

White Paper

Accelerating the Support Experience with the Cognitive, AI-Powered Help Desk

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Executive Summary

Optimizing and accelerating the support experience is a critical initiative for businesses today. The support organization is the bridge that connects IT resources and data with the rest of the business; in an era of digital transformation, the ability for an organization to support the infusion of digital services and devices into new business processes is a competitive differentiator. A support organization that leverages artificial intelligence (AI) and machine learning (ML) technologies is able to work in a more intuitive and efficient manner to streamline the resolution of issues, freeing valuable human capital on both the IT and business side to innovate and serve the needs of the business. IDC's research consistently shows that users prefer a personalized and efficient support experience. AI-powered support organizations enable human service agents to do their jobs better. Improving support's ability to understand, communicate, and resolve issues is directly tied to productivity, security, and employee and user satisfaction.

This IDC white paper explores the challenges support organizations face, including:

- Increasing complexity of providing support to a growing number of devices, heterogeneous platforms, and diverse users
- Supporting remote/work-at-home employees and supporting multiple geographic regions with different time zones and cultural differences
- Implementing AI and automation tools in a way that is productive instead of counterproductive

This white paper also outlines best practices for delivering more personalized and intuitive support experiences at the scale required by a highly mobile and diverse workforce.

Progressive support organizations use KPIs that are aligned with improvement of user productivity and satisfaction, rather than on number of transactions performed. Measuring the value of accelerating the support experience should include both the improvement in efficiency and the negative impact on productivity when support is not fast or effective. The impact of support on data and device security is an important consideration. With the stakes high for monetary and reputational risks with data or device security problems, investment in advanced and intuitive tools and improved processes is necessary.

The sheer scale and scope of support services today makes more automation necessary. Automation that is powered by AI and ML technologies is more intuitive and effective at turning data into insights. Rather than approach support from a standpoint of fixing problems quickly, AI technologies approach support from a standpoint of learning as much as possible from data and improving outcomes and shifting to a much more proactive experience. Partnering with a provider that supports a broad spectrum of environments and industries for AI technologies will propel support organizations along their journey to transforming the support organization.

Situation Overview

Support and service desk organizations today are the primary enabler of a company's most valuable assets – the human capital and labor that underpin all operations. Rather than a backroom tech organization that fixes technology and answers questions for workers in an office, service desks today are the lifeline for a highly mobile and flexible workforce. The role of support has been elevated as the number of remote and mobile workers increases and their ability to connect with customers and the rest of the organization depends solely on technology.

Placing more pressure on organizations is the expectation that support serves as the single point of contact for multiple platforms and devices. This expectation requires the ability to navigate diverse platforms and applications, as well as varied user types/personas with their varied approaches to technology. Adding to these demands, digital transformation (DX) initiatives have infused technology into new business processes and applications. For support organizations, this melds new platforms that were previously separated into technology functions and all other functions. While many efficiencies and improvements are the direct result of technology, DX is straining the capabilities and resources of services organizations whose job is to keep that technology running and users productive.

Most support organizations struggle with connecting and supporting mobile workforces; providing support for a vast array of devices, applications, and user personas; and supporting the infusion of technology into all aspects of business with DX initiatives. Compounding these challenges is the shrinking patience and increasing expectation of instant answers and results from the average worker or technology consumer. The lines have blurred between personal and work devices, and more users are connecting their personal devices to business systems; subsequently, they look to support organizations to integrate and solve any technical challenges across all of the personal and work devices. This expectation increases the strain on support organizations. They are under increasing pressure to be more versatile and knowledgeable in a much more complex environment. More than ever before, technology support needs to be efficient, or better yet, technology should be self-healing and proactive.

To tackle these challenges, many support organizations are investing in or investigating the use of artificial intelligence, cognitive computing, and machine learning technologies. While leveraging AI and cognitive technologies can accelerate outcomes for support services, danger lies in the direction of this acceleration. A solution that is unable to be intuitive and respond to emotion will exacerbate a negative situation. Organizations that invest in solutions that focus on positive user outcomes (as opposed to solutions that focus solely on speeding transactions or increasing numbers of transactions) will improve productivity and loyalty. In addition, the data gathered from these interactions is very valuable in improving and being proactive. The opportunity exists to transform the support experience, but AI that is poorly leveraged and executed can wreak havoc on a support organization, undermining credibility and limiting future investment. The stakes are high.

