Accelerating IoT Maturity in Medical Field Service

How adopting a single source provider drives better patient outcomes and operational success

A Field Service Medical 2018 Report

KORE

FIELD SERVICE MEDICAL   WBR INSIGHTS

Introduction

Despite the growing adoption of healthcare IoT solutions, many organizations in the space have minimal resources available to them for deploying, managing, and maintaining a successful IoT solution. Healthcare providers often have difficulty maximizing ROI of IoT initiatives as they fail to optimize their deployments to extract the IoT data and data analytics necessary to inform day-to-day decision making and business performance.

The problem, as we will find, is that many healthcare organizations lack the necessary support throughout the entire IoT solution lifecycle, preventing them from realizing the true value of their IoT deployments.

IoT solution providers help scale and grow businesses with global, managed connectivity, equipment, and professional services backed by IoT industry expertise. They add value for Application Service Providers (ASPs) by integrating managed tablet or wearable devices to offer more comprehensive solutions to downstream customers, for example.

In this report, we uncover how field service teams working with a single partner have driven positive patient experiences and business results by simplifying the complexity of the IoT ecosystem. KORE partnered with the WBR Insights research team to study medical field service organizations taking on the challenge of managing a leading-industry IoT solution. In the findings, we observe how mature IoT solutions help field service teams add capabilities and value to their existing solutions, driving patient satisfaction and profitability.

Key insights from the research include:

At least **21%** of field service medical organizations have worked with an IoT project for at least a year and have not achieved any meaningful results.

Two customer-facing initiatives—improving patient experiences (**74%**) and supporting modern service delivery models (**72%**)—are respondents' most-cited reasons for implementing IoT.

Among the **23%** of companies already working with a single source provider, **83%** claim the provider has helped them improve patient experiences and increase ROI from their IoT initiatives in medical field service.

Among the companies currently working with more than one source provider, **52%** are considering the adoption of a single source provider to achieve these same goals.
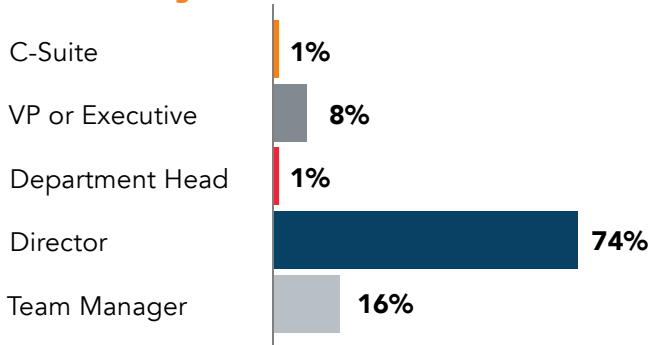
About the Study

KORE partnered with Field Service Medical and the WBR Insights research team to survey 100 leaders in the medical field service industry. Respondents hold a variety of leadership positions, and the vast majority represent enterprise companies.

The majority of respondents identify as directors (74%). Respondents in other leadership positions include C-Suite (1%), VP or executive (8%), and department head (1%). Sixteen percent of respondents identify as team managers.
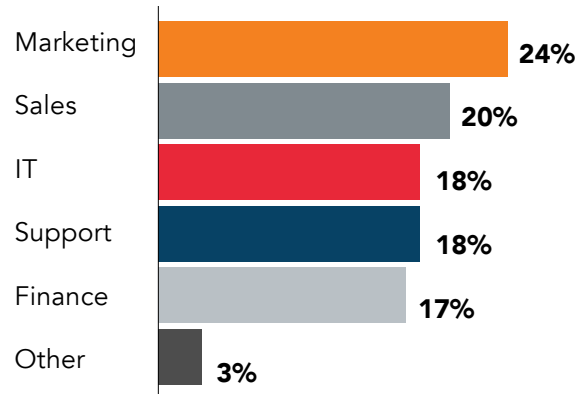
Nearly half of respondents are in marketing (24%) or sales (20%). IT professionals make up 18% of respondents, as do support professionals. The remaining respondents work in finance (17%) or some other field not listed (3%).

What is your role?

Role	Percentage
C-Suite	1%
VP or Executive	8%
Department Head	1%
Director	74%
Team Manager	16%

What is your field?

Field	Percentage
Marketing	24%
Sales	20%
IT	18%
Support	18%
Finance	17%
Other	3%

What is your company size (estimated annual revenue)?

83%	**15%**	**2%**
Enterprise (>$500 million)	Mid-Market ($100-500 million)	SMB (<$100 million)

The vast majority of respondents (83%) represent enterprise companies with over $500 million in annual revenue. Most others (15%) represent mid-market companies with $100 million – $500 million in annual revenue. Two-percent represent SMBs, with less than 100% million in annual revenue.

The data shows that many enterprise companies that have worked with IoT for a year or more nonetheless struggle to execute their existing solutions quickly, efficiently, and in a way that drives real business value. Enterprises that succeed in implementing IoT solutions—many of which are nonetheless new to IoT—are leveraging their ASP's IoT expertise, professional service offerings, and portfolio of connected solutions.

The Age and Size of IoT Infrastructure Does Not Equate to Maturity

Among enterprise companies, IoT adoption has reached an inflection point in terms of maturity and development. They have realized valuable business results as a result of their investments, with years of experience managing integrated IoT in the context of their overall operations. If we isolate the majority of respondents whose companies are realizing those results, roughly one-quarter are leading the industry.

Respondents were asked to rate the maturity of their IoT adoption for medical field service from a business perspective. Almost one-quarter of all respondents (22%) claim theirs is advanced—they are leading the medical device industry in IoT.

