Customer-Focused Intelligence

Unlocking AI's Power to Elevate Mobile Operator CLV

MCE. Mobilizing Customer Experiences

Table of Contents

The AI Era is Here. Let's First Understand its Applicability.

Since OpenAI's splash with the release of "ChatGPT," the mainstream perception of AI has changed forever; it suddenly became sexy. In ChatGPT's wake, nearly half of executives indicated in a Gartner survey that its publicity drove them to increase investment in AI, despite the fact that AI has been used in analytical capacity since the 2000s and even before. It is clear and has been for some years now that AI is here to stay and is dramatically changing industries across the board for the better. Telecommunications has jumped into the water. Within this industry, its definition and application seem be nebulous at times.

Currently, many telcos organizations are predominantly experimental with AI – GenAI specifically – or they've applied it for internal applications, with few large-scale projects for external, customer-facing applications showing success. Because of the increased investment, expectations and visions for what GenAI can deliver have skyrocketed and the pressure to deliver ROI is mounting. What's more important, is the changing consumer landscape that will necessitate change and AI can be the conduit.

However, we must walk before we can run. In order to achieve the ROI mobile operators seek from AI implementation, it's critical to understand all the components to successfully deploying AI for customer experience in telecommunications. Otherwise, high aspirations can turn into disappointment and lost investment.

In this ebook, we'll break down the moving parts for Applied AI for mobile operators who want to transform their customer experience for the better. "It will lay the base for your understanding of how to strategize on leveraging Applied AI for better customer experience and how to achieve a strong — and sometimes even fast — ROI.

Yuval Blumental,
CEO & Co-Founder
MCE Systems

Pressure on the Customer Lifetime Value (CLV)

Mobile operators or "operators" are at a crossroads. They sit at a juncture between the need for transformation and managing financial pressures, including high debt burdens and interest rates to count following 5G deployment; increased competition from smaller newcomers like virtual network operators; limited room for revenue growth in highly saturated market; and rising costs to operate and serve.
This is forcing operators to become more agile and adapt to an evolving consumer landscape in order to reduce churn. When churn is at risk, mobile operators are inhibited in their ability to further monetize, which is further exacerbated by rising costs to operate. As a whole, due to shifting consumer trends and economic factors, operators are seeing their customer lifetime value at risk.

Over that span, carriers split their business between RAN and services, pouring investment into technologies like 5G to improve network connectivity and satisfy an increasing hunger for connectivity and speed as consumers depend more and more on their smartphones to power their daily lives. While operators have invested in their legacy revenue generators – network and billing – device-related customer experience has not received the same attention, which will prove problematic. Device-related experiences are key points of friction and uncertainty for customers, which can increase likelihood of churn, higher cost to serve and lost monetization opportunities.
An increasingly savvy consumer base due to generational shifts has challenged the status quo, prompting the need for mobile operators to cater to their needs.

Transformation, however, first requires an understanding of which direction to go.
For many years operators were product-focused – selling the products they prioritized to their customers at the time and place of their choice. However, with consumers increasingly demanding personalization and customization, operators are hard-pressed to shift to pushing what their customers want to buy, and when they want to buy it.

>4%

increase in OpEx for 3 consecutive years **(1.4 and 1.5% in 2017 and 2018, respectively)**[1]

0-1%

expected ARPU growth in 2025 for mobile operators[2]

31

NPS score for U.S. mobile operators collectively[3]

Shifting to a Customer-Focused Strategy

Shifting the approach to customer-focused means first understanding what the customer will want. The modern customer has arrived with a generational shift and wants speed, personalization and self-service capability – largely driven by a growing Gen Z consumer base, with Gen Z spending set to surpass baby boomers, according to projections.

While it may seem like a costly bill to foot, the inability to meet expectations of a new generation of customers at different phases of the device lifecycle will have deep consequences for customer loyalty, resulting in reduced NPS and churn – and not in the long run, but rather soon. Not only can shifting to a customer-focused approach set a baseline to meet new customer expectations, but it can also deliver increases across several key business metrics for operators.

