



Cognitive Help Desk



Smart Routing

Sends the ticket to the most qualified Competence Center, in order to speed up its solution process.



Similar Tickets Suggestion

Provides a list of answers based on similar, already resolved requests.



Cognitive Search

Based on the question, it finds the most important paragraph of the documents where the topic is explained.



FAQ Suggestion

Provides an official answer to the ticket leveraging similar FAQs.

Cognitive Help Desk

Speed up assistance and enhance your problem-solving capabilities

Cognitive technologies can help companies to empower their help desk teams, with better results and lower costs.

Help Desk applications are one of the first main areas impacted by cognitive technologies. This is due to the high availability of natural text and past human decision-making rationale, which are stored in the previously resolved tickets. Deloitte Analytics has developed an application to speed up the ticket management process and amplify the capabilities of the

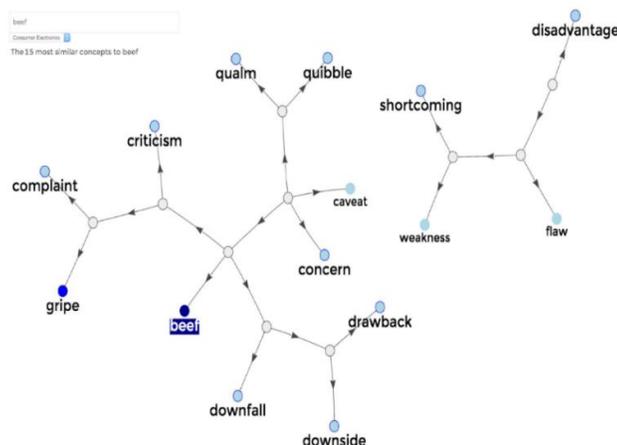
human help desk. This process usually has two big challenges: efficiency and effectiveness. Efficiency to avoid a continuous loop of ticket-forwarding among the different competence centers and lower the human costs related to ticket management. Effectiveness to immediately resolve the requests with the most appropriate and consistent answers.

Cognitive technologies allow users to solve both challenges, utilizing the unstructured data of the tickets stored in the help desk systems. With the use of AI algorithms, powered by the cognitive capability to understand new future requests, every ticket can be resolved immediately, with less time and effort.

A closer look

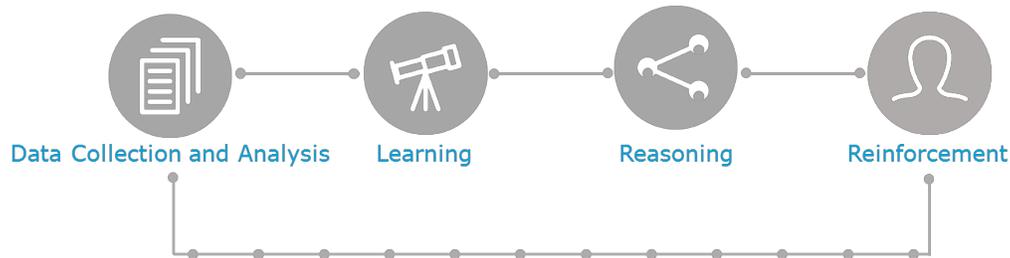
Core Functionality	 Smart Routing	 Similar Tickets Suggestion	 Cognitive Search	 FAQ Suggestion
Description	Assign the request to the most qualified team All past tickets contain information regarding the team that resolved the requests. Once the key concepts of a new request are identified, the application assigns it to the team with the highest likelihood of resolving it.	Solve problems with previous experiences Finds the most similar resolved problems to obtain the right solution for informative requests.	Smart document crawling Finds the right information in the documentation to provide a solution to the problem.	Make your FAQs effective The application suggests the top FAQs that provide a potential solution to the problem.
	Speed up of ticket routing Requests are resolved in less time.	Make use of all the available knowledge Info requests can be resolved in less time.	User empowerment Allows the user to solve the problem independently, bypassing the help desk and reducing the helpdesk loads.	Increase efficiency With this feature, requests can be quickly resolved, even bypassing the help desk.
Potential Savings	Up to 30%	Up to 35%	Up to 40%	Up to 45%

The figure below shows an example of concepts related to the word "beef", the core component of Loop Q cognitive architecture which, thanks to the best of breed approach, could be applied to other business processes other than Cognitive Help Desk.



How to apply

Cognitive System components and guidelines to putting them into action



The application of a cognitive system to the Help Desk is composed of the following phases:



Input Data

First of all, it is necessary to collect a large body of documents containing previous tickets, FAQs and any other materials in text format used to support the Help Desk teams (manuals, operating instructions and so on). Inputs should also be analyzed in order to make the other steps easier and performant.



Learning

The next step is the learning phase, during which, according to the cognitive technology chosen, the system creates a knowledge model of linked concepts.



Reasoning

The reasoning phase begins after the model is created, and the system then uses the model to understand new input data, such as a new ticket or a request.

Main steps

Business Case **Plan the project in detail**, analyzing goals and desired functional requirements and determining the best cognitive technology to adopt, evaluating profits and costs of the specific investment, etc.

Data Collection **Collect all structured and unstructured data** - historical tickets, FAQs and documents - **to allow the cognitive system to learn language and concepts**. The **analysis phase** is necessary **in order to improve the learning and reasoning processes** and could involve a pre-processing phase.

Learning Data needs to be ingested and then the learning process starts, during which **the cognitive system learns concepts based on words and semantics**. The output is **a knowledge model with linked concepts**, a cortex built via unsupervised algorithms.

Reasoning Test and apply the system with new data. **The application should be able to identify: the nearest competence center, the best operator** to carry out the task **and the best suited FAQ to answer the ticket**.

Where to start

Requirements for the easy integration of cognitive solutions in Help Desk applications

As mentioned before, each cognitive solution has common tasks performed by application-specific components. In terms of data, resources and development, the cognitive Help Desk requires:



Learning

The available knowledge base within the company should be used to train the cognitive engine. It is recommended to use a large body of documents, as clean and varied as possible, in order to allow the system to understand all the business concepts and lingos.



Reasoning

In order to automate the help desk operations, an appropriate set of prior tickets must be provided to sustain the training of the algorithms. Based on our experience, thousands of tickets is best to reach this goal.



Model Update

In order to update the model and increase its performance, feedback should be integrated. All the capabilities of the cognitive help desk could be improved through the development of other classification models (powered by the cognitive engine), or by calling other API services.



A team of experts

The efforts of a team of specialists are minimal. They are primarily focused on data preparation and the fine tuning of the reasoning project phases.

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