Benchmark Insights

—

Empowered electronics service and support

Creating data-driven human-technology interactions

IBM **Institute for Business Value**

IBM

About IBM Electronics

IBM Electronics offers solutions to help clients realize opportunities as they evolve into Cognitive Enterprises.™ Cognitive innovation generates new revenue streams and accelerates time to market through structured offering management; systems engineering processes; and tools for new products, systems, and services. Cognitive operations increase effectiveness and reduce costs by designing and embedding intelligent workflows across the supply chain, optimizing manufacturing, and globally integrating corporate support functions. Cognitive engagement captures new markets and increases revenues by increasing customer intimacy, using data analytics to design new product and service offerings and customer experiences. IBM offers a full suite of solutions and deep expertise to make new ideas into new businesses.

By Scott Burnett,
Lisa-Giane Fisher, Ken Pace,
and Cristene Gonzalez-Wertz

Key takeaways

COVID-19 has intensified industry trends and external pressures that were already impacting electronics service operations. Throughout the crisis, executives have had to quickly offer a myriad of contact options, rapid response times, and new modes of hardware repair or replacement. This has accelerated their transition to NextGen Service.

Our research identified an "Empowered" after-sales support model that leverages exponential technologies extensively. The result is a more effective service organization that is also efficient. On average, organizations implementing NextGen Service used 24% fewer resources, handled 56% more support requests, and earned higher customer retention rates.

NextGen Service can be described as an enabling business platform. It creates an innovative human-technology interaction model. And it optimizes the use of data, providing collaborative, data-rich interactions and applications across organizations and their external partners.

The COVID-19 service experience: Resilient, intelligent, responsive

The COVID–19 pandemic has intensified industry trends and external pressures that were already impacting electronics service operations. Seemingly overnight, organizations across the industry needed to not just respond, but respond with alacrity. Despite the need for electronics companies to reinvent the entire service function virtually, consumers still had high expectations for quality. Executives had to act quickly to offer plenty of contact options, rapid response times, and new modes of hardware repair or replacement.

As a result, the service function has substantially shifted, not only because service has become more dynamic and virtual. In changing the premise on which service is delivered, everything around it needed to evolve as well (see "Insight: COVID-19 accelerated a transition" on page 4). Electronics organizations began by prioritizing cash flow and optimizing operating expense. But looking forward, they must consider how to create competitive advantage and resiliency.

It's true that a rapid response to a *force majeure*, such as COVID-19, combined with an amplified need for collaboration and increased cost pressures, can negatively impact an organization. But it doesn't have to. What if the *force majeure* is a catalyst to transitioning from old ways of working to an intelligent, orchestrated service approach?

To better understand the current and future after-sales support capabilities of electronics companies, the IBM Institute for Business Value (IBV) joined forces with Oxford Economics to survey 600 executives across 6 electronics industry segments in 19 countries.

Empowered organizations report the highest level of exponential technology adoption.

The Empowered: Driving after-sales support success

In our survey, executives revealed plans for applying exponential technologies and shared how their current implementations enhance aspects of after-sales support performance. Exponential technologies can include artificial intelligence (AI), augmented and virtual reality (AR, VR), data science, biotech and digital biology, medicine, digital fabrication and nanotech, computing systems and networks, robotics, and autonomous vehicles.[1]

The research also studied how developing and applying insights from after-sales support data drives improvements throughout the organization. Three categories of after-sales support emerged: the Enabled, the Enacted, and the Empowered (see Figure 1).

While all three models deliver benefits, Empowered organizations—those fully embracing NextGen Service capabilities—are significantly more efficient, using far fewer resources to execute on far more support requests. On average, they create higher customer retention, which often translates to higher profitability. As well, these advanced service organizations showed the highest percentage of cloud computing utilization, creating valuable connective tissue across locations and applications. In fact, 94% of Empowered organizations drive their service functions from cloud-enabled architectures versus less than 80% of Enacted and Enabled companies.

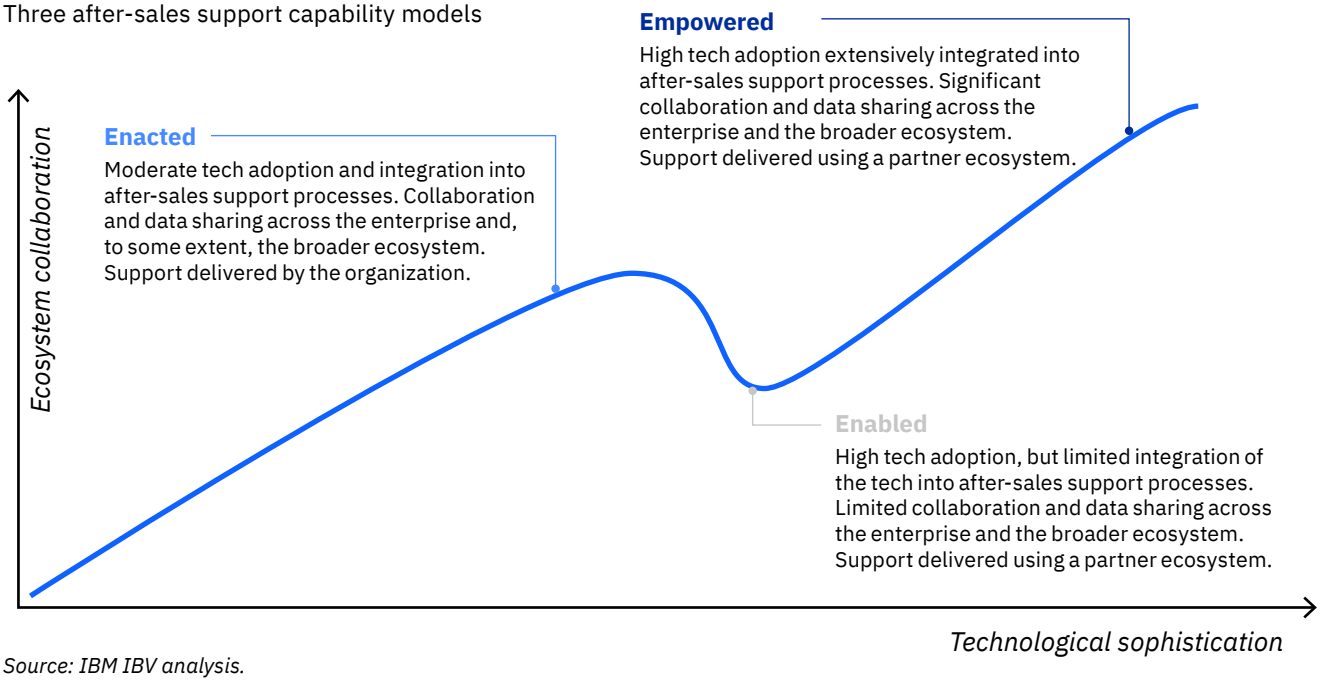
Each service delivery model depicts a set of capabilities across four aspects of the after-sales support function:

- Primary objectives (customer experience, cost takeout, or growth)
- Governance and execution model (internal, external, or a combination)
- Extent to which collaboration is enabled across an ecosystem
- Organizational satisfaction with after-sales capabilities and performance.

Figure 1

In support mode

Three after-sales support capability models



Source: IBM IBV analysis.

The Enabled: Service as a cost

Organizations that apply the Enabled service delivery model are characterized by their view of service as a cost center. Their average after-sales support costs are 2.5% of revenue, with support being delivered via a partner ecosystem. Enabled organizations have a moderate level of digital technology adoption but have yet to completely integrate these tools into after-sales support workflows.

