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## Smart is...

***Using cognitive computing to process natural-language questions about technical support – and deliver accurate answers instantly***

Technical support is all about answering questions: “Why is this happening? How can I fix it?” For IBM Technical Support Services (TSS), the need to find information in multiple knowledge bases meant that call center agents required training to know where to look.

IBM Watson now allows these agents to get the right answer almost instantly – saving time and costs and enhancing customer service. Moreover, in the near future, customers will be able to interact with Watson directly via a self-assistance application on [ibm.com](http://ibm.com).

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# IBM Technical Support Services

*Harnessing cognitive computing to answer clients' support questions with IBM Watson*

What if your customer service teams, instead of searching and trawling through hundreds of support documents, could simply ask a question and find the answer instantly? Better still, what if your clients could ask that question and get the answer themselves, without needing to phone the call center at all?

IBM Technical Support Services (TSS) is already taking the first steps on this journey. By harnessing the cognitive computing capabilities of IBM Watson, TSS agents are able to skip the complex process of determining the problem and deciding where to look for the solution: they simply type a question in plain English and receive a set of answers, ranked by how confident Watson is that those answers are correct.

## Limitations of a search-based approach

Among many other types of hardware, IBM TSS supports clients who use IBM Power Systems™, System x® and System Storage® hardware. Technical support information on the hundreds of models and components that make up these three sets of systems is held in multiple knowledge bases, which hold different types of data in a wide variety of formats.



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### Business benefits

- Reduces average call duration
  - Increases rate of remote fixes by phone
  - Increases rate of first-time fixes
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The majority of this data is stored as unstructured text, which creates a significant challenge for agents trying to find the right answer quickly amidst a huge mass of information. Even the most sophisticated search algorithms can do little more than locate relevant keywords – in essence, although they may be able to find documents that might contain an answer, they can't provide the answer itself.

Kevin Wahlmeier, Information & Analytics Leader at IBM TSS, explains: "With a traditional search approach, you have to rely heavily on the skill and experience of the individual call-center agent. They need to know where to look, and they need to be able to recognize the right answer when they find it.

"This takes a lot of training, and with such a huge amount of information, it's impossible to know everything. Even the most experienced agents can sometimes draw a blank. If they can't diagnose the client's problem on the first call, we might have to call them back, send out an engineer, or even replace parts – just because nobody knows that a simpler, quicker, smarter fix exists, hidden somewhere in one of our knowledge bases."

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## Smarter Support

## Cognitive computing for faster resolution

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### Instrumented



### Interconnected



### Intelligent

Error codes, support documents and other technical data on hundreds of models of IBM hardware are collected from multiple separate knowledge bases and consumed into the Watson corpus.

The Watson knowledge engine processes questions from hundreds of TSS agents, analyzes and ranks the answers, and presents the results instantly via a web portal.

Watson does more than just list documents where an answer might be found: in many cases, it highlights the answer itself – helping TSS resolve clients' problems faster and more cost-effectively.

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## Solution components

### Software

- IBM® Watson™

### Services

- IBM Global Technology Services® – Technical Support Services
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*“With Watson, you can build stronger relationships with customers by proving that you can give them the right answers to their questions and solve their problems quickly and accurately.”*

— Kevin Wahlmeier, Information & Analytics  
Leader, IBM Technical Support Services

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## The difference with cognitive computing

IBM TSS decided to address these issues with an entirely different approach, utilizing IBM Watson’s cognitive computing capabilities.

Beginning with technical support documents for IBM System x servers, the team fed data into the IBM Watson corpus, and developed a web-based interface that would make it easy for call-center agents to consult the Watson knowledge engine simply by typing in questions in natural language.

“Watson analyzes the structure of the question and finds possible answers, which it ranks with a confidence score and then presents to the user,” says Kevin Wahlmeier. When the first result has a high confidence score, this gives a very strong indication that it is the answer the agent is looking for.

“We found that traditional search tools returned a document containing the right answer as one of the top 20 results in about 20 to 30 percent of cases. Watson already does it 80 percent of the time, and that figure is rising as the system learns. Moreover, it doesn’t just match keywords: it actually finds answers and highlights them in the source document to make it easier for agents to check.”

## Measurable impact on call center efficiency

Before the project started, IBM TSS carried out a comprehensive benchmarking exercise, measuring key agent performance metrics such as “fix on phone” and “first-time fix” rates, and average call duration.

With Watson as an assistant, agents proved to be significantly more effective: the average call duration was reduced by two minutes, and there were also increases in the first-time fix rate and the proportion of issues that were able to be resolved by phone, instead of by sending out a technician.

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unsolicited anecdotes  
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— Kevin Wahlmeier, Information & Analytics  
Leader, IBM Technical Support Services

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### **Faster resolution boosts customer service**

“It’s not just call-center productivity that goes up,” adds Kevin Wahlmeier. “Instead of sending out an engineer to replace a part, we’re able to find microcode or firmware fixes that can be deployed remotely – so we save on parts, labor and travel time.

“More importantly, if we can solve a customer’s problem on the phone, we get them up and running again quicker, which gives a boost to customer satisfaction. We’ll be very interested to see the impact on our NSI [net satisfaction index] scores when we have rolled this out to all of our agents.”

### **Making agents’ lives easier**

The feedback from the agents themselves has been very positive.

“When you release a new system, usually the best you can hope for is that the users won’t complain too much,” says Kevin Wahlmeier. “But I actually get three or four unsolicited anecdotes a day from our agents about how Watson is making their lives easier.”

Examples of praise from agents include: “This was exactly the document I was looking for – and I didn’t even know it existed,” and “I had an issue finding the meaning of an error message. Watson found that error in a heartbeat.”

### **Unleashing the power of cognitive computing**

Looking to the future, TSS has plans to launch a new “Client Self Assistance” service, which will allow clients to interact directly with Watson before they even call technical support. Watson will lead them through a diagnostics exercise that will either help them resolve problems themselves, or route them to an appropriate TSS agent who is fully briefed to deal with their issue.

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— Kevin Wahlmeier, Information & Analytics  
Leader, IBM Technical Support Services

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Kevin Wahlmeier concludes: “This isn’t just about technical support – it’s about transforming the way you engage with your customers. With Watson, you can build stronger relationships with customers by proving that you can give them the right answers to their questions and solve their problems quickly and accurately.

“IBM TSS is proving the value that cognitive computing can offer for real-world use cases. Any company with a large-scale customer service operation could potentially see similar benefits. The time is right for our clients to take a serious look at what Watson has to offer.”

### **About IBM Technical Support Services**

IBM Technical Support Services helps clients maintain higher availability and IT performance with integrated maintenance and technical support for multivendor hardware and software solutions. Its comprehensive portfolio of services is designed to help clients resolve problems more quickly – or even before they occur.

### **For more information**

To learn more about IBM Technical Support Services, please visit [ibm.com/services/us/en/it-services/technical-support-services/](http://ibm.com/services/us/en/it-services/technical-support-services/)

To learn more about how IBM Watson is helping to forge a new partnership between humans and computers that scales and augments human expertise, contact your IBM representative or visit the following website: [ibm.com/watson](http://ibm.com/watson)



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