However, a gap still remains between the consumer landscape and customer experience in practice. Although many operators have begun undergoing a digital transformation process, hoping to achieve level four or five digital maturity in customer service to address these changes, there is still room to go.

The Generational Shift in Consumer Expectations

76%

of consumers get frustrated when companies don't deliver personalized interactions[4]

59%

of customers prefer a digital-first, self-service approach to their journeys[5]

71%

of customers are expecting personalization from companies[4]

81%

of customers expect faster services as technology progresses[6]

The Mobile Operator CLV Impact of Shifting to Customer-Focused

8%

increase in annual incremental revenue[7]

15%

lower cost of service[7]

40pts

NPS increase[7]

Source: **Model makeover: Turning a telco into a customer-centric tech-co, McKinsey 2024**

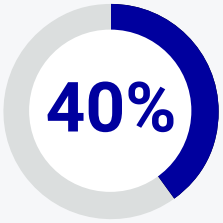
AI Has Entered the Chat

AI's origins in business application for customer experience started as early as the 90s with machine learning-driven customer analytics, steadily increasing in complexity and capabilities toward voice recognition – what we see in smart home products like Siri or Alexa. Now, AI is part of every aspect of our daily lives, from the face ID on our iPhones to recommendations on Netflix to GPS navigation to get to work. With the introduction of large language models powering GenAI into the mainstream, consumers have become increasingly conscious of what AI can deliver them and companies have felt the pressure to ramp up their AI investments.

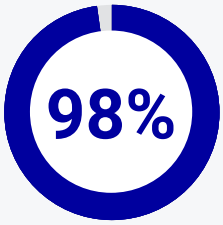
Mobile operators are fully embracing the momentum generated by the introduction of GenAI and the promise of its applicability for operational optimization.

Network optimization is a strong example where operators have directed their AI efforts, but customer experience has become a highly critical area in need of attention and failing to address it could inversely have a negative impact on financial metrics. Mobile operators are now recognizing the value of AI in addressing customer engagement, with 48% indicating they've onboarded AI in order to make a greater impact on the customer experience.

One of the most effective means of addressing customer experience is viewing it through the prism of mobile device lifecycle management – engaging a customer spanning the time they are locked in with the operator – from onboarding and activation to device care to trade-in or upgrade. Each stage presents a potential point of churn when a customer experiences friction or they don't receive the ideal solution or, worse, their issue goes unresolved altogether. While there is a lot of hype around how AI can deliver better customer experience, few applications exist on the market with proven results that can deliver results and improve CLV.



of consumers indicate they are excited about the different uses of AI[9]



of companies worldwide feel the urgency to integrate AI into their systems[9]

Telecommunications Organizations Are All Aboard the AI Train

97% of telecom executives said they're either adopting or assessing AI in their operations.[10]

80% of telecom executives indicated that AI is important to their organization's future[10]