While established infrastructure and processes support the exchange of after-sales support data and insights among business functions, organizations don't exploit them enough to fully deliver on their potential. Their workflows are not yet intelligent (see "Insight: What makes a workflow intelligent?" on page 4). Functionality that could afford a greater degree of collaboration within the broader ecosystem is underutilized.

The Enacted: Engaged and effective

At 2.8% of revenue, the Enacted have a slightly higher after-sales support cost, but they are also using a 100% internal service organization. Enacted organizations have a moderate level of exponential technology adoption and integrate these tools into their after-sales support processes to a greater extent than the Enabled. Their workflows are intelligent. And the infrastructure and processes that support the flow of after-sales support data and sharing of insights among business functions can extend to partners in the broader ecosystem.

The Empowered: Customer first, collaborative, and innovative

Empowered organizations report the highest level of exponential technology adoption. They integrate these tools extensively into after-sales support processes, enabling intelligent workflows to realize their functionality and benefits.

Insights from after-sales support data are applied across business functions, as well as to partners in the broader ecosystem. Empowered operations are flexible, focused on continuous improvement, and built to respond to opportunity and change. Like the Enabled, Empowered organizations spend 2.5% of revenue on support, which is delivered using a partner ecosystem. But they derive significantly greater benefit from their investments (see "Insight: Empowered and efficient electronics servicing" on page 4).

85%

of NextGen Service organizations have implemented cloud computing in service and support processes for use across locations and applications

84%

of the electronics companies using AI as part of their service experience report a positive impact on performance

More than

80%

of electronics companies use a partner ecosystem to deliver service

Insights:

COVID-19 accelerated a transition already in progress

Online orders for nearly every conceivable item ballooned, demand grew volatile, and suddenly generators and chest freezers became hot commodities. Sales volume moved to online or curbside pickup with jarring speed. This shift left electronics organizations and their retail channel partners in a logistical logjam.[2] It could take multiple quarters for appliance manufacturers to escape the trilemma of tighter supply chains, factories operating with reduced staff, and increased demand.[3] A mandate for technical skills has increased while the supply of technicians and their ability to service customers remains under continuous assault. As a result, installation and configuration services traditionally handled by professionals have moved increasingly into consumer hands.

What makes a workflow intelligent?

Intelligent workflows optimize collaboration, efficiency, and human experience by applying AI and automation to a single process, a series of integrated processes, or a function.

Intelligence is introduced into a workflow when highly repetitive areas are targeted for automation. This breaks down barriers and improves interactions or handoffs that created past inefficiencies. Increases in transparency and consistent application of rules can engender greater trust in the workflow's outcomes. By removing mundane tasks using either digital agents or improved technology, service team members can address higher priority, more complex issues for customers. As exponential technologies are embedded within these processes, benefits can be amplified.

Empowered and efficient electronics servicing

In general, electronics servicing is more complex than other industries, with a workforce that often has decades of experience and extensive education. The cost of after-sales support is, on average, 2.6% of revenue for the electronics industry. For the Enabled and the Empowered, at least 70% of service costs are external—for the Enacted, the metric is less than 20%.

The Enabled have an average of 32 FTEs per million dollars of support cost, delivering on 1,800 support requests per FTE. The Enacted are similarly equipped: they deliver 1,700 support requests per FTE, with 30 FTEs per million dollars of support cost.

But the Empowered, organizations that embrace NextGen Service, report far greater efficiencies. They use, on average, 24% fewer resources to handle 56% more support requests—24 FTEs per million dollars of support cost deliver more than 2,700 support requests per FTE. And, despite the increase in calls handled, their first call resolution is 5 percentage points higher, at 57%.

Three out of four Empowered executives report more satisfaction with after-sales support function performance.

Three out of four executives from these organizations say they are continuously testing new approaches to improve post-sales services. They also report far more satisfaction with the performance of after-sales support functions. The vast majority of executives from Empowered organizations are confident they're increasing agility and responsiveness in their contact centers (see Figure 2).

The path to Empowered

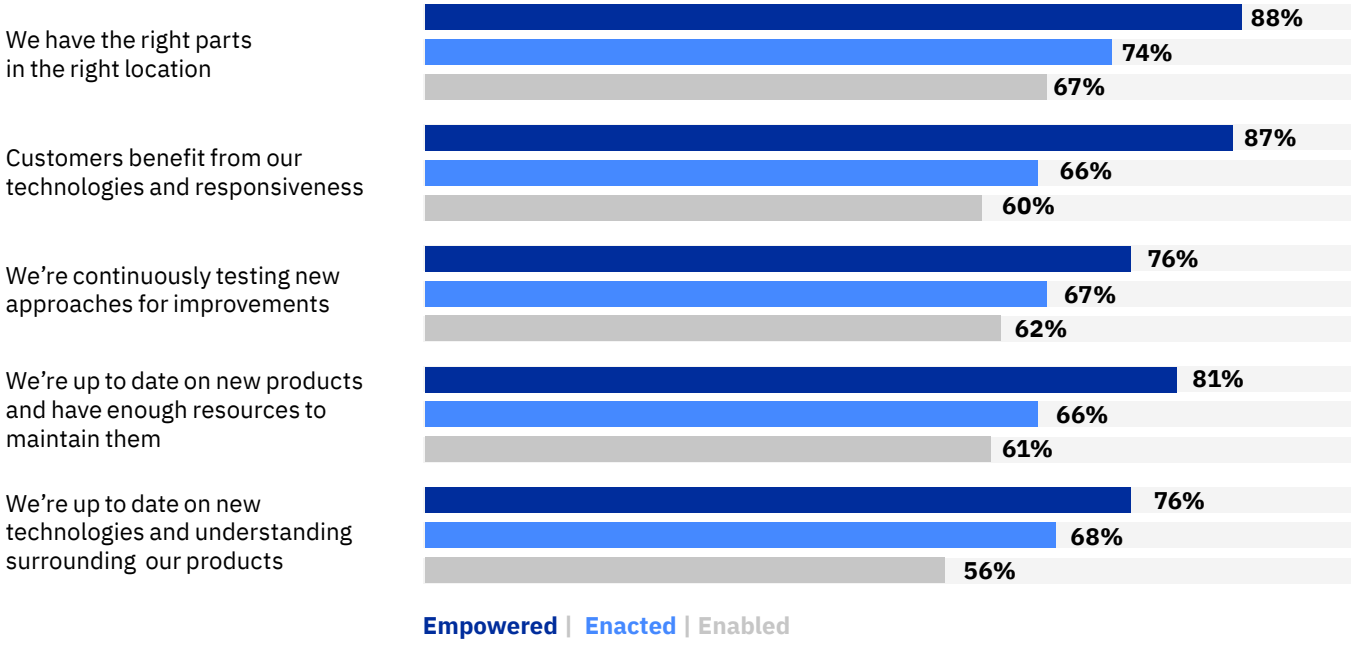
In short, our research says electronics service organizations can "have it all"—or at least most of what they need to deliver effective, efficient, technically savvy service. The question, is how to get there from here?

—

Figure 2

When support looks strong

Percentage of execs who agree with these statements about their after-sales support capabilities



Q. To what extent do you agree with the above statements about your post-sales support function?

A logical, four-step path starts with a guided re-evaluation of the enterprise's strategic principles. Second, executives should examine potential interaction improvements. The third step develops a new business architecture that embeds intelligent workflows—supported by exponential technologies—for service and other business functions.

