THE 2024 FIELD SERVICE BENCHMARK REPORT: INDUSTRIAL MACHINERY EDITION

OEMs are facing challenges to their profit margins due to global competition, price deflation, and rising commodity costs. To overcome these issues, they are adopting data-driven strategies and advanced service offerings, such as predictive maintenance and real-time monitoring, to boost uptime, productivity, and customer loyalty.

Industrial machinery organizations are being called to adopt new and innovative approaches to manage their workforces, customer experiences, and business operations. Dive in to understand today's service landscape, see how your organization stacks up to industry benchmarks, and learn how top companies maintain a competitive edge using Generative AI, Shift Left, and more.

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INTRODUCTION

Original Equipment Manufacturers (OEMs) in the industrial machinery sector are grappling with several daunting challenges, including heightened global competition, price deflation, and escalating commodity costs. These factors are significantly eroding the profit margins traditionally associated with product sales. In response to these pressures, OEMs within this sector recognize the critical importance of data-driven strategies and enhanced service offerings to maintain their competitive edge.

This means going beyond traditional break-fix services and improving business outcomes for their end customers.

This transformation is driven by data collection and analysis, allowing for more accurate predictions of maintenance needs and operational efficiencies. By adopting robust data analytics practices and the tools to facilitate them, OEMs can preempt equipment issues with predictive maintenance, reducing costly downtime. Furthermore, OEMs are expanding their services to include real-time monitoring, remote diagnostics, lifecycle management, and efficiency consulting. The comprehensive service packages ensure higher uptime and productivity and strengthen client relationships, enhancing loyalty and long-term engagement.

In 2024, as the sector's competitive landscape intensifies, the integration of Generative AI has become critical. Once a novel option, this technology is now essential for reducing operational costs, improving service quality, and managing complex supply chains. Generative AI streamlines processes and automates decision-making, enabling OEMs to deliver better results and extract more value from their AI investments.

In addition to predicting equipment failures, scheduling maintenance, and optimizing operations, Generative AI plays a critical role by upskilling workforces in the face of a tight labor market. It facilitates rapid training and skill enhancement through customized programs and real-time assistance, increasing workforce efficiency and productivity. In supply chain management, AI's predictive capabilities enable OEMs to foresee supply needs, anticipate potential disruptions, and adjust their strategies accordingly, thus ensuring a smoother operation and better resource allocation.

With its vast potential, companies are increasingly eager to explore and integrate Generative AI into their operations.

Shift Your Organization Forward

Understanding your organization's strengths and weaknesses is crucial. Use this report as a guide to gain that understanding.

- Discover how your organization measures against industry benchmarks for service KPIs (Key Performance Indicators).

- Pay attention to First Time Fix Rates and successful case resolution rates, as organizations often overlook these.

- Dig deeper into lower-performing employees' impact on service outcomes.

- Learn to measure performance accurately—by looking at your entire data landscape using Generative AI tools and strategies. **Pro tip:** Consider where the **Shift Left Method** fits into your service strategy. This approach uses your data to spot opportunities to move service resolutions closer to the customer.

- Use those findings to set goals and drive measurable improvements

And best of all, you can start wherever you are right now.

KEY FINDINGS

In our analysis of trends across industrial machinery companies, we learned:

KPIS

- On average, some KPIs, like First Time Fix Rates, are generally stable across various industries. However, the performance differences between heroes and challengers remain significant in bottom-performing organizations—for example, their First Time Fix Rate is just **56%** compared to **86%** for the top-performing organizations.

- Diagnostic time continues to impact industrial machinery service organizations, primarily due to complex documentation and multiple revisions within manuals. As a result, many organizations need help locating asset information readily.

  - The median Resolution Time is **almost two weeks** in bottom-performing organizations, but it is about **three days** in top-performing organizations.

  - Top-performing manufacturers provide tools and training to dealers so that dealers can spend less time diagnosing issues. This frees up dealer capacity, allowing them to spend more time fixing the problems that come through their doors.

- The skills gap also presents a challenge.

  - In top industrial machinery companies, bottom performers cost **20% more** than the highest. However, the lowest-performing organizations have the most expensive workforce gap, with their bottom performers costing **128% more** than the top-performing employees.

DATA

There is a significant opportunity for organizations to gain more visibility into their performance and spot areas of opportunity.

- Industrial machine companies typically have disorganized and imperfect customer data. It's generally scattered across multiple ERPs, CRM systems, and locations. The data source can also cause issues—for example, warranty data provided by dealers often lacks visibility into the entire service history of problems, making it challenging to get insights that improve performance.

- Additionally, multiple stakeholders are involved in handling the assets throughout their lifecycle. For example, repair centers offer repair services, warehouses dispatch spares, and field technicians examine and attend to the product. Customers reach out to contact centers belonging to different product value chain entities.

- For these reasons and more, OEMs are typically unable to optimize post-sales services and value due to the effort required to consolidate, clean up, and enhance customer and product data. For service delivery plans to succeed and scale, teams must be able to utilize quality data across the entire organization.

HOWEVER, THERE ARE OPPORTUNITIES FOR INDUSTRIAL MACHINERY SERVICE TEAMS TO IMPROVE.

- **Take a deeper look at existing data**. Industrial machinery organizations should examine their data more thoroughly. By analyzing data from all aspects of their operations, including customer interactions, equipment performance, and field service activities, companies can identify patterns and trends that will help them make more informed business decisions. They can also utilize AI data collection and processing tools, which allows for accurate and up-to-date information on equipment performance and service needs. By using these tools, teams can better prioritize tasks and address potential issues before they become more significant problems.

- **Emphasize training and building technical expertise as technology advances.** The effectiveness of these technologies hinges on personnel's ability to communicate, problem-solve, and adapt to rapid changes. This trend recognizes the dual need for advanced technical training and the cultivation of soft skills such as leadership, communication, and empathy.

- **Embrace the connectivity and serviceability trends**, especially since equipment complexity is rising.

- **Implement AI tools built for servicing complex machinery**, offering insights and problem-solving based on a granular understanding of your business.

THE GOOD NEWS: The required tools already exist and don't necessarily need to be custom-built.

Read on to see how your org stacks up using the benchmarks below, and learn how to leverage your data and AI tools to become best-in-class.