Today, even live agents have challenges interpreting sentiment and navigating emotion. Longer term, AI-enabled support that is implemented correctly can improve the emotional relationship with users, enabling more stable and controlled relationship management and improving outcomes.

This white paper explores these challenges and outlines IDC's recommendations for accelerating productivity and transforming the support organization by leveraging AI and cognitive learning technologies.

Emerging Trends

The challenge for support organizations is to provide personalized and specific help to a growing number of users, on many different technology platforms, in multiple geographies.

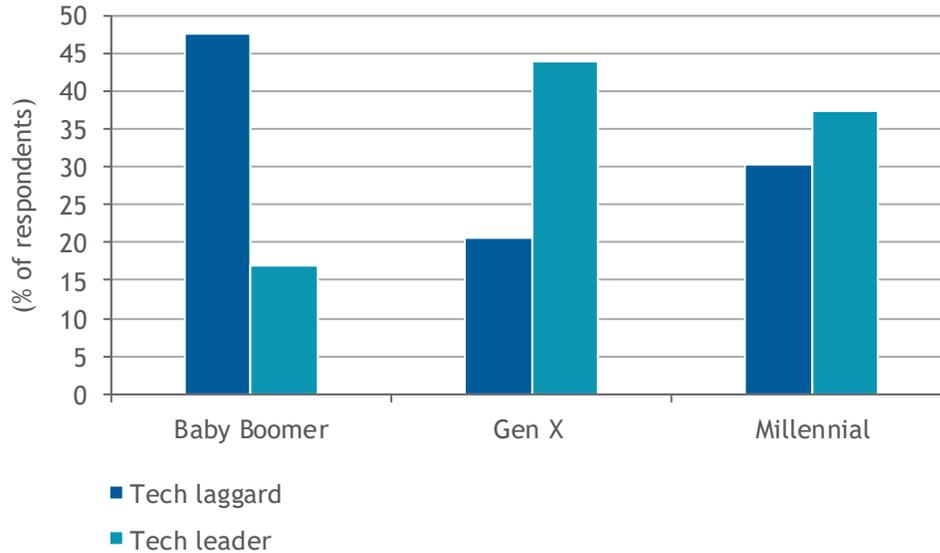
AI and cognitive solutions based on big data are necessary elements to meet support needs as the challenges increase. IDC forecasts that investment in cognitive/AI software platforms will grow from \$1.6 billion in 2016 to \$8.4 billion in 2021, representing a compound annual growth rate of 39.7%. The need for chatbots, conversational interfaces, as well as predictive and prescriptive applications is strong, especially for support platforms. IDC has predicted that by 2021, 90% of consumers will interact with customer support bots. This elevates the need for high-quality data and tools to ensure availability and accuracy.

Support organizations are tasked with helping users who are diverse in their approach to and preferences for receiving support. The great paradox of the technologically savvy millennial generation of workers is that they don't actually want to be "tech savvy." They want to do their jobs, aided by technology that supports and speeds their work. IDC's research has shown that millennials are not the generation of technology tinkerers like Gen Xers are. Figure 1 shows alignment between user generation and approach to technology. Millennials are much more similar to baby boomers in their approach to technology. What does this mean for support? It means that the majority of the workforce of the near future expects a simple and efficient resolution to their issues. Or better yet, that they should never have issues with their technology.

FIGURE 1

Worker Generation and Approach to Technology

Q. Thinking of how you approach new technologies, how would you place yourself in terms of attitude and level of comfort?



n = 259

Source: IDC's *Enterprise User Experience Survey*, 2017

When asked about their preferred way of receiving help, people in general say that they like to talk to a support person on the phone (see Figure 2). Users want a high-touch, personalized experience, as shown by the preference for talking to the right person who is most qualified to help them, either on the phone or in person, to resolve their issues. Users also want this personalized experience wherever they are, whenever they need the help. But for most companies, providing this personal approach becomes impossible on a large scale. The sheer number of users, locations, and communication barriers make this approach time consuming, highly inefficient, and costly. The user experience is at risk with traditional approaches, and support agents struggle with language and communication barriers, high turnover rates and attrition, and lack of new skills needed to keep up with demand.

