The Critical Role for
AI in Field Service

Pushing forward AI-enabled field service
in conservative business cultures

How can field service leaders capitalize on these new opportunities in inhospitably conservative business cultures?

Field service is on the cusp of a major transformation. Shifting market dynamics necessitate new models for revenue growth and businesses face an ongoing labor crunch as they strive to meet rising customer expectations for quality service. In this period of transition, companies are looking to find footholds to drive productivity and improve the customer experience — from automated technician scheduling and enhanced support for service contracts to more sophisticated entitlement management.

Beyond these baseline improvements, the capabilities of Artificial Intelligence (AI), both predictive and generative, promise to accelerate change and drive full-scale, cross-industrial business transformation. In the case of field service, those transformative capabilities aren't merely promised. They're available here and now.

This window of opportunity around the modernization of field service is underexploited. Innovative organizations are rapidly adopting "as a service" hardware and software models in order to answer the call for elevated service experiences. Some are beginning to experiment with AI's potential, but most are lagging. While the pandemic put increased focus on field service — as it became one of the only remaining touchpoints between companies and customers — the accelerated digital transformation that characterized those years has slowed. Skittish in response to macroeconomic uncertainty and unsure of how to start with AI, many decision-makers remain unclear on how to deploy new technologies as they retool their approach to field service.

Modernization will play out in winner-takes-all terms. Businesses that fail to adapt will leave revenue on the table, diminish customer satisfaction, and lose efficiency. For field service leaders who want to make the most of their opportunities, strategic thinking is needed.

Field service's disrupted trajectory:
A brief recent history

Traditionally, business leadership conceptualized field service simply as part of the cost of doing business. While it offered occasional revenue opportunities, field service primarily served to buttress customer relationships and safeguard brand loyalty that had been established before a service call.

COVID-19 disrupted this trajectory. During lockdowns, businesses found they had fewer touchpoints to connect with customers. Sales teams could not build new, meaningful relationships with new prospects. In many cases, only essential services were able to engage customers directly, which slowed growth for a majority of enterprises. This constricted relationship between brands and customers rapidly transformed field service technicians into the new-but-familiar face of the company. They were suddenly appointed de-facto agents of sale.

One thing the pandemic did not disrupt was the rapid rise of customer expectations for increasingly sophisticated technology and faster service. For the past decade, customers have increasingly expected a wider variety of highly flexible options to manage assets and conduct maintenance. CSG International reported survey results in 2014 indicating 89% of respondents were seeking an "Uber-like" experience from technician visits, with regular updates on technician locations and arrival times. If anything, COVID-19 only accelerated this demand, causing customers to seek options for click-for-service and self-service. Customers also have higher expectations of service from the representatives who do physically visit their locations. Companies that meet these demands aren't rewarded with only brand loyalty — customers are also willing to pay more for this higher caliber of service. But relatively few companies capitalize on this emerging opportunity. In particular, they tend to lack the tiered levels of service and associated entitlements that would adequately satisfy these demands.

[1] https://ir.csgi.com/investors/press-releases/press-release-details/2014/CSG-Releases-Survey-Results-on-In-Home-Customer-Service/default.aspx