How We Compiled the Data

Aquant gathered and analyzed anonymized data across leading industrial machinery companies.

40 organizations

More than **5 million** work orders spanning nearly **1.3 million** assets

Over **73,000** technicians

Nearly **$2.5 billion** in service costs

An average of **3.2 years of service data** per company

Note: Data from OEMs with and without dealer networks are included within this set.

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We view Aquant as a 'search engine on steroids.' It's designed to streamline the vast amounts of manuals and service documents into an accessible format, enabling technicians to find what they need quickly. Additionally, it provides resources for further exploration if more in-depth knowledge is required.

While searching for a partner, Aquant stood out because of its compelling blend of in-house technician knowledge with advanced AI capabilities. This strategic collaboration enables us to achieve enhancements we couldn't have accomplished independently.

Clayton Bruce
Group Product Manager

KOHLER.

WATCH NOW ▶

SERVICE PERFORMANCE

First Time Fix Rate

First Time Fix Rate is one of the most popular metrics for workforce measurement. It indicates how often a technician can fix an issue on the first try.

FIRST TIME FIX RATE (MEASURED AT 30 DAYS)

- Bottom 20% of Orgs
- Median Across All Companies
- Top 20% of Orgs

56% 72% 86%
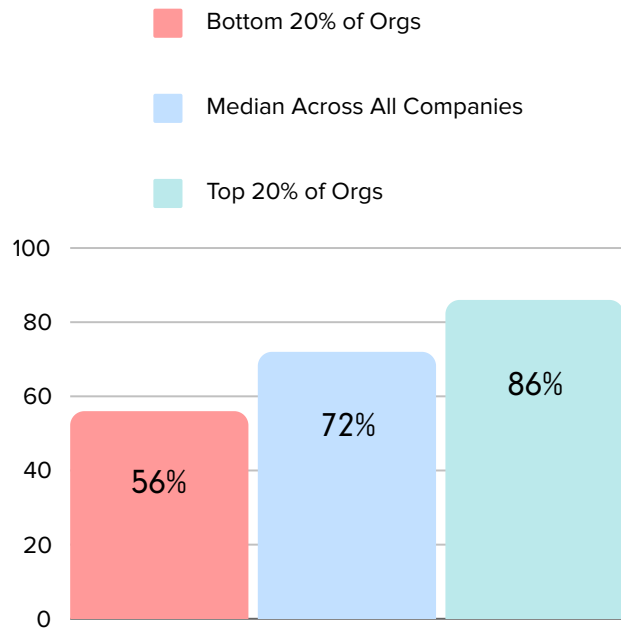
Gap Between Top & Bottom Performing Organizations

COMPARING FIRST TIME FIX RATES (MEASURED AT 30 DAYS) VS. THE EMPLOYEE SKILLS GAP OF AN ORGANIZATION

First Time Fix Rate

Top vs. Bottom Performers Diff (%)
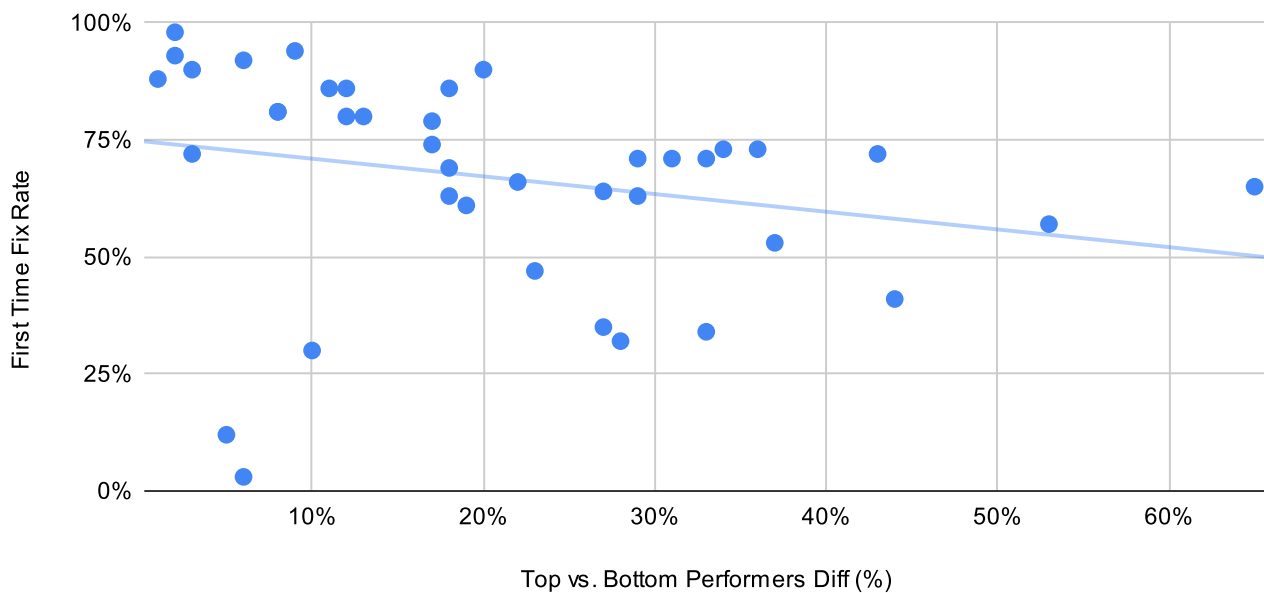
Key Observations

Best-in-class organizations, in the top left, have:

- High First Time Fix Rates.
- Better knowledge equity among teams.
- Lower service costs.

TIP

Examine your First Time Fix Rate from different points of view to determine your next steps.

- **Workforce Angle:** Assess technician performance, honing in on those needing improvement. Focus on low-performing workers with the highest number of events or costs.

- **Observation Angle:** Check out observations that require repeat customer visits. Track low First Time Fix Rates and frequent occurrences.

- **Customer Angle:** Investigate which customers are at risk and why. Look at customers with poor experiences, understand which KPIs are the culprit, and dive into why those KPIs changed over time

Customer Experience Gap

The **Customer Experience Gap** refers to the difference between what customers anticipate and what your organization delivers. Our analysis indicates that companies that measure the First Time Fix Rates using **anything less than 30-day windows** create a significant gap in customer experience, leading to frustrating customer experiences. **The key takeaway:** relying on a few metrics cannot provide the whole picture, and examining the entire experience is crucial.

