Work Package Report R7.5: Support and Help Desk
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Deliverable R7.5: Documentation of the activities in the Work Package “Support and Help Desk”

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Introduction

This fifth annual report provides an overview of the work and the activities undertaken as part of Work Package 7 ("Support and Help Desk") within the period between the milestones M48 and M60. The focus of previous work was on the integration of the Help Desk and its components into the CLARIN-D infrastructure. This included the integration of further (also CLARIN-external) tools and the successful operation. For evaluation, different approaches were taken during the reporting period to gain reliable information on user demands and possible needs for optimization.

Section 1 provides an overview of the evaluation that has been carried out during the reporting phase including qualitative (section 1.1) and quantitative (section 1.2) methods and time accounting (section 0). The following two sections, section 2. (Optimization and Performance Tuning) and section 3. (Usability and User-Friendliness) and their subsections include optimization steps that have been taken in order to account for the evaluation results.
1. Help Desk Evaluation
An important step to document the success of the work package was the evaluation of the help desk, both in terms of operation and in terms of usability. Evaluation here was performed qualitatively and quantitatively.

1.1 Qualitative
In the framework of the third CLARIN-D F-AG Workshop from June 30th to July 1st 2015 in Leipzig, a so called "Help Desk Kiosk" was arranged. Its purpose was not only to inform about the CLARIN-D Help Desk itself but also to perform live support for workshop visitors and, in doing so, to carry out an interview based survey on their demands and issues. Apart from this qualitative exploration, users were asked to click through the CLARIN-D Web Portal and find an entry point for getting into contact with the help desk.

The most important results of this lightweight usability testing were the following:

- All interviewed users stated reservations regarding the use of contact forms as an appropriate method to get in contact with an individual in a CLARIN-D centre. After further enquiry it became clear that this was mainly caused by negative experiences with the use of contact forms in existing online portals, for example getting no reply and in most cases even no notice of arrival in response to the submitted issue.
- The majority of users had problems identifying the so called "Help Desk Buttons" (uniform call-to-action-buttons which are placed all over the CLARIN-D website and infrastructure components to provide an access for contacting the help desk, see also R 7.3 and R.7.4) or did not perceive them as a way of bringing users in direct contact with the CLARIN-D Help Desk.

The steps that were taken in order to address these issues are described in section 2 and 3.

1.2 Quantitative
In order to get feedback concerning user satisfaction, a web based questionnaire was developed. For its implementation the feedback software Questback was used. The questionnaire was sent to CLARIN-D users that had made use of and benefited from the CLARIN-D Help Desk after their tickets were closed. In doing so, the unique ID used with every support process was linked to the user's responses so that the individual results could always be interpreted in the light of the respective issue.

In the following, the data acquisition and the survey's results are described:

The design of the English and German questionnaire items was intended to motivate users for an explicit and intuitive response and thus achieve maximum feedback and allow for an objective an unambiguous interpretation:

1) Were you satisfied with the personal support you received from CLARIN-D?
   a. Yes, absolutely
   b. Yes
   c. No

1 https://www.questback.com/de/
d. Not at all

2) How do you evaluate the response time for your request?
   a. Very fast
   b. Fast
   c. Slow
   d. Very slow

3) Did you consult (in addition to the personal support) any supplementary documentation (FAQs) to solve your request?
   a. Yes -> Filter 3.1
   b. No ->

3.1) At which point in your research did you make use of documentation (FAQs)?
   a. I checked the Documentation (FAQs) prior to turning to the CLARIN-D Help Desk.
   b. After a CLARIN-D support agent directed me to the qualified documentation

4) Has your problem been solved?
   a. Yes
   b. No

While question number 1, 2 and 4 aim at the overall evaluation of the user support quality, question number 3 and 3.1 focus on possible demands regarding an enhanced or more comprehensive documentation, i.e. in the form of manuals and FAQ articles.

The sets of answers were aggregated into ordinal scales, decision questions were supplemented by optional text fields, solely question 3.1 allows for multiple answers. The optional text additions have no influence on the evaluation but were included for the user to give additional information.

To survey only users that had asked for support regarding tools affiliated with CLARIN-D, the questionnaire was exclusively sent to users in association with support processes that were supervised by one of the CLARIN-D centres. A further selection criterion was the age of the respective ticket, because it had to be guaranteed that the documentation mentioned in the questions was already available.

The results that are presented in the following were gathered over a period of two weeks from 26 users.

Question 1) „Were you satisfied with the personal support you received from CLARIN-D?“:

77% Yes, absolutely
15% Yes
8% No
Question 2) „How do you evaluate the response time for your request?“

46%  Very fast
46%  Fast
8%   Very slow

Question 3) “Did you consult (in addition to the personal support) any supplementary documentation (FAQs) to solve your request?”

100%  Yes

Question 3.1) “At which point in your research did you use the documentation (FAQs)?”