Almost half of respondents consider their IoT adoption mature, meaning they have deployed IoT in their desired areas and are seeing valuable results.

However, over one-third of respondents are not yet achieving meaningful results (33%) from their IoT investment, or they have not gotten IoT off the ground (2%). This highlights a problem area among some field service organizations as they struggle to meet their objectives—even though many of those organizations have been working with IoT for a year or more.

What is the maturity of your IoT adoption for medical field service in terms of your business?

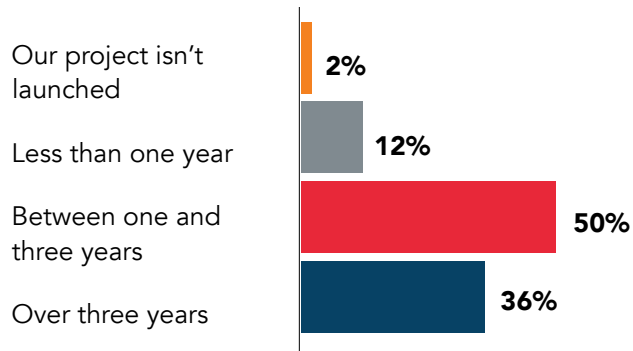Advanced - we are leading the medical device industry in IoT sophistication — **22%**

Mature - we have deployed IoT in our desired areas and are seeing valuable results — **43%**

Developing - we have adopted IoT, but we are yet to achieve any meaningful results — **33%**

Incomplete - we are yet to get IoT off the ground or we have not adopted IoT at all — **2%**
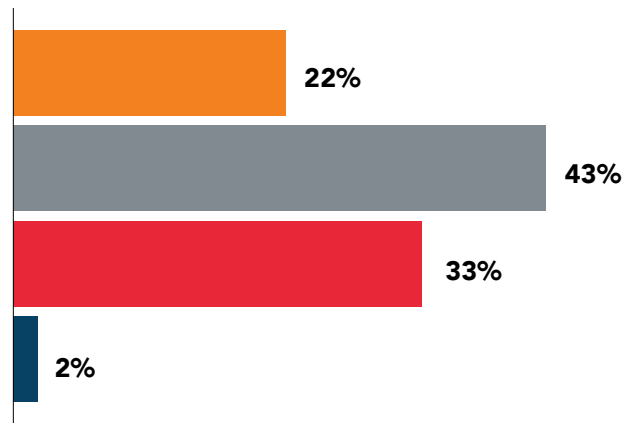
How long have you been working with an Internet of Things (IoT) project?

Our project isn't launched	2%
Less than one year	12%
Between one and three years	50%
Over three years	36%

How many active IoT devices is your company managing?

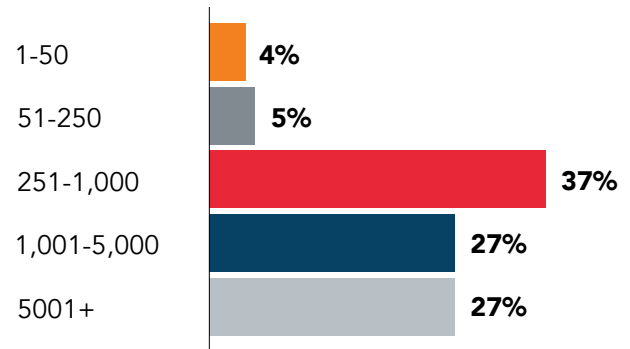|	
1-50	4%
51-250	5%
251-1,000	37%
1,001-5,000	27%
5001+	27%

Researchers found that 50% of companies have worked with IoT projects for one-to-three years; 36% have worked with IoT for even longer. These findings indicate that at least 21% of companies have worked with an IoT project for at least a year and have not achieved any meaningful results.

Fewer companies have been working with an IoT project for less than one year (12%), while 2% have not launched an IoT project.

What's more, the vast majority of companies (91%) manage at least 251 active IoT devices, where 27% are managing 5,001 or more. This implies many of these

companies are yet to achieve meaningful results. Only 9% of respondents are managing 250 or fewer active IoT devices.

Simply tallying the companies that are mature or even advanced in their IoT adoption obfuscates a problem—dozens of companies have invested time, effort, and capital in IoT devices and infrastructure, but they are yet to realize meaningful business value.