Customer Experience Curve

- Bottom 20% Companies
- Benchmark
- Top 20% Companies
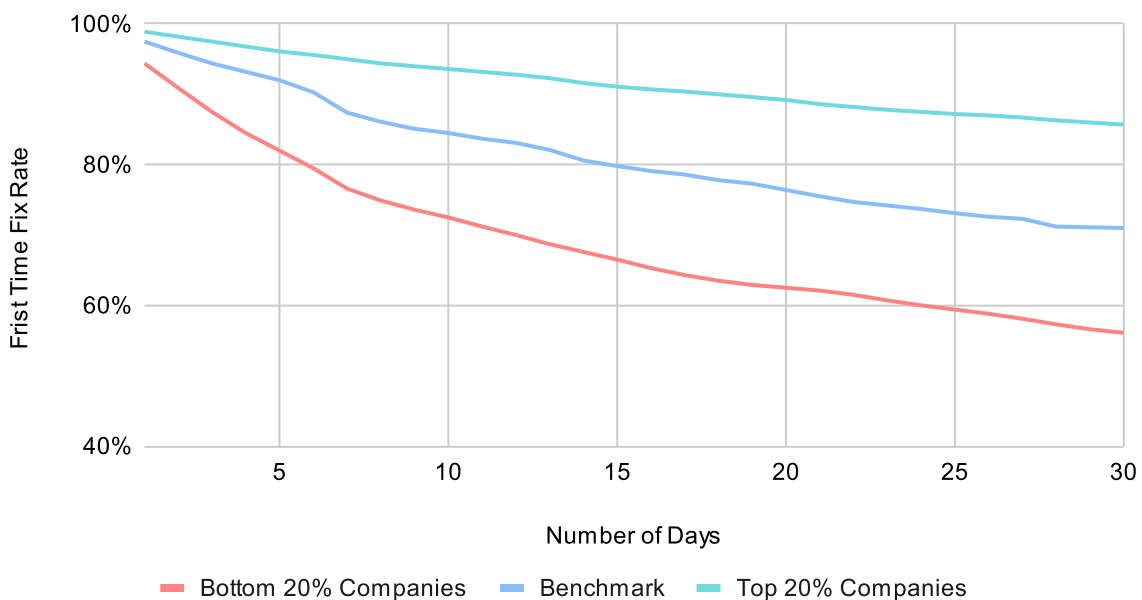
Key Observations

Monitoring First Time Fix Rates over intervals shorter than 30 days can lead to overestimating success and underestimating Resolution Costs. This discrepancy happens when an organization fails to aggregate multiple tickets addressing the same problem.

Moreover, the overall customer experience should always be a priority. The need for repeated service interventions, even for distinct issues, detrimentally affects the customer's perception of your service quality.

For industrial machinery OEMs, a failed first visit leads to **three visits overall** to resolve the issue and adds **11 extra days** to the Resolution Time.

Resolution Time

Resolution Time measures the time it takes to resolve a customer issue. Typically, it's the time between the case creation and closure dates.

Key Observations
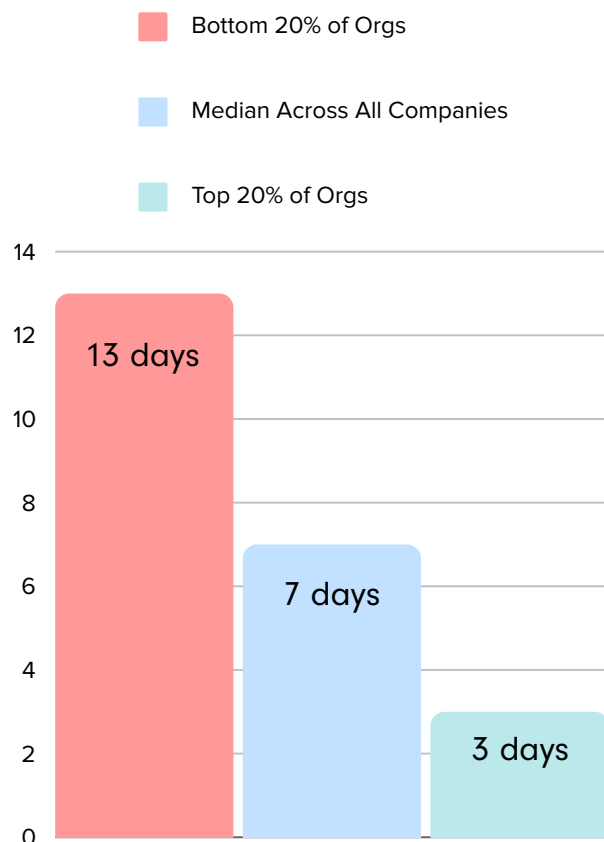
Bottom-performing companies take over four times longer to resolve an issue than their top-performing counterparts.

TIP

Set a goal of low **Resolution Time** rates. Benefits include longer machine uptime, happier customers, fewer repeat visits, and higher revenues.

RESOLUTION TIME (DAYS)

- Bottom 20% of Orgs
- Median Across All Companies
- Top 20% of Orgs

13 days

7 days

3 days

Using technology, we can take somebody new to service and make them perform like they have 30 years of experience.

