | Speech Recognition too (e.g. Siri, Alexa | Search s Googl a) W | tools (e.ç e search, ikipea) |
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| ese indicate fo plications liste ase, select as m Bulgarian Croatian Czech Danish Dutch English | or which language(s) you ed below. any tools and languages as Proofing tools (e.g. Spell checkers, grammar checkers) | apply. Translation 1 (e.g. Goog Translate | nisation tools gle e) | n use the langu Speech Recognition too (e.g. Siri, Alexa | Alage technol Search Googl W | tools (e.c e search, ikipea) |
| Bulgarian Croatian Czech Danish Dutch English Estonian | or which language(s) you ed below. hany tools and languages as Proofing tools (e.g. Spell checkers, grammar checkers) | or your orga apply. Translation (e.g. Goog Translate Comparison Translat | nisation tools gle e) | speech Recognition too (e.g. Siri, Alexa | Alage technol Search Googl W | tools (e.g e search, ikipea) |
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| se indicate fo lications liste ase, select as m Bulgarian Croatian Czech Danish Dutch English Estonian Finnish French | or which language(s) you de below. hany tools and languages as Proofing tools (e.g. Spell checkers, grammar checkers) | or your orga | nisation tools gle e) | n use the langu Speech Recognition too (e.g. Siri, Alexa () () () () () () () () () () () () () | Alage technol Search Googl W U U U U U U U U U U U U U U U U U U | tools (e.g e search, ikipea) |
| Ise indicate for lications listed ase, select as m Bulgarian Croatian Czech Danish Dutch English Estonian Finnish French German | or which language(s) you ed below. any tools and languages as Proofing tools (e.g. Spell checkers, grammar checkers) | or your orga | tools gle e) | n use the langu | Alage technol Search Googl W Coogl W Coogl | ogy tool tools (e.c e search, ikipea) |
| se indicate fo lications liste ase, select as m Bulgarian Croatian Czech Danish Dutch English Estonian Finnish French German Greek | r which language(s) you ed below. any tools and languages as Proofing tools (e.g. Spell checkers, grammar checkers) | apply. Translation (e.g. Goog Translation (e.g. Goog (e.g. Goog (e.g | tools gle e) | n use the langu Speech Recognition too (e.g. Siri, Alexa | Alage technol Search Googl W Coogl W Coogl | ogy tool tools (e.s e search, ikipea) |
| Ise indicate fo lications liste ase, select as m Bulgarian Croatian Croatian Czech Danish Dutch English Estonian Finnish French German Greek Hungarian | r which language(s) you ed below. any tools and languages as Proofing tools (e.g. Spell checkers, grammar checkers) | or your orga | tools gle e) | n use the langu Speech Recognition too (e.g. Siri, Alexa | Alage technol Search Googl W Coogl W Coogl | ogy tool tools (e.c e search, ikipea) |

11

ELE

Figure 17: Full survey as published (page 11/18)

| Italian Latvian | | | | |
|---|--|---|---|----------------------------------|
| Latvian | | | | |
| Lithuanian | | | | |
| | | | | |
| Maltese | | | | |
| Norwegian | | | | |
| Polish | | | | |
| Portuguese | | | | |
| Romanian | | | | |
| Slovak | | | | |
| Slovenian | | | | |
| Spanish | | | | |
| Swedish | | | | |
| Other | | | | |
| guage(s) you or y | our organisation wo | rk with? | r the minority/region | nai/iesser-u |
| No I do not know iich tools/applicat | ions do you use with | n these minority/regio | nal/lesser-used lan | guages? |
| No I do not know hich tools/applicat proofing tools Translation tools Speech recognit Parsing tools cofing tools | ions do you use with hese types of tools, clic Search too Sentiment ion tools Text summ Text mining | a these minority/regio k on the boxes and select Is and opinion analysis too parization tools (e.g. Quill g tools (e.g. IBM Watson | nal/lesser-used lan ct as many tools as ap Language l ls Other bot Al)) | guages? ply. earning tools |