Overcoming Internal Roadblocks to Realize Positive Business and Patient Outcomes

A closer look at how companies are managing their IoT solutions internally tells us more about what is driving their success or failure in realizing their goals. In terms of three core competencies, a majority of field service organizations prioritize customer-facing and customer-satisfaction initiatives above all others.
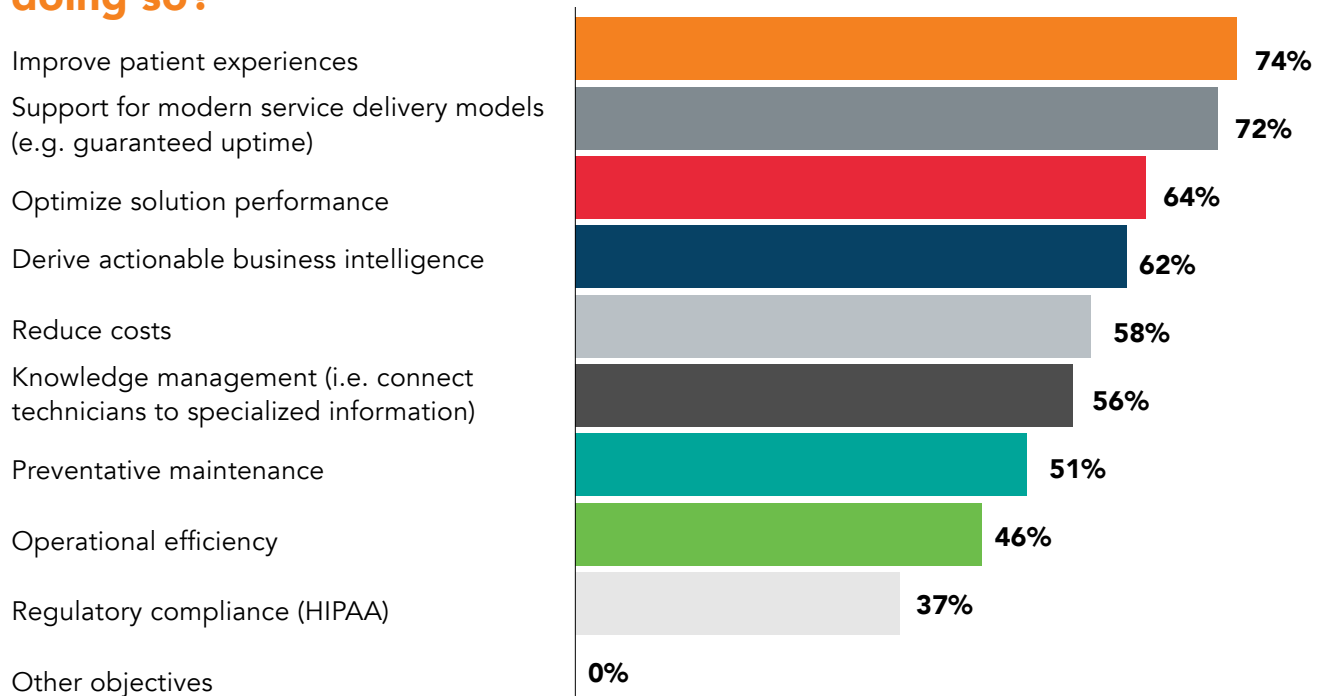
Respondents were asked to share their most widely discussed objectives when choosing to implement IoT. Improving patient experiences (74%) and supporting modern service delivery models (72%) are the most-cited reasons in the study.

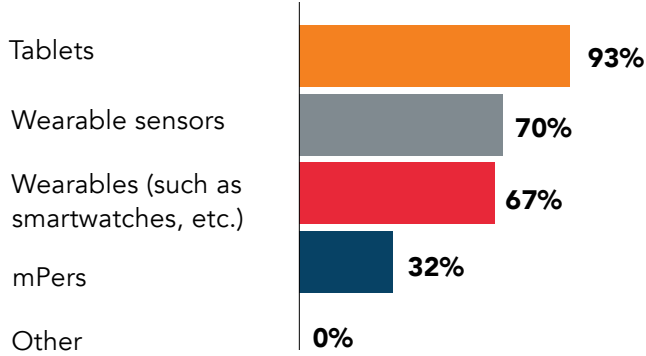As we will find, 70% of respondents claim their companies are either agile (49%) or advanced

(21%)—leading the medical device industry—in how they enhance existing patient solutions quickly and efficiently. However, 72% of respondents cite managing patient data that lacks the context of a complete health record as the most common obstacle when utilizing IoT.

Meanwhile, almost two-thirds of respondents identify optimizing solution performance (64%) and nearly two-thirds identify driving actionable business intelligence (62%) as an objective. Over half claim reducing costs (58%) and knowledge management (56%) are widely discussed objectives.

Why have you chosen to implement IoT, or why are planning on doing so?

Objective	Percentage
Improve patient experiences	74%
Support for modern service delivery models (e.g. guaranteed uptime)	72%
Optimize solution performance	64%
Derive actionable business intelligence	62%
Reduce costs	58%
Knowledge management (i.e. connect technicians to specialized information)	56%
Preventative maintenance	51%
Operational efficiency	46%
Regulatory compliance (HIPAA)	37%
Other objectives	0%

What types of devices are you utilizing in your IoT deployment in your healthcare application?

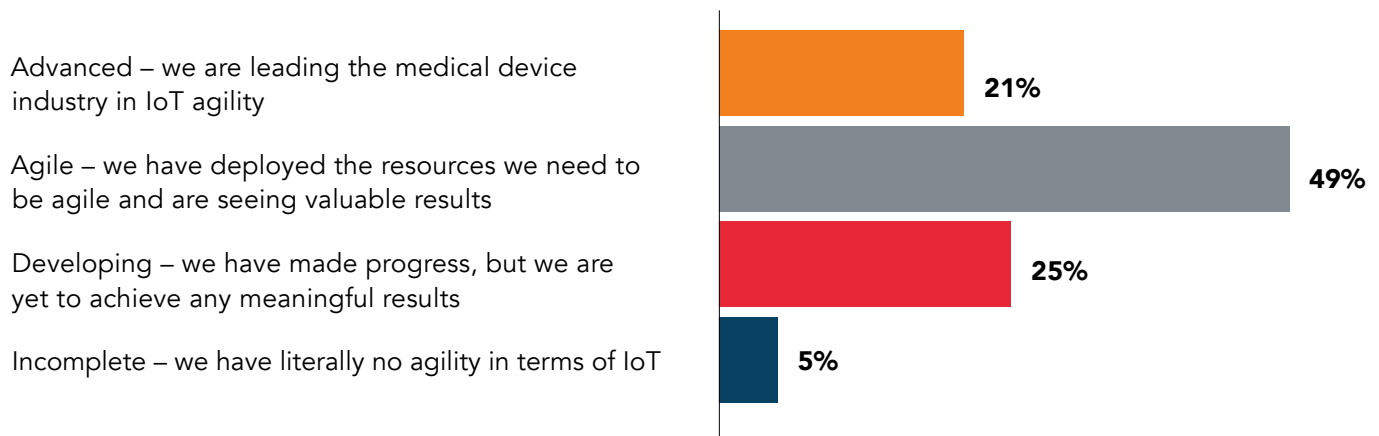| Device	Percentage
Tablets	93%
Wearable sensors	70%
Wearables (such as smartwatches, etc.)	67%
mPers	32%
Other	0%

