

**TACKLING THE  
SCALABILITY CHALLENGE  
IN ARTIFICIAL INTELLIGENCE  
FOR CUSTOMER VALUE  
MANAGEMENT**

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# ARTIFICIAL INTELLIGENCE (AI) IS WITNESSING LARGE-SCALE IMPLEMENTATIONS IN SEVERAL ENTERPRISE FUNCTIONS

According to PwC, 16 per cent of companies have implemented AI pilots in discrete areas, while 15 per cent are planning expansion into multiple areas; another 27 per cent of companies already have AI projects in action across different areas. And **one of the prime transformation candidates for AI is customer engagement and how to maximize its value.**



Mckinsey finds that stakeholders in marketing and sales are most likely to achieve revenue gains from AI, far ahead of other functions like supply chains, risk management, and HR. But one of the key challenges of sustaining this benefit is the difficulty of scaling AI beyond a certain point. To effectively use AI (and related technologies like NLP, OCR, ML, Neural Networks and Deep Learning and augmented analytics) in customer value management, it's vital that organizations overcome technology hurdles in scaling AI capabilities. The impacts of business processes and the organization's people assets also require careful investigation.

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**1** <https://www.pwc.com/us/en/services/consulting/library/artificial-intelligence-predictions-2019.html>

**2** [https://www.mckinsey.com/~/\\_media/McKinsey/Featured%20Insights/Artificial%20Intelligence/Global%20AI%20Survey%20AI%20proves%20its%20worth%20but%20few%20scale%20impact/Global-AI-Survey-AI-proves-its-worth-but-few-scale-impact.ashx](https://www.mckinsey.com/~/_media/McKinsey/Featured%20Insights/Artificial%20Intelligence/Global%20AI%20Survey%20AI%20proves%20its%20worth%20but%20few%20scale%20impact/Global-AI-Survey-AI-proves-its-worth-but-few-scale-impact.ashx)



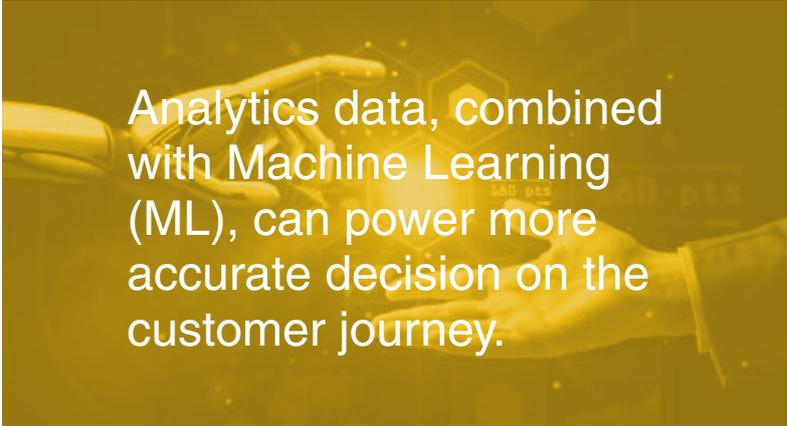
# HOW AI AND ML COULD REVOLUTIONIZE CUSTOMER VALUE MANAGEMENT

The modern customer value management (CVM) function relies heavily on data to gauge customer expectations, anticipate demand, and preemptively design products/offerings to stay a step ahead of the competition. In telecom, this is particularly important as customers are eager to interact with service providers across a variety of channels. Engagement analytics from these channels – be it social media, a carrier’s mobile application, non carrier applications, such as travel applications, hotel applications, food delivery applications, a branded website, affiliate websites, Chatbots or the humble email – could go a long way in garnering an accurate 360-degree view of the customer with versatile persona view of the customer

This analytics data, combined with Machine Learning (ML), can power more accurate decisions on the customer journey. For example, ML can be leveraged to identify opportunities for making product recommendations, including when not to make a recommendation offer. A keen understanding of customer behavior would help AI engines target customers in a more targeted way.