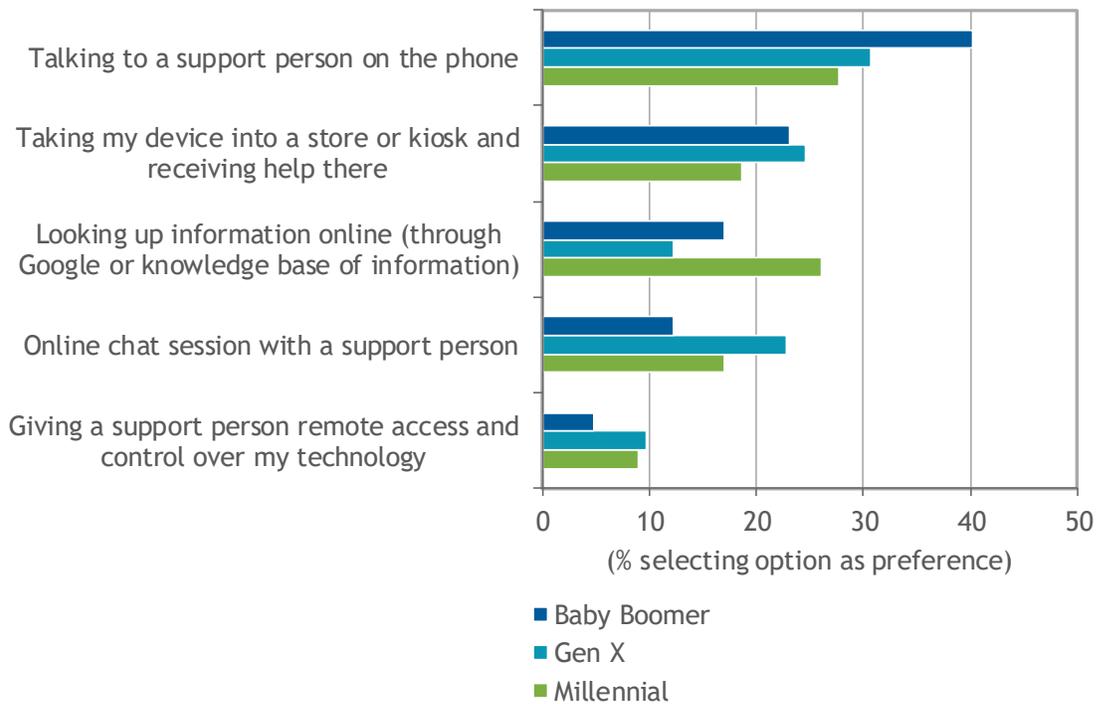
It's increasingly difficult for an organization to provide a personalized experience in the traditional way that support has been delivered. Machine learning and artificial intelligence can be game changers here – where problems can be remediated more quickly or avoided altogether by leveraging data to drive better outcomes and streamline the support experience. AI shouldn't be viewed as a replacement for human interaction, but rather a technology that enables the human service agents to do their jobs more efficiently and effectively and focus on higher-level concerns. The sheer volume of interactions and complexity of providing support makes AI-augmented support a necessity. The "anytime, anywhere" and highly personalized experience is only achievable at scale with AI.

As support organizations seek to improve operational efficiency, they focus on solving problems as quickly as possible, with as few resources as possible. This focus is rational, yet it is not entirely aligned with the outcome of more satisfied, productive workers. IDC's research shows that most workers want a high-touch, personalized approach to solving their technology issues. But the traditional model of delivering what workers want and need is expensive and time consuming and is at odds with the goal of improving operational efficiency. Cognitive/AI solutions offer a way to prioritize both operational efficiency and a positive user experience. In addition, cognitive/AI solutions gather large amounts of data and leverage it to drive better outcomes, which is not possible with traditional support solutions. Longer term, this data can be used to drive proactive support and eliminate the need for issue remediation altogether.

