



### Business challenge

CrushBank Technology LLC recognized that IT help desk workers spend about half their time just searching for the right information before they can even start resolving customers' problems.

### Transformation

Founded to tackle the growing problem of help desk staff inefficiency and overwork, CrushBank developed a solution that taps into the machine learning power of the IBM Watson® Discovery platform and uses AI to interpret unstructured data. The solution then presents it to IT support staff in a single-pane-of-glass view, helping them resolve problems faster.



Brian Mullaney  
Principal and  
Chief Revenue  
Officer  
CrushBank  
Technology LLC

### Results

#### 40% increase

in the number of help desk tickets closed per day

#### 45% decrease in total time to resolution (TTR)

and 22% decrease in average handling time improves customer satisfaction

#### 4x faster onboarding of new support engineers

by putting information at their fingertips

# CrushBank Technology LLC

## Using AI to transform IT help desk support

Founded in 2017 in Syosset, New York, by two veteran MSP owners, each with more than 25 years of experience, [CrushBank](#) (external link) developed the first AI-enabled IT help desk application. Using cognition, which is the process of acquiring knowledge, the CrushBank solution thinks, learns and informs decisions in the same way that engineers and support teams do. CrushBank streamlines help desk operations, resulting in fewer escalations to Level 2 and above. Help desk engineers see an increase in productivity, and users experience increased satisfaction with more first-call resolutions.

**“We’re not looking to replace people. We’re looking to make people better at their jobs, faster, more efficient.”**

—Brian Mullaney, Principal and Chief Revenue Officer, CrushBank Technology LLC

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## Help desk agents— drowning in information

The help desk support technician who can quickly find answers and solve an IT application user's problem is the unsung hero of any IT department or firm, especially for Managed Service Providers (MSPs). MSPs have been around for over two decades, ever since companies realized that it was more cost effective to focus on their core competencies and let someone else manage their IT. Often, the same help desk engineer at an MSP will be asked to troubleshoot multiple applications supporting vastly different customers in the course of a single shift. Yet, even when the help desk closes a ticket, about 50% of customers feel that their problem has not been resolved adequately.

The founders of CrushBank know firsthand the challenges that IT support staff face in trying to provide personalized service. For more than 20 years, they operated an MSP in the New York metropolitan area that supported several lines of business for customers ranging from 100-person law firms to 1,500-person medical practices and everything in between.

Help desk engineers are expected to be experts in both the IT applications and in their customers' specific configurations, history and issues. When customers call in to the help

desk with a problem, they expect that the presumed expert will resolve it without excuses, and without delay. CrushBank recognized that with the growing layers of technology piling up in most companies, those expectations of instant resolution were becoming nearly impossible for help desk staff to meet.

According to Brian Mullaney, Principal and Chief Revenue Officer at CrushBank, this current information-provision model is proving increasingly inefficient and costly to the MSP for several reasons.

First, there is the vast amount of information that the help desk engineer must sift through. "It's a struggle for these organizations to extract all that data and turn it into useful information on the spot while they're being challenged and bombarded by their clients on the phone," he says. "Eighty percent of the data that IT firms are accessing is unstructured. It's not in a metadata field that you can pull out of a database."

In Mullaney's experience, around 50% of an engineer's time is spent just searching for information before they can even begin to troubleshoot the customer's problem. This leads to a second problem for firms: a direct impact on their bottom line. Help desk engineers are paid to solve problems, but only half their time is spent doing so. As he points out, "Half of [their salary] is going to just

finding information before the first morsel of technical competency is leveraged...."

Finally, the reality is that highly experienced and knowledgeable IT help desk personnel are getting harder to find and keep. Most IT graduates now gravitate toward jobs in application development. Further compounding the problem is the high turnover rate among personnel—38.3% every year, according to Mullaney. So companies that invest the six months of time and expense to train and onboard help desk engineers see that money walk out the door only 18 months later.