Josh Orr
Product Support
Services Manager

JOHN DEERE

▶ PLAY

AI assistance guides less-experienced people to perform similarly to their higher-skilled counterparts. Everyone, including customers, can independently troubleshoot issues, which helps with uptime. If they can handle the problem themselves using AI assistance, it helps them fix it quickly without the need to call a technician, especially if the required part is nearby or not needed for the repair.
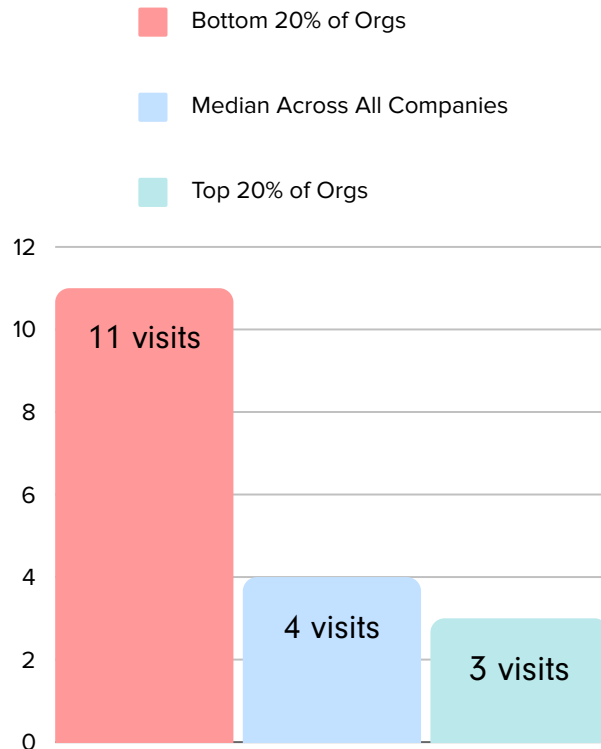
Number of Visits Per Asset Per Year

Number of Visits Per Assets Per Year measures the frequency of maintenance checks or service visits performed on a specific asset within a year. It is an essential KPI for measuring uptime—and is particularly useful for industries that heavily rely on the performance and reliability of physical assets. It helps organizations understand the frequency of attention required for each asset, which can reveal the asset's condition, maintenance efficiency, and overall operational reliability.

Key Observations

The challenge of repeat visits, often seen as indicators of service lapses or ongoing issues, presents a significant setback for service-driven businesses. This can be due to:

- Rising expenses associated with parts, labor, and travel.
- A demotivated frontline workforce, which could lead to higher staff turnover, disengagement, and a decline in service standards.
- A less efficient team that manages fewer customer cases.

NUMBER OF VISITS PER ASSET PER YEAR

Bottom 20% of Orgs

Median Across All Companies

Top 20% of Orgs

Bar chart showing:
- Bottom 20% of Orgs: 11 visits
- Median Across All Companies: 4 visits
- Top 20% of Orgs: 3 visits

Y-axis ranges from 0 to 12.

THE DATA CHALLENGE

Solving Your Service Challenges Starts With Complete Data

Like many other service sectors, companies with dealer-based service models usually need more data visibility, mainly because they base many business decisions on warranty data. However, warranty data presents a false front and paints a partial picture. It can help spot trends but doesn't tell you everything you need to know about your service performance.

Here's what we mean: Traditionally, OEMs were focused on manufacturing the product, and service was not seen as a profit center (Wipro). Due to a low focus on service, install base data such as customer details, asset details, location, equipment age, site data, service, and life cycle data have either not been captured or are incomplete and error-ridden. Additionally, OEMs usually only get warranty data from dealers, which is typically immeasurable, inaccurate, and incomplete. For example, an organization can only accurately measure the First Time Fix Rate by summarizing all claims. Dealers may only submit claims that will get approved, and many OEMs will not pay for a failed first visit. There needs to be more connection between dealers and OEM data.
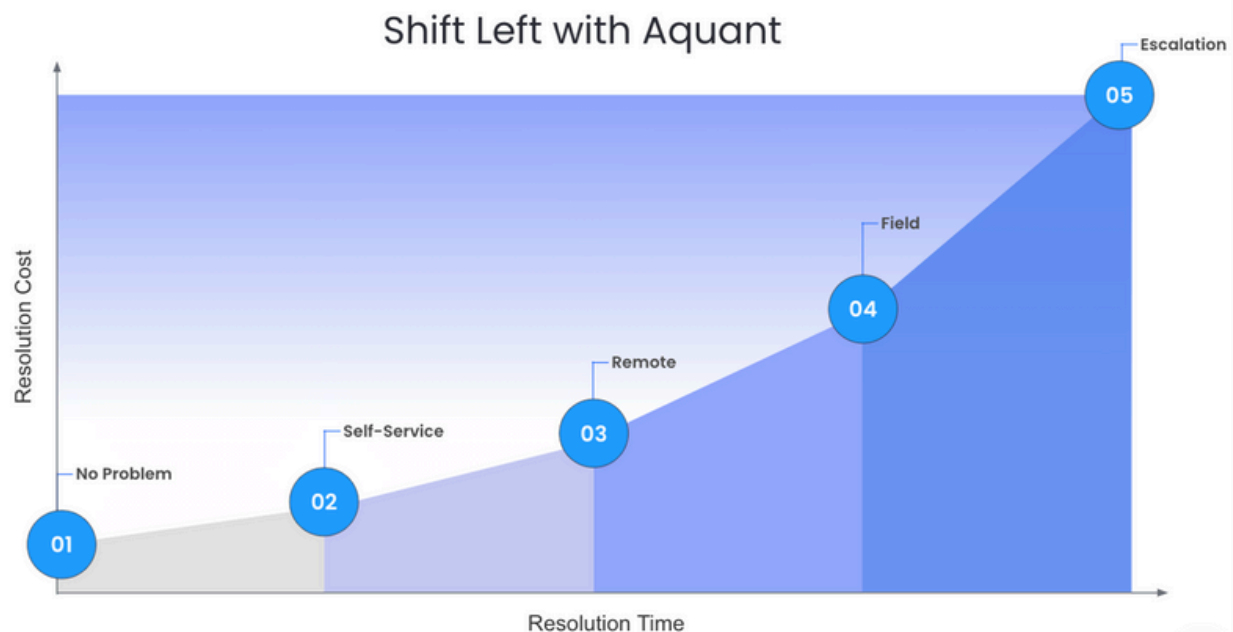
WITH COMPLETE DATA, YOU CAN BEGIN TO ADDRESS OTHER ESSENTIAL SERVICE ISSUES, SUCH AS:

- **Providing adequate training and upskilling:** Maintaining a uniformly high level of technical expertise and training across all dealers is difficult. New products or technologies may only be supported effectively if dealers' staff are adequately trained.

- **Increasing capacity and growing install bases:** OEMs have many machines to manage and repair—a single OEM can have hundreds of machines. This gets increasingly complicated if you're a servicer or dealer working on multiple brands. Additionally, many dealers are stuck on solving warranty claims, but the revenue generator is service events. This entire market is up for grabs, so if OEMs and dealers can become more efficient, they can focus on completing more high-revenue jobs. Lastly, the whole service chain is impacted when issues cannot be solved independently, which also ties into Resolution Time and overall customer experience.