A slim majority identifies preventative maintenance (51%) as a top reason for implementing IoT. Fewer respondents identify operational efficiency (46%) and regulatory compliance (HIPPA) (37%) as widely discussed reasons for their existing or potential IoT implementations.

Field service teams are delivering on these initiatives using leading industry technologies. Nearly all companies (93%) are using tablets in their IoT deployment within their healthcare applications. Although only 70% of companies use wearable sensors and 67% use wearables (e.g., smartwatches), the majority of companies are using these three technologies.

Far fewer companies are using mPers (32%) in their IoT deployment within their healthcare applications. Respondents did not cite any other types of devices.

How would you rate your company's agility with IoT in the healthcare marketplace—that is, your company's ability to enhance existing patient solutions quickly and efficiently?

Rating	Percentage
Advanced – we are leading the medical device industry in IoT agility	21%
Agile – we have deployed the resources we need to be agile and are seeing valuable results	49%
Developing – we have made progress, but we are yet to achieve any meaningful results	25%
Incomplete – we have literally no agility in terms of IoT	5%

Organizations set customer- and patient-facing initiatives high among their priorities, but many continue to struggle in these areas. Respondents were asked to rate their agility in terms of enhancing existing patient solutions quickly and efficiently. Almost half of respondents (49%) consider themselves agile, meaning they have deployed the resources they need to be agile and are seeing valuable results. Nearly one-quarter of respondents (21%) consider themselves advanced—they are leading the medical device industry in IoT agility.

However, one-quarter of respondents (25%) are only developing their IoT agility—they have made progress, but they are yet to achieve any meaningful results. Five percent claim they have little or no agility in terms of IoT. And despite their customer-facing initiatives and near-universal adoption of technologies, over one-third of companies feel they lack the resources they need to succeed in these areas.

Just as 65% of respondents believe their companies are mature or advanced in their IoT sophistication, 61% claim they have the resources they need for their IoT solutions. However, over one-third of respondents (39%) claim they do not have enough resources available to deploy, manage, and maintain a successful in-house IoT solution that supports all of their core competencies. This aligns with 36% of organizations who lack maturity in their IoT adoption.

61% of Companies

feel they have enough resources available to deploy, manage, and maintain a successful in-house IoT solution that supports all of their core competencies in healthcare.

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What is your biggest challenge in implementing your IoT field service solution?

Researchers asked the 39% of respondents who lack those resources to identify their biggest challenges in implementing IoT field service solutions:

"We feel that IoT for field services is an important factor and we do use it. But we lack the finesse required to create this technology internally… We have better results through partners, which provide end-to-end solutions for our field service operations."

- IT Executive, Enterprise

"We face challenges balancing investment in technology and strengthening the base line of the company."

- Sales Director, Mid-Market

"Operating in the service field using IoT requires a lot of capital investment and is often time consuming. Partnering in this regard makes more sense."

- Finance Team Manager, Enterprise

"Our testing and manufacturing facility is only for the medical products and not for technical aspects such as IoT for field services. This makes it difficult for us to develop and create personal solutions."

- Finance Director, Enterprise

"[The] time factor is the biggest challenge. We [would] require at least two years to create a system wherein we could indigenously develop IoT solutions in-house… The same solutions can be achieved through associate partners within a fraction of [that] estimated time."

- Chief Marketing Officer, SMB

"Support from senior management is the biggest challenge… to be able to make use of IoT in service solutions, it's necessary that all the stakeholders are on one page."

- Marketing Director, SMB

"A single source relationship and global resource management is one IoT-based solution we should be able to bring forth in 2019."

- IT Director, Enterprise

"[We don't have] the talent required to create the solutions we require within our organization. It's feasible for us to develop the same technology through a third party that has the talent available and can provide us [with] immediate assistance as and when required."

- Finance Team Manager, Enterprise

"Our goal is to transform healthcare, not internal services. Technology is the challenge that is holding us back. If we prioritize our goals to work on internal development and IoT solutions, we could implement certain groundbreaking solutions."

- Support Director, Enterprise

These healthcare organizations have minimal resources available to them for deploying, managing, and maintaining a successful IoT solution. Time, internal resources, decision makers, and the bottom line inhibit the development of internal technologies and expertise that could add value to customer-facing initiatives and ROI—if implemented correctly. The existing shortcomings of organizations' solutions highlighted above play out in more specific areas identified in the survey.