92%    prior to submitting their support request
(No user responded that he/she consulted the documentation elements after receiving help from the user support).

Question 4) „Has your problem been solved?“

92%    Yes
8%     No

The results clearly show a positive attitude towards the overall performance of the CLARIN-D user support. The general satisfaction, as well as the processing time, was rated as highly satisfying, but from the negative answers, it becomes clear that there is still a need for improvement. A further user demand can be inferred from the feedback regarding the question of documentation and FAQ consulting.

The result states that the existing documentation referred to by the users did not solve their issues. The survey of course does not give any information on the number of users whose issues could be solved by using the existing documentation because these users did not contact the Help Desk. That documentation was also not consulted after receiving personal support suggests that the required information did not exist as documentation at the moment the support request was sent, since otherwise the help desk agents would have simply referred to it.

The result of the final question, asking whether the user’s problem could be solved, was, in accordance with the overall satisfaction, considered as positive. Negative answers to the question might imply a missing expert (i.e. help desk agent) answer to the user support request, or that its solution required a higher degree of complexity or even could not be solved satisfactorily.

The results indicate that the individual user support is an indispensable part of the CLARIN-D Help Desk. They also confirm the idea of comprehensive technical documentation as a first instance of a multilayer support concept consisting of knowledge resources and individual (1st. and 2nd line) support.

To keep track on the development of the CLARIN-D Help Desk under the aspects described here, it was decided to continue the querying of users during regular Help Desk operations and thus gain a sound basis for continuous Help Desk evaluation.
1.3 Time Accounting

In order to get reliable information on the personnel effort of the CLARIN-D-Help Desk, comprehensive time recording and analysis was performed using the OTRS time accounting module. This module adds functionalities to the system that allow agents to not only record their working time directly in the OTRS backend (see Figure 1) but also to classify the type of work that has been done. This is realised by the definition of pre-defined projects and tasks (see Figure 2). For the time-limited recording described here the classification provided not enough insights and thus will be considered in later and more comprehensive time recording approaches.

The time recording was conducted with a representative group of six help desk agents from the CLARIN-D Centres in Tübingen, Mannheim and Hamburg over a period of one month from Nov 15th to Dec 15th 2015. During this period, 64 tickets were processed and closed successfully, seven tickets had been adopted from the preceding time and 61 new tickets were created. The average number of 15 tickets per week stayed constantly on this level for the entire reporting period.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Tickets</th>
<th>Avg Time/Ticket (Min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>TT</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>TS</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>HH</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>TL</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>CF</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>All</td>
<td>64</td>
<td>17.2</td>
</tr>
</tbody>
</table>
Table 1

Table 1 provides a view on time effort per ticket and help desk agent with agents performing 1st line support (coloured grey) and those performing 2nd line support (in white). The results show a homogeneous picture of the average time effort for every agent, apart from the agent HS, who had just been employed as a student assistant when the time recording started.

<table>
<thead>
<tr>
<th>Support</th>
<th>Tickets</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st line</td>
<td>39</td>
<td>61%</td>
</tr>
<tr>
<td>2nd line</td>
<td>25</td>
<td>39%</td>
</tr>
</tbody>
</table>

Table 2

For the future, combined with the ticket statistics, the results can be used as a representative basis for the calculation of personnel effort for the CLARIN-D Help Desk. The results in Table 2 also show that 61% of all incoming tickets could be processed and successfully closed by the 1st line support (mainly consisting of student assistants), and only 39% had to be escalated to 2nd line support (mainly performed by experts and employees at CLARIN-D-centres).
2. Optimization and Performance Tuning
During the productive operation of the CLARIN-D Help Desk, several maintenance procedures and updates had to be carried out. These included work on the web frontend, system operation and migration and restructuring the storage of support tickets.

2.1 Web Form Improvement
In the previous reporting period, the web based contact form of the CLARIN-D Help Desk used for individual website integration for the various CLARIN-D services was converted to make use of a more flexible and generic SOAP based ticket creation instead of Email-based ticket generation (see also R 7.4).

In the current reporting period, the form has been further developed to provide enhanced security and spam protection as well as support the use of multiple languages in field labels and description text. Furthermore it was made possible to add individual and customizable full text description elements to the form that give additional information to users depending on where the form is embedded.

It turned out that the response time to incoming tickets that are sent via web form increases. This is due to the fact that tickets generated by incoming requests on the website are only assigned to a queue instead of a single person. This results in the need of a help desk agents of the queue to take up the responsibility for a specific ticket in the queue. When tickets are assigned manually, it was established as common practice to directly assign a help desk agent in charge for each incoming ticket and also keeping track on the response time. Since April 2016, the tickets created via the OTRS SOAP API (usually by using the web form) are assigned to specific helpdesk agents, not only sorted into queues. For this purpose, the web service as well as the respective connectors had to be extended.