FIGURE 2

Preferences for the Support Experience

Q. When you need help with your technology, what is your preferred way of getting that help?



n = 453

Source: IDC's Enterprise User Experience Survey, 2017

Mobility, Device, and Platform Challenges

Workers are more mobile today than they were 10 years ago. Remote workers require connection and communication to be productive, placing the burden for productivity on the support organization. According to the U.S. Bureau of Labor Statistics, 35% of professionals worked from home in 2017 and 24% of all workers worked from home. The number of devices being used has also increased. In 2017, the number of home and work devices for the digitally savvy averaged 9.46 per person. The number of devices to be supported and the different platforms and compatibility issues increase the knowledge and skills needed by support organizations. Beyond the variety and diversity of devices and platforms, the digitalization of the workplace drives a new challenge for support organizations. In a fully digitized workplace, data and services and applications are provided over a multitude of provider sources and connection types. To provide a stable and efficient work environment, enterprises need to master and control this highly heterogeneous landscape. Compounding these demands are the blurring of lines between work and personal devices and users' expectations for support. Users today are connecting their personal devices to business systems, which has led to an expectation of support for these personal devices. IT staff and the support solutions are challenged by new issues and are being asked to be more versatile and competent across a broad landscape of devices.

Location and Scope Challenges

Many companies need to upgrade their support tools to support new regions. Serving new regions requires more than extending support hours and adding more languages, however. The ability to adapt to cultural nuances and standardize the support experience across multiple geographies is important yet places a large burden on support organizations.

Security Mandates

Protecting corporate and personal data and assets is a critical, table stakes competency. The monetary and reputational risks associated with data and asset security are placing additional demands on support organizations. The burden of updating and ensuring security and compliance for the diverse devices and platforms often falls to the support team, who need dynamic and robust tools that can automate security processes.

DX Driving Integration and New Skill Sets

As technology is integrated into many new business applications and processes, expertise to support and manage not just the traditional IT hardware and software but the solutions into which they are integrated is needed. With melding of technology into many new applications and processes, the ability to learn from and gather data is increased exponentially. An example is in the healthcare field. Imaging technology requires certain IT elements that can contribute data for machine learning. In addition, the specifically medical technology (also largely based on IT elements) and language can add more context from which machine learning and cognitive solutions can learn and improve. Support experiences can be streamlined by using a solution that can learn from and improve by specific vertical focus.

Essential Guidance

Transforming support to become efficient and proactive and ultimately drive productivity for workers requires changing the foundation of the traditional support model. Instead of moving faster and working harder, cognitive and AI-driven support solutions help the support organization work smarter.

IDC has identified the following best practices for delivering more personalized and intuitive support experiences at the scale required by a highly mobile and diverse workforce:

- **Automated processes.** Speed to resolution is a top priority for users, and automating processes is common practice today in support organizations. Scripted and automatic email and text communication and password resets are widely used today. Expanding further into automation, however, can have a negative impact if not executed with intelligent, intuitive solutions. The future of efficient and effective support depends upon automation, but it needs to be intuitive and accurate, or it will be seen as a barrier.
- **Self-service.** Many users are comfortable troubleshooting their own issues and need tools that aggregate or organize information intelligently. Creating and supporting knowledge bases can decrease the load on support organizations, while increasing worker productivity.
- **Robust remote support.** Table stakes for support today is empowering the mobile and remote worker. Technology that enables remote visibility into and control over devices will streamline and improve the effectiveness of the support experience.
- **Advanced ticketing.** Ticketing systems that are integrated well into an end-to-end solution will ensure better outcomes. These systems have the ability to gather and leverage interaction history and extract the wealth of information to enable better insights and learning.
- **Single source for support.** The user experience is greatly diminished when users need to explain their issue multiple times, or engage with different organizations to solve their issues. Solutions that can cover multiple and diverse platforms and devices and ensure the seamless handoff between support organizations improve efficiency and user satisfaction rates.
- **Kiosks.** Users of all generations appreciate the opportunity to engage face-to-face with a person who will help them solve their technology challenges. For this reason, organizations with a strategic focus on improving the support experience are investing in kiosks where their employees or customers/users can receive an in-person support experience.