In fact, AI takes the power of data analytics to a whole new level. ML is a specialized AI technique that helps analytics engines to learn from historical data and past behavioral patterns. It can observe frequently used channels and the most popular interaction times for a customer and recommend when and how a carrier should approach the customer for maximum engagement. This significantly improves upselling/cross-selling success rates. Another component of AI which is Deep Learning and Neural Networks helps to trap real time customer behaviour and suggest real time recommendation based on very recent and new customer behaviours which are not there in the history. This makes AI more suitable with the changing impacting factors such as environments, weathers, emergency conditions, competitions offerings, Geofencing etc.



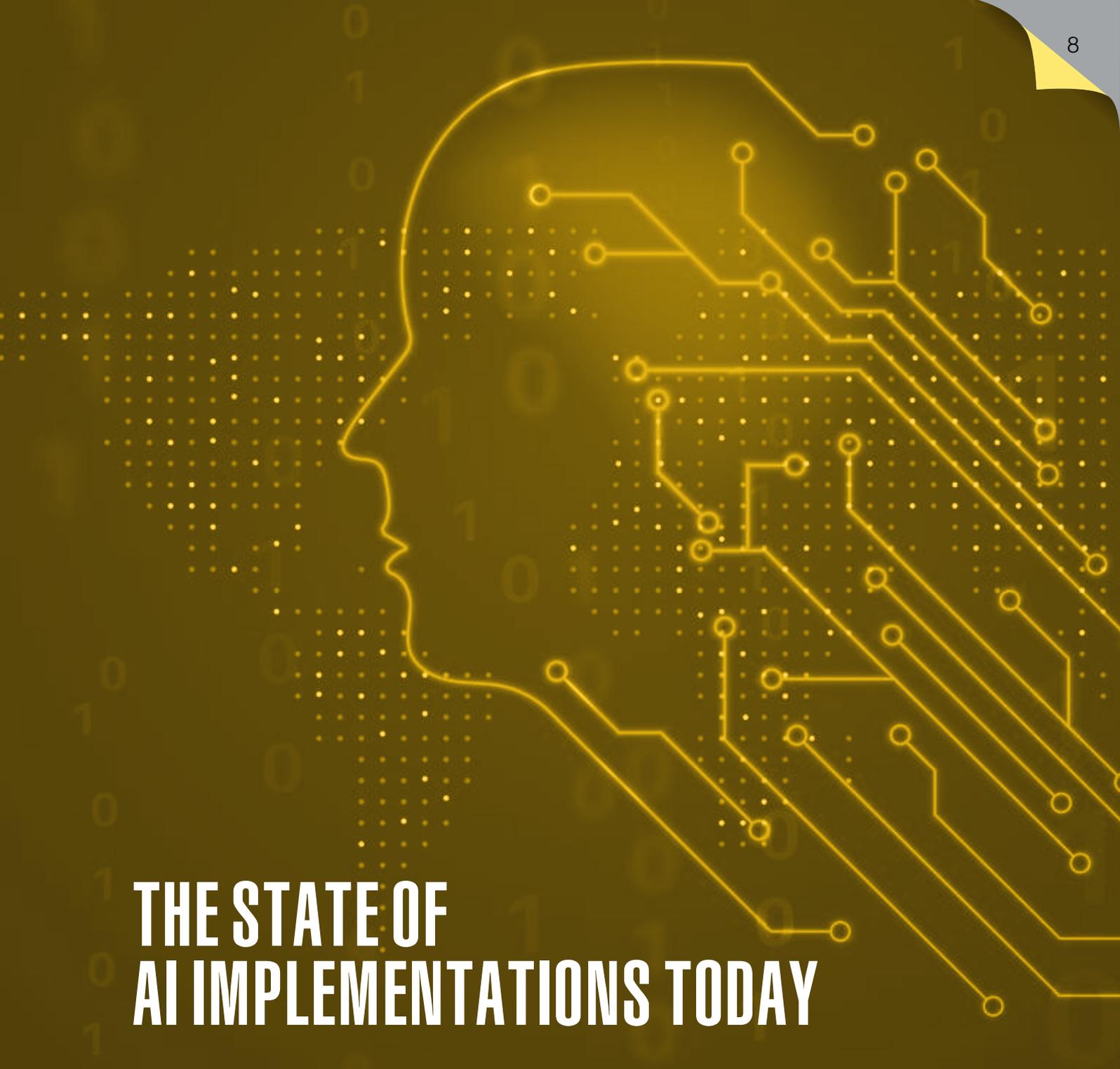


**Analytics data, combined with Machine Learning (ML), can power more accurate decision on the customer journey.**

Another way in which AI transforms customer value management (CVM) is via its ability to convert unstructured data into meaningful insights. Optical character recognition (OCR) extracts alphanumeric inputs from images, screenshots, PDFs, and other unstructured data assets. This can be auto-populated into the customer database without any intervention from a contact center executive. As a result, carriers can maintain a comprehensive and dynamically updated customer database, at optimized effort levels. The AI driven audio to text converters help to understand customer sentiments on a audio call to Contact Center and can be helpful for generation of automated and more complete Net Promoter Scores. This is further amplified via natural language processing/generation (NLP/NLG), which can translate information in natural languages like English into a machine-readable format. This plays a major role in social media analytics for telecom, scouring social platforms to find brand mentions, negative comments, positive feedback, and other sentiment indicators.

All of these elements together drive up customer lifetime value by empowering carriers to interact with them more meaningfully. It is estimated that frequent engagement can increase revenue per customer by as much as 40 per cent; personalizing customer experiences based on Ai insights can boost ROI by 5-6X times.

