Evaluation Questionnaire.

This questionnaire was used to introduce the CHM process workers to the research topic and get first feedback as a preparation for the follow-up interview in the form of online discussion.

Research Context Information (5 min. read):

Dear participant,

Within a research project conducted using the Company XXX Change Management (CHM) tickets dataset, the researchers aim to investigate the Decision-Making nature of the incoming Requests for Change (RfCs), i.e., to classify them into the *routine*, *semi-cognitive*, and *cognitive* requests (activities). Different methods from semantic and linguistic analyses are conceptually combined to extract the necessary knowledge from the initial RfC textual description, which would help classify the incoming request into routine, semi-cognitive, or cognitive one.

The *semantic analysis* of the RfC textual descriptions was performed using Text Mining algorithms to extract descriptive keywords from the incoming RfC textual data. Afterward, based on the state-of-the-art research approaches and literature, the researchers developed a set of indicators and, using these indicators, semantically classified the extracted keywords into three Decision-Making Logic (DML) levels: routine, semi-cognitive, or cognitive. The developed vocabulary of keywords[1] is used to classify the exemplary RfCs into the three DML levels.

The *linguistic analysis* of the RfC descriptions is a second step of the research. The knowledge about linguistic aspects will include the contextual structure (the RfC length and level of details), emotional coloring and writing style, vocabulary richness (repetitions, synonyms, new words not existing in the extracted vocabulary) in the RfC textual descriptions.

Hereby, the researchers' interpretation of the DML levels and related RfC classification is to be considered from the point of view of computer-/ technology-aided process support potential. Thus, the researchers use the following interpretations:

- *routine requests*: those expressible in rules so that they are easily programmable and can be performed by computers at economically feasible costs;
- *semi-cognitive requests*: those where no exact ruleset exists, and there is a clear need for information acquisition. Here, computer technology cannot substitute but has the potential to increase the productivity of employees by partial task processing;
- *cognitive requests*: those where not only an information acquisition but also evaluation and complex problem-solving are needed. Here, computer technology can offer minimal decision support leaving the task processing to the process worker.

Questionnaire (15-20 min. fill-in):

1. In the context of the present research applied on the case study of CHM at Company XXX, please briefly define <u>using few (3-5) keywords</u>, what does it mean for you as a CHM process worker to process:

(a) Routine request: Click or tap here to enter text.

(b) Semi-cognitive request: Click or tap here to enter text.

(c) Cognitive request: Click or tap here to enter text.

2. In the context of your daily RfC processing work, please define the complexity of the routine RfC and routine-cognitive RfC using the scale from 1 (minimal complexity) to 10 (maximal complexity). You can also suggest further subcategorization based on the complexity score level.

(a) Routine request: Click or tap here to enter text.

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[1] The vocabulary can be found in appendix. The extracted descriptive keywords are organized into parts of speech (PoS) with the following semantic contextual meaning: ***R**esources* (nouns), ***T**echniques* (verbs and verbal nouns), ***C**apacities* (adjectives), ***C**hoices* (adverbs) (RTCC structure). Afterward, with the help of indicators, the keywords are classified into those having routine, semi-cognitive, and cognitive contextual meaning.

(b) Semi-cognitive request: Click or tap here to enter text.

(c) Cognitive request: Click or tap here to enter text.

Notes: Please include further subcategories if meaningful
Click or tap here to enter text.

3. In the context of your daily RfC processing work, how would you assess the dependency of the RfC complexity from the following criteria? Which criteria make the RfC more complicated to process? Please give the score from 1 (completely irrelevant criteria) to 10 (highly relevant criteria).

Textual length of incoming RfC (long texts): Click or tap here to enter text.

Level of details (overdetailed): Click or tap here to enter text.

Emotional coloring[2]: Click or tap here to enter text.

Writing style[3]: Click or tap here to enter text.

Usage of standard CHM vocabulary words: Click or tap here to enter text.

Usage of telegraphic style: Click or tap here to enter text.

4. Give an example from your practice of a routine, semi-cognitive, and cognitive RfC.

(a) Routine request: Click or tap here to enter text.

(b) Routine-cognitive request: Click or tap here to enter text.

(c) Cognitive request: Click or tap here to enter text.

Notes: Please include further examples of subcategories if meaningful
Click or tap here to enter text.

5. Here are the examples of how the researchers classified the RfCs using the developed vocabulary[4] of keywords based on the data set and the sentence-by-sentence approach. Please agree or disagree, write a few comments, especially in case of disagreement.

(a) Selected example of a routine request: X0012345678, Due to some errors in application and in database a restart has been recommended. Check if the application is up and running. Check if the DB is up and running.

Ticket ID X0012345678 (sentences)	**Values**	**Part of speech & its contextual semantic aspect**	**Keyword DML**	**Ticket DML**
Due to some errors in application and in database a restart has been recommended.	application	noun (resource)	routine	*routine* in **resources** & **techniques**
	database	noun (resource)	routine	
	start	verb (technique)	routine	
Check if the application is up and running.	check	verb (technique)	routine	
	application	noun (resource)	routine	
	run	verb (technique)	routine	
Check if the DB is up and running.	check	verb (technique)	routine	
	run	verb (technique)	routine	

[2] E.g. a lot of exclamation marks, polite adverbs “please” or urgency adverbs “immediately”

[3] Repetitions, synonyms

[4] Can be found in appendix

Click or tap here to enter text.
Please agree or disagree, write a few comments, especially in case of disagreement.

(b) Selected example of a mixed request:

X00111222, Please stop-start BBB(EUTAD) databases mentioned below: BBB1, BBB2, BBB3, BBB4, BBB5. server: hfgssak. Please check mentioned databases if were stop-start successfully and if applications after start running properly.

Ticket ID X00111222 (sentences)	**Values**	**Part of speech & its contextual semantic aspect**	**Word DML**	**Ticket DML**
Please stop-start BBB(EUTAD) databases mentioned below: BBB1, BBB2, BBB3, BBB4, BBB5.	stop start database	verb (technique) verb (technique) noun (resource)	routine routine routine	*routine* in **resources** & **techniques** and *semi-cognitive* and *cognitive* in **choices**
server: hfgssak.	server	noun (resource)	routine	
Please check mentioned databases if were stop-start successfully and if applications after start running properly.	check database stop start successfully properly application run	verb (technique) noun (resource) verb (technique) verb (technique) adverb (choice) adverb (choice) noun (resource) verb (technique)	routine routine routine routine semi-cognitive cognitive routine routine	

Click or tap here to enter text.
Please agree or disagree, write a few comments, especially in case of disagreement.

(c) Selected example of a mixed request:

X000888444, SAP R3 environment should be updated for TTT Light. The installation will affect DB part only. SAP R3_OM will deliver the software SAP R3_LL should execute the installation test should be done by SAP R3_LL and SAP R3_OM after installation.

Ticket ID X000888444 (sentences)	**Values**	**Part of speech & its contextual semantic aspect**	**Word DML**	**Ticket DML**
SAP R3 environment should be updated for TTT Light.	environment	noun (resource)	semi-cognitive	*semi-cognitive* in **resources** & *routine* in **techniques**
	update	verb (technique)	routine	
The installation will affect DB part only.	install	verb (technique)	routine	
SAP R3_OM will deliver the software SAP R3_LL should do the installation test should be done by SAP R3_LL and SAP R3_OM after installation.	install	verb (technique)	routine	
	test	verbal noun (technique)	routine	

Click or tap here to enter text.
Please agree or disagree, write a few comments, especially in case of disagreement.

6. Please provide a few comments, feedback, and critic to the researchers regarding the conducted research.

Click or tap here to enter text.