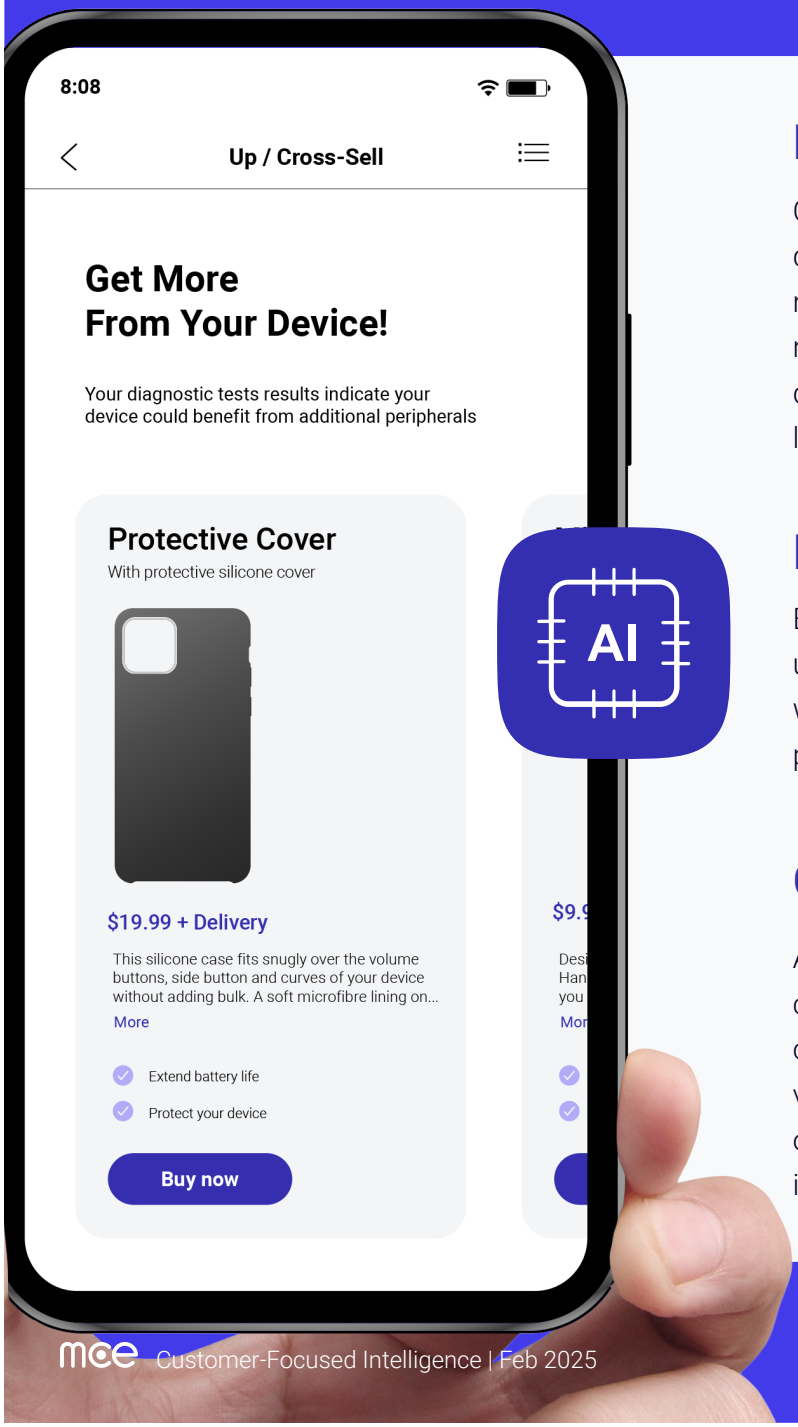
77% of telecom executives agree that AI will give their organizations a competitive advantage[10]

Source: **NVIDIAState of AI in Telecommunications: 2024 Trends Survey Report**

The Nebulous Understanding of AI in Mobile Device Management

The nebulous nature of the term "AI" can lead to misconceptions or set unrealistic expectations. Dozens of "AI-driven" solutions exist on the market for customer experience enhancement, but few have actually proven to create real-world impact or are truly AI-driven. This has left a nebulous definition for AI in telecommunications, hence the limited ROI seen so far by mobile operators for CX.

In order to create the desired CX impact across a device lifecycle, AI must focus on points of service and timeliness or relevance of engagement, ensuring that customers' unique preferences and interests are accounted for. AI applications for mobile device lifecycle management and CX must be able to deliver the following qualities:



Proactive

Collate data from customer CRM and mobile devices to identify the right resolution at the right time for the customer before they may reach a point of risk of churn, i.e. poor mobile device diagnostic performance that leads to lower NPS.

Personal

Engage a customer in terms that they will understand, feel comfortable with and will address the customer's need with precision without creating uncertainty.

Connected

AI must be deployed to operate across all channels, capable of supporting reps or customers in retail, call support centers or via the mobile app. Operating in a silo without omnipresence, it is doomed to be fragmented in its ability to unlock and deliver value.

Applied AI: The CLV Game-changer

To be proactive, personal and connected in real-time, mobile operators require that AI perform three distinct functions – collating and analyzing data, interpreting it and creating a contextualized output.
This requires a combination of traditional components, which are machine learning (ML), deep learning (DL) and natural language processing (NLP) or, in simpler terms, "analytical AI," "perceptive AI" and "Generative AI" (GenAI). Below is a matrix defining the purpose and application of each.