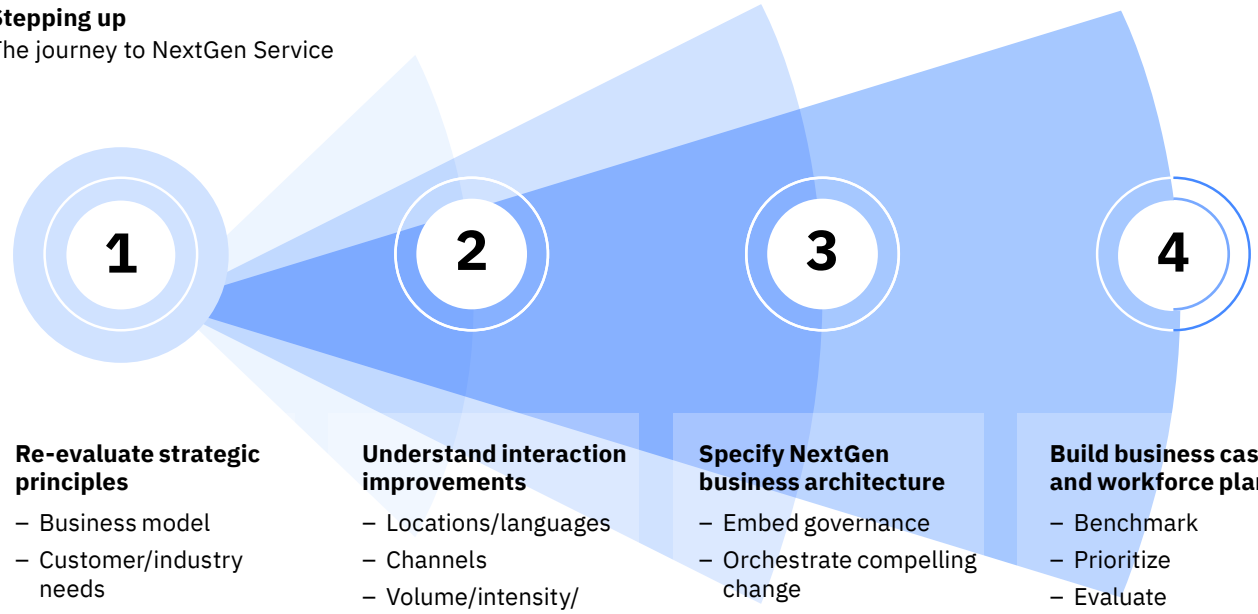
It also requires orchestrating change based on real-time visibility of the enterprise—its people, technologies, and overall performance. The fourth and final step involves building a business case for transitioning to NextGen Service, as well as outlining a strategic workforce development plan (see Figure 3).

—

Figure 3

Stepping up

The journey to NextGen Service



Re-evaluate strategic principles

- Business model
- Customer/industry needs
- Data use, semantic layer
- Collaboration
- Platform

Understand interaction improvements

- Locations/languages
- Channels
- Volume/intensity/ interaction length
- Use cases/applications
- Consider exponential technologies

Specify NextGen business architecture

- Embed governance
- Orchestrate compelling change
- Move from single to multifunction processes
- Shift from processes to intelligent workflows

Build business case and workforce plan

- Benchmark
- Prioritize
- Evaluate
- Enable and augment the workforce

Source: IBM IBV analysis.

A logical, four-step path starts with a guided re-evaluation of the enterprise's strategic principles.

Step One: Re-evaluate the principles that shape your strategy

Step One addresses five principles that, ideally, should inform strategy: the business model, customer and industry needs, the use of data, collaboration, and the type of business platform required to support all of this.

In examining the business model, organizations must understand how users prefer services to be delivered, which channel the user contacts, how users interact with specific channels, the percentage of customers retained after service interactions, and the Net Promoter Score (NPS). NPS is an index, ranging from -100 to 100, measuring customer willingness to recommend a company's products or services to others.

Executives need to examine where and how enterprise partnerships work. They should determine the importance of uptime and response time to the product categories served, important needs for both customers and the industry. Many organizations recognized the heightened challenges COVID-19 brought to their existing operating environments. Some found their systems were simply not architected for the intensity of these emerging interaction needs. Others, especially those relying heavily on external partners, needed to collaborate more effectively and efficiently.

Empowered organizations lead the way with an effective data-oriented response. This approach makes data and information about the operation, maintenance, and repair of products immediately accessible to service professionals, technicians, and customers.

Collaboration goes beyond sharing resources and interaction outcomes. It requires detailed consideration of data access; principles for data governance; role definition; and legal, security, and privacy guidance across enterprises and borders.

Organizations should identify departmental stakeholders who can benefit from the service and product intelligence collected in the contact center. Additionally, organizations must determine how insights gained from analyzing after-sales service data can benefit the supply chain, product forecasting, parts deployment, service center locations, product development, and engineering.

NextGen Service can be described as an enabling business platform that relies on a customer-centric business model. It provides data-rich interactions and applications informed by collaboration across organizations and external partners. The NextGen Service platform layers exponential technologies atop the cloud and, with a service-driven data catalog and semantic data model, can dramatically reshape after-sales performance.

A semantic data model shows the relationships among all of the organization's data both conceptually and as it pertains to the real world. Internal and external data remain in source systems, with relationships mapped so applications, algorithms, and analytics can find and contextualize them. The result: fast, fluid systems of insight and engagement for service professionals. These systems are supported by intelligent workflows and interactions among partners, employees, core systems, processes, data, and technologies (see "Insight: Defining characteristics of a winning business platform" on page 8).

For all organizations, especially those pursuing digital transformations, the support function can become an essential source of engagement and insight. When an organization explores reducing budgets, viewing service as a cost-cutting candidate may be short-sighted.

Insight: Defining characteristics of a winning business platform

Business platforms extract new advantage from existing capabilities, then evolve and scale those capabilities over time. Clear criteria for a successful business platform have emerged, including:

- Deep expertise
- Differentiated workflow
- Exponential technology applications
- Unique proprietary data
- Scale
- Channel power
- Network credibility.[4]

Step Two: Enhance interactions between customers and employees

Step Two requires executives to analyze areas for improvement in customer and employee interactions. The services team should establish realistic goals, for example:

- Prevent downtime with proactive, exceptional service
- Resolve outages—if they do occur—faster to better protect brands
- Optimize equipment and user productivity, as well as revenue, to enhance business results
- Protect brand reputation and retain customer base
- Enable social listening and new communication channels
- Simplify support to save time, resources, and costs.

Organizations need to define the service function's scope in the locations, languages, channels, volumes, and applications it must support—all of which guide identification of which exponential technologies are critical to delivery. And something to consider: instead of building a deep capability, most companies elect to partner with an external company to provide sufficient coverage. For example, Global Technology Services, the team that delivers IBM's internal and contracted service for electronics companies, employs 19,000 staff. These professionals understand the cultural nuances of delivering service to six million hardware and software contacts in 200 countries, 127 languages, across 57 support centers.[5]