- **Customer-relationship management:** Ensuring all dealers provide the same top-notch service quality and customer experience is challenging. Inconsistent service standards among different dealers can damage the brand's reputation. Depending on the dealer they visit, customers might experience varying satisfaction levels, affecting their loyalty to the brand. **Negative experiences at one dealer can lead to losing customers across the entire brand.**

Shift Left: A Strategy to De-Escalate Service at Every Stage

This can involve figuring out which problems technicians solve on the road can be fixed from a distance, how simple customer questions can be answered without needing to call in, or how to reduce escalations. The goal of Shifting Left is to make solutions more accessible to the customers so they get what they need without having to reach out to the service department unless necessary.

Addressing these challenges requires the right AI tools and strategies. Savvy industrial machinery companies are adopting comprehensive and personalized AI tools and the **Shift Left Approach** to solve issues quickly and effectively. Simply put, it's about using the right tools and strategies to examine your company's data and find ways to impact the bottom line positively.

Shift Left with Aquant

Resolution Cost (vertical axis) / Resolution Time (horizontal axis)

- 01 — No Problem
- 02 — Self-Service
- 03 — Remote
- 04 — Field
- 05 — Escalation

TIP

Tip: Shift your service delivery left to reduce repeat visits and increase First Time Fix Rates. **Get started in six easy steps!**

At Aquant, we help our clients identify areas where they can **Shift Left and improve the resolution process** by:

- Reducing escalations, improving First Time Fix Rates, preventing issues from becoming more extensive than needed, and aiming for a smooth fix right from the start.

- Leveraging AI tools to get more thoughtful about diagnosing problems, ensuring the right solutions are applied faster.

- Tackling the habit of **parts shotgunning**, or blindly swapping out parts—a common tactic among less experienced techs

- Using data to figure out areas of improvement, like which onsite visits could have been resolved with a quick remote fix, saving time and resources.

- Reimagining how tasks are approached, decisions are made, and problems are solved to make everything more streamlined and customer-friendly (this could mean training call center teams to handle troubleshooting directly or using a blend of key performance metrics to track success!)

- Ensuring customers can easily find the information they need to fix issues independently through **Aquant's Service Co-Pilot**.

- Helping expert technicians share their knowledge and tips with the newer folks, boosting the team's overall skill level.

ADDITIONAL RESOLUTION COSTS VS. COST PER WORK ORDER (SERVICE EVENT)

- Bottom 20% of Orgs
- Median Across All Companies
- Top 20% of Orgs
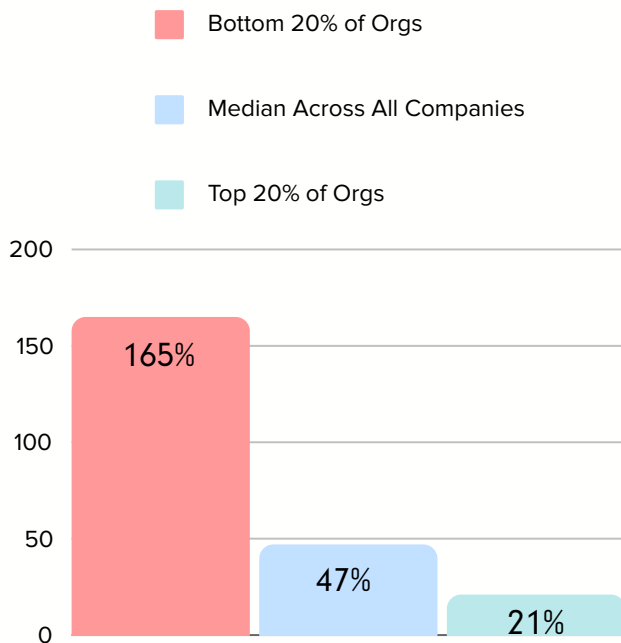
On average, if a technician doesn't solve the issue on the first visit, the Resolution Cost is **47% more** than the Cost Per Work Order.

Cost Per Work Order measures rates for materials, travel, labor costs, and more per job. **Resolution Cost** measures the dollar amount needed to close a service ticket, considering multiple visits and truck rolls, various parts, and labor costs.

THE WORKFORCE SKILLS GAP

The data shows that the skills gap—also known as the **knowledge gap**—is one of the most significant barriers that prevent companies from achieving their business goals.

The skills gap refers to the difference between the skills an employer expects their employees to have and the skills that the employees possess. This disparity exists for many reasons: for example, some employees may lack years of experience, while others may not have been adequately trained.

The skills gap is also expensive in industrial machinery service organizations. The lowest-performing employees can cost **128% more** than the top-performing employees.

## Where does your organization fall?

If the cost gap between your top and bottom performers is:

- **Green: You're on track!** There are opportunities to transfer workforce knowledge across all employees, but you are among the highest-performing organizations.

- **Blue: Dig deeper!** At this rate, the cost differences significantly impact your bottom line, resulting in moderately uneven customer service. There is an opportunity to make substantial changes in your service delivery strategy.

- **Red: It's time to make changes!** Your workforce has an enormous cost gap. If you dig deeper into organizational-wide performance, you will likely find chronic issues such as substandard First Time Fix Rate, parts shotgunning, poor or uneven customer service experiences, low Net Promoter Scores, and higher-than-average employee dissatisfaction and turnover rates.

TIP

Find ways to **democratize knowledge** and give everyone the best answers to every service challenge. These methods reduce onboarding time for new employees and upskill every workforce member.