Figure 18: Full survey as published (page 12/18)





Figure 19: Full survey as published (page 13/18)





Figure 20: Full survey as published (page 14/18)

D2.7: Report from ECSPM



| Text mining (e.g. IBM Watson) Language learning (e.g. Duolingo, thesaurus, bilingual dictionaries) | 0 | - | | | |
|--|----------------|--------------------------------|----------------------|---------------|---|
| Language learning (e.g. Duolingo, thesaurus, bilingual dictionaries) | | 0 | 0 | 0 | |
| 0.1 | 0 | 0 | 0 | 0 | |
| Other | 0 | 0 | 0 | 0 | ſ |
| ther" nlease snecify | | | | | |
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| | | | | | |
| ase, choose the option that best describes the level of the second s | vel of langua | ge techn | ology su | pport for the | Э |
| ase, select as many tools as apply. If you do not know of | ne or more too | on work ls, select r | witn. iot applica | ble (N/A). | |
| | 1 Verv | 2 | 3 | 4 | Γ |
| | poor | Poor | Good | Excellent | |
| Proofing tools (e.g. Spell checkers, Autocorrect) | 0 | 0 | 0 | 0 | |
| Translation tools (e.g. Google Translate) | 0 | 0 | 0 | 0 | |
| Speech recognition tools (e.g. Siri, Alexa) | 0 | 0 | 0 | 0 | |
| Parsing (e.g. PoS taggers) | 0 | 0 | 0 | 0 | |
| Search tools (e.g. Google search) | 0 | 0 | 0 | 0 | |
| Sentiment analysis and opinion analysis tools | 0 | 0 | 0 | 0 | |
| Text summarization (e.g. Quillbot) | 0 | 0 | 0 | 0 | |
| Text mining (e.g. IBM Watson) | 0 | 0 | 0 | 0 | Γ |
| Language learning (e.g. Duolingo, thesaurus, bilingual dictionaries) | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | Γ |
| Other | | - | | | |

Figure 21: Full survey as published (page 15/18)