Owing to these benefits, carriers are eager to invest in AI deployments, targeting specific use cases like sentiment analysis on social media , predictive email marketing automation, Audio Sentiment Scoring , Geofencing Offer Recommendations . Unfortunately, these projects often struggle to scale up in tandem with business growth, even as organizations find it challenging to integrate discrete AI pilots with the overall enterprise digital footprint.



# THE STATE OF AI IMPLEMENTATIONS TODAY

As AI fast becomes a mainstream technology (following in the heels of once-disruptive trends such as the cloud and big data), issues around scalability begin to emerge. Accenture found that 84 per cent of C-level leaders believe scaling AI is integral for the business strategies, but only 16 per cent have successfully gone beyond early-stage experimentation. Worryingly, 75 per cent said that they risk going out of business in the next five years if the scalability issue in AI isn't addressed.

Zeroing in on the telecom sector, research suggests that AI implementation is yet to reach its promised potential. Only 41 per cent of operators use advanced analytics (including AI) to onboard new customers; only half are using this technology to auto-match customers with the right subscription plans. And even in today's digital world, 94 per cent of operators communicate with their customers via SMS – even more worryingly, texts are personalized in only 20 per cent of cases .

Clearly, AI is yet to find widespread adoption and continues to be limited to sporadic CVM use cases. This isn't due to lack of interest, given that one out of five companies (across industries) are planning industry-wide AI deployment, moving ahead of isolated pilots . This brings us to a key question: why are organizations, then, not implementing AI at scale?





# CHALLENGES HOLDING BACK ORGANIZATIONS FROM SCALING AI

There are several reasons why carriers could fail to deploy AI across the entire CVM function, in spite of successful pilots. To begin with, there are technical challenges that limit AI 's capabilities. If the objective of AI is to mimic human-level intelligence and understanding (so that a chatbot could hypothetically be as sensitive and versatile as a contact center executive), there is a long way to go. A human being can spot the difference between a massive variety of objects – between 1022 and 1048 objects, according to research . But the most powerful AI engines today perform approximately 1020 times worse than human cognition.

