

## Leading Support for the Cognitive Era

*IBM's Cognitive Support enables dynamic, continuous learning that expands our capacity and available knowledge to more quickly and cost-efficiently respond to client issues*

**Category:** Best Achievement in Operational Excellence to deliver an Outstanding Customer Experience Excellence

### SYNOPSIS:

#### The Challenge

IBM supports 7,000 products across 170 countries investing over 9,500,000-person hours of effort each year to enable our clients' success. Our clients expect timely, high-quality support and the IBM business expects support delivery costs to be in line with business objectives.

To meet the growing needs of IBM clients and the business, adding more people was not the answer. The IBM Support Transformation Team embarked on a revolutionary transformation using IBM Design Thinking moving from a classic support model to a cognitive omnichannel capability to deliver support at an unprecedented scale focusing on exceptional client experience.

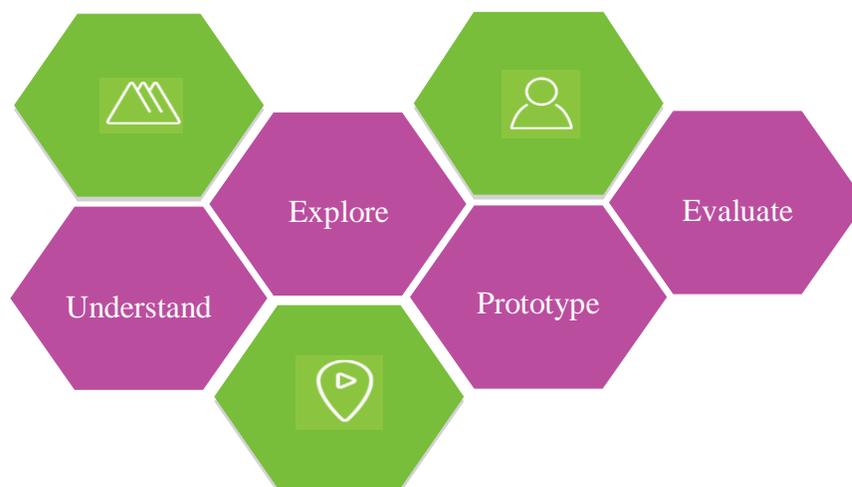
#### The Solution: IBM's Design Thinking Principles

Using principles of the IBM Design Thinking loop to focus on user outcomes, restless reinventions, and a cross-functional network of experts, our Support Transformation team was able to develop numerous components that enhance our clients' support experience and improve our Support teams' efficiency. The objective is not to replace IBM Support staff, but to allow them to focus their unique skills and abilities on new and challenging issues. To do this, we developed a Cognitive Support platform that intelligently augments known activities and completes defined tasks. The Cognitive Support platform enables an entirely new support model.

**For the products currently enabled with such components as chatbot, cognitive routing, and case prioritization, our clients are able to self-serve 39% of their issues and save up to 50% on time to resolve the remaining issues by being able to access the right engineers the first time.**

### Methodology and Solution

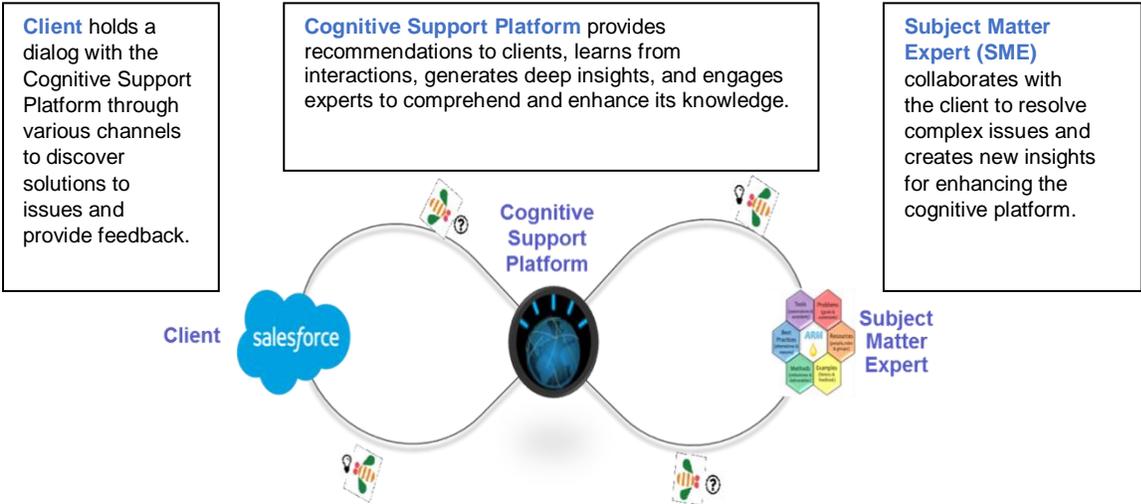
IBM Design Thinking is a framework for collaboration that helps us create innovative experiences with real market value. Concentrating on HOW the client is impacted by everything IBM Support does, it is the approach IBM uses to transform with a client-centered mindset.