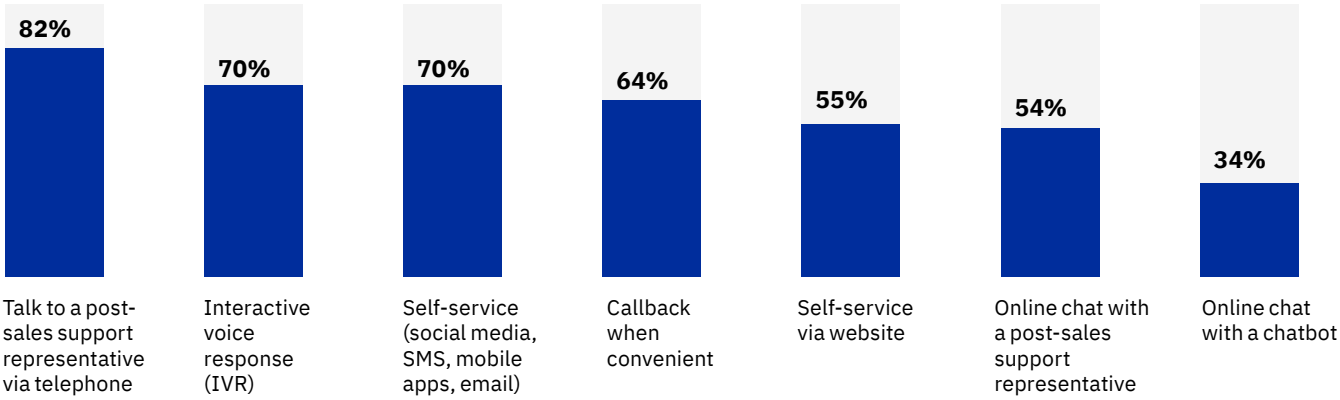
Defining and planning for interaction improvements includes evaluating current channel mix and metrics, as well as setting parameters for the organization's NextGen Service platform. Across electronics enterprises, our research shows more than 80% are using telephone-based services. Chatbots are used by only one-third of the respondents (see Figure 4). This number is sure to increase as part of a NextGen Service strategy, given the rising use of automation. In contrast, Empowered organizations report about 20% higher adoption of chatbots and chat than their peers.

Step Two requires analyzing areas for improvement in customer and employee interactions.

Figure 4

The flexibility of options

Mix of support channels/services that respondents offer to customers



Q. Which support channels/services are offered to customers? Select all that apply.

Next, understand volumes and their drivers. Are volume spikes linked to specific events such as product launches or software updates? Will they be handled within each geography? Is there a plan to handle 100,000—or 1 million or 10 million—contacts in a compressed period, such as during a product recall or software defect? Defining and planning for interaction improvements should evaluate the current channel mix and metrics and set expectations for the next generation of support.

The data-driven agent: Four use cases

Use cases reflect the types of problems an organization needs to address. They can run the gamut from describing major interaction categories to identifying how a particular interaction or enabling technology is used in a call. Four major categories of use cases include:

Predictive maintenance using AI and IoT. Companies can use data and technology to build "sense-and-respond" service organizations. Service data captured though IoT-connected devices and analyzed with AI can enable companies to predict and prevent service events, sometimes automatically. This data also allows service agents to repair devices remotely. If techs do need to be dispatched, they can achieve better issue resolution information. The result can be faster repair, fewer parts used, and higher client satisfaction.

In fact, almost three in four consumer electronics companies expect to implement AR/VR in post-sales service in the next three years. This can result in up to a 30% improvement in productivity.[6] For example, the Samsung Mobile B2B team and IBM are collaborating on 5G-enabled AR solutions driven by AI. These solutions give field workers the ability to connect in real time with another field tech, supervisor, or subject-matter expert. This allows workers to collaborate on identified issues, solve complex problems, and gain feedback on work performed.[7] KC Choi, Executive Vice President and Head of Global Mobile B2B Team, Mobile Communications Business at Samsung Electronics, comments, "We are excited to work with IBM to discover how our unique devices, mobile IoT, and network solutions can provide frontline workers with access to better data and more actionable insights to take their business to the next level."[8]

Virtual agents. These AI chatbots are designed to provide customers with greater access to information and increased personalization across devices, but without talking to a human agent. They can be used on the web and in the contact center to answer questions with natural language. The chatbots can also provide insightful answers to standard questions such as how to find the latest version of device software, extend a warranty, or find a repair center.

Agent assist. As new services and devices come to market, customer care agents must be equipped to answer questions. On average, just over half of electronics post-sales problems and inquiries are closed on the first call. Using a knowledge management approach built off the semantic data layer helps agents address complex questions. Integrating AI technology into agent desktops brings multiple sources together in a unified application. Once implemented, AI has the potential to improve first call hardware success rates and to reduce the time required for issue determination.

Field service advisor. One in eight calls to a field technician results in a repair that can't be executed due to unresolved issue determination. Of completed repairs, 23% turn out to be unsuccessful and require follow-up. AI applications can help prevent additional visits by delivering insights that can elevate technician expertise, drive operational efficiency, and improve customer satisfaction, helping prevent a second repair visit.

For example, appliance manufacturer BSH Hausgeräte developed a mobile-native app specifically for its 5,300 technicians. These technicians complete 12 million service jobs a year in 46 countries. By using the app, they generated 20% more sales revenue, worked at 7% higher productivity, and helped drive a 22% increase in NPS.[9]

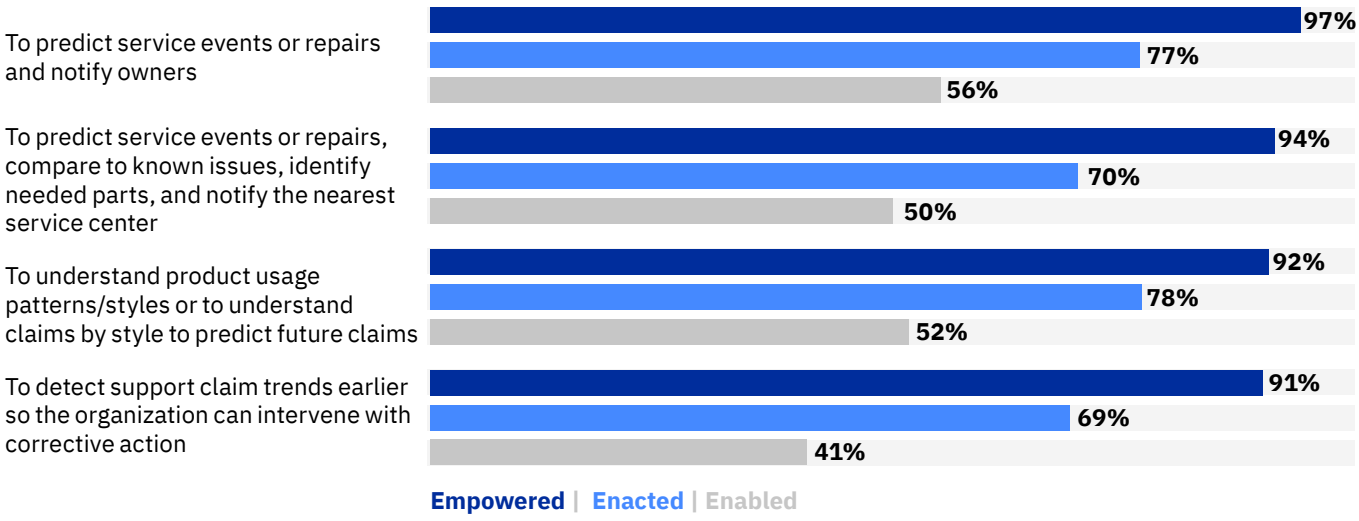
Unlike virtual reality, which immerses the user in a digital world, AR layers graphics, as well as other media, over a user's real-world surroundings. By displaying guidance over a physical environment, AR support leverages visual guidance to reduce the effort needed to convey instructions, frequency of errors, and even time required to look up service information.[10]

Data—and how that data empowers decisions and actions—is embedded into each of these four use case categories. These systems can compare service events or repairs to previous issues, then reserve needed parts while notifying the nearest or best-equipped service centers. They can understand product usage patterns and styles to determine service needs, potential warranty claims, or detect customer support trends and difficulties earlier, creating a shorter detection-to-correction cycle (see Figure 5).

Figure 5

How data does its duty

Ways in which companies use service data to improve after-sales support performance



Q. To what degree is your organization applying insights from analysis of post-sales support data together with data from post-sales support functions?