The journey toward a transformed and highly automated support organization usually starts with a focus on optimizing costs and focusing on efficiency. Most have started this journey by investing in tools that deliver analytics and productivity gains including ticketing analysis and chatlogs. The next step to a continuous learning environment that can tackle natural language processing is where a significant leap takes place – where the tools are persona driven and adapt to specific business processes to drive efficiency at a greater scale.

Determining the value of investing in cognitive and AI-powered support tools requires assessing a number of factors including the cost of worker downtime, the current and expected future remote and mobile workforce, the diversity and number of devices and platforms used, and the organization's ability to expand to provide service in a timely way. For some organizations, partnering with an outside service desk will be the most effective and efficient way to support their needs.

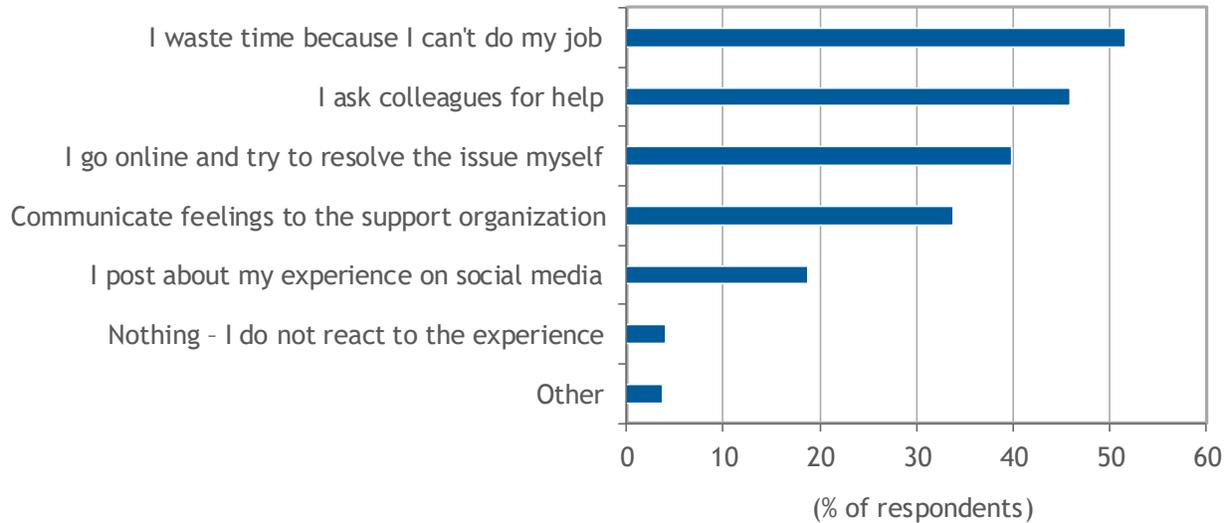
Measuring the value of investing in cognitive and AI-enabled support will vary by the scope and complexity of each organization. The factors to consider include the ability to support to all employees for all devices and platforms in all locations. But all organizations should factor in the impact of slow or ineffective support on productivity. Calculating the value should include an assessment of the negative

impact of not providing fast and effective support. A recent IDC survey on the support experience confirmed the negative impact on productivity, where workers often look to other co-workers for assistance, compounding the negative impact on productivity (see Figure 3).

FIGURE 3

Impact on Productivity

Q. What happens when you don't receive fast and effective support for your work devices or applications?



n = 246

Note: Multiple selections were allowed.

Source: IDC's *Enterprise User Experience Survey*, 2017

Measuring progress in improving the support experience should include key performance indicators focused on user productivity and satisfaction, not on number of transactions. Getting meaningful feedback from users, however, is difficult with existing toolsets and processes. Today, most feedback is measured in a like/don't like or "thumbs up/down" fashion. The ability to expand beyond this simple measurement and augment the feedback loop to gather users' more complex feelings and emotions is the next stage in transformation. People's assessment of their experience is one important factor that needs to be incorporated, and to more accurately capture emotion requires advanced tools and intuitive, complex feedback processes.