Against this pandemic-fueled backdrop, the labor shortages that continue to plague wide swaths of the business world hit particularly hard. As a generational shift in the workforce sees large numbers of experienced field service technicians retiring and taking their institutional knowledge with them, 74% of mobile field service workers report increasing workloads[2] — highlighting the need for new technologies such as AI, VR, and labor forecasting to help drive productivity.
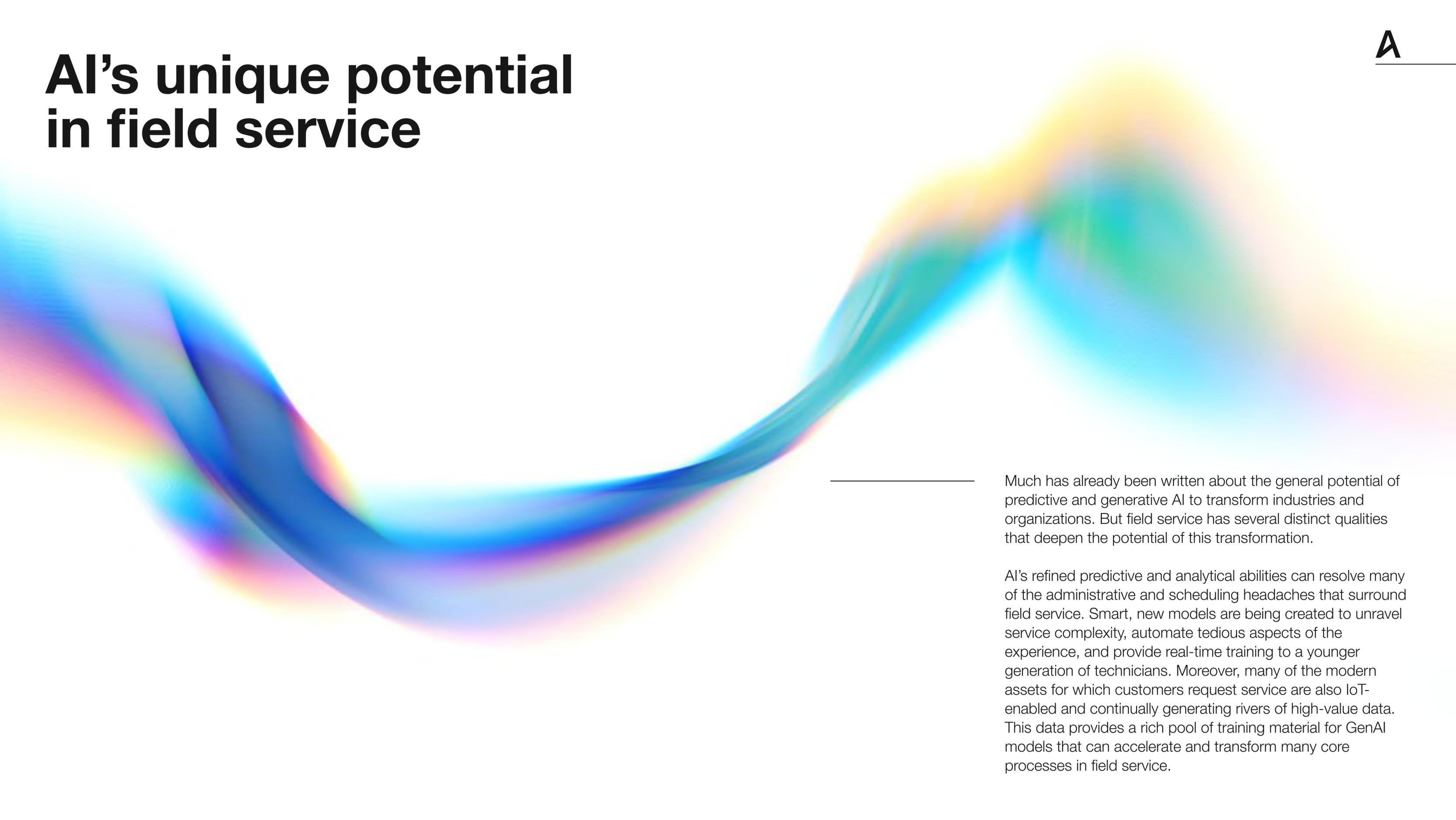
74%

of mobile field service workers report increasing workloads[2]

What's clear:

The pandemic forced a foundational shift in how companies think about field service — and ongoing market dynamics continue to push field service into a new spotlight.

[2] https://www.salesforce.com/resources/articles/field-service-trends/

AI's unique potential in field service

Much has already been written about the general potential of predictive and generative AI to transform industries and organizations. But field service has several distinct qualities that deepen the potential of this transformation.