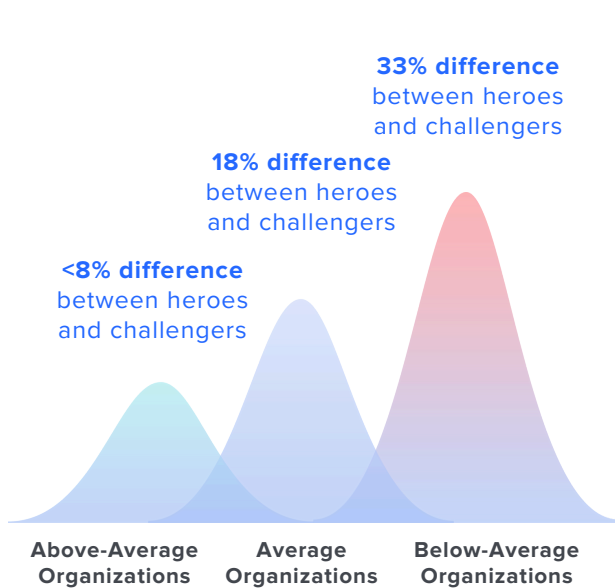**0-31%**   **Between 32%-93%**   **94%+**
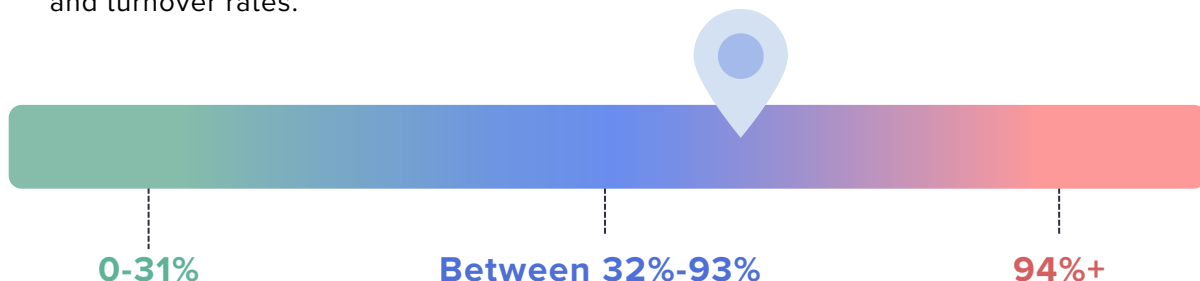
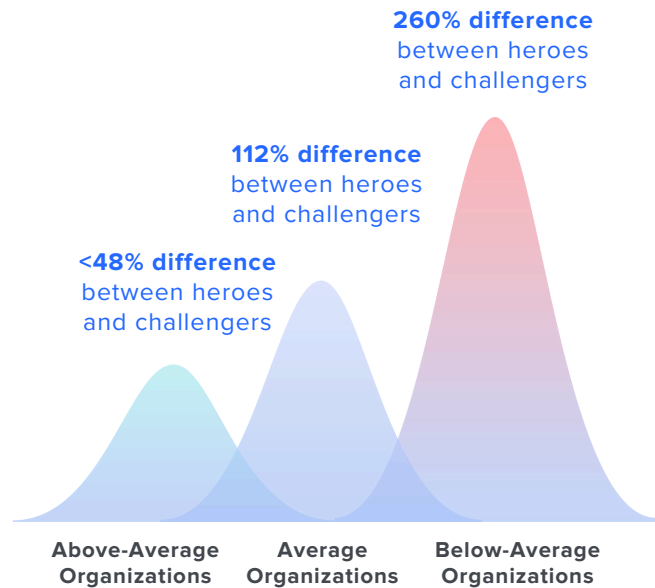# A Snapshot of High-Performing and Low-Performing Organizations

Higher-performing organizations have a better distribution of knowledge among employees.

Note: Above-average organizations have the lowest skills gap,
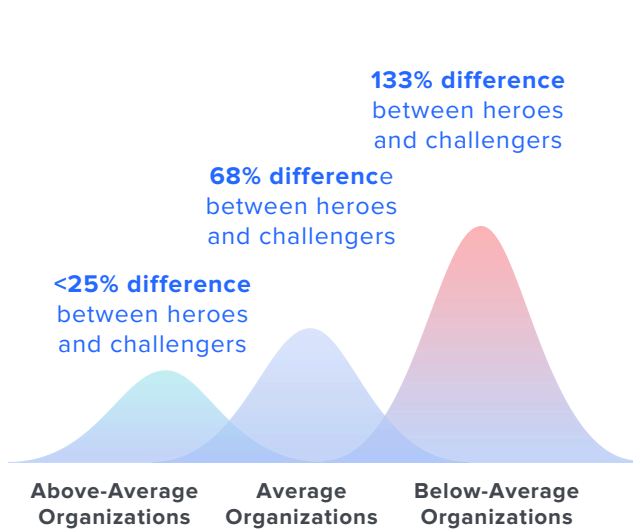while below-average organizations have the widest ones.

First Time Fix Rate
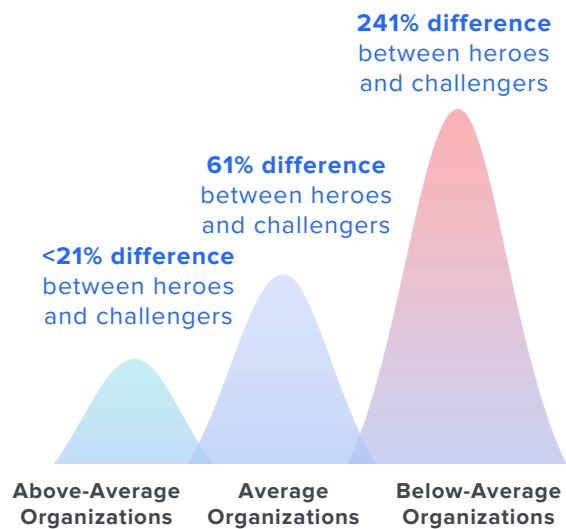(in Percentage Points)

33% difference
between heroes
and challengers

18% difference
between heroes
and challengers

<8% difference
between heroes
and challengers

Above-Average Organizations   **Average Organizations**   **Below-Average Organizations**

of Visits per Asset

260% difference
between heroes
and challengers

112% difference
between heroes
and challengers

<48% difference
between heroes
and challengers

Above-Average Organizations   **Average Organizations**   **Below-Average Organizations**

Resolution Time

133% difference
between heroes
and challengers

68% difference
between heroes
and challengers

<25% difference
between heroes
and challengers

Above-Average Organizations   **Average Organizations**   **Below-Average Organizations**

Resolution Cost

241% difference
between heroes
and challengers

61% difference
between heroes
and challengers

<21% difference
between heroes
and challengers

Above-Average Organizations   **Average Organizations**   **Below-Average Organizations**
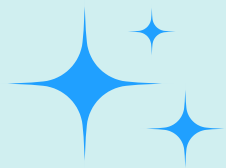
Key Observation

Best-in-class organizations have found ways to bring bottom performers closer to expert-level workers in all KPIs.