Setting aside this foundational challenge, carriers often find it difficult to train their AI engines with the requisite data sets and learning techniques. In the absence of reliable, comprehensive customer data and effective feedback from the trainer, AI engines will soon fall short of expected performance benchmarks in more grueling interaction scenarios.

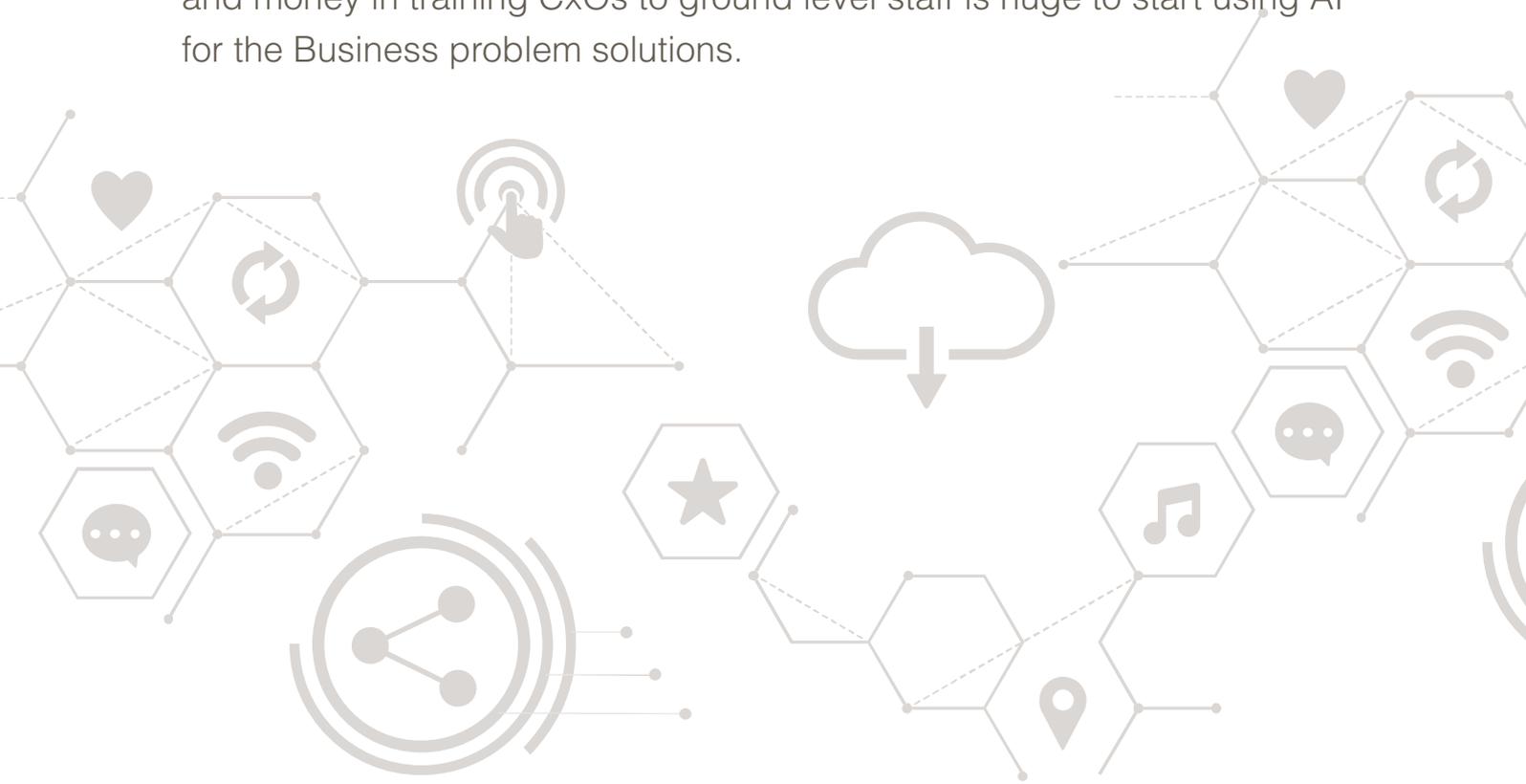
A futuristic, glowing yellow robotic hand reaches out from the left side of the frame. The hand is composed of several segments, each with a circular joint. The background is a warm, yellow-toned digital landscape featuring various data visualizations, including a large circular gauge with a needle pointing to 90%, a bar chart with three bars of increasing height, and a network of glowing lines and nodes. The overall aesthetic is clean, modern, and high-tech.