It was clear to CrushBank that IT firms that continue to operate with this traditional help desk model will certainly face a fourth consequence: a blow to their customer experience and a reduction in customer satisfaction.

CrushBank's founders decided they wanted to disrupt the traditional IT support help desk model by using AI technology to quickly sift through both structured and unstructured data to revolutionize the way MSPs and other IT service firms provide information and services to their customers.

"This is a problem that has haunted this space, this industry, for a really long time," says David Tan, Chief Technology Officer and Co-founder of CrushBank. "We needed a really powerful platform that could help us combine all that information, compile

it and present it back to the end users. When we found Watson and saw what IBM was doing, we knew it would be a great fit for the solution we were building."

## Using AI to interpret and deliver information

CrushBank approached IBM and soon became one of the original Watson ecosystem partners who used Watson application programming interfaces (APIs) for business purposes. As CrushBank experimented with the early Watson Natural Language Processing (NLP) products and APIs, it became clear that the machine learning and AI technology could be turned into a viable offering to other service providers.

In early 2019, CrushBank launched its eponymous CrushBank solution running on the IBM Watson Discovery platform to perform AI-assisted searches that enable help desk personnel to quickly find the most relevant information to solve customers' problems. The solution takes in an organization's structured and unstructured support information and interprets it using machine learning algorithms and presents it to the help desk engineer in a useable format.

CrushBank hosts the software as a service (SaaS) solution to MSP and industry customers on a per user

basis. It comes preloaded and pretrained with documentation from key manufacturers such as Microsoft and trusted community expert updates from StackExchange. CrushBank then adds all the relevant support information from its customers' systems, including unstructured data such as call logs and ticket notes, into the Watson Discovery platform.

To quickly find product and customer information, help desk engineers are able to query all the resources that they would typically retrieve from separate systems using a single-pane-of-glass web interface. The machine learning capabilities of the IBM Watson Discovery solution continuously refine and improve its search and results capabilities. This continuous filtering ultimately creates a bank of intellectual property that help desk workers can tap into for instant answers.

Even the smallest firm of 5 - 10 employees can use the CrushBank solution. And, in a marketplace that constantly changes through a rising number of mergers and acquisitions, the solution becomes even more valuable and important, according to Mullaney. "Every time you put two companies together, that's two systems that don't talk to each other," he says. "And CrushBank can pull those systems together and make them intelligent and legible from one dashboard."

Early on, CrushBank realized that teaming with IBM would allow it to focus on the front-end user interface (UI) and user experience (UX), while IBM continues to improve and enhance the underlying AI technology behind its solution. "We're a faster, more responsive, more agile organization because somebody bigger and better is dealing with the platform," says Tan.

CrushBank recently launched two new services based on its proprietary offering and IBM Watson Discovery technology.

The first, Resolve, simplifies the help desk engineers' work even further. They select an assigned ticket and click "work on ticket," and the CrushBank application returns the best suggested information from the available resources. "It threads the results onto one pane of glass listed in order of clearly identified and order of confidence," says Tan. It further speeds the problem-resolution process and provides information that a newer user might not otherwise know to look for or consider.

The other service, Insight, as its name suggests, uses the power of the IBM Watson Discovery platform to help MSPs uncover insights that previously lay buried in the vast repository of their help desk interaction data. A key feature of the Insight module is root cause analysis. Before developing this solution, a customer might not notice an emerging problem with one of its supported systems unless tickets were very well categorized

and tagged up front, which is often not the case. Although 10 calls or tickets might have the same root cause, a problem can manifest itself in different ways, or end users might report it differently.

Tan explains: "Sometimes someone will call up and say, 'I can't log in to my system.' Sometimes someone will say they can't log in to Citrix. Sometimes someone will say, 'my password doesn't work.' All of those may have the same exact cause and resolution. And once people actually start working on it and put their notes in, [Insight] can highlight that and pull that out and make that information available."