Across the spectrum, these new techniques and tools are turning aspirational rhetoric into reality.

The explosive power of exponential

Upon considering use cases, executives can evaluate exponential technology that empowers users and applications. Contact center workflows and applications that use exponential technologies—whether one or many—can become frictionless, touchless, and transparent. Data and services that are available on a secure, hybrid cloud-based architecture can foster easier collaboration across business partner ecosystems. *Workflows enabled by exponential technologies can allow NextGen Service to deliver significantly more benefits for the same investment.*

Across the spectrum, these new techniques and tools are turning aspirational rhetoric into reality. New approaches are enabling high-performing organizations to move faster and more flexibly, alleviating operational challenges for contact center employees and management. Organizations adopting exponential technologies are seeing tremendous value in time, cost, quality, and efficiency benefits. These technologies can be classified into three groups:

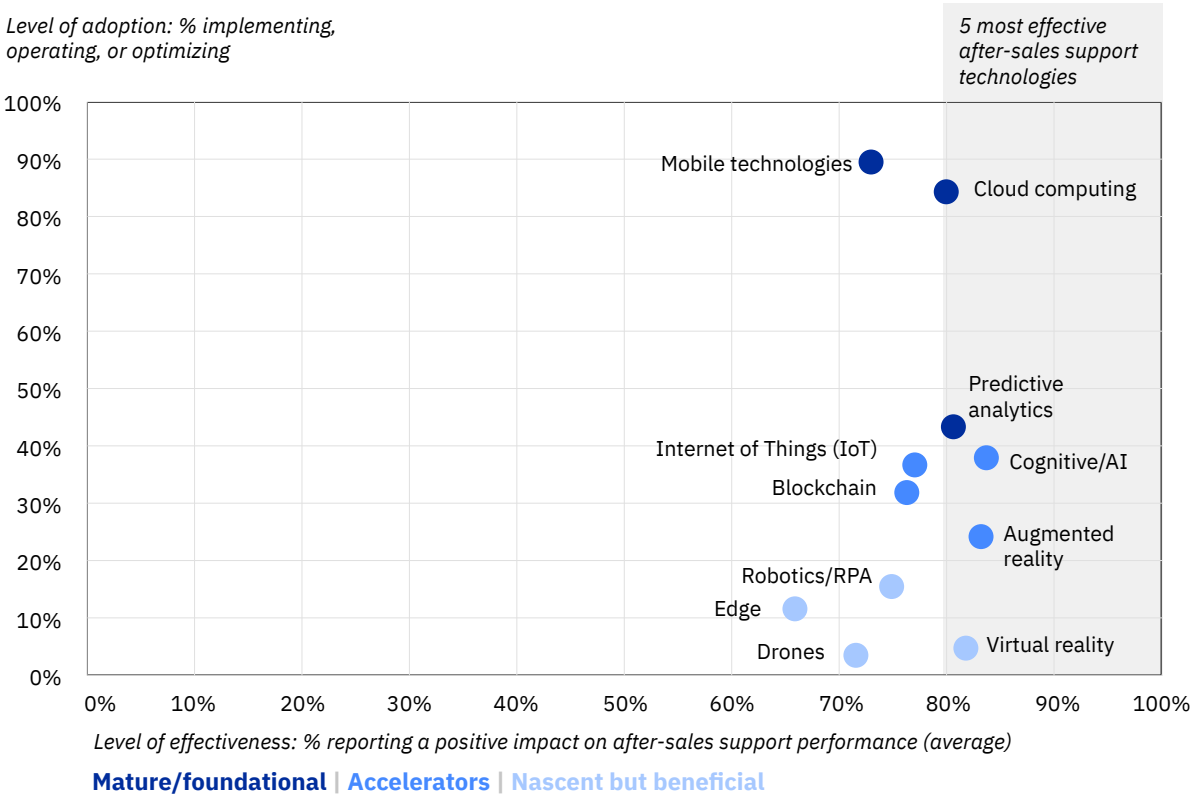
1. Mature/foundational technologies show the greatest adoption and tend to be embedded in most applications. They're regular parts of the enterprise's technology roster.
2. Accelerators are newer digital technologies that can enhance visibility and transparency, increase speed and scale, and ease frictions (see "Insight: Guided repair leverages augmented reality" on page 12).
3. Nascent, but beneficial, technologies are just beginning to be incorporated into applications, but already show positive impacts (see Figure 6).

—

Figure 6

Leaders of the pack

The most effective after-sales support technologies



Q. To what extent have these technologies impacted the cost, time, efficiency, and quality performance of post-sales support?
The average percentage of organizations that selected "somewhat positive" or "significantly positive" impact.

Insight: Guided repair leverages augmented reality

Customers and agents are now taking service into their own hands—literally. They're pointing their camera phone at the back of a server or other device to diagnose or repair what ails their equipment. New technicians, unfamiliar equipment, or customers attempting their own repair can benefit from augmented reality with guided visuals and directions. One process features a 2D image taken by a technician, then rendered in 3D, so a technical expert can deeply examine it to understand the problem. Then, the expert adds instructions and specs to the image and returns it to the end user's device. The result: faster fixes and improved communications between field support and product experts.[11]

Step Three: Design your NextGen Service platform architecture

Step Three involves detailing specifications for the NextGen Service platform, starting with principles that guide how humans and AI work together, then adding governance—processes and rules—for decision making. Next, organizations should outline a new approach to change management. Finally, they need to establish intelligent workflows that extend beyond services to other business functions. This is where leading organizations can make service look seamless. Armed with the right technologies, they can deliver finely orchestrated services for the customer and the enterprise.

By its nature, NextGen Service commands significant change. It's all new. A new services operating model. A new decision framework. A new partnership between humans and technology. New guiding principles for how humans and AI work together. Teams throughout the organization should receive clear and explainable guidance related to business logic and algorithms. This must be accompanied by governance that determines where, how, and by whom decisions are made.

NextGen Service requires a different approach to change management. Companies need a view of their overall performance as well as the ability to respond to challenges and opportunities. Establishing a control tower that sees across business functions, workflows, and applications adds context to advanced technologies and live data streams. This can create real-time visibility and monitoring across the entire organization, highlighting interdependencies. Constant monitoring by this control tower improves line of sight and timely understanding of overall enterprise stability—and the ability to affect it.[12]

The control tower also improves interactions with systems of record across the organization. ERP, CRM, and service scheduling systems all benefit from an enterprise-wide view that allows optimization across applications and functions.

The Empowered companies in our study show how exponential technologies—which support intelligent workflows—raise the service game for those organizations that apply them extensively. Multi-process and end-to-end intelligent workflows integrate these technologies with

Intelligent workflows and humans with the right data are creating “sense-and-respond” service organizations.

human expertise and data, allowing organizations to deliver more value to customers while extracting more insights and benefits from data. Intelligent workflows, in effect, re-architect operations. Intelligent workflows and humans with the right data are creating “sense-and-respond” service organizations.