All respondents were asked to identify their most common obstacles when utilizing IoT. As stated, managing patient data that lacks the context of a complete health record is among the most common obstacles for 72% of companies when utilizing IoT.
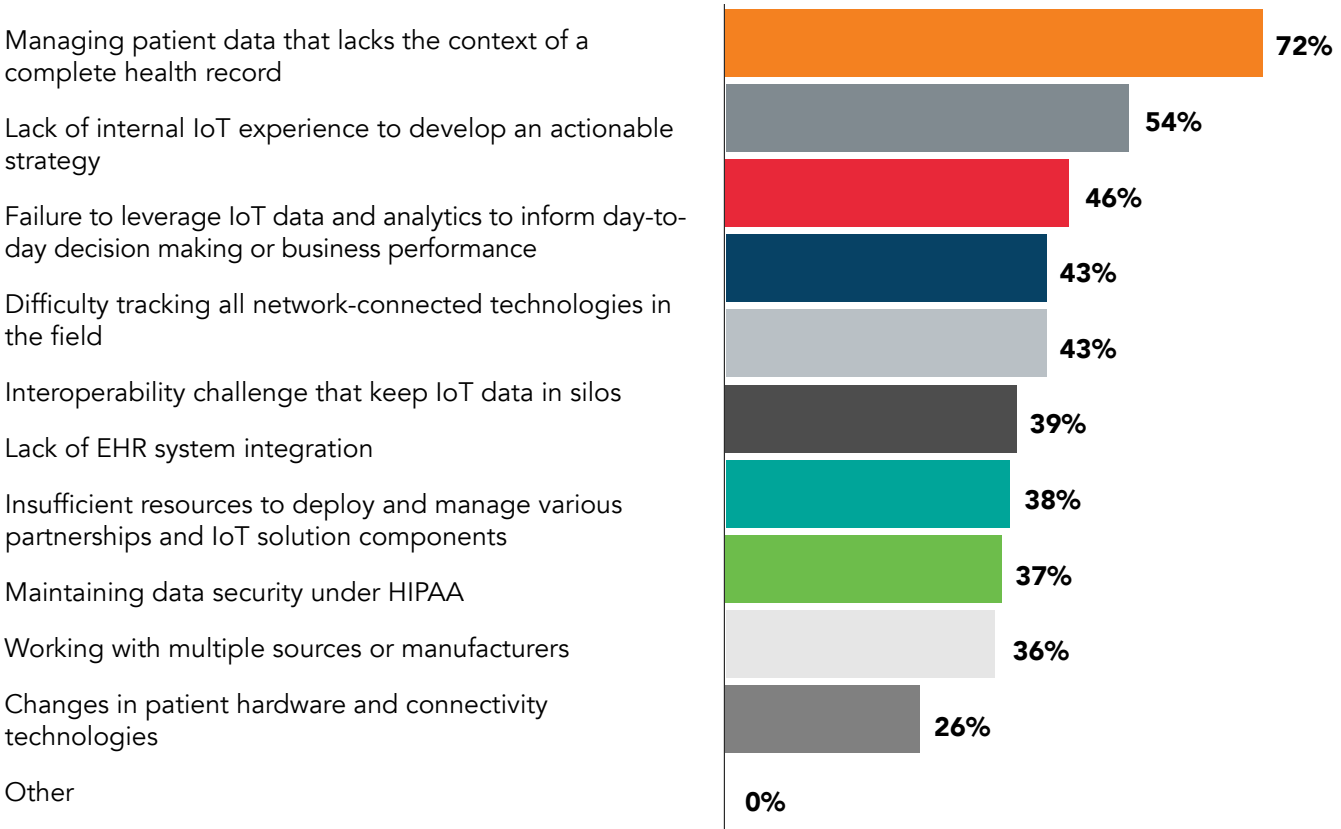
Just over half of respondents (54%) identify a lack of internal IoT experience to develop an actionable strategy among their most common obstacles. This was widely identified in respondents' verbal responses as well.

Similarly, just under half of respondents (46%) claim a failure to leverage IoT data and data analytics to inform day-to-day decision making or business performance is among their most common obstacles.

Fewer companies have difficulty tracking all network-connected technologies in the field (43%) or struggle with interoperability challenges that keep IoT in data silos (43%). In each case, over one-third of companies regularly encounter a lack of EHR system integration (39%), insufficient resources to deploy and manage various partnerships and IoT solution components (38%), and difficulty maintaining data security under HIPPA (37%). Just over one-quarter of respondents (26%) struggle with changes in patient hardware and connectivity technologies.

What are your most common obstacles when utilizing IoT?

Obstacle	Percentage
Managing patient data that lacks the context of a complete health record	72%
Lack of internal IoT experience to develop an actionable strategy	54%
Failure to leverage IoT data and analytics to inform day-to-day decision making or business performance	46%
Difficulty tracking all network-connected technologies in the field	43%
Interoperability challenge that keep IoT data in silos	43%
Lack of EHR system integration	39%
Insufficient resources to deploy and manage various partnerships and IoT solution components	38%
Maintaining data security under HIPAA	37%
Working with multiple sources or manufacturers	36%
Changes in patient hardware and connectivity technologies	26%
Other	0%

Prioritizing a Single Partner for Better Patient Outcomes and ROI

The healthcare IoT ecosystem is highly complex with many different network technologies, hardware and device manufacturers, and application systems to choose from. In their verbal responses, respondents indicate a single source provider can help alleviate these challenges, streamline decision making and application of internal resources, and simplify the complexities of IoT.

Today, most respondents (83%) feel they have the support of their source provider(s) throughout the entire lifecycle of their IoT solutions. Only 17% do not. However, over one-third of companies claim to have difficulty working with multiple sources or manufacturers (36%).

83% of Companies

feel they have the support of their source provider(s) throughout the entire lifecycle of their IoT solution, helping them realize the true value of their IoT deployments.