| Proofing tools (e.g. Spell checkers, Autocorrect) Image: Speech recognition tools (e.g. Siri, Alexa) Image: Speech recognition tools (e.g. Songle search) Image: Speech recognition tools (e.g. Google search) Image: Speech recognition tools (e.g. Google search) Image: Speech recognition tools (e.g. Quillbot) Image: Speech recognition tools (for the language tools for the language to | Proofing tools (e.g. Spell checkers, Autcorrect) Image: speech recognition tools (e.g. Google Translate) Image: speech recognition tools (e.g. Siri, Alexa) Speech recognition tools (e.g. Siri, Alexa) Image: speech recognition tools (e.g. Siri, Alexa) Image: speech recognition tools (e.g. Siri, Alexa) Parsing (e.g. PoS taggers) Image: speech recognition tools (e.g. Google search) Image: speech recognition tools (e.g. Google search) Image: speech recognition tools (e.g. Google search) Search tools (e.g. Google search) Image: speech recognition tools (e.g. Quillbot) Image: speech recognition tools (e.g. Quillbot) Image: speech recognition tools (e.g. Quillbot) Text summarization (e.g. Quillbot) Image: speech recognition tools (e.g. Duolingo, thesaurus, bilingual dictionaries) Image: speech recognition tools (e.g. Duolingo, thesaurus, bilingual dictionaries) Other Image: specify. Image: specify. Image: specify. Predictions and visions for future Image: specific languages tools for the tanguages tools for the specific languages tools for the tanguages tools for the specific languages tools for the langu | Proofing tools (e.g. Spell checkers, Autocorrect) Image: speech recognition tools (e.g. Siri, Alexa) Image: speech recognition tools (e.g. Siri, Alexa) Translation tools (e.g. Coogle search) Image: speech recognition tools (e.g. Siri, Alexa) Image: speech recognition tools (e.g. Sociel search) Speech recognition tools (e.g. Google search) Image: speech recognition tools (e.g. Google search) Image: speech recognition tools (e.g. Google search) Search tools (e.g. Google search) Image: speech recognition analysis tools Image: speech recognition analysis tools Text summarization (e.g. Quillbot) Image: speech recognition (e.g. Quillbot) Image: speech recognition (e.g. Quillbot) Text mining (e.g. IBM Watson) Image: speech recognition (e.g. Quillbot) Image: speech recognition (e.g. Quillbot) Text mining (e.g. IBM Watson) Image: speech recognition (e.g. Quillbot) Image: speech recognition (e.g. Quillbot) Language learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Image: speech recognition (e.g. Quillbot) Image: speech recognition (e.g. Quillbot) Uther Image: speech recognition (e.g. Quillbot) Image: speech recognition (e.g. Quillbot) Image: speech recognition (e.g. Quillbot) Image: speech recognition, what provision of resources would increase the use of language tools for the speecific languages you or your organisation use? Please, select as many as apply. | | | 1. Never | 2. Rarely | 3. Sometimes | 4. Frequently | 5. Eve da |
|--|--|--|------|--|-------------|--------------|-----------------|------------------|-----------------|
| Translation tools (e.g. Google Translate) Image: Speech recognition tools (e.g. Siri, Alexa) Image: Speech recognition tools (e.g. Siri, Alexa) Parsing (e.g. PoS taggers) Image: Speech recognition tools (e.g. Siri, Alexa) Image: Speech recognition tools (e.g. Siri, Alexa) Image: Speech recognition tools (e.g. Siri, Alexa) Parsing (e.g. PoS taggers) Image: Speech recognition tools (e.g. Google search) Image: Speech recognition tools for the language for the lang | Translation tools (e.g. Google Translate) Image: Speech recognition tools (e.g. Siri, Alexa) Image: Speech recognition tools (e.g. Siri, Alexa) Parsing (e.g., PoS taggers) Image: Speech recognition tools (e.g. Siri, Alexa) Image: Speech recognition tools (e.g. Google search) Image: Speech recognition tools (for the languages I work with) Image: Speech recognition tools (for the languages I work with) Image: Speech recognition tools (for the languages I work with) Image: Speech recognition tools (for the languages I work with) Image: Speech recognition tools (for the | Translation tools (e.g. Google Translate) Image: Coople Translate) Image: Coople Translate) Speech recognition tools (e.g. Siri, Alexa) Image: Coople Translate) Image: Coople Translate) Parsing (e.g. PoS taggers) Image: Coople Translate) Image: Coople Translate) Image: Coople Translate) Parsing (e.g. PoS taggers) Image: Coople Translate) Image: Coople Translate) Image: Coople Translate) Image: Coople Translate) Search tools (e.g. Google search) Image: Coople Search) | | Proofing tools (e.g. Spell checkers, Autocorrect) | 0 | 0 | O | O | C |
| Speech recognition tools (e.g. Siri, Alexa) Image: Comparison of the system of the | Speech recognition tools (e.g. Siri, Alexa) Image: Comparison of the system of the | Speech recognition tools (e.g. Siri, Alexa) Image: Speech recognition tools (e.g. Siri, Alexa) Parsing (e.g. PoS taggers) Image: Speech recognition Search tools (e.g. Google search) Image: Speech recognition Search tools (e.g. Google search) Image: Speech recognition Search tools (e.g. Google search) Image: Speech recognition Sentiment analysis and opinion analysis Image: Speech recognition Text summarization (e.g. Quillbot) Image: Speech recognition Text mining (e.g. IBM Watson) Image: Speech recognition Language learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Image: Speech recognition Other Image: Speecify. If "other" tool, please specify. If other tool, please specify. Predictions and visions for future Please, select as many as apply. Image: A wider range of language tools for the languages I work with Image: A wider range of language tools for the languages I work with Image: Other Image: A wider range of language tools for the languages I work with Image: Other Image: The other is please specify. | | Translation tools (e.g. Google Translate) | 0 | 0 | 0 | 0 | C |