Driving quantifiable improvements with exponential technology and automation

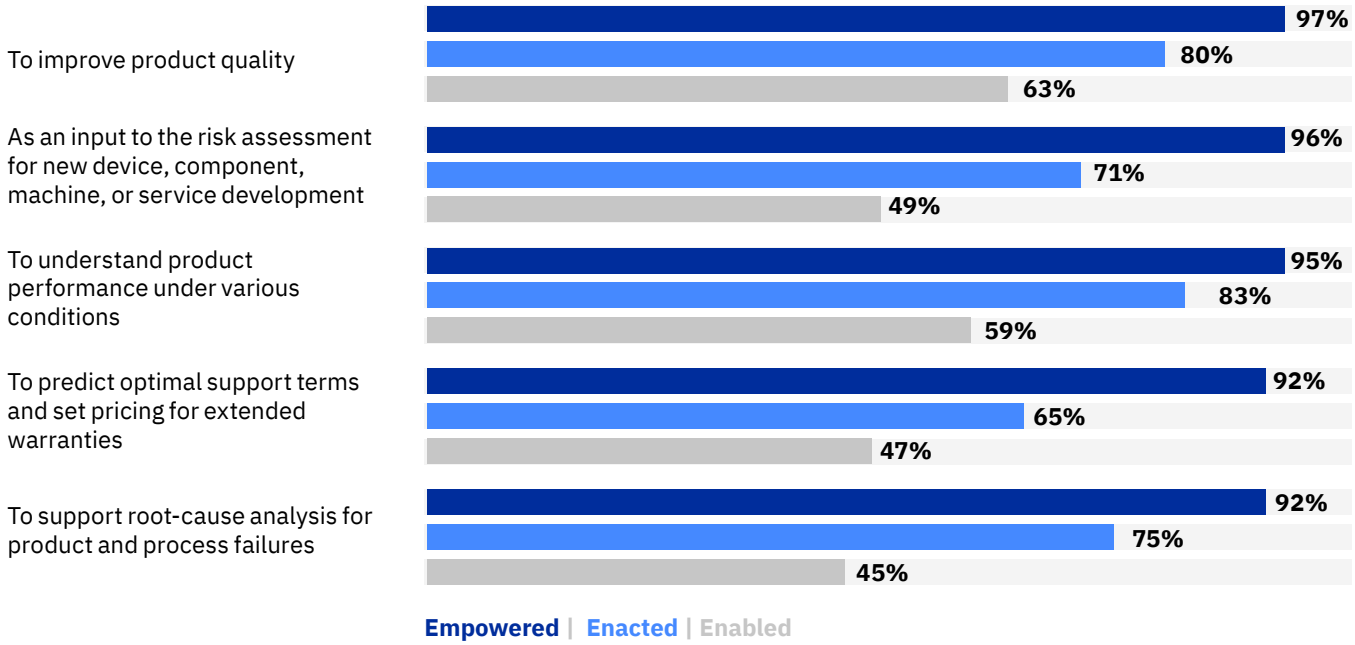
IBV research found that when applied to a single process, exponential technologies and automation can deliver improvements of 15% to 20% in expected outcomes. When multiple processes are connected into a workflow, improvement can increase to 25% to 50%. When those workflows are connected across functional lines in the business, effectively knocking down traditional organizational silos, improvement grows to 50% to 70% or more.[13]

In product and service development, the Empowered are applying these insights to improve product quality, assess risk for new products, understand product performance under various conditions, predict support and warranty terms, and support root cause analysis in the case of product failure (see Figure 7).

Figure 7

From data to development

More than 90% of Empowered companies use service data to improve product development performance



Q. To what degree is your organization applying insights from analysis of post-sales support data together with data from product design, development, and engineering functions?

Transforming a business from the inside-out requires elasticity and resilience.

For financial management processes, intelligent workflows allow companies to apply insights from service data to develop more accurate budgets and operational forecasts for the function. Similarly, insights from service data can improve the accuracy of warranty cost forecasts and the management of accruals and reserves (see Figure 8).

For supply chain planning, manufacturing, and distribution processes, insights from service data analysis close the loop on production quality issues. Collaboration between the after-sales support function and manufacturing provides critical feedback on materials or components that are driving issues (see Figure 9). In this arena, the sooner these issues are identified and resolved, the less costly the problem is to the organization. AI and automation can significantly reduce the gap between when problems are initially reported and corrective action is taken.

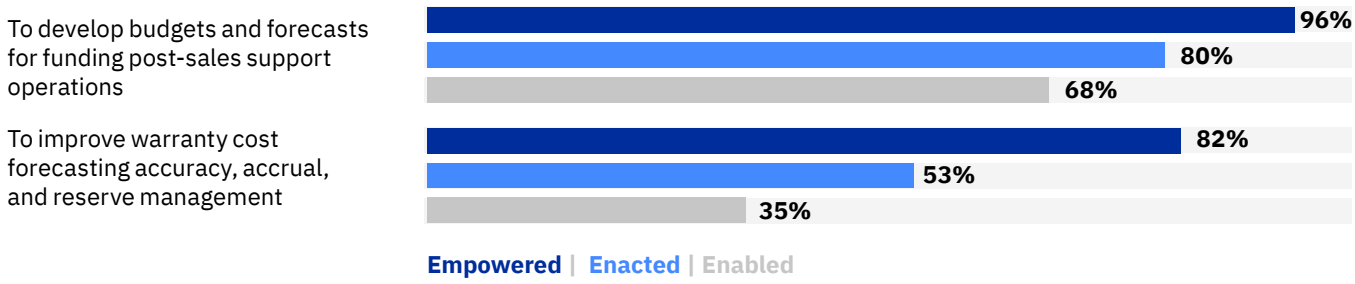
Transforming a business from the inside-out requires elasticity and resilience. Exponential technologies such as cloud, AI, blockchain, automation, Internet of Things (IoT), 5G, and edge computing are essential to successful delivery.

—

Figure 8

The data-driven profit curve

How companies use service data to improve financial management performance

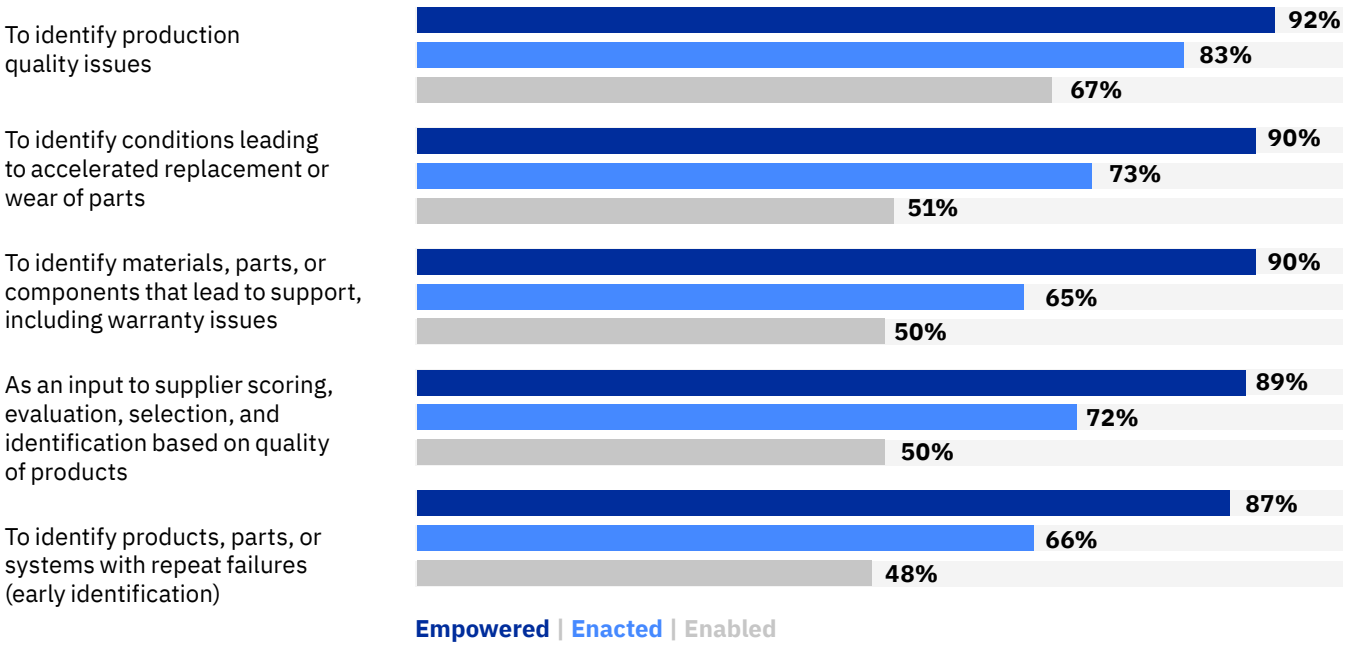


Q. To what degree is your organization applying insights from analysis of post-sales support data together with data from cost, accrual, and reserves management functions?