Multiple Partnerships are an Issue for Organizations Lacking Internal Resources

36% of organizations struggle to work with multiple sources

39% of organizations cannot deploy or manage various partnerships and IoT solution components

As it turns out, almost one-quarter of respondents (23%) are currently working with a single source provider—e.g., manufacturers of network technologies, hardware, and devices—as part of their IoT operations.

Twenty-eight percent of respondents have only 2 – 5 source providers, indicating the majority of organizations represented in the study have five source providers or fewer.

Most other respondents have either 6 – 10 (14%) or 10 – 25 (18%) source providers, though 7% have 26 or more. Ten percent of respondents claim the question does not apply to them.

Researchers took a closer look at the segment of respondents working only with a single provider. Among that group, 83% claim it has helped them improve patient experiences and increase ROI from their IoT initiatives in medical field service—two of the top initiatives identified in the study.

83% of Companies

says that working with a single source provider has helped them improve patient experiences and increase ROI from their IoT initiatives in medical field service.

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As part of your IoT operations, how many different manufacturers of network technologies, hardware, and devices are you working with at this time?

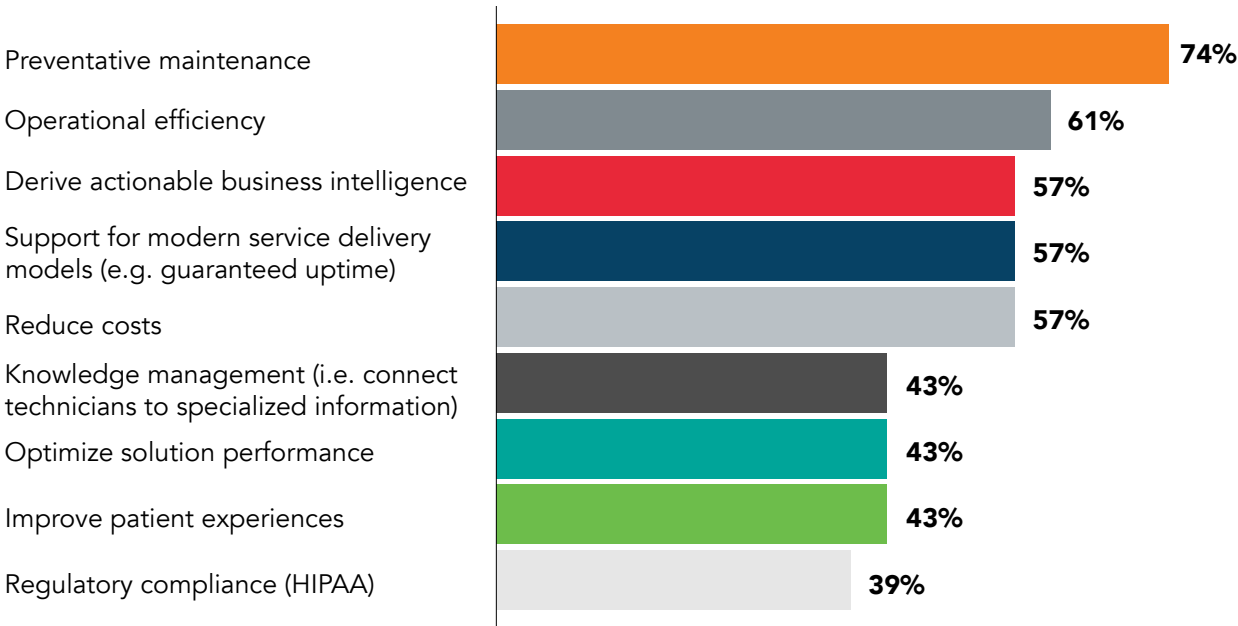|	
We work with a single source provider	23%
2-5	28%
6-10	14%
10-25	18%
26+	7%
This doesn't apply to us	10%
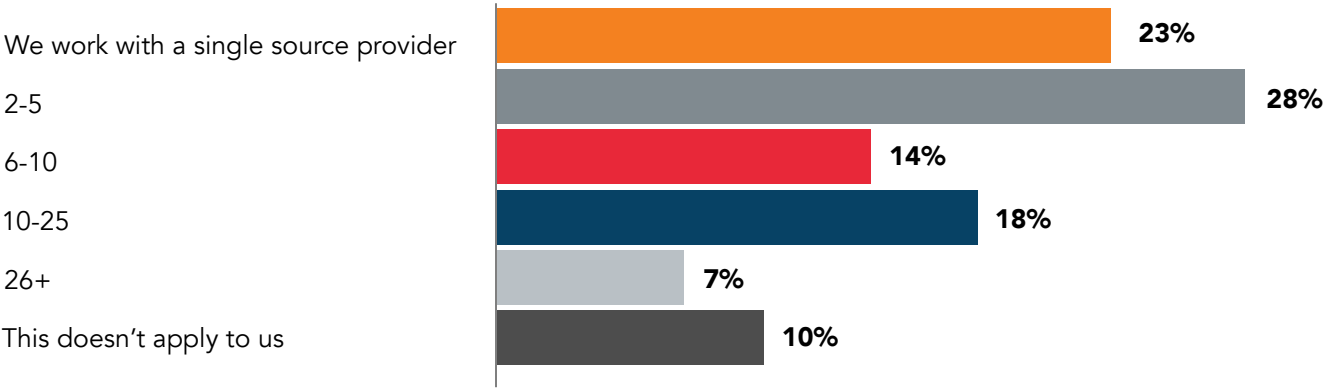
Additionally, 74% of respondents in that group—those already working with a single source provider—claim they have achieved preventative maintenance as a result of working with a single source provider for their IoT operations. Another 61% of respondents have improved operational efficiency in this way.