The Applied AI Triad	Analytical AI	Perceptive AI	Generative AI
Purpose	Scrutinizes, interprets and draws insights from data	Interprets and understands real-world data inputs, often in real-time	Produces new data or patterns such as text or images
Data direction/flow	Data processing	Input data to AI	AI outputs data
Applications	Predictive models Next-Best-Actions	Voice-to-text Visual recognition	Chatbots Image generation

Together, these three form the basis for any application of AI or "Applied AI" – the practical application of artificial intelligence for real-world business problems. It is distinctly differentiated from general artificial intelligence which is designed to imitate human behavior. Instead, Applied AI is focused on delivering a desired outcome in a multi-faceted environment. Ultimately, Applied AI allows a mobile operator to become more proactive with the customer base across different channels, regardless of the type of customer engagement.

Multi-Objective Optimization

Contextual Decision-Making

Predictive Analytics

Dynamic Adaptability

Real-Time Execution

To drive this kind of success across channels, mobile operators require data, guardrails and the underlying digital framework, which function as rails to a car.

Without it, Applied AI gets derailed quickly – but combined the right way can transform Applied AI into powerful DeviceAI.

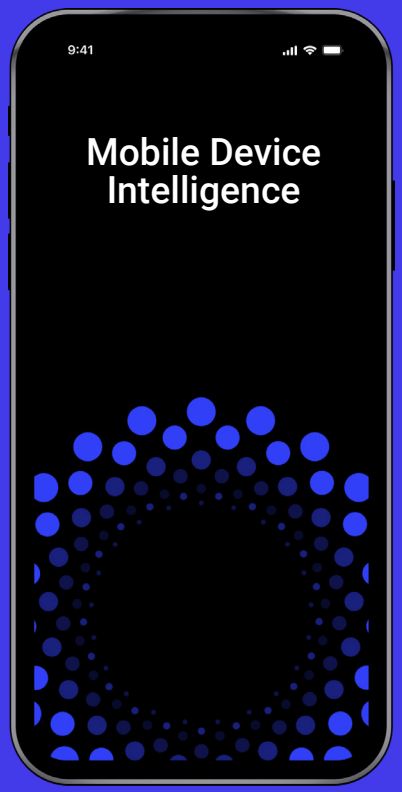
DeviceAI: Bridging Device Intelligence and Applied AI

Applied AI's success hinges on data from multiple sources. Within the mobile device lifecycle management, data from these sources is called mobile device intelligence, consisting of real-time, historical and configurative data, such as IMEI number, make and model information and diagnostics performance data.

DeviceAI – the connecting function between these data sources and Applied AI – converts these data points into actionable insights that allow AI to engage with a customer and select the best outcome, including the more proactive choice in many cases.

Acquiring device intelligence begins with turning a mobile device into a data source at the onboarding phase of a customer's device lifecycle. Data collection continues throughout the lifecycle, including real-time information as the customer performs actions like diagnostic, self-help device health checks. As data points are accumulated, they are matched with on-file CRM data toward more proactive decision-making across the lifecycle.

For example, a customer whose CRM data indicates they are near the end of their postpaid plan can be prompted with a push notification to execute a device health check via the operator's mobile app. Should the check demonstrate poorer device performance, the operator's on-device AI function can proactively offer an upgrade or trade-in with another contract.



IMEI

Allows AI to easily match the hardware device to the customer in the CRM to ensure targeting is hyper-accurate for engagements like contextual marketing and general security.

Diagnostics / Performance

Real-time, up-to-date and historical information on the device's software and hardware status and condition that enables smarter, hyper-accurate decision-making in any device-related journey, such as device care.

Make and Model

This information provides clarity to AI on the device and establishes more context to deliver more accuracy in device assessment or marketing opportunity, i.e. market price transparency in trade-in offer.