Figure 9

Improving through information

How companies use service data to enhance supply chain and manufacturing performance



Q. To what degree is your organization applying insights from analysis of post-sales support data together with supply-chain data? Includes procurement, manufacturing and assembly, and quality control/management.

Step Four: Develop a business case and a workforce strategy

Step Four entails building a business case to justify the transition to an instantiated NextGen Service, as well as a prioritized roadmap and a strategic workforce development plan. The goal is to develop a realistic estimate of the business and financial value of transforming, including KPIs that create a compelling case for change to business stakeholders.

To accomplish this, organizations should focus on these key tasks:

- Define measures and KPIs that drive the service business and trace impacts across the organization.
- Compare service delivery performance and capabilities with industry peers to identify performance gaps and improvement opportunities. Align opportunities with the greatest value, understanding trade-offs at the enterprise level.
- Quantify the potential benefit each can deliver to alleviate an organization's pain points (cost, quality, efficiency, and customer satisfaction). Consider priority end-to-end processes, including impacts outside of the support function.

The goal is to develop a realistic estimate of the business and financial value of transforming.

- To guide decisions on what services to keep and what to outsource, organizations should first determine whether specific intellectual property is embedded in core processes. Then, identify potential benefits delivered through technology improvements. Finally, determine processes that can be effectively outsourced without sacrificing performance or consistency.

  Note: Companies face new challenges to developing an exemplary service and support approach. Optimizing customer experience and cost requires new thinking that combines internal and external service functions with advanced technologies and capabilities.

- Consider service quality, operational excellence, total costs, client satisfaction, and the skills of the workforce. This requires an "outside-in" mindset, as opposed to simply evaluating potential partners. It's critical to remember that partners, as an extension of your brand, require a vetting for "brand fit." An organization also needs to thoroughly examine its process maturity and completeness, strategic fit, and future-state readiness.

- Clearly identify annualized and one-time cash benefits from improving key metrics, including NPS and customer retention, especially when considering outsourcing. Analyze key service value pools that improve revenue, operating margin, and process efficiency. Then define costs, benefits, and ROI for each process. Support the business case with a prioritized roadmap to implement NextGen Service.

Empower and augment the workforce through a strategic workforce plan

An electronics company may hire its own team, find contingent resources, or collaborate with partners across its ecosystem for talent. Regardless of the approach, human experience is the overwhelming driver behind the service equation. And NextGen Service is focused on delivering great outcomes for its participants.

Strategic workforce planning must develop or refine the business and technology acumen required in intelligent workflows and new operating models. Purposeful agility reflects the changing demands of the business, especially remote work and collaboration. However, it also extends to a willingness to embrace new solutions and work alongside "virtual colleagues," including chatbots that can answer the simplest questions.

Given the speed of change, skills obsolescence is also a very real concern. It's one of the reasons some executives consider buying new skills through partnering instead of building them internally. Its estimated that many skills could claim a half-life of merely five years—meaning the applicability of the skill to the job at hand declines.[14] This highlights the need for a culture in which new ways of working inspire continuous learning and development.

Competition for top resources is expected to remain intense, placing pressure on recruitment and retention. Maintaining an environment that provides a sense of value and places a premium on the team is equally critical. The goal is to create an environment that fosters enthusiasm for working with customers, technological curiosity, collaboration, and responsiveness.

While service can certainly be transformed by technology, it's more important to describe how technologies deliver an improved experience for the organization—both its workforce and its customers. That experience must be omnichannel and meet needs where and when they arise. And it must be scalable to support fluctuating volumes, well vetted, and secure. The processes should be data-rich, AI-enabled, collaborative, and responsive.

Data, insight, and knowledge are shared across the organization and the ecosystem to optimize value. Organizational responsiveness grows as automation removes repetitive and predictable tasks, freeing talented specialists to work on thornier issues. The workforce and technology blend to be globally accessible and multilingual, supporting knowledgeable, technically inquisitive teams. And last but not least, they must be focused on organizational metrics, not just those that are service-specific.

Action guide

Questions to ask as you create a NextGen Service organization

We've outlined four steps in this report, beginning with a re-evaluation of the enterprise's strategic principles and ending with a prioritized business case and workforce plan to instantiate NextGen Service for your organization. Use these questions to specifically guide your organizational decisions as you navigate the four steps.

Step One. Re-evaluate your strategic principles.

- How are you preparing to deliver service virtually?
- What data model is required for integration and collaboration to increase knowledge and flexibility of the entire system?
- What is required for you to access expertise across service delivery systems?

Step Two. Understand interaction improvements.

- How do you account for time zones and capacity?
- What exponential technologies can help deliver remote technical support?
- How can AI infuse product knowledge and access to tools across all channels?
- Can you make services user-friendly, enabling customers to service themselves, especially with new technologies such as blockchain and AR?

Step Three. Specify your NextGen Service platform architecture.

- Which of our workflows have the most repetitive tasks and will benefit most from automation?
- How can you help ensure consistency and transparency across enterprise processes?
- What security controls must be in place to make your organization secure enough to deliver, protecting customer data and your own?
- Which exponential technologies offer high-priority benefits to users and workflows?

Step Four. Develop a business case and a workforce strategy.

- What are the measures and KPIs that drive your service success?
- How do your service delivery performance and capabilities compare with your industry peers?
- Where does outsourcing provide access to technologies and resources more quickly and with improved scale?
- How do you accelerate skills transfer?
- How can you facilitate the collaboration needed to fill in knowledge gaps?

Study approach and methodology

The IBM Institute for Business Value surveyed—in cooperation with Oxford Economics—600 electronics leaders with overall accountability for the after-sales support functions at their organizations. These individuals included C-level executives, vice presidents, directors, department heads, and managers.

The electronics segments represented include medical devices, office equipment, appliances and white goods, consumer electronics, power and automation, and network equipment manufacturers. Each comprises approximately a sixth of our total sample. The 19 countries in our survey encompass USA and Canada, Europe (including Nordics), Asia Pacific (including ASEAN), and Latin America.

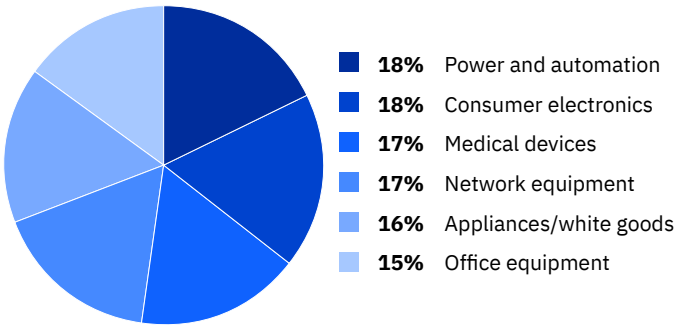
Our goal was to better understand how electronics companies support users of their products and services. An online survey was administered in two parts:

- Part one collected cost, cycle time, quality, and efficiency metrics to benchmark the performance of the after-sales support function.
- Part two collected data related to the adoption and application of exponential technologies in after-sales support processes, as well as an organization's plans for the next three years. The survey also covered the impact these technologies have had on after-sales performance and the specific use cases they enable.