Another bottleneck in large-scale AI implementation is the skills level in a telecom organization. Developing, training, managing, and utilizing AI requires highly-specific skill sets, over and above analytics capabilities. PwC found that nearly one out of 10 companies is yet to develop any sort of plan for building an AI-ready workforce, despite acknowledging its need . In contrast, strategic scalers of AI (as identified by Accenture) are 1.5X times more likely to receive formal training, 2X more likely to understand AI's application in the job role, and 1.7X times more likely to know how to implement AI responsibly than laggard organizations.

Finally, one of the biggest roadblocks to scaling AI is the absence of a unified strategy and leadership vision. In most cases, there is no centralized owner for AI, which means that non-technical employees in the CVM function could be tasked with AI success. In many cases, AI falls entirely under technical teams, impeding collaboration with marketing, customer support and CVM. According to PwC, the data and analytics team owns AI in approximately 1 out of 5 companies; for 14%, the automation team owns AI. Only 15% have an enterprise-wide AI leader to guide implementations in a single cohesive direction.

While the first challenge may require technology advancements at the foundation, skill gaps, fragmented strategies, and the lack of clear ownership can be effectively addressed to accelerate AI growth.

Investment needed on AI tools and technologies to get the scalable, user friendly, lower lead times benefits from the technology for solving specific business issues. Where AI needs to handle unstructured data, the investment is needed in Hadoop Clusters that have cost involved of enterprise licenses. Understanding AI by the business to think in terms of solving the business case is another hurdle. The investments of time and money in training CxOs to ground level staff is huge to start using AI for the Business problem solutions.



**5** <https://www.prnewswire.com/news-releases/global-survey-reveals-telecommunications-providers-lag-in-use-of-applied-ai-and-machine-learning-300827892.html>

**6** <https://www.pwc.com/us/en/services/consulting/library/artificial-intelligence-predictions-2019.html>

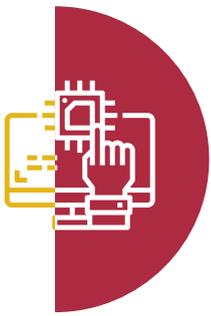
**7** <https://arxiv.org/abs/1505.00775>

**8** <https://www.pwc.com/us/en/services/consulting/library/artificial-intelligence-predictions-2019.html>

**9** <https://newsroom.accenture.com/news/failure-to-scale-artificial-intelligence-could-put-75-percent-of-organizations-out-of-business-accenture-study-shows.htm>

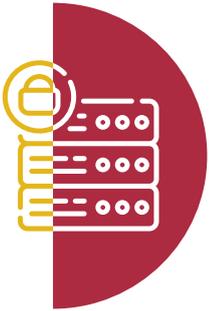
# BEST PRACTICES FOR A SUSTAINABLE AI STRATEGY

To ensure that investments in AI for increasing customer value return the expected ROI in the long-term, organizations can:



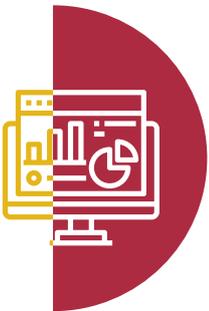
The strategic positions like Chief Data Science Officer or Chief AI Officers are required to focus on creating AI driven initiatives across organisation. This will provide good thrust on investing in AI and get ROI from the same across multiple functions of the business. The focus on an AI-driven roadmap for three to five years will be enabled with this.