| Parsing (e.g. PoS taggers) Image: Search tools (e.g. Google search) Image: Search tools (e.g. Quillbot) Image: Search tools (for the languages I work with (for the languages I work with (for taning of personnel dealing with such tools (for the languages I work with (for taning of tanguages I work wit | Parsing (e.g. PoS taggers) Image: Search tools (e.g. Google search) Image: Search tools (for the language search) | Parsing (e.g. PoS taggers) Image: Search tools (e.g. Google search) Image: Search tools (e.g. Google search) Sentiment analysis and opinion analysis tools Image: Search tools (e.g. Google search) Image: Search tools (e.g. Google search) Sentiment analysis and opinion analysis tools Image: Search tools (e.g. Google search) Image: Search tools for future Predictions and visions for future Image: Search tool search to the search tools for the language tools for the language tools for the language tools for the language tools for the search tools image: Search tools for the language tool | | Speech recognition tools (e.g. Siri, Alexa) | 0 | 0 | 0 | 0 | C |
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| Text summarization (e.g. Quillbot) Image: Content of the second seco | Text summarization (e.g. Quillbot) Image: Control of the second seco | Text summarization (e.g. Quillbot) Image: Comparison of the second s | | Sentiment analysis and opinion analysis tools | 0 | 0 | 0 | 0 | C |
| Text mining (e.g. IBM Watson) Image (e.g. IBM Watson) Image (e.g. IBM Watson) Image (e.g. IBM Watson) Language learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Image (e.g. IBM Watson) Image (e.g. IBM Watson) Image (e.g. IBM Watson) Other Image (e.g. IBM Watson) | Text mining (e.g. IBM Watson) Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Other Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Other Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Other Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Other Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) If "other" tool, please specify. Image learning (e.g. Duolingo, thesaurus, bilinguage tools for future Predictions and visions for future Image learning (e.g. Duolingo, thesaurus, bilinguage tools for the languages tools for the language tools for the languages tools for the language tools for the languages tools for the language tools for the language tools for the languages tools for the language tools for the language tools for the languages tools for the language tools for the languages tools for the language tools for the languag | Text mining (e.g. IBM Watson) Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Other Image learning (e.g. Duolingo, thesaurus, bilingual dictionaries) Predictions and visions for future Image learning (e.g. Duolingo, the language tools for the specific language tools for the languages I work with In your opinion, what provision of resources would increase the use of language tools for the specific language tools for the languages I work with Image of language tools for the languages I work with Image of language tools for the languages I work with Image of languages I work with Image of the languages I work with Image of the languages I work with Image of the languages I | | Text summarization (e.g. Quillbot) | 0 | 0 | 0 | 0 | C |
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| Other Other f "other" tool, please specify. f "other" tool, please specify. Predictions and visions for future n your opinion, what provision of resources would increase the use of language tools for the specific languages you or your organisation use? Please, select as many as apply. A wider range of language tools for the languages I work with Higher-quality tools for the languages I work with More training of personnel dealing with such tools Other | Other Image: Content of the specific section of the specific language tools for the languages of | Other Image: Content of the specific language specify. Predictions and visions for future n your opinion, what provision of resources would increase the use of language tools for the specific languages you or your organisation use? Please, select as many as apply. Image: A wider range of language tools for the languages I work with Image: Higher-quality tools for the languages I work with Image: More training of personnel dealing with such tools Image: Tother f "other", please specify. | | Language learning (e.g. Duolingo, thesaurus, bilingual dictionaries) | 0 | 0 | 0 | 0 | C |
| If "other" tool, please specify. Predictions and visions for future In your opinion, what provision of resources would increase the use of language tools for the specific languages you or your organisation use? Please, select as many as apply. A wider range of language tools for the languages I work with Higher-quality tools for the languages I work with More training of personnel dealing with such tools Other | • If "other" tool, please specify. Predictions and visions for future • In your opinion, what provision of resources would increase the use of language tools for the specific languages you or your organisation use? Please, select as many as apply. A wider range of language tools for the languages I work with Higher-quality tools for the languages I work with Higher-quality tools for the languages I work with More training of personnel dealing with such tools Other | • If "other" tool, please specify. Predictions and visions for future • In your opinion, what provision of resources would increase the use of language tools for the specific languages you or your organisation use? Please, select as many as apply. A wider range of language tools for the languages I work with Higher-quality tools for the languages I work with More training of personnel dealing with such tools Other If "other", please specify. | | Other | 0 | 0 | 0 | 0 | C |
| Other | | If "other", please specify. | lf ' | other" tool, please specify. | | | | | |