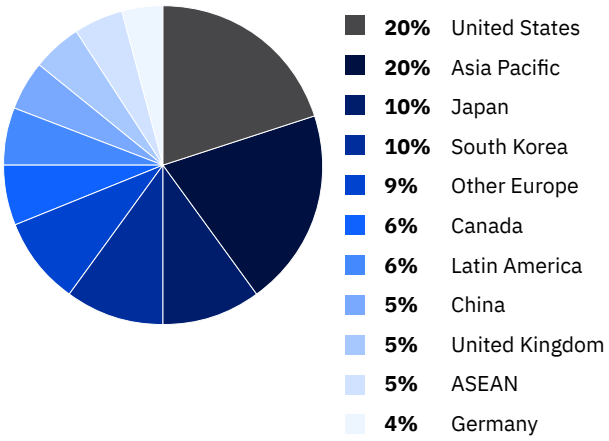
We applied a cluster analysis that resulted in organizations being categorized according to three distinct after-sales support capability models. The most sophisticated, the Empowered, comprises 44% of electronics respondents. The other two groups, the Enacted and the Enabled, make up 15% and 41% respectively.

All three groups deliver benefits, but the Empowered model leverages cloud and exponential technologies extensively in its service operations, performs better on service delivery KPIs, and claims higher customer retention. All data is self-reported.

Respondents by minor industry for electronics



Electronics respondents by location



About the authors

S. Scott Burnett
Global Director, IBM Electronics Member, IBM Industry Academy
linkedin.com/in/sscottb/
burnetts@us.ibm.com

Scott leads IBM strategy and business development specializing in the consumer technology segment. He advises clients on strategic transformation and partnerships, applying AI for product and service innovation, and brand management. Scott is a member of the Consumer Technology Association, Board of Industry Leaders.

Ken Pace
Senior Managing Consultant, IBM Global Electronics Center of Competence
linkedin.com/in/ken-pace-8572bb11/
kpace@ca.ibm.com

An expert in post-sales support and supply chain, Ken helps electronics clients transform manufacturing, delivery, and support operations using technology such as mobile, AI, analytics, blockchain, and IoT. Ken closely follows emerging trends and changing client preferences. He develops industry points of view to help clients prioritize actions to improve sales, reduce costs, and optimize processes. Ken is an IBM Certified Supply Chain Management Professional.

Lisa-Giane Fisher
Benchmarking Leader, IBM Institute for Business Value, Middle East and Africa
linkedin.com/in/lisa-giane-fisher/
LFISHER@za.ibm.com

Lisa is responsible for specialized benchmark research for the Industrial sector, as well as the Utilities, Travel, and Transportation industries. This includes after-sales service and support, warranty management, mergers and acquisitions, IT and OT risk, and security. She also collaborates with IBM industry experts to develop and maintain industry process frameworks. Lisa is based in South Africa.

Cristene Gonzalez-Wertz
Electronics and Environment, Energy, and Utilities (EE&U) Research Director, IBM Institute for Business Value
linkedin.com/in/cjgw1/
cristeneg@us.ibm.com

Cristene advises clients on technology, trends, and strategic positioning in AI, analytics, IoT, security, data, and customer experience. She provides guidance for executives, entrepreneurs, boards, shareholders, and stakeholders on emerging value opportunities, especially the data economy. Cristene is a former CMO and executive strategist. She is a member of the IBM Industry Academy.

Notes and sources

1 "An Exponential Primer: Your guide to our essential concepts." Singularity University. Accessed December 15, 2020. https://su.org/concepts/

2 "The Future of the Last-Mile Ecosystem." World Economic Forum. January 10, 2020. https://www.weforum.org/reports/the-future-of-the-last-mile-ecosystem

3 Moffat, Anne Riley, and Drew Hutchinson. "'Fragile' Supply Chain Pushes Whirlpool's Backlog Out Quarters." Bloomberg. July 22, 2020. https://www.bloomberg.com/news/articles/2020-07-22/-fragile-supply-chain-pushes-whirlpool-s-backlog-out-quarters

4 Foster, Mark. "Building the Cognitive Enterprise—Nine Action Areas: Deep Dive." IBM Institute for Business Value. May 4, 2020. https://ibm.co/cognitive-enterprise

5 "IBM Services Signs $240M Agreement with Lenovo™ to Help Drive the Future of its Call Centers with Artificial Intelligence." PRNewswire. Oct. 18, 2018. https://www.prnewswire.com/news-releases/ibm-services-signs-240m-agreement-with-lenovo-to-help-drive-the-future-of-its-call-centers-with-artificial-intelligence-300733545.html

6 Based on IBM client experience.

7. Ibid.

8. "Samsung and IBM Plan to Help Businesses Embrace the Fourth Industrial Revolution." Samsung Newsroom. December 16, 2020. https://news.samsung.com/global/samsung-and-ibm-plan-to-help-businesses-embrace-the-fourth-industrial-revolution

9 "BSH Hausgeräte enhances the customer support experience with innovative iPad apps from IBM." IBM case study. 2019. https://www.ibm.com/case-studies/bsh-hausgerate-ibm-services-customer-service-apps

10 Teich, David A. "IBM Augmented Reality Working To Support And Accelerate How Support Services Are Changing." Forbes. Apr 28, 2020. https://www.forbes.com/sites/davidteich/2020/04/28/ibm-augmented-reality-working-to-support-and-accelerate-how-support-services-are-changing/#5465e9e42c56

11 "Remote support with augmented reality." IBM.com. Accessed December 15, 2020. https://www.ibm.com/services/resources/5-innovations-for-IT-support/index.html#section-3

12 Foster, Mark. "Building the Cognitive Enterprise—Nine Action Areas: Deep Dive." IBM Institute for Business Value. May 4, 2020. https://ibm.co/cognitive-enterprise

13 Ibid.

14 Estes, Paul. "The Half Life of Skills." The HR Daily Advisor. March 25, 2020. https://hrdailyadvisor.blr.com/2020/03/25/the-half-life-of-skills/

About Benchmark Insights

Benchmark Insights feature insights for executives on important business and related technology topics. They are based on analysis of performance data and other benchmarking measures. For more information, contact the IBM Institute for Business Value at iibv@us.ibm.com.

Related reports

Foster, Mark. “Building the Cognitive Enterprise—Nine Action Areas: Deep Dive.” IBM Institute of Business Value. September 2020. https://ibm.co/cognitive-enterprise

Price, Paul, Bruce Anderson, Christophe Begue, Lisa Fisher, and Cristene Gonzalez-Wertz. “Stronger M&A strategies through AI-driven processes: Ten tenets for electronics companies.” IBM Institute for Business Value. December 2019. https://ibm.co/mergers-acquisitions-electronics

Bodley, Grant, Cristene Gonzalez-Wertz, William Thomas, and Amy Slagle Swanson. “Three electronics industry strategies for the new data economy: Powering up platforms, tech stacks, and rapid innovation.” IBM Institute for Business Value. July 2019. https://ibm.co/3-electronics-strategies

Kienzle, Martin, Rami Ahola, and Mike Edholm. “How 5G can spark an electronics revolution: The technology enabling next-gen manufacturing and self-driving cars.” IBM Institute for Business Value. January 2019. https://ibm.co/5gelectronics

IBM Corporation
New Orchard Road
Armonk, NY 10504

Produced in the United States of America
January 2021