With the focus on providing better customer experiences, organizations should also consider partnering with service desk providers that leverage cognitive and AI-driven tools to transform the support experience. The expertise and commitment needed to provide best-in-class support may not be a primary goal of some organizations, which are focusing on driving value with their core products and services. For some, it makes better business sense to partner with a provider that can leverage machine learning and big data to proactively avoid problems, as well as deliver a seamless, cross-platform support experience.

As mentioned previously in this white paper, cognitive and AI-driven technologies can accelerate outcomes for support services. This acceleration can go in a positive direction when intuitive tools solve issues quickly. This acceleration can also go in a negative direction when nonintuitive tools frustrate users and slow down the problem remediation. The stakes are high to invest in, or partner with a provider who uses, advanced solutions that deliver on the ultimate goal of productive and happy workers.

IBM's Digital Workplace Services with Watson

IBM has a long history of automating processes and is a pioneer in developing cognitive technologies, with Watson as its flagship AI engine. Watson has been implemented across multiple domains, providing Digital Workplace Services – a unique capability to cross-leverage technical advances and discover and leverage synergies from the broader Watson scope. Watson Health, for example, leverages big data to drive insights that support better decisions for the physician and care team, with the goal of improving patients' chances for improved health. The broad application of Watson AI across pharmaceutical research and drug discovery, disease and treatment research, combined with management and workflow capabilities, provides a robust foundation for other Watson applications, including service and help desk management. While the domain applications are focused on very different outcomes, the goals are the same – enabling inductive reasoning with Watson to proactively address challenges. Instead of analytically deriving an answer, it can compare among options to determine what is actually happening. This ability to perform inductive reasoning is a key component of what Watson brings to IBM Digital Workplace Services.

As digital transformation initiatives weave IT and digital services and technologies into all business functions and applications, the ability to adapt and make more intelligent, data-driven decisions is essential. Demand for service and support from many nontraditional IT functions will be a more natural transition for organizations that have implemented tools with a breadth of experience in AI, such as Watson.

Using Watson intelligence and cloud-based tools, IBM can provide secure, personalized support across virtual, physical, and connected environments. As the demand on support organizations continues to grow, IBM Workplace Support Services with Watson is designed to triage and tackle a large volume of service desk requests. Using Watson, IBM is able to improve the end-user experience by continuously ingesting and learning from the data that it receives. This ongoing analysis of data supports proactive remediation of problems over time and contributes to finding the root cause of problems.

A differentiator for IBM Workplace Support Services with Watson is the ability to take previous unused call data and derive valuable knowledge from it, turning raw data into insights. When service desk tickets are submitted, the raw data including words and phrases are processed, and clusters are identified. This data is continuously used to train Watson to make the solution better able to answer more questions, thus streamlining and accelerating the support experience. Watson is used in conjunction with existing processes to answer questions that it can and seamlessly handoff to a live chat with a human agent as well as giving human agents the history to pick up where Watson left off, when Watson has not been trained to answer the question. As support technologies expand beyond chatbots to "actbots" that can initiate processes, update tickets, and read data, they become even more valuable for tackling support.

Watson can leverage its learning across a broad spectrum of environments and industries. IBM's work in healthcare, financial, transportation, and manufacturing verticals provides industry-specific data and patterns that strengthen knowledge and ability to drive better decisions. As digital transformation initiatives proliferate and blur the lines of support across many technologies and services, the ability to leverage cognitive technologies to drive better outcomes is necessary.

As AI seeks to automate and improve support services, a key capability will be to embrace features that allow the solution to become more intuitive. Capturing user feedback – beyond a thumbs-up/down metric and getting more insightful and valuable knowledge – will be the hallmark of a successful solutions. Much like a support person providing deskside support who can understand body language and other nonverbal cues, Watson can also receive feedback and find anomalies to assess the user's emotions and become more accurate and responsive. Investment in services that are capable of deeper, more accurate user intuition, that have the ability to automate support processes, and that have a rigorous approach to data security will propel organizations that are committed to transforming the support experience.

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