Figure 22: Full survey as published (page 16/18)





Figure 23: Full survey as published (page 17/18)



| you | naro any commente/suggestions, piedeo let us know. |
|-------------|---|
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| | |
| | |
| | |
| Can w | e contact you to arrange a possible follow-up discussion? |
| 0 | Yes |
| \bigcirc | No |
| Nhat | is your a mail address? |
| | |
| | |
| Vhat | is your name? |
| | s you name. |
| | |
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| - Pv | aliaking an 'Submit' Lagrae that my naraanal data (amail address and/ar nama) aan ha us |
| By | r clicking on 'Submit', I agree that my personal data (email address and/or name) can be us ding to the Privacy Policy of the European Language Equality (ELE) project. |
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Figure 24: Full survey as published (page 18/18)

B. Additional Tables and Graphs

| Country | Answers count | % |
|--------------------|---------------|------|
| Russian Federation | 2 | 16.7 |
| Turkey | 2 | 16.7 |
| Ukraine | 2 | 16.7 |
| Austria | 1 | 8.3 |
| Croatia | 1 | 8.3 |
| Bulgaria | 1 | 8.3 |
| Serbia | 1 | 8.3 |
| Kosovo | 1 | 8.3 |

Table 2: Breakdown of answers to "Where are you based in?" (Example of mandatory closed question, plus "if other" as optional open-ended question)

| Types of organisations | Answers count | % |
|------------------------|---------------|----|
| Education/research | 8 | 67 |
| SME | 1 | 8 |
| Other | 3 | 25 |

Table 3: Breakdown of answers to the question "Which of the following best describes the type of organisation you work for?" (Example of mandatory single choice question)

| Languages | Answers count | % |
|----------------|---------------|------|
| English | 5 | 41.2 |
| German | 2 | 16.7 |
| Croatian | 2 | 16.7 |
| Czech | 1 | 8.3 |
| French | 1 | 8.3 |
| Romanian | 1 | 8.3 |
| Slovak | 1 | 8.3 |
| Slovenian | 1 | 8.3 |
| Spanish | 1 | 8.3 |
| Ukranian | 2 | 16.7 |
| Moldovan | 1 | 8.3 |
| Russian | 1 | 8.3 |
| Turkish | 3 | 8.3 |
| Albanian | 1 | 8.3 |
| Serbian | 1 | 8.3 |
| Bosnian | 1 | 8.3 |
| Macedonian | 1 | 8.3 |
| Montenegrin | 1 | 8.3 |
| Roma | 1 | 8.3 |
| Lezgi | 1 | 8.3 |
| Rusyn language | 1 | 8.3 |

