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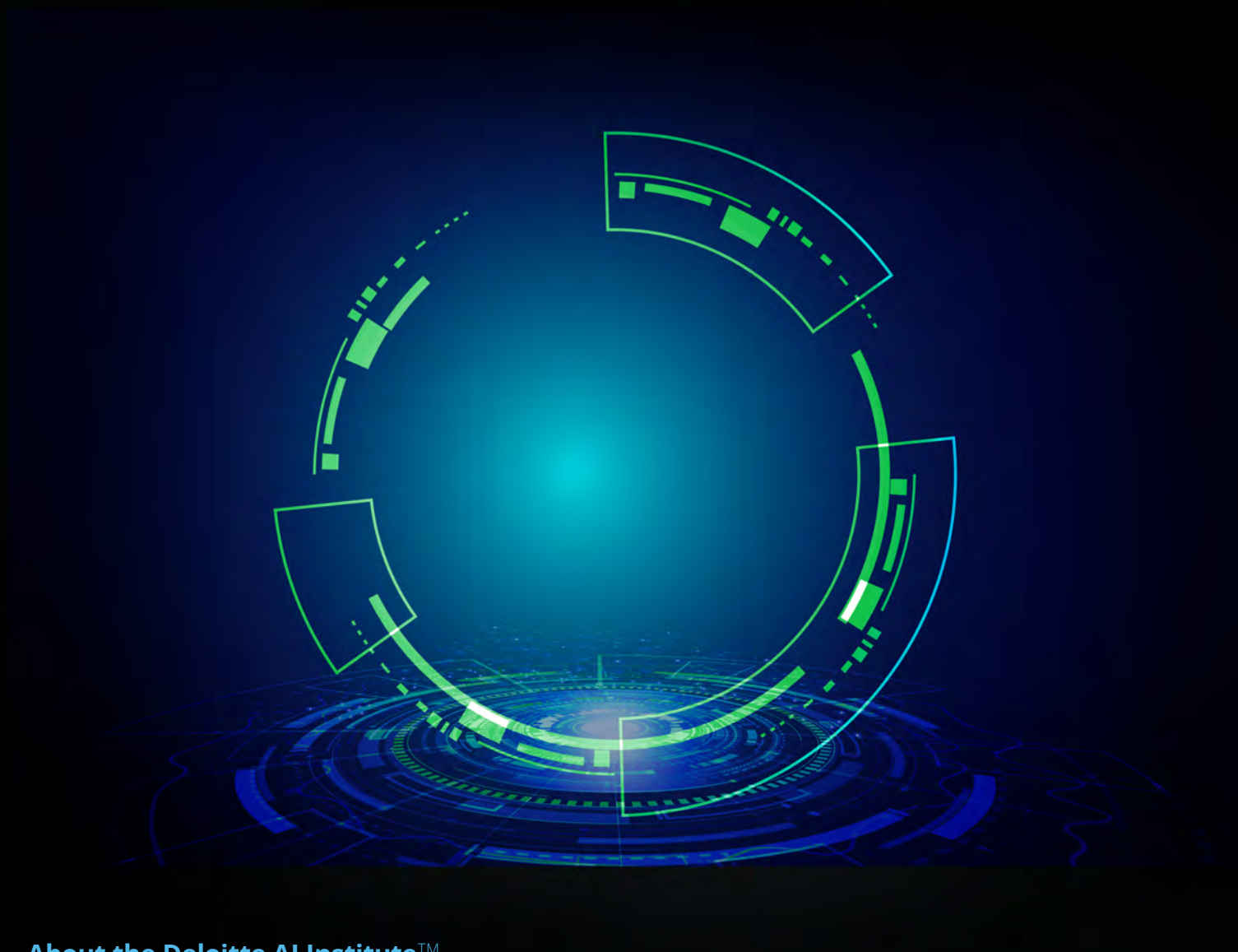
AI-powered Communications Service Providers

Reinvent the future of enterprise operations and customer care

Deloitte AI Institute™



About the Deloitte AI Institute™

The Deloitte AI Institute helps organizations connect the different dimensions of a robust, highly dynamic and rapidly evolving artificial intelligence (AI) ecosystem. The AI Institute leads conversations on applied AI innovation across industries, with cutting-edge insights, to promote human-machine collaboration in the "Age of With™".