AI's refined predictive and analytical abilities can resolve many of the administrative and scheduling headaches that surround field service. Smart, new models are being created to unravel service complexity, automate tedious aspects of the experience, and provide real-time training to a younger generation of technicians. Moreover, many of the modern assets for which customers request service are also IoT-enabled and continually generating rivers of high-value data. This data provides a rich pool of training material for GenAI models that can accelerate and transform many core processes in field service.
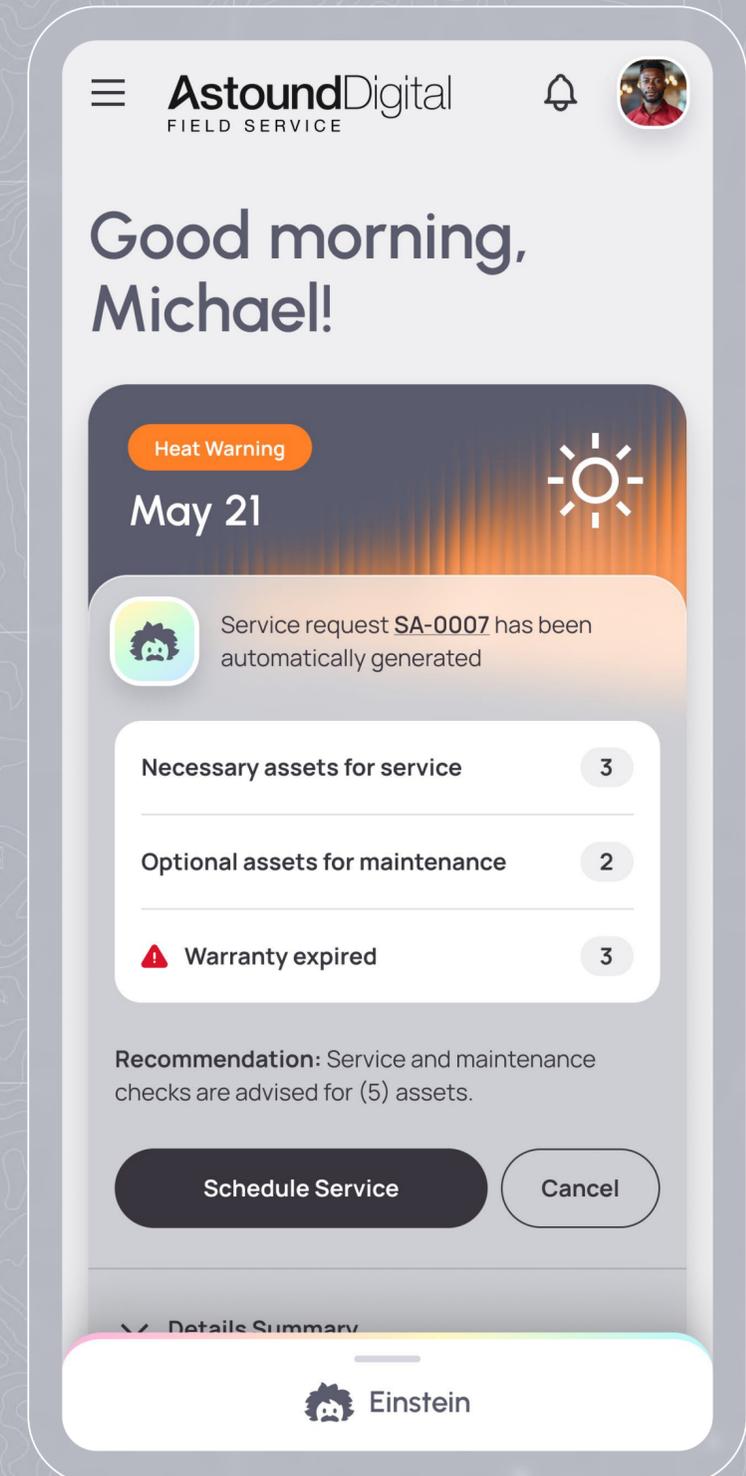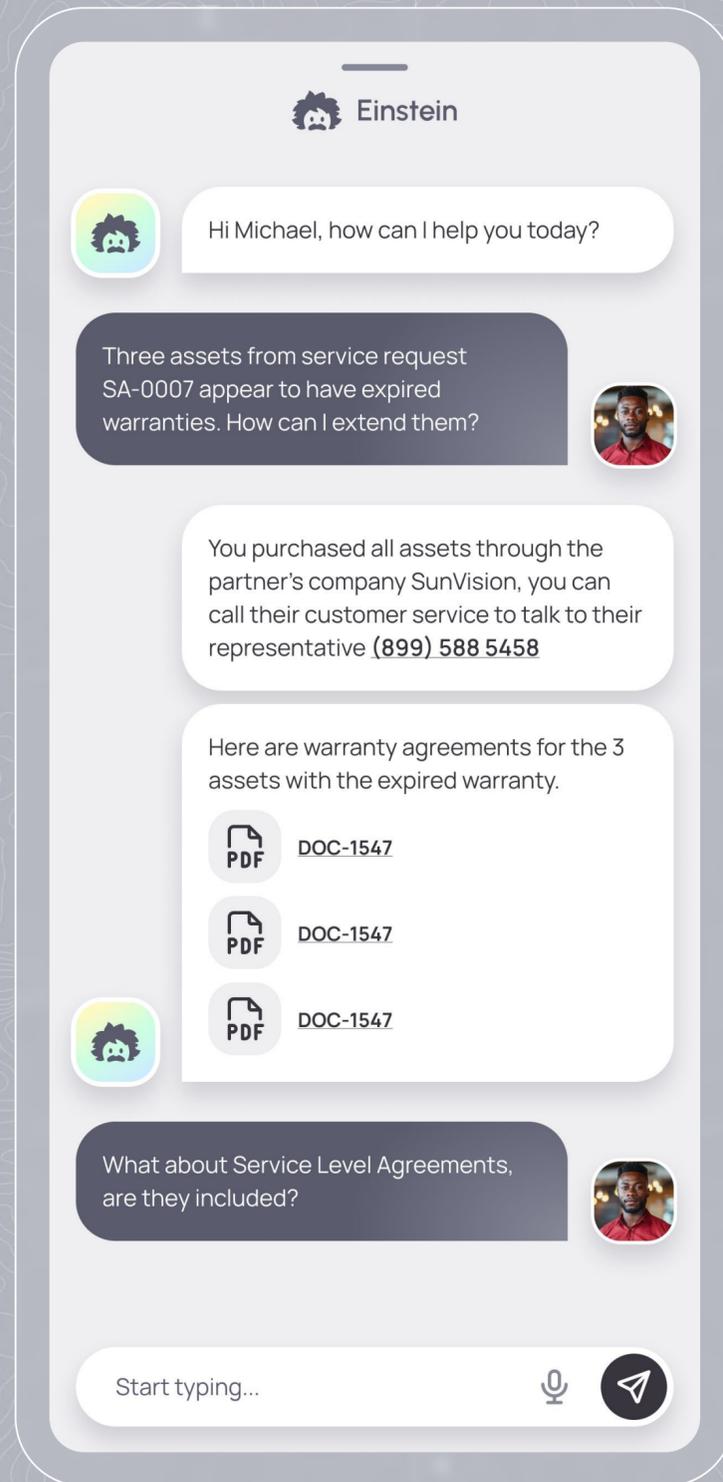
Ready-to-deploy AI use cases

While some of the most-hyped AI use cases remain on the horizon, a distinct advantage for field service professionals is that many AI tools and applications are available now. With the right set of tools or the right partners, field service leaders could be transforming selected aspects of their jobs today.