Table 4: Breakdown of answers to the question "Which of the official European language(s) listed below do you or your organisation work with? if other, please specify"

| Language Technologies | Answers counts | % |
|---|----------------|------|
| Parsing tools | | |
| Part-of-speech taggers of any type | 0 | 0 |
| Dependency or constituency parsing systems | 1 | 8.3 |
| Proofing tools | | |
| Grammar checkers | 0 | 0 |
| Spell checkers | 0 | 0 |
| Autocorrect tools | 0 | 0 |
| Search tools | | |
| Multilingual search engines | 0 | 0 |
| Generic search systems freely on the web | 0 | 0 |
| Web-based question-answering systems | 2 | 16.7 |
| Domain-specific search engines | 0 | 0 |
| Ontology tools | 0 | 0 |
| Customer-build search engines | 0 | 0 |
| Multimedia search engines | 0 | 0 |
| Cross-language search engines | 0 | 0 |
| Language-focused search engines | 0 | 0 |
| Speech technologies | | |
| Voice user interfaces | 1 | 8.3 |
| Text-to-speech systems | 0 | 0 |
| Translation tools | | |
| Generic translation tools freely available on the | 1 | 8.3 |
| web | | |
| Computer-assisted translation tools | 2 | 16.7 |
| Terminology management applications | 1 | 8.3 |
| Custom-built translation engines | 2 | 16.7 |
| Language Learning tools | | |
| Web-based thesaurus tools | 2 | 16.7 |
| Web-based translation search engines | 0 | 0 |
| Computer-assisted language learning tools | 2 | 16.7 |

Table 5: Breakdown of answers to the question: "Which language technology tools/applications listed below do you or your organisation use with the official European language(s) you or your organisation work with? if "other", please specify."

| LT tools used per EU official Language | answer counts | % |
|--|---------------|------|
| Bulgarian | | |
| Proofing tools (e.g. Spell checkers, grammar checkers) | 1 | 8.3 |
| Search tools (e.g. Google search, Wikipedia) | 1 | 8.3 |
| Translation tools (e.g. Google Translate) | 1 | 8.3 |
| Croatian | | |
| Translation tools | 2 | 16.7 |
| Search tools | 1 | 8.3 |
| Proofing tools | 1 | 8.3 |
| English | | |
| Proofing tools (e.g. Spell checkers, grammar checkers) | 4 | 33.3 |
| Search tools (e.g. Google search, Wikipedia) | 4 | 33.3 |
| Translation tools (e.g. Google Translate) | 4 | 33.3 |
| Speech Recognition tools (e.g. Siri, Alexa) | 2 | 16.7 |
| French | | |
| Proofing tools (e.g. Spell checkers, grammar checkers) | 1 | 8.3 |
| Search tools (e.g. Google search, Wikipedia) | 1 | 8.3 |
| Translation tools (e.g. Google Translate) | 1 | 8.3 |
| German | | |
| Translation tools (e.g. Google Translate) | 2 | 16.7 |
| Proofing tools (e.g. Spell checkers, grammar checkers) | 1 | 8.3 |
| Search tools (e.g. Google search, Wikipedia) | 1 | 8.3 |
| Hungarian | | |
| Search tools (e.g. Google search, Wikipedia) | 1 | 8.3 |
| Translation tools (e.g. Google Translate) | 1 | 8.3 |
| Romanian | | |
| Search tools (e.g. Google search, Wikipedia) | 1 | 8.3 |
| Slovenian | | |
| Search tools (e.g. Google search, Wikipedia) | 1 | 8.3 |

Table 6: Breakdown of answers to the question: "Please indicate for which language(s) you or your organisation use the language technology tools/applications listed below: Proofing tools, Translation Tools, Speech Recognition Tools, Search tools"

| Digital translator |
|--|
| Translators, mobile applications |
| Virtual Reality, Augmented Reality and Mixed Reality |
| Speech systems, language learning systems |

Table 7: Full list of answers to "Which tools or applications that could potentially use language technology do you want to see that is not currently available for the languages you work with (we welcome any suggestion, even ideas that are not possible with current technology)?"