It pays to empower your team!
If everyone at industrial machinery companies had the knowledge and skills to perform like the top 20% of the workforce, **service costs would be reduced by 28%**.

A Snapshot of Individual Technicians

See performance trends across the entire workforce on an individual level.

HERO

Median First Time Fix Rate: 78%

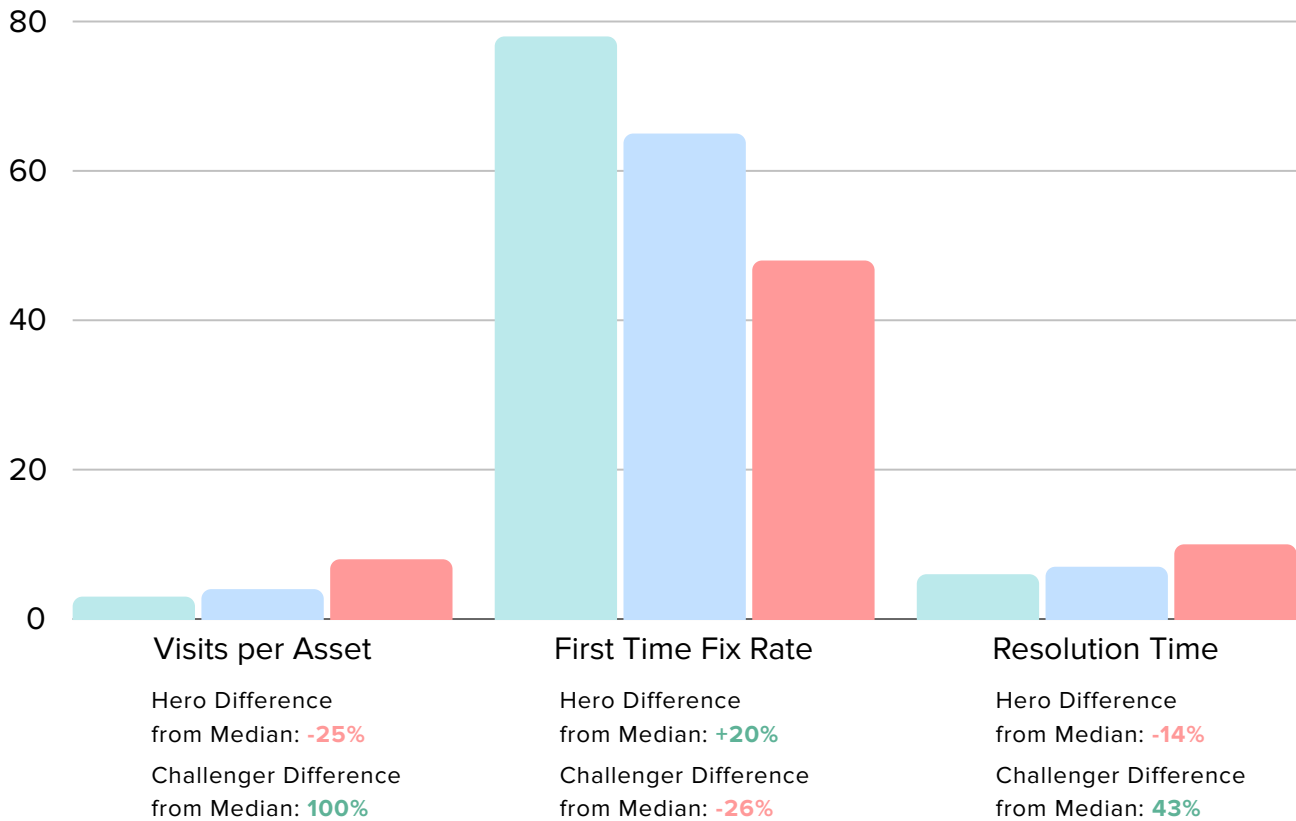**Median Resolution Time:** 6 days

Median # of Visits Per Asset Per Year: 3

CHALLENGER

Median First Time Fix Rate: 48%

Median Resolution Time: 10 days

Median # of Visits Per Asset Per Year: 8

Visits per Asset

Hero Difference from Median: **-25%**

Challenger Difference from Median: **100%**

First Time Fix Rate

Hero Difference from Median: **+20%**

Challenger Difference from Median: **-26%**

Resolution Time

Hero Difference from Median: **-14%**

Challenger Difference from Median: **43%**

Key Observation

Here's another example of the customer experience gap when comparing First Time Fix Rate to overall Resolution Time. Remember, your customers aren't concerned with your internal stats about First Time Fix Rate. **Their main concern is how long it takes to solve the problem.**

IMPROVE PERFORMANCE WITH DATA CLEANLINESS & MAINTENANCE

Monitoring your KPIs is essential for achieving significant results. However, you must have your data organized and structured before you can do that.
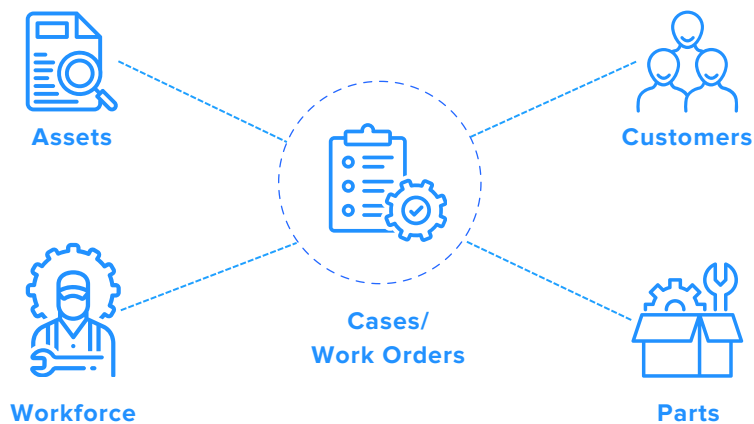
Understanding your service organization's landscape is crucial for becoming more efficient and productive. This involves recognizing how each data point is interconnected, identifying gaps in reporting, and having the right tools to address any inconsistencies. Leveraging precise data and insightful analysis can help you better understand your company. This knowledge will empower you to chart the right course, devise a winning strategy, and make a meaningful impact.