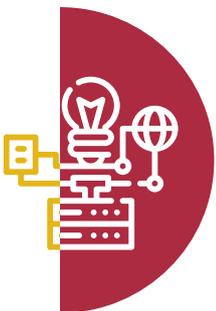
Strengthen the underlying bedrock of data - By collecting data regularly from omnichannel sources, carriers can train the AI engine to better understand the customer and intercept queries. This requires a data lake infrastructure that is equipped to handle big data and a governance framework to spot data gaps.

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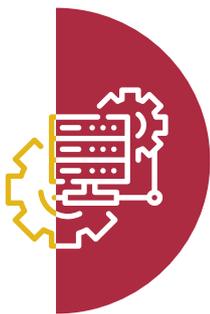


Implement a workbench for data scientists - A workbench will allow employees to gain self-service access to data, thereby simplifying the ML prototyping process and improving productivity for every stakeholder. The more advanced, intuitive and user friendly workbench tools are required so that business analysts and business teams can start using the same to solve the simple to medium-complex business problems. Even data scientists can leverage modeling workbenches to speed up AI implementation exponentially.

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Leverage AIOps – Advanced AIOps can identify AI use cases to transform IT and network capabilities for greater service availability, optimized internal processes, and better customer experiences. Beyond IT operations, AIOps will also influence CVM finds a survey by TM Forum, according to which customer experience enhancement (77%), OpEx reduction via automation and closed loop systems (62%), and predicting IT outages/ failures (45%) were the top three drivers for AI adoption among communication service providers.



Reimagine the culture - This is a critical cog for scalable AI implementation. Companies need to step away from a single leader-driven decision-making process and embrace data-driven strategies; this would mean large-scale democratization of the workforce, bolstered by adequate upskilling.



Test for bias - Bias is a massive concern for AI implementation, particularly in CVM, as biased customer data could skew the insights generated by AI. The testing process must factor in this issue, ensuring that there is no risk of unethical AI or discriminatory data insights that adversely impact both the customer and business success.



Use of AI for telecom companies in the current Emergency Global Pandemic situations and post pandemic situations can be enhanced across network capacity and fault predictions, big data analytics based applications for contact tracing, et all. Other use cases include enhancing cybersecurity by detecting security threat over telecom networks predictively, better AI power customer insights for CRM and retail stores in the remote contacting scenarios and aligning the network elements components supply chain before the failure happens to avoid network down times.

**11** <https://inform.tmforum.org/catalyst/2019/04/repeat-aiops-future-telcos/>

**12** <https://www.mckinsey.com/~media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Driving%20impact%20at%20scale%20from%20automation%20and%20AI/Driving-impact-at-scale-from-automation-and-AI.ashx>

# CONCLUSION — THE ROAD AHEAD

It is estimated that AI could have over a \$100 billion impact on the telecom sector, if implemented effectively . To realize this potential, it is vital to overcome the scalability hurdle and embed AI into the overall enterprise fabric, impacting every customer interaction, engagement, and offering. The potential of AI will only increase, as computing technology becomes more powerful, affordable, and accessible.

By implementing the aforementioned best practices, telecom companies can build a launchpad for scalable AI, dramatically increasing customer value. Better customer experience is among the top five monetizable benefits of AI – to take advantage of this, a robust data governance structure is required, in conjunction with AI-aligned leadership strategies and the requisite employee skill sets.





## ABOUT COMVIVA

Comviva is the global leader of mobility solutions and a part of the \$21 billion Mahindra Group. With customer centricity, innovation and ethical corporate governance at its core, the company's offerings are broadly divided into three categories-Financial Solutions, Digital Systems and Growth Marketing. Its extensive portfolio of solutions spans digital financial services, customer value management, messaging and broadband solution and digital lifestyle services. The company strives to enable service providers to enhance customer experience, resolve real, on-ground challenges and leverage technology to transform the lives of customers. Comviva's solutions are deployed by over 130 mobile service providers and financial institutions in over 95 countries and enrich the lives of over two billion people to deliver a better future.

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