Most of these respondents have derived actionable business intelligence (57%), gained support for modern service delivery models (57%), and reduced costs (57%) as well.

In each case, 43% of these respondents have improved how they connect technicians to specialized information via knowledge management, optimized solution performance, and improved patient experiences. Thirty-nine percent of these respondents claim they have improved regulatory compliance with HIPAA as well.

Which of the following objectives has working with a single source provider for your IoT operations helped you achieve?

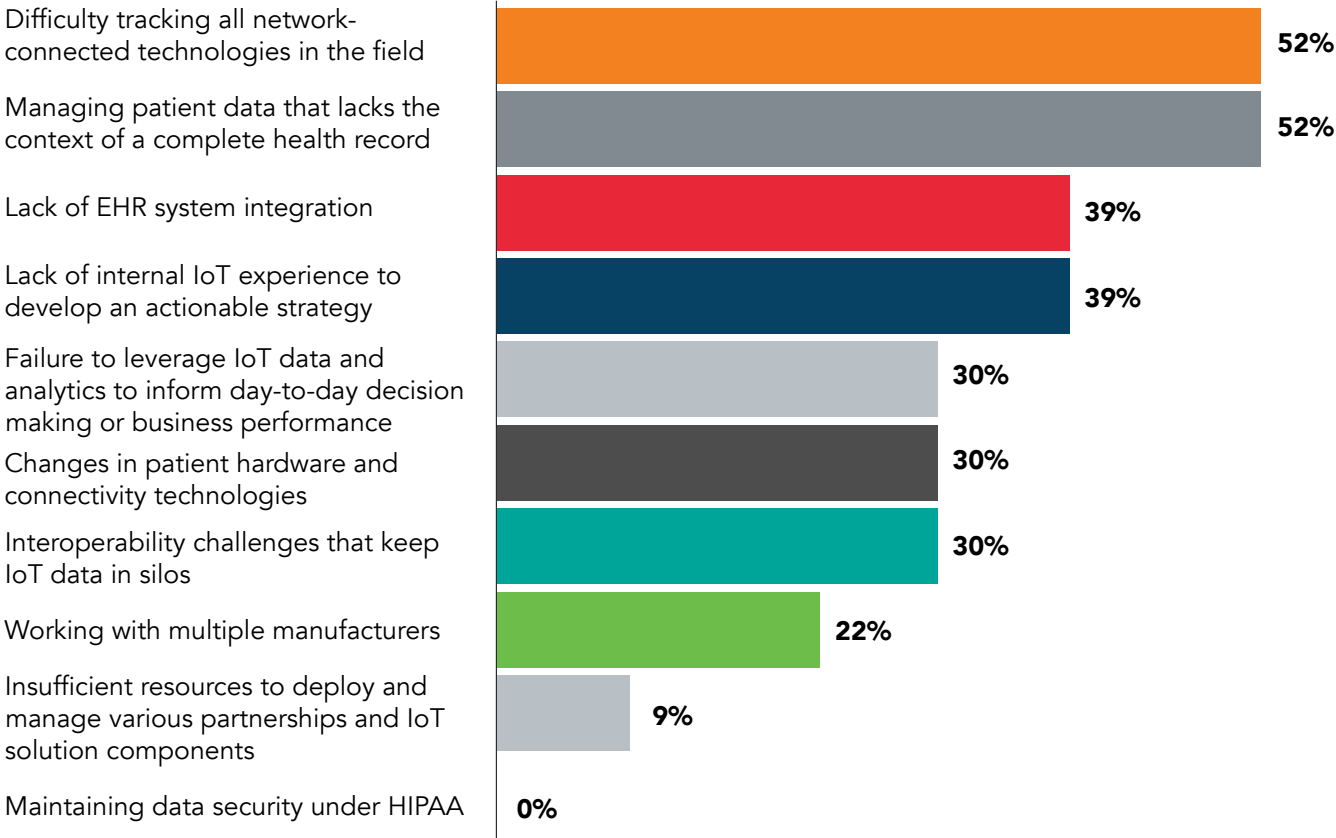| Objective	Percentage
Preventative maintenance	74%
Operational efficiency	61%
Derive actionable business intelligence	57%
Support for modern service delivery models (e.g. guaranteed uptime)	57%
Reduce costs	57%
Knowledge management (i.e. connect technicians to specialized information)	43%
Optimize solution performance	43%
Improve patient experiences	43%
Regulatory compliance (HIPAA)	39%

Also within that group, most have overcome difficulties tracking all network-connected technologies in the field (52%), and most are better managing patient data that lacks the context of a complete health record (52%)—a major roadblock for most medical field service organizations in general.