Preventive maintenance for assets

Advances in AI can now leverage field service and IoT-enabled asset data on telemetry, usage, climate, and many other variables — shifting reactive and preventive maintenance to predictive models. These models are developing reputations for not only delivering cost savings, but also increasing operational resilience and boosting productivity.

Instead of fixed-interval scheduling, manual inspections, and reactive repairs, field service managers can collect performance data that's streaming from the assets they're monitoring and use it to build these predictive models. Collected data can include variables such as temperature, vibration, and operational speed. With this data uploaded to the cloud, AI tools can run advanced analyses to identify patterns and predict problems based on both real-time monitoring and broader historical trends. GenAI can also create dynamic maintenance checklists of the needs and condition of the equipment, and deliver prioritized task lists for technicians to keep assets working.

AstoundDigital
FIELD SERVICE

Good morning, Michael!

Heat Warning
May 21

Service request SA-0007 has been automatically generated

Necessary assets for service	3
Optional assets for maintenance	2
⚠ Warranty expired	3

Recommendation: Service and maintenance checks are advised for (5) assets.

Schedule Service   Cancel

⌄ Details Summary

Einstein

Virtual assistants for field service engineers

The aforementioned labor crunch and generational shift exacerbates a long-brewing trend of field engineers feeling overworked and suffering from inadequate access to comprehensive product knowledge and technical documentation. AI-enabled virtual assistants provide a novel approach to solving this problem.

By voice or by text, field engineers can describe maintenance issues to a GenAI model. Trained on a massive flow of relevant data, the model can ask pointed questions and propose appropriate courses of action, even taking the engineer through a work order step by step. These interactions are a far cry from the clunky assistant bots of generations past. These are seamless conversations, informed by a broader base of knowledge than could be possible for a human dispatcher.

Chatbots for customer service

On the customer side, AI chatbots offer a first wave of immediate response, answering questions or providing requested information or articles, easily solving many L1 and even L2 customer support problems. This saves customers from hunting down information on their own and, in many cases, may eliminate the need to talk with a live service agent.

When customers do need to speak with agents, they can streamline chat sessions using AI-generated service replies. AI can also function as a real-time researcher to help resolve questions while engaging the customer.

Dispatch optimization

AI will also disrupt traditional dispatching, bringing significant optimization and efficiency to a process known for errors and inefficiency. AI-assisted dispatch can streamline how a company organizes its service territories, from distributing technicians to matching individual levels of skill and experience to the right jobs. AI can also provide technicians with optimized routes, allowing them to move between jobs faster based on traffic conditions, construction, and other variables. AI can crunch more realistic estimates on how long it will take to complete work orders and use historical data to set dynamic service appointment times and adjust schedules accordingly. It can also leverage predictive capabilities to anticipate seasonal needs, as well as labor shortages and excesses.

A

Accelerated Maintenance Required

Extreme Heat Warning
Check fluid levels and inspect cooling system

	Work Order #	Priority	Dates:	Parts	Status
⌄	SA-0007	High	Thu, May 23	⚠ Missing	✓ Scheduled

Navigation: Schedule · Inventory · Actions · Notifications · Profile

Overview | Products | Report | Feed

Service Appointments ⋮

May 21, 2024   Monday   14:00 - 18:00

Rev. Ernest D. Butler Park
W 11th St · N Rogers St · N Morton St · N Walnut St · N College Ave
W 8th St · N Maple St · E 9th St · E 8th St · E 7th St
Juannita's · WonderLab

401 North Morton Street, Bloomington, IN 47404, United States

Work Order Line Items ⋮

Item Name	Required Qty	In Truck	Status
CMC Plastic Connector 05	48	20	Order
CPC Connector Housing	48	104	In Stock
Lift Cylinder	48	0	Out of stock
Battery	48	1	In Transit
Tilt Cylinder	48	104	N/A