The Deloitte AI Institute aims to promote a dialogue and development of artificial intelligence, stimulate innovation, and examine challenges to AI implementation and ways to address them. The AI Institute collaborates with an ecosystem composed of academic research groups, start-ups, entrepreneurs, innovators, mature AI product leaders, and AI visionaries, to explore key areas of the technology including risks, policies, ethics, future of work and talent, and applied AI use cases. Combined with Deloitte's deep knowledge and experience in AI applications, the Institute helps make sense of this complex ecosystem and as a result provides impactful perspectives to help organizations succeed by making informed AI decisions.

No matter what stage of the AI journey you're in—whether you're a board member or a C-Suite leader driving strategy for your organization, or a hands on data scientist, bringing an AI strategy to life—the Deloitte AI institute can help you learn more about how enterprises across the world are leveraging AI for a competitive advantage. Visit us at the Deloitte AI Institute for a full body of our work, subscribe to our podcasts and newsletter, and join us at our meet ups and live events. Let's explore the future of AI together.

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Communication Service Providers (CSPs) can leverage AI-enabled solutions to build a competitive advantage through operational efficiencies and enhanced customer experiences.

For CSPs, the need to optimize and automate processes is increasing rapidly, especially given the challenge of managing and servicing complex networks while still delivering a seamless and personalized customer experience. Automating processes, improving business insights, and creating value require flexible strategies, a creative approach and data-driven methodologies that can prescribe custom solutions at the right place and at the right time.

The business benefits of artificial intelligence (AI) are becoming more apparent each day. With AI—and especially Generative AI—CSPs can automate mundane tasks through prediction and decision-making, derive insights that improve customer experiences, and generate data that can be used to train machine learning models and simulate real-world scenarios.

Capitalizing on this value is no small feat—achieving AI-enabled operations involves end-to-end transformation of business functions and moving from a traditional to an augmented workforce. **Way too often companies hastily pursue individual, disjointed AI and Generative AI use cases that eventually waste resources and prove ineffective in achieving the goals of the business. CSP leaders should first develop a sound AI strategy for transforming their operations in alignment with their business objectives.**

What is AI-enabled CSP operations?

AI-enabled CSP operations embed AI solutions to optimize and automate field service and network operations, and enhance customer service. By automating complex tasks, improving decision-making, optimizing network strategy and performance, and enabling personalized customer experiences, CSPs can:

Why is Generative AI a game-changer?

Generative AI is a subset of artificial intelligence in which machines create new content in the form of text, code, voice, images, videos, and processes. Generative AI has massively expanded the scope of what value AI can bring because it can generate net new content based on past data and patterns, as well as assist in formulating new solutions. Generative AI also allows users to retrieve data across complex and siloed data sources to gain insights with ease. Other AI techniques such as supervised and unsupervised learning models can be used to predict outcomes and uncover anomalies. Together with Generative AI, they represent a significant opportunity for CSPs to reinvent their operations.

Here are a few examples where CSPs can utilize AI and Generative AI to drive value in the enterprise:

Personalized customer self-service
Enable on-the-fly customer support based on local language and propose new product/service recommendations, generating offers to increase satisfaction and retention.

Network planning and deployment
Create simulations of service quality and subscriber experience at potential deployment sites based on user behavior, environmental and historical usage data.

Network stress testing
Generate scenarios to simulate future network consumption patterns to stress test load and provision resources given specific bandwidth and network constraints.

Network ops and maintenance
Identify network faults through digital twins and provide prompt-based remediation solutions for on-field technicians for faster resolution.

Advanced decision making in the field
Augment technicians with advanced problem-solving to provide them with additional solutions they might not have thought of or to test new solutions prior to implementation.

Amidst an ever-changing business and technology landscape, CSPs who effectively embed Generative AI across their operations may be better able to adapt quickly and remain competitive. Here's more on what AI can do for customer service, field services, and network operations.

Elevating customer care

Technology innovations are pushing CSPs to reimagine how they deliver customer care experiences. The low costs of switching from one provider to another and increased competition require companies to build loyalty through delivering a differentiated customer experience.