Ultimately, the CrushBank solutions enable help desk employees to work smarter, not harder, with the help of AI. As Mullaney says, "It's about taking the efficiencies that are available and driving them down to the employees to make them better employees."

## More efficient employees—happier customers

The results for CrushBank's customers that have embedded the solution into their help desk workflow and require their engineers to use it have been nothing short of phenomenal. Since its launch at the beginning of 2019, the CrushBank solution, based on IBM Watson Discovery technology, has fielded

approximately 500,000 queries, and that number is rising exponentially as more companies adopt it.

The AI-powered CrushBank solution reduces the average time-to-resolution of help desk tickets significantly—often by 40% - 50%. And faster resolution time means that the help desk can close more tickets in a day.

"We're seeing about a 40% increase in the number of tickets that our customers can close a day," says Tan. "So that obviously means they can grow the business. They can bring in more customers, they can expand without having increased headcount."

"CrushBank is not a tool," asserts Mullaney. "CrushBank is an employment efficiency function. It provides the ability for a company to take the technology and make its biggest cost structure, its payroll, wildly more effective and wildly more profitable."

For MSPs that spend up to half of their revenue on payroll, having an efficient and effective staff can generate big returns in scale and profit. "It's just simple efficiency, and efficiency equals profit," Mullaney concludes.

Mullaney makes it clear that the goal of using the CrushBank applications is not to reduce headcount. "We use the term 'employee-machine partnership,'" he says. "We're not looking to replace people. We're

looking to make people better at their jobs, faster, more efficient. And we're looking to make working at a help desk a better experience for the employee and for the person they're supporting at the same time."

Companies that use the CrushBank applications report higher satisfaction from their customers and an improved customer experience. Higher first-level resolution rates, faster call resolution and a greater sense of intimacy with the customer help drive these metrics.

Help desks have largely replaced onsite service techs, but they don't have to feel distant and impersonal thanks to CrushBank. "The ability [for the help desk tech] to pull up historical information and interactions from two weeks, two months or two years ago and to reference what's been going on during that time recreates that intimacy and just makes for a better customer experience—and a faster one, too," says Mullaney.

The CrushBank solutions have become valuable in unexpected ways to the MSPs that use them, according

to Mullaney. In July, the employees at one of CrushBank's customers declared the CrushBank application "employee of the month," revealing just how tight that employee-machine partnership can be. "The more you personify CrushBank, the more you will understand its impact, the more you will understand where it fits from a cost structure in your business," he recommends. "The value, the interaction, the way you use it, it's all about that efficiency and about considering CrushBank part of your team as opposed to just another tool."

Furthermore, the CrushBank applications help MSPs reduce the negative impacts of high personnel turnover and the time and costs of training and onboarding new staff. Companies don't lose the institutional knowledge of the departing engineers; their logs and tickets become part of the knowledge corpus of the CrushBank solution. "Imagine taking the smartest engineer in your organization and cloning them 50 times over, so now everyone is that person," says Tan. "Now you have that, because Watson is sitting on your help desk."

Plus, all the information from the organization is part of the CrushBank solution, so it simplifies training because new personnel don't need to know where to look for solutions, they just need to use the dashboard. "People are now coming on in six weeks and solving problems because they don't need to know everything," says Mullaney. "They can find everything with a one-sentence search."

Although its market share among the more than 30,000 MSPs may be small, CrushBank expects to continue its growth trajectory. The underlying IBM Watson Discovery service lends credibility to the CrushBank solution, which in turn makes the power of IBM Watson AI technology available to even the smallest of companies. "We're taking this technology and democratizing it in a really manageable way for small to midsize businesses to consumers. And that makes AI a lot more pervasive," says Mullaney.

## Solution component

- IBM Watson® Discovery

### Take the next step

To learn more about the IBM solution featured in this story, please contact your IBM representative or IBM Business Partner.

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