Contacts ⋮

Michael Thompson
Manager

Asset Service History ⋮

Electric Straddle Stacker MB15	Connector cables replacem...	04/06/2023
Pallet Truck SPTE33XLI	Belts replaced	28/05/2023
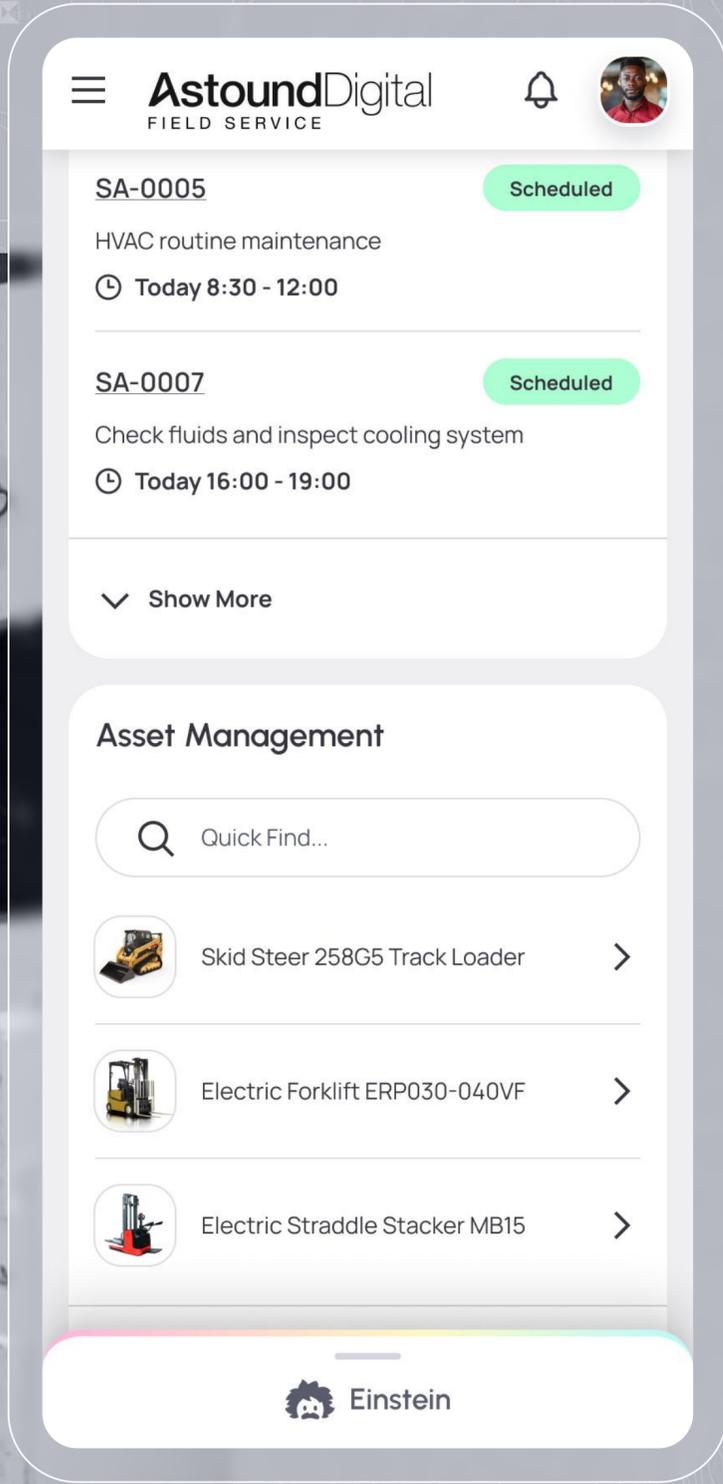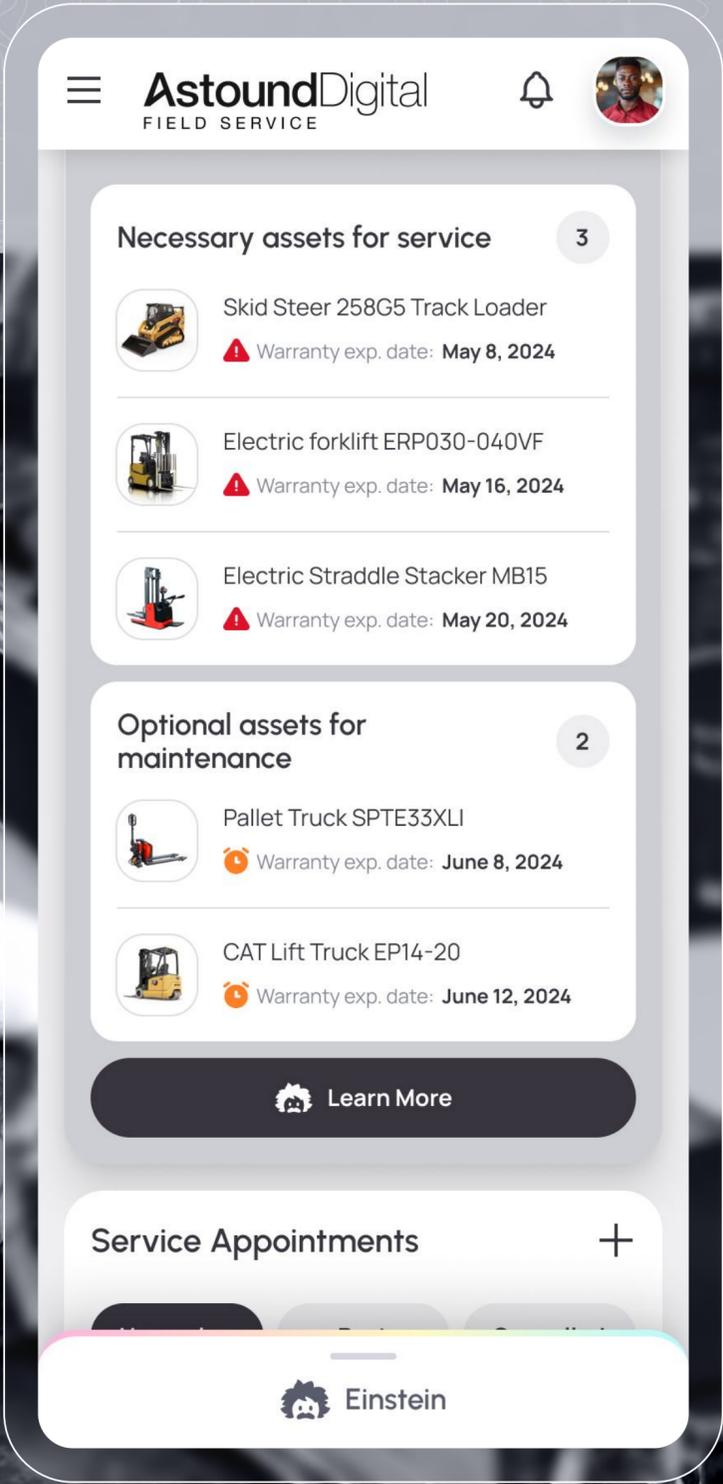
Supply chain intelligence