Customer experiences can now be improved through next-generation conversational AI, which can create unique, personalized encounters that are brought to life by avatars and Generative AI models. Imagine empathetic, multilingual chatbots instantly solving technical issues, providing personalized recommendations, and understanding the nuances of every customer question. Additionally, predictive models can anticipate problems before they arise, proactively solving the issue to improve their experience. Need to speak to an agent? They are better armed with chatbots that can summarize complex information at a glance. This seamless, AI-driven approach boosts customer satisfaction and fosters loyalty through personalized and delightful experiences.

For customers

Generative AI can improve outcomes through direct customer interactions and enable customer service associates to be more efficient and customer centric. Generative AI virtual assistants can enhance the self-service experience and effectiveness by interpreting customer intent and available data via:

Knowledge search. Quickly interprets context and searches for relevant information from complex and siloed customer history and knowledge management systems to deliver tailored responses in real-time.

Next best action/Next best offer. Proposes new product/service recommendations and sales offers based on customer preferences to increase satisfaction and retention.

Smart routing. Quickly connects customers to the best live agents based on specific needs when issues are beyond what the system can do.

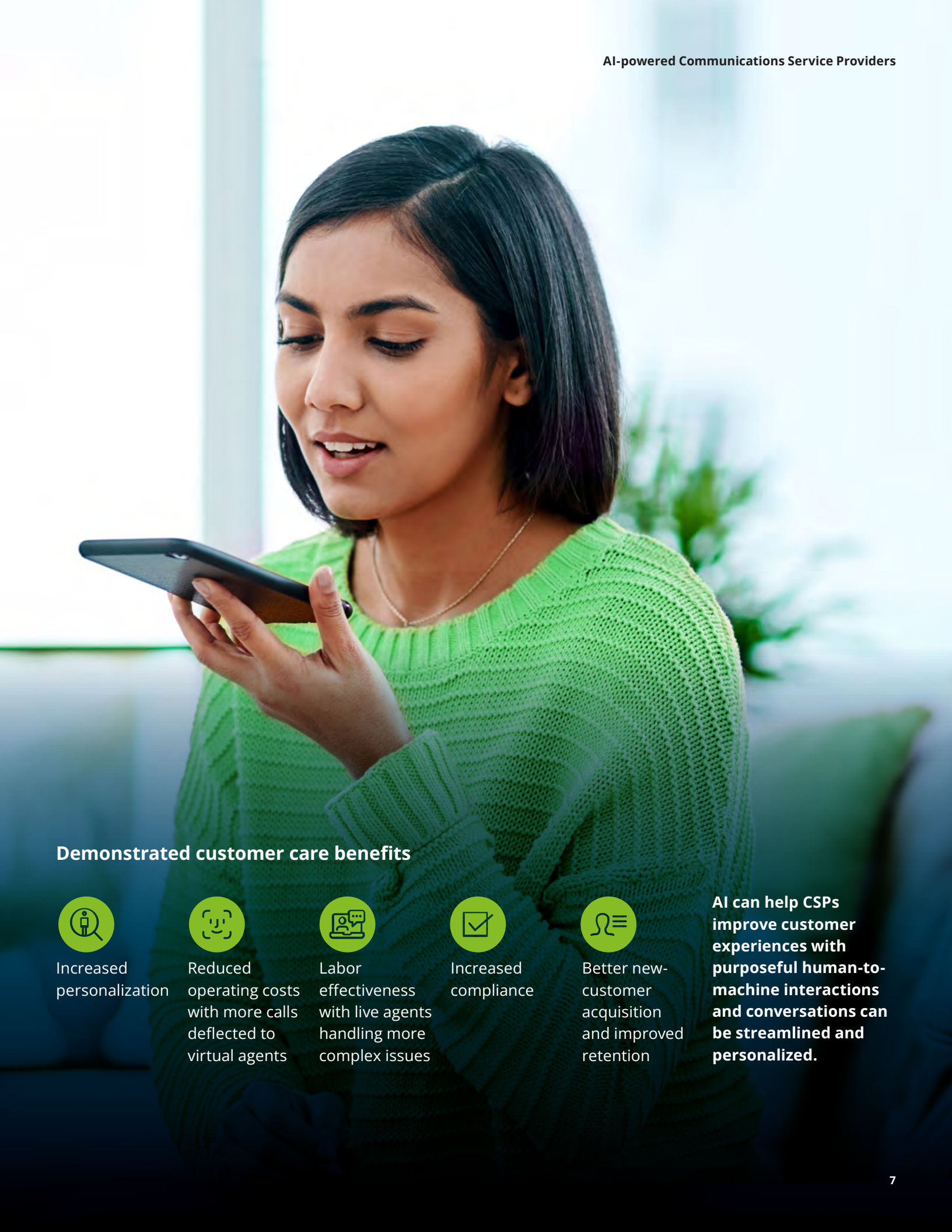
For agents

Generative AI can support customer service associates by generating suggested scripts, solutions, and recommendations based on current customer issues and past interactions and trends. Agent performance can be improved by creating a one-stop-shop hub where agents have fast access to information and tools, such as:

Agent assist. Enables agents to collaborate with Generative AI virtual assistants trained on internal data in real-time via voice and text to help resolve customer inquiries more efficiently.

Issue summarization. Automatically summarizes, tags, and logs customer history for agents' future reference.

Agent training. Evaluates customer sentiment, resolution steps, and KPIs to initiate coaching and training.



Demonstrated customer care benefits

Increased personalization

Reduced operating costs with more calls deflected to virtual agents

Labor effectiveness with live agents handling more complex issues

Increased compliance

Better new-customer acquisition and improved retention

AI can help CSPs improve customer experiences with purposeful human-to-machine interactions and conversations can be streamlined and personalized.

Transforming field service and logistics

A heavier reliance on at-home networks and increased customer expectations of network reliability have exacerbated the challenges for field service and logistics teams. The added strain can lead to inefficient operations, higher costs, and a less-than-ideal customer experience.