The encouraging news is that you can still start with imperfect data. Allowing a wide range of sources for data ingestion is recommended, as it will result in a more complete and accurate dataset. The quality of your AI outputs is directly proportional to what you feed into it. Use whatever data you have, then commit to refining your AI outputs to yield better results each time.

> Internal Aquant research has shown that **30% of service solutions are not found in historical service data**. Instead, the knowledge of veteran service experts contains the best answers.

4 SERVICE TRENDS THAT WILL SHAPE THE INDUSTRIAL MACHINERY INDUSTRY

The industrial machinery industry is on the cusp of a transformation, with technology playing a pivotal role in shaping future service models, operations, and customer interactions. Four trends are anticipated to impact the sector significantly:

Improved data sharing:

Dealers and OEMs will embrace a more symbiotic data-sharing relationship. OEMs will ask dealers to share all work orders, not just warranty claims; dealers will request more tools and support from their OEMs. This will help both parts of the business understand their data landscape while developing effective service delivery and training strategies.

Personalized AI for service and training:

Personalized AI is proving to be a crucial asset in the industrial machinery sector, primarily due to the intricate nature of machinery and its components, which require a high level of technical skills to maintain. Personalized AI tools are customized for each unique machinery, component, user, and dealer, making it possible to provide accurate predictive maintenance and operational insights. This technology streamlines service models, significantly reducing service times, enhancing repair precision, and improving remote support capabilities. With the help of Personalized AI, experts can provide real-time guidance to customers or onsite technicians, guiding them through complex repairs without needing physical presence, thereby reducing downtime and travel expenses. Regarding training, Personalized AI will revolutionize learning by sharing methods used by the top performers of the workforce, allowing technicians to gain practical, hands-on experience without needing years of training. This shift will enable a blend of training methods, making workforce upskilling more efficient and effective.

Value-added tools for servicers:

The traditional one-size-fits-all approach to machinery service will be replaced by more personalized, flexible SaaS models. These models will help dealers troubleshoot simple and complex issues—and help OEMs capture data that brings better visibility to their service landscapes. Top features include remote monitoring, on-demand repairs, software updates, and predictive maintenance analytics. Personalization will be vital to such tools because it will go beyond simply answering questions; users will want to adopt a tool that works seamlessly with their org's data.

Increased connectivity for proactive maintenance:

Listening to the call for connectivity within industrial machinery will revolutionize how companies service their products. Sensors and connected devices can now monitor machine performance in real time, transmitting data back to service teams. This facilitates proactive maintenance, where service interventions can be precisely timed based on actual wear and tear rather than fixed schedules. The outcome is reduced unplanned downtime, optimized maintenance costs, and extended machinery lifespans. This trend improves operational efficiency and enhances customer satisfaction by ensuring machinery reliability and performance. Additionally, the more data you have, the more confident you will feel when finding answers for common service issues—and it will help dealers and OEMs be more proactive with customers.

These trends indicate a shift towards more proactive, efficient, and customized technology-enabled service models. By embracing these innovations, companies in the industrial machinery industry can optimize their operations and forge stronger relationships with their customers, positioning themselves as indispensable partners in their customers' success.

START YOUR JOURNEY TO SERVICE EXCELLENCE

Curious about how your org stacks up against the benchmarks outlined in this report? **Participate in Aquant's 7 Day Challenge to find out — at no cost.**

Our analysts will process and analyze your data via Aquant's robust AI engine. We'll show you the results of your org's key metrics (including First Time Fix Rate), how you can be more efficient, and where to save money.

Use your data to uncover the most significant opportunities for performance improvement and see how Shifting Left can help your org stay ahead of the competition.

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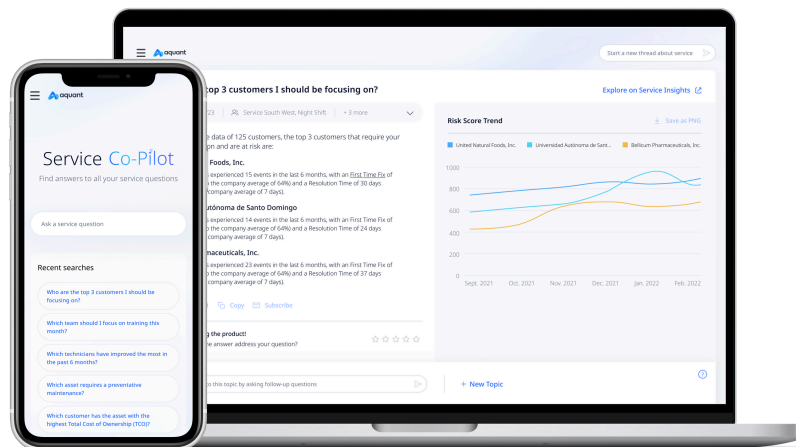
Currently, technicians might spend upwards of six minutes on the phone to obtain answers, even for straightforward queries addressed in the manuals. **Aquant's [simple, chat-based interface] drastically reduces the response time to seconds.**

This enables newer technicians to resolve their queries quickly and encourages them to ask more questions, including those they might not typically raise. **Ultimately, this tool will be foundational in bridging knowledge gaps among technicians.**

Clayton Bruce
Group Product Manager

KOHLER

FOOTNOTES

1. **OEMs—Unleash the Power of Your Install Base**, Wipro.

Aquant offers Generative AI purpose-built for service through its **Service Co-Pilot** platform. Whether you're a service leader, field technician, customer service representative, or customer, this platform is designed to offer expert guidance for all participants involved in the service lifecycle, ensuring optimal decision-making at each stage.

Service Co-Pilot continuously refines its capabilities by learning from real-world service data, expert insights, and user feedback. This dynamic approach enables the engine to generate the most accurate and personalized recommendations for every query throughout every phase of the service cycle.

Learn more about Aquant here: **www.aquant.ai**.

Press and News

Aquant Wins "2023 Technology Innovation Leadership Award" From Analyst Firm Frost & Sullivan

Aquant Earns Most Promising Vendor Ranking in CB Insights' Analysis of Agent Support Tools

Aquant Named Best Overall Solution 2023 by Service Council