GenAI can also identify and simulate potential disruptions and risks within the supply chain, helping ensure SLAs are maintained and replacement parts are available. By analyzing factors such as historical wear patterns, available stock, trunk stock, port congestion, shipment routes, and supplier mapping, AI tools can predict issues and assess their impact on parts and asset availability for work orders. Companies may also choose to leverage other vendors as a back-up to supply needed parts when AI anticipates supply chain disruptions.

Conservative business culture: An understandable hurdle

Despite these readily available and proven capabilities, decision-makers at many companies are more skittish than they once were about investing in new technologies. The extraordinary techno-optimism and pro-investment posture that many companies carried into and through the first several years of the pandemic have cooled somewhat. Facing macroeconomic volatility, companies are taking a more stringent approach to vetting tech investment — requiring proven business cases to justify even small projects.

This need for a rock-solid business case is even more pronounced with AI, and sometimes more difficult to meet. As a new technology with unique sets of risks, conversations around AI's potential are often tempered by caution. Gartner notes that AI business cases pose distinct hurdles, such as perceived high costs; a scarcity of specialized talent; a need for culture change to reap benefits; and the need to spend more time on training, data, and algorithms[3].

While AI will continue to be a hot topic among C-Suite executives, a practical sense of how to implement it and evaluate its true business impacts and returns remains elusive — and somewhat daunting.

3   https://www.gartner.com/en/information-technology/insights/artificial-intelligence/ai-business-case
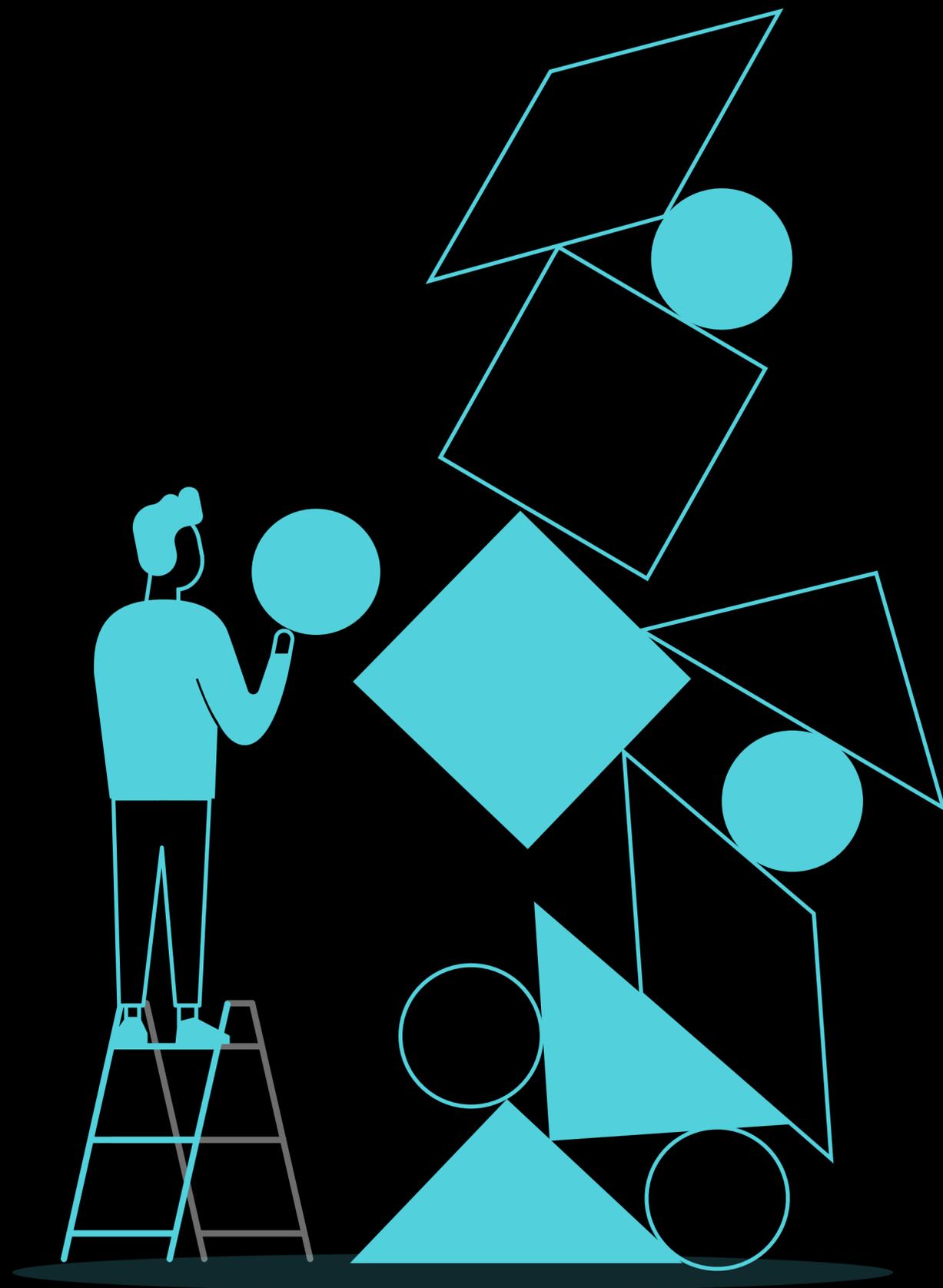
Strategies for gaining buy-in on AI