To address these challenges, CSPs can leverage AI across the field service value chain. AI tools can help CSPs optimally source, manage, and pick/pack inventory that field service technicians bring to job sites. Logistics teams can also leverage optimization algorithms to efficiently equip and schedule technicians based on skillsets in addition to dynamically routing them based on unpredictable constraints such as schedule changes and weather disruptions.

For logistics managers

Generative AI can support logistics managers and help them make more informed, proactive decisions. Look into solutions such as:

Field technician dispatch. Optimize your fleet productivity with faster dispatch and dynamic routing, significantly reducing the organization's carbon footprint. The advanced scheduling can route field technicians based on skillsets, equipment required, and availability.

Predictive maintenance. Avoid untimely vehicle and mechanical warehouse breakdowns, as machines alert managers of potential problems before they happen.

For technicians

Once technicians are on site, Generative AI can serve as a copilot. The technology enables them to more efficiently complete jobs, improving technicians' experience and productivity while bettering the customer experience. For example:

Issue resolution. Leverage Generative AI to power a search for personalized solutions to customer network issues and accelerate troubleshooting. Retrieval augmented generation and summarization from internal databases and customer chat history can generate the recommended resolution steps and explanations for network engineers.[1] Vision AI for image and video analysis can further enable technicians to diagnose issues through visual inspection.

Demonstrated field service and logistics benefits

- Increased field service technician productivity
- Reduced time to resolution for jobs
- Decreased dispatch processing time
- Lower costs for gas and maintenance
- Decreased time to train and onboard technicians
- Increased customer retention

These improvements can not only result in reduced costs, but also new revenue through an enhanced brand and greater customer loyalty by serving the customer more quickly and effectively.

Optimizing network operations

Network downtime and service degradations cost CSPs tens of billions of dollars in losses per year.[2] The ability to move from reactive to proactive asset maintenance can deliver significant savings. Network Operations start to look different when enabled with AI technologies. There aren't as many fire drills to answer.

Many CSPs are now enabling their Network Operations Centers (NOCs) with AI. These centers serve as the nerve center of telco networks and can enable downstream AI use cases that can drive value for CSPs. NOCs of the Future will rely less on human wherewithal and manual processes by implementing AI-enabled solutions that bring greater agility, precision, and proactiveness. Building AI-enabled NOCs are not only more efficient, but also more resilient, scalable, and future-ready.

From an operational efficiency perspective, this includes leveraging historical maintenance and fault data to train predictive and network-specific large language models that can evaluate real-time streaming data to identify potential network issues and raise alarms for network engineers to quickly intervene. AI can help to reduce operations costs through preventative actions and improve the customer experience through proactive notifications and backup solutions.