2.2 System Update
During the reporting period the OTRS Ticketing System was updated to version 4.0 which among other things provides

- an improved backend design that offers help desk agents an optimized overview and thus allows for a faster processing of support requests,
- new search and overview functionalities for a better reuse of ticket content,
- enhanced features for webservice integration,
- better system performance,
- the integration of further modules, especially the time accounting module (see section 0).

2.3 Optimizing Storing of Tickets and Articles
The OTRS Ticketing System provides the options either to store the total stock of all tickets and articles (subparts of tickets like single correspondences, notes etc.) in the systems database or in the local file system. The first option means that all ticket content (including binary data from Email attachments) has to be stored in the MySQL relational database, and the latter alternative means that all ticket data is stored as textual or binary data in a transparent hierarchical directory structure.

Whereas database storage (which is the pre-defined setting in the OTRS System) is rather suitable for smaller setups and provides better portability and flexibility, it turned out that for the CLARIN-D Help Desk it became necessary to switch data storage and to migrate the entire ticket data from the database into the filesystem. This was mainly due to the fact that an increasing number of CLARIN-D
users send HTML-based mail, often containing attachments (i.e. screenshots, documents etc.), which caused an alarming growth of the database size and thus remarkable loss of system performance.

2.4 System Migration
The OTRS Ticketing System is running on a virtual machine server hosted by the Forschungszentrum Jülich. The unexpectedly high storage requirements in the file system caused by email attachments and the OTRS database made it necessary to migrate the entire system to another server. Therefore, the migration process first was tested in a simulation environment and subsequently could be performed with a minimum downtime (less than one hour) of the ticketing system.

3. Usability and User-Friendliness
The following measures were taken in order to ease the way users find an entry point to the CLARIN-D Help Desk:

3.1 New concept for guiding users
In the beginning of the implementation phase it was planned for users to be provided with a decision tree based online wizard guiding them to relevant knowledge resources and contact persons at the CLARIN-D help desk. Similar approaches had been pursued by CLARIN e.g. in the case of the LINDAT License Selector and the Data Depositing Wizard that is part of the new CLARIN-D Web portal. After modelling a decision tree based on the experiences with user queries, the draft was discussed internally and also with CLARIN-D users in the framework of the interviews mentioned in section 1.1). As a result of the discussion it became clear that the formalization of demands appeared too complex. It was expressed that any form of decision trees would have appeared as oversimplification to the users. All users asked about this way of guidance also unanimously agreed that they would prefer personal contact to an expert directly rather than to click through a wizard. It was therefore decided that the existing Data Depositing Wizard by just querying for resource types and some additional attributes exhausts all possibility of semi-automated user guidance.

3.2 Help Desk Visibility
As a result from the qualitative user interviews (see section 1.1) and along with the rebuilding of the CLARIN-D Website, a new help desk icon was designed to replace the help desk buttons. The new icon both has a higher recognition value and fits visually the icon set of the CLARIN-D Web Portal (see Figure 3). To encourage users to use the web form for getting in contact with the Help Desk, the icon was placed in a prominent position on the CLARIN-D website with explanatory text to inform users on the functionality and principles of the CLARIN-D Help Desk, i.e. enabling the direct contact with an expert etc.

3.3 FAQ
In the preceding reporting period a SOAP-based webservice was implemented that made it possible to embed subsections of the entire FAQ library, such as single FAQ lists or even selected FAQ items, at specific locations on the CLARIN-D website in a flexible manner. To merge the Iframe-based embedding principles of the CLARIN-D Website, the FAQ had to be revised with respect to the

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2 https://lindat.mff.cuni.cz/repository/xmlui/handle/11234/1-1468
content of articles (shorter articles with no graphic content). Apart from this, the FAQ content was revised with respect to more basic and less specific articles based on incoming user queries.

4. Dissemination Activities

4.1 Help Desk Workshop
For the extension of the current implementation phase an OTRS workshop is planned that will bring together help desk agents from all CLARIN-D centres to inform on new features of the OTRS ticketing system and collaboratively discuss further steps of development for the upcoming phase.

4.2 Presentations
• June 6th/ 7th 2015
  CLARIN-D Help Desk Kiosk at the Fach-AG Workshop Fächerübergreifende Perspektiven durch digitale Forschungsinfrastrukturen
• July 29th 2015
  Oral presentation – The CLARIN-D Help Desk at the ESU Summer University (Leipzig)
• September 15th 2015
  Oral presentation – Wissenstransfer und Wissensressourcen: Support und Helpdesk in den Digital Humanities at the FORGE 2015 („Forschungsdaten in den Geisteswissenschaften“) (Hamburg)
Conclusion and Outlook

In the reporting phase, all necessary steps for a sustainable productive operation of the CLARIN-D Help Desk during the upcoming usage phase were successfully taken.

The evaluation measures that were adopted to gain information on user demands and the need for optimization of knowledge resources and workflows have proven successful and will be part of all future operations.