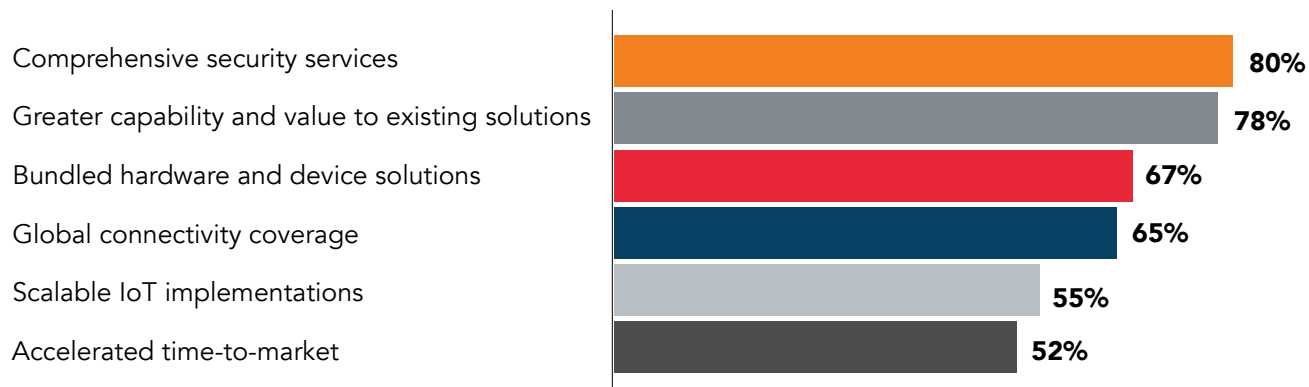Fewer companies are overcoming their lack of EHR system integration (39%) or their lack of internal IoT experience to develop an actionable strategy (39%).

In each case, 30% of respondents are now leveraging IoT data and data analytics to inform day-to-day decision making or business performance; better managing patient hardware and connectivity technologies; and overcoming interoperability challenges that kept IoT data in silos.

Which of the following obstacles has working with a single source provider for your IoT operations helped you overcome?

Obstacle	Percentage
Difficulty tracking all network-connected technologies in the field	52%
Managing patient data that lacks the context of a complete health record	52%
Lack of EHR system integration	39%
Lack of internal IoT experience to develop an actionable strategy	39%
Failure to leverage IoT data and analytics to inform day-to-day decision making or business performance	30%
Changes in patient hardware and connectivity technologies	30%
Interoperability challenges that keep IoT data in silos	30%
Working with multiple manufacturers	22%
Insufficient resources to deploy and manage various partnerships and IoT solution components	9%
Maintaining data security under HIPAA	0%

What are the top qualities and/or capabilities you look for or would you look for when sourcing a single IoT partner for all of you medical field service operations?

Quality/Capability	Percentage
Comprehensive security services	80%
Greater capability and value to existing solutions	78%
Bundled hardware and device solutions	67%
Global connectivity coverage	65%
Scalable IoT implementations	55%
Accelerated time-to-market	52%

As respondents indicated, organizations struggle to justify investments in internal teams and technology resources to create their own viable IoT models. The top qualities and capabilities companies look for in a single IoT partner indicate a single partner could be a means to overcome those struggles.

Among all respondents, the vast majority claim comprehensive security services (80%) is among the top qualities or capabilities they look for or would look for when sourcing a single IoT partner for all of their medical field service operations. Seventy-eight percent prioritize adding greater capability and value to their existing solutions in this way.

Most respondents consider bundled hardware and device solutions a top priority (67%), as well as global connectivity and coverage (65%). Just over half of respondents prioritize scalable IoT implementations (55%) when considering sourcing a single IoT partner for all of their medical field service operations. Another 52% prioritize accelerated time to market.

Now, 75% of companies are either considering adopting or have already partnered with a single source provider to help improve their patient experiences and increase ROI from their IoT in medical field service.

Further segmentation and analysis of the data shows that among the companies currently working with more than one source provider, 52% are considering the adoption of a single provider to achieve these same goals.

75% of Companies

are considering adopting or have already partnered with a single source provider to help them improve patient experiences and increase ROI from their IoT initiatives in medical field service.

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Conclusion

Researchers' final question to respondents was to predict how their IoT solutions would evolve to greater improve the patient experience, whether directly or indirectly. As noted by the excerpts received from respondents below, patient outcomes are increasingly a top priority in the healthcare industry.

Medical field service organizations' top priorities—patient outcomes, uptime, and operational efficiency—and many of their key pain points—managing patient data, tracking network technologies, and lack of internal IoT experience—can be realized or overcome with a single source IoT provider. Working with a partner with deep IoT industry expertise helps to accelerate time-to-market and ensure scalable IoT implementations. It relieves organizations of investing in required technology and expertise that many decision makers cannot justify. Finally, working with a single source partner can help medical field service organizations not only optimize solution performance for both customers and patients, but also drive actionable business intelligence from their IoT solutions.

"Our IoT solution is evolving—not only to help patients, but also [to] improve internal operations, which will ultimately improve patient experiences."

- Marketing Director, Enterprise

"Oncology remains our primary field of development. Patient experiences will be highly improved using early detection methodologies through connected devices, data mining, and medical health data integration."

- Marketing Director, Enterprise

"We already have a dedicated IoT operating system in place, which is capable of connecting all machines in the network to help in consolidation of resources while ensuring uptime. We will be expanding operations to gain market share in the upcoming years."

- Sales Director, Enterprise

"With post-surgery care, we are seeking to use IoT to track patients' health from home and report it directly to their doctor. This [helps] the doctor to chart the recovery plan according to the readings obtained."

- Support Director, Enterprise

About the Authors

KORE

KORE Wireless Group ("KORE") is a pioneer, leader, and trusted advisor delivering transformative business performance. We empower organizations of all sizes to improve operational and business results by simplifying the complexity of IoT. Our deep IoT knowledge and experience, global reach, purpose-built solutions, and deployment agility accelerate and materially impact our customers' business outcomes.

Learn more at www.korewireless.com

FIELD SERVICE MEDICAL

Field Service Medical is the only event that brings together 200+ medical device service and support executives, thought leaders, and innovators for a collaborative debate on the ever-changing regulatory environment, medical device connectivity, service marketing and brand differentiation, talent acquisition and retention, and the latest technologies you need to know about to keep ahead of the competition in an over-saturated market.

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