To overcome the concerns and skepticism around AI and take advantage of opportunities within field service, leaders need to think strategically about how to persuade some of the more conservative-minded decision-makers in their companies.

We should note at this point that not every business will face this problem. Many field service leaders will experience no friction in responding to changes within the industry and adopting AI's easy wins. But for those who do, it is useful to have some proven strategies ready to help bring senior leadership on board and soften resistance to experimentation.

Foremost among these strategies will be education, partnership, and small-scale experimentation that can then scale as results allow. In addition to getting leadership on board, these strategies will also help field service leaders build stronger business cases for AI implementation as adoption accelerates.

Education

The first strategy is to ensure that decision-makers are adequately educated on the value of AI. This involves bringing use cases in field service to light and applying those learnings to the service needs of a particular company and customer base.

Despite field service's pandemic-driven progress in the last several years, many leaders remain unaware or under-aware of just how much the industry has changed. Day-to-day crises almost always trump taking time to learn about new technologies or benchmark what top companies are doing in field service.

Similarly, with AI, many decision-makers need to be shown genuine applications of these technologies in field service. Field service leaders will likely find it less effective if their conversations amount to forcing a verdict on AI at large. Instead, they should focus on plumbing the utility of specific use cases and applications. This education will likely move the conversation beyond AI's historical growing pains toward the tangible value it can deliver today.

Starting small, moving quickly

The "crawl, walk, run" model for business transformation is critical with AI. Field service leaders should propose small pilot projects with tightly defined parameters that can quickly be propped up to deliver value and proof of concept. The idea here is to provide a smaller, simpler business case from which field service leaders can expand. This approach also allows these leaders to focus tightly on proper implementation, which increases the odds of pilot programs reaching their promised ROI.

Field service leaders can gain traction and build momentum on the success of smaller projects, making stronger cases to scale up and out based on precedent. Gradually extending AI's benefits across more and more areas of operations, if conducted diligently, will put these leaders at the forefront of AI adoption.

Partnership

Developing AI capabilities in-house is also likely a daunting proposal for many with budgetary authority, as these projects require risky initial commitments of time and money.

A quicker win for field service leaders would be partnering with organizations that have already developed these tools and have experience in rolling them out. Such a surefooted approach to AI implementation would displace these significant risks and ensure the process is guided by expertise.