For network operators

Deloitte EMEA's Telecom Engineering Centre of Excellence outlines significant return on investment for automation in its paper, *The Age of Telecom Network Automation.* Both AI and it's counterpart Generative AI are emerging as game changers, saving critical time in such areas as:

Network operations optimization. Move from reactive to proactive automation of Tier-1 operations that can deliver significant cost savings while minimizing network downtime and service degradations. Generative AI can help technicians correlate alarms with meaningful insights and take action by automating resolution steps.[3]

Predictive surveillance. Predict potential future issues before they occur and monitor network equipment in-real time in order to detect anomalies that might indicate potential issues. Leveraging AI helps maintain the physical layer of the network, and proactively avoids sudden equipment malfunction and expense truck rolls.

Automated data enrichment. Dramatically improve ticket resolution. Technicians have to parse through siloed information sources in order to resolve issues that arise. Generative AI can enrich issue data by automatically pulling in relevant information from network service, configuration, and performance metrics. It then correlates it with past incidents and resolution approaches, which can lead to a quicker understanding of each problem, more certainty around the most effective fix, and faster mean-time-to-diagnose and mean-time-to-resolve.

Demonstrated network operations benefits

- Reduced operational complexity
- Reduced network downtime
- Increased network outage & incident predictability
- Preventative care for network access

These results demonstrate that AI-enabled operations can improve network infrastructure by decreasing disruptions, reducing risk of network failure, and improving productivity of network technicians.

Create a winning AI strategy

When developing a sound AI strategy for transforming operations, CSP leaders should align closely with their business objectives.

1. **Develop a strategic Generative AI ambition**
   Your AI strategy should align to your core business objectives and goals and be clear on the value it aspires to realize as well as the route to get there via considered, achievable action.
2. **Produce a compelling case for transformation**
   Considerations should be made across economic viability, technology viability, privacy, risk appetite, capacity required and competitive advantage for the case taken to the board.
3. **Establish a purposeful approach to prioritizing use cases**
   Use a risk versus reward metrics to help determine where to start. AI use cases not only need to aspire to business objectives, but also be evaluated for risks.
4. **Identify key players to inspire and drive transformation**
   A cultural shift will be necessary to upend current business processes, bring people along on the journey early.
5. **Evolve talent to keep pace**
   For humans and machines to collaborate effectively, both business and technical teams need to be fluent in and adaptable to new AI technologies.
6. **Assess the technical landscape**
   The technology required to deliver, monitor, evaluate, and improve AI models should all be evaluated.
7. **Develop and efficient data governance approach**
   The traditional data capabilities built for traditional analytics can support AI with additional attention on quality, governance, availability, and ownership clarity.
8. **Ensure robust controls**
   Risks and their corresponding mitigations should be built into AI delivery for every use case, not as an afterthought.
9. **Put risk, privacy and ethical considerations at the forefront**
   Design governance and control mechanisms to ensure ethical and accountable AI development aligned to policies and customer expectations.
10. **Adapt operating models for AI development**
    Operating models across core and edge businesses should drive safe and consistent delivery of AI solutions, instilling confidence in the decisions and insights that result.

AI is a transformative opportunity for CSPs. Many organizations are already realizing significant benefits, both cost saving and revenue generating, by automating processes and augmenting workforces with tools that can accelerate and improve performance. The CSPs that look at the technology in a broad way, with a clear path, across operations may better their long-term position.

As we progress through the AI era, CSPs have an opportunity to transform their operations with enhanced automation, precision, and personalization.

However, it is imperative that the journey begins with a cohesive AI strategy in order to avoid a siloed approach that fails to extract the value from this revolutionary technology.

If CSPs do this correctly, smooth operations, delighted customers, and a differentiated competitive advantage could lie ahead.

Reach out for a conversation.

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Endnotes

1 Beena Ammanath et al, *The Generative AI Dossier*, Deloitte, 2023, p. 137.

2 Anubhav Mohanti et al, "The hidden costs of downtime: The $400B problem facing the Global 2000," Oxford Economics in partnership with Splunk, 23 July 2024.

3 Beena Ammanath et al, p. 137.

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