Keeping AI in Context: Guardrails

Much like train cars are guided by rails to stay on course, Generative AI requires guardrails to give it boundaries to operate within before outputting a response to the customer in an interaction. Because GenAI programs typically leverage open AI models like large language models (LLMs) to create an output, it's important that any customer-facing application has guardrails. This helps prevent GenAI from creating undesirable outcomes, like inappropriate responses or misusing data. The purpose of guardrails can be broken into three central pillars for mobile operators:

Safety and security

Ensuring that data inputs and outputs are secured from malicious external actors and are not openly accessible.

Situational contextualization

Focusing the GenAI to ensure only relevant and appropriate outputs are generated for the interaction at hand.

Compliance and regulatory

Providing legal and regulatory context for GenAI to ensure it is not violating consumer privacy laws.

The Digital Maturity Obstacle to Operating DeviceAI pt. I

Mobile operators have invested in digital transformation by moving data to the cloud to reduce costs, but there are more steps in the transformation, especially toward AI. The pressure exists to onboard AI solutions more hastily in order to achieve specific innovation goals, but without digital maturity, the true ROI will be largely unrealized. Legacy systems which are siloed, disconnected and not digital are unable to be augmented or impacted by AI.

For effective AI transformation, mobile operators must have sufficient digital maturity with connecting platforms to ensure value realization. Let's explore what a lack of digital maturity looks like in terms of customer journeys that could lead to diminished gains.

In a survey of 23,000 operator customers titled "Telco NPS is at Risk During the Smartphone Lifecycle," MCE identified three key points of friction in customer journeys caused by the absence of digital connectivity between channels and thus the fragmentation of customer journeys and data:

A lack of remote intelligence

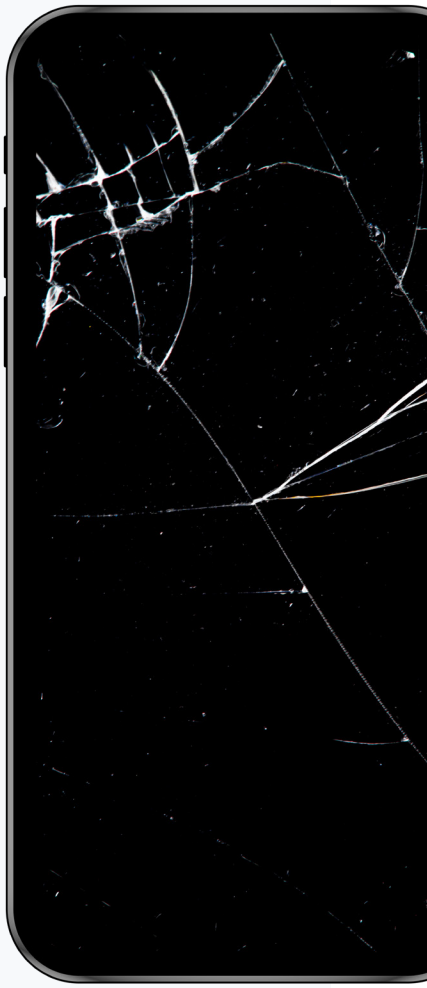
The inability to access in-depth information about a customer's mobile device renders customers and frontline representatives unable to make smart, informed decisions remotely about the best action to take with their mobile devices. This often forces the customer to visit a retail outlet or to call a customer center unnecessarily.

Limited data on customer device history

A lack of information on the customer's device that leads to repeated steps in certain types of journeys when transferring between channels and creates blindness to a customer's previous experiences.

A fragmented and inconsistent experience

A variance in the levels of service and difference in product promotions between channels, which can often lead to customer confusion.



The Digital Maturity Obstacle to Operating DeviceAI pt. II

Over the course of the device lifecycle, customers experience friction at different touchpoints, often attributable to the fragmentation of journeys – a consequence of the absence of digitization. Without full digital maturity, an end-to-end journey cannot be delivered.