What's at stake:
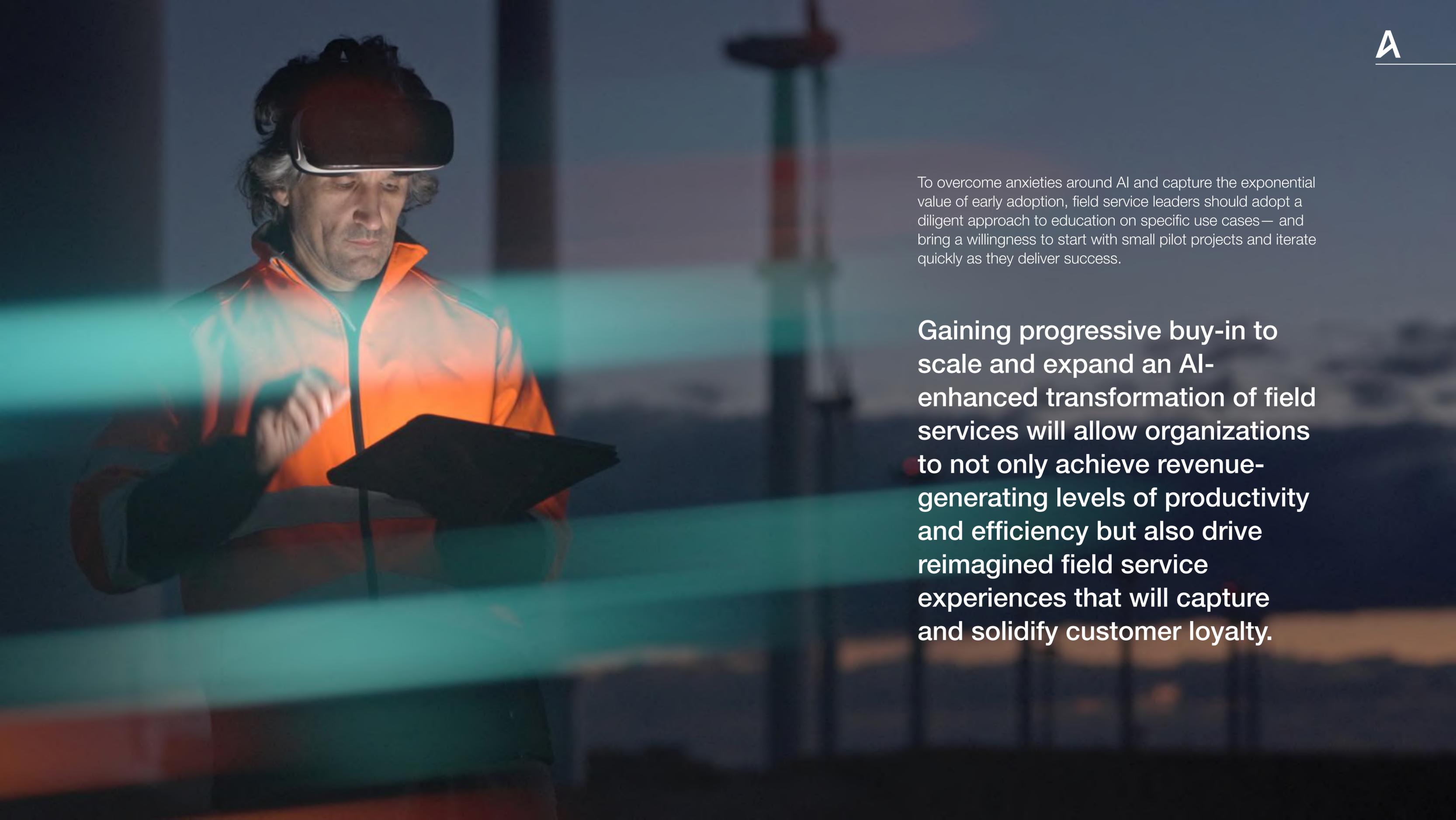## First-mover advantage will multiply AI's value

Field service leaders face a rare convergence of opportunities. The pandemic and other macroeconomic forces have reinvented field service as a strong driver of revenue and brand value, while, at the same time, present a growing set of challenges in capturing that revenue and brand loyalty. An emerging and increasingly efficacious set of AI-fueled models aligns perfectly with these challenges. Designed and deployed properly, they offer substantial efficiencies on the back-end while transforming customer experiences on the front-end.

A certain level of caution is understandable, but forward-thinking field service leaders must recognize the urgency of the moment: Those who fail to move quickly to implement and advance their use of AI will not only leave business value on the table but cede a tremendous competitive advantage to more progressive peer organizations. McKinsey notes that field service is particularly sensitive to this phenomenon, citing a statistic that says first adopters of technology experience a 7% higher rate of revenue growth over a three-year period compared with a more average response[4].

7%

higher rate of revenue growth over a three-year period

4 https://www.mckinsey.com/capabilities/operations/our-insights/the-coming-evolution-of-field-operations

To overcome anxieties around AI and capture the exponential value of early adoption, field service leaders should adopt a diligent approach to education on specific use cases— and bring a willingness to start with small pilot projects and iterate quickly as they deliver success.

Gaining progressive buy-in to scale and expand an AI-enhanced transformation of field services will allow organizations to not only achieve revenue-generating levels of productivity and efficiency but also drive reimagined field service experiences that will capture and solidify customer loyalty.

Bill Donlan

CEO - Astound Digital

Bill Donlan is a proven technology leader who brings more than 35 years of executive management and enterprise consulting experience to his role as CEO of Astound Digital. His career has included global leadership roles at Accenture, Capgemini, and now Astound, where he advises Fortune 100 organizations across all aspects of technology, and leads customers through their enterprise business transformation programs in Sales, Marketing, Customer Service, Field Service, Partner/Vendor Management and E-Commerce.

At Astound, Bill advises C-suite executives in retail, consumer goods, manufacturing, aerospace and defense, and life sciences as they develop their digital transformation strategies and roadmaps. His counsel has helped numerous organizations improve their customer and value chain relationships through a combination of business strategy, process tuning and industry best practices, and technology integration.

Bill is a trusted partner to many of the leading software vendors, who frequently call on him to deliver keynotes at global customer events, to co-author industry assets and content, and to moderate executive roundtables. His significant experience in Field Service and his perspectives on how AI will impact field service innovation is drawing attention from industry associations and enterprise executives who are eager to see the intellectual property and technology accelerators that Bill is driving at Astound. He has been featured in articles and industry events from CRM, Servitization, Field Service Transformation, and customer engagement in the new normal.

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