We know our clients are looking for faster resolution and the right solution the first time. With that in mind, we developed a Cognitive Support Platform that is a “**Continuous Learning Loop**” where cognitive components listen to client interactions, collect feedback and learn how to better provide advice and act to resolve issues. Within this Loop, cognitive components have three primary directives:

- **Understand the Problem** – As IBM clients interact with the cognitive platform to describe issues, cognitive components attempt to *understand* the problem.
- **Generate Insights** – Cognitive components draw from what they learned previously to generate insights to accelerate problem resolution. If the cognitive components do not have the ‘knowledge’ to resolve an issue, they remain engaged in the resolution process to learn.
- **Take Action** – When possible, cognitive components take action to resolve client issues or direct the issues to the best qualified resource for resolution.

The Cognitive Support Platform is a framework of systems and highly interconnected intelligent software components powered by IBM Watson Technologies that enables deep levels of knowledge discovery, client engagement, and problem resolution.



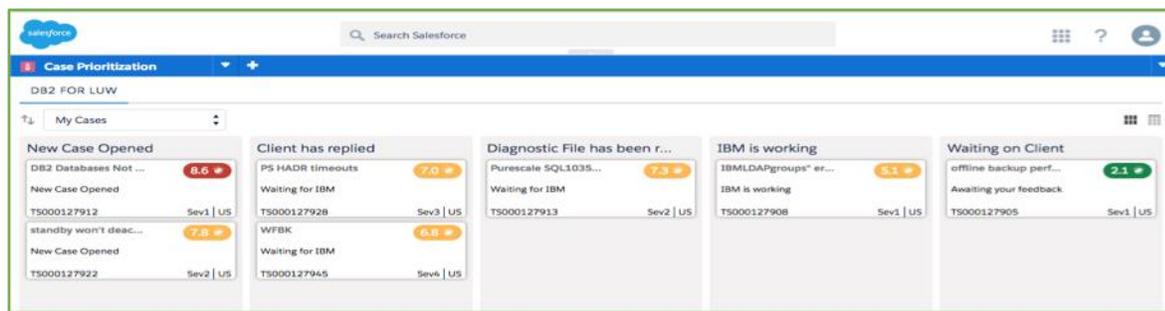
IBM clients and support staff conduct interactive sessions with the cognitive components in a natural language. Through every interaction, cognitive components use their learned knowledge of IBM products to understand client issues and offer the best possible path to resolution. Cognitive components learn how to completely resolve some issues, but their primary contribution is to apply existing learned knowledge to triage client issues and route new issues to the best qualified expert.

Cognitive components learn from every interaction with clients and IBM support staff. As they accrue knowledge they become more effective in accelerating time to problem resolution.

During the development of the **Cognitive Components**, IBM’s Design Thinking was front and center. Using the principles of Hills, Playbacks, and most importantly the sponsor users, each team understood the user needs and through the continuous loop of understanding (observe, reflect, adjust) were able to develop each of the cognitive components (shown in the diagram at the right).

Illustrating **3 of the 5 Cognitive Components** depicted on the image:

**Case Management Prioritization** had a team goal to develop tooling that would enable Support engineers to quickly see and understand their workload and know how the client cases should be prioritized as they begin their workday. The Case Management Prioritization team talked with numerous Support engineers to understand how each client case was weighted and how they determined which one to work on first. Armed with that information, the team developed weighting factors for various attributes (severity, age of the problem, sentiment, days since last update, and system down) to create a prioritization score along with developing a Support Engineer-friendly dashboard to display each case along with the score/priority value. The score enables each individual Support engineer to save valuable time in understanding the priority order in which their client cases should be worked.