	Customer journey Example and explanation	NPS metric	Why this impedes DeviceAI
Onboarding phase	Slow content transfer and delayed or problematic device activation processes, as well as lack of personalized offers in the onboarding phase lead to lower NPS. Moreover, the lack of digitization creates an inability to gather and collect data throughout the lifecycle.	**-16 points**[4] in the onboarding and device activation phase	Without turning a device into a data source in the onboarding phase, DeviceAI cannot identify trends, decision points or track KPIs, which in turn inhibits predictive accuracy and engagement in contextual conversations with the customer. This inhibits the ability to create personalization in the initial activation phase.
In-life	Insurance claims, device care and VAS upsell processes are confusing and frustrating because they are disjointed between channels and customers find themselves restarting processes during a transition from one channel to the other.	**-19 points**[4] for phone care	When customers transition between channels for service, without transferability of data between the channels, the customer journey becomes fragmented and full of friction. This inhibits AI's ability to deliver a seamless customer journey end-to-end, between channels.
Retention	Mobile operators are missing the opportunity to offer a trade-in promo to customers and better retain them because they lack the data to contextually offer trade-ins.	**-18 points**[4] for no trade-in promo offered	Without device history awareness, predictive AI cannot offer a promo for a trade-in that is most likely to convert the customer. Furthermore, a fragmented and inconsistent experience between channels causes confusion for the customer and wipes out any successful gains the AI made.

Ascending to Digital Maturity

Digital maturity or digitization of the mobile device lifecycle means shifting from level two or three to level four or five organizations and requires a digital-first approach or digital device lifecycle management (dDLM).

Full digitization through dDLM of the customer journey can maximize the gains made by AI in customer engagement, allowing a journey started or guided by AI to be completed end-to-end and connected across channels. dDLM empowers mobile operators to make the leap from levels 1-3 to level 5 with the principles of dDLM, which can be consolidated into three digitally-enabled capabilities:

1

Siloed singular events with low immediate resolution capability

3

Some journeys are digitized and connected, but not all

5

Full end-to-end omnichannel implementation

Remote Intelligence Enablement

Customers and operators' employees can engage with the operator's digital services remotely and are given on-device, digital tools to execute self-help functions across different journeys. This allows the operator a unique access point for data. In practice, having this capability enables remote device support and contextual marketing.

Channel Consistency on a Truly Omnichannel Platform

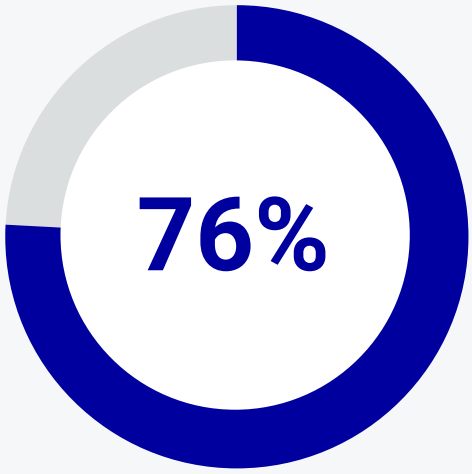
Customers can receive the same level of service across all engagement channels – from retail to on-device mobile app to call support center. This allows the operator to streamline journeys and reduce customer confusion on marketing offers or device care support between channels.

Device History Awareness

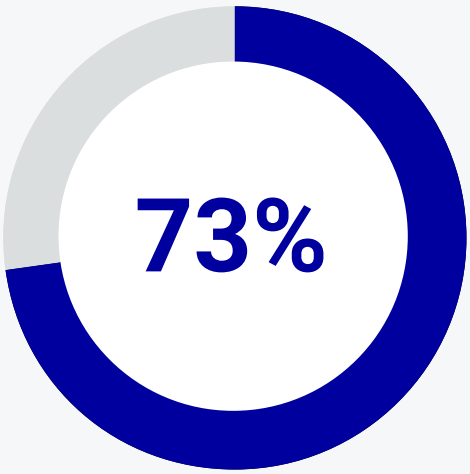
This capability lets customers pick up where they left off when changing channels, rather than having to start over or repeat steps. It also enables an operator to have a complete repository of previous customer experiences over the course of a device lifecycle and thus the ability to engage a customer with the appropriate response in any given scenario.