*“I like this view because on average, I have between 65-75 cases. It is overwhelming to see that many tickets in list view. I like the “card” view... I can clearly see which ones the client has replied on, which ones SA/Engineering has sent back to me, etc. It is all on one page, and I don't have to keep switching views to get this filtered out.”*

- Amber N., TMS BrassRing

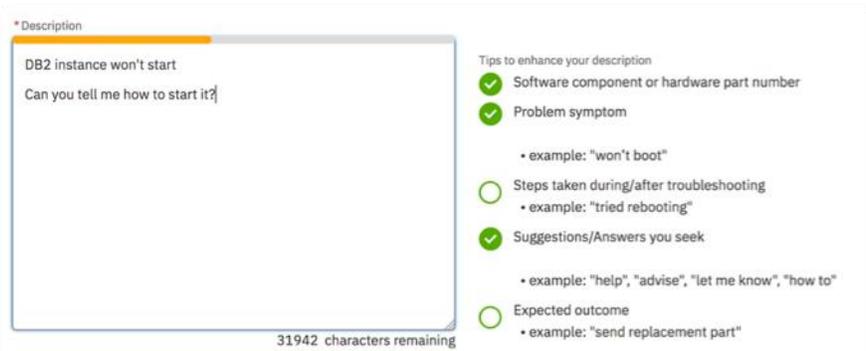
**Cognitive Routing and Assignment** predicts the expertise required to resolve a case, then matches that with the skills, capacity, and availability of a Support engineer. As Support engineers interact with the routing, they can re-assign, if necessary. The tool proactively monitors changes in assignments and adjusts its algorithms to continually make better decisions.

*“For BPM, the team is really pleased with the results, seeing about an 80-85% accuracy in correctly identifying the proper skills queue”*

- Barry R., Hybrid Cloud

The **Question Assistant** cognitive component was developed to rapidly highlight and request pertinent information from the clients while they are opening their cases with IBM. Research shows the more relevant details the Support team has on the front-end, the quicker the problem can be resolved, without going back to the client numerous times with requests for more information to understand the issue.

As new electronic cases are submitted, clients are prompted to fill in critical pieces of information that allow Support engineers to understand the issues more quickly. The interaction with clients is dynamic based on new information learned by the cognitive system. Collecting pertinent information at the time of case creation saves an average of 5% of IBM engineers' time, expediting resolution for our clients.



The image shows a screenshot of a support case description form. On the left, there is a text input field with the text "DB2 instance won't start" and "Can you tell me how to start it?". Below the input field, it says "31942 characters remaining". On the right, there is a section titled "Tips to enhance your description" with a list of items, each with a green checkmark icon:

- Software component or hardware part number
- Problem symptom
  - example: "won't boot"
- Steps taken during/after troubleshooting
  - example: "tried rebooting"
- Suggestions/Answers you seek
  - example: "help", "advise", "let me know", "how to"
- Expected outcome
  - example: "send replacement part"

## In just a short time, the results are in...

The results are already starting to prove out in amazing ways!

**Chatbot**, for IBM products that have the Chatbot enabled, our clients are able to **self-serve 39% of their issues**. The average chatbot case is 2 minutes 45 seconds. For a technology company supporting over 7000 products, that can have a tremendous effect on efficiency for IBM and a significantly improved experience for our clients.

**Question Assistant** is enabling the discovery of hidden insights that are non-obvious, saving an average of **5%** of our engineers' time resolving client issues. In IBM, that translates to close to **half a million hours saved** per year.

**Cognitive Routing and Assignment** has shown to **save up to 50% of the time to resolve** our clients' issues by eliminating potential delays with routing and directing cases to the right engineers the first time.

**Case Management Prioritization** enables Support teams to know immediately the most pressing client issues, **saving upwards of 45 minutes per day per engineer**.

**IBM cognitive technologies** "learned" rapidly about IBM products and support processes to now understand 44% of client issues. This is a **360% improvement in just 6 months**. This AI-assisted education is generating insights 40% of the time; a **500% improvement in just 6 months**.

We are excited with these results and are poised for greater success as we continue to roll out IBM's cognitive technologies across the full breadth of worldwide Support. We are inspired to lead the industry by addressing its most basic needs:

- provide exceptional client service & make the experience easy;
- fix it fast the first time;
- manage the business by optimizing costs.

*Additional information / References:*

**Transforming Support for the Cognitive Area – Bob McDonald (VP, Support Transformation and Training):**  
<https://youtu.be/efjQ2XBAVE0>

**IBM Design Thinking:** <https://youtu.be/psLjEBUOnVs>