Customer Loyalty with Digital Maturity

Customers also prefer this kind of approach to engagement, with most indicating in MCE's report that they would prefer an operator who delivers this degree of seamlessness in customer journeys. When combined, dDLM enables mobile operators to apply intelligence or "DeviceAI" across the lifecycle at different points in time.



of U.S. customers indicated they'd stay loyal to a telecom operator applying dDLM concepts[5]



of U.S. customers indicated they'd defect to a competing telecom operator applying dDLM[5]

The Bottom Line: Business Impact

The ROI of AI lies in the ability to drive real-world results and move the needle in the customer experience. In a customer-centric approach, that means becoming a proactive organization across the entirety of the mobile device lifecycle, at key points of churn and determining the best course of action at each point. DeviceAI can empower an operator to manage these points and experience real-world business impact. If we look at the matrix below, we can see how dDLM and DeviceAI can impact different customer lifecycle points.

Onboarding: Digital device evaluation tools help accelerate device activation and content transfer times and accurately assess new customers' devices with bring-your-own-device (BYOD) cases. DeviceAI helps identify opportunities with new customers for insurance attachment.

In-life: Provide customers with the digital capability to troubleshoot their device and to interface with a chatbot to receive service. DeviceAI assists in determining the best course of action for a customer in any given service scenario, including value added service upsell opportunities.

Retention: Better retain customers at the point of churn near the end of their postpaid contract or use of their mobile device by analyzing customer data, predicting the risk of churn and triggering an offer to retain the customer.

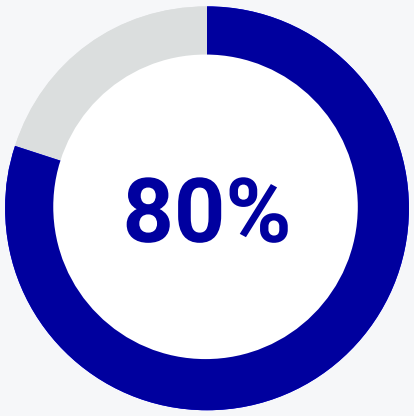
	Onboarding	In-life	Retention
Brand loyalty	>70% reduction in onboarding time improves CSAT scores.	Improve NPS by 20 points with a GenAI-driven customer service chatbot managing device care issues. Avoid 60-point NPS drop with customer repair journeys.	Proven NPS bump from seamless, digital-first approach with guaranteed price (+17 NPS, +19 ppts CSAT).
Monetization oppotunity	20% increase in insurance take rate for bring-your-own-device (BYOD) customers.	Increase average revenue per user (ARPU) by up to $22 and conversions by up to 0.2 percentage points with DeviceAI driving care to commerce journeys.	Increase total trade-in volumes up by 5x Improve rate plan X/U-sell by +20ppts.
Cost of service efficiency	Boost digital-first conversion rate by up to 60 percentage points.	Incur up to 30% in opex cost savings by deflecting unnecessary calls to the support center with AI-driven chatbot device care. Deflect up to 50% or more of no fault found warranty claims.	Reduction of variance with device intake in trade-in to 6%. 78% reduction of in-store trade-in processing times.

Source: **Internal MCE data**

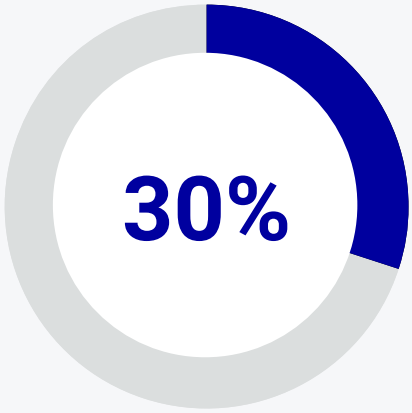
In Practice: The Virtual Agent pt. I

Large organizations, including mobile operators, are using virtual agents or virtual assistants to automate service processes, gate-keep against unnecessary inquiries to support, deliver more personalization and support calls and reduce cost to serve. But it's not necessarily always to the benefit of both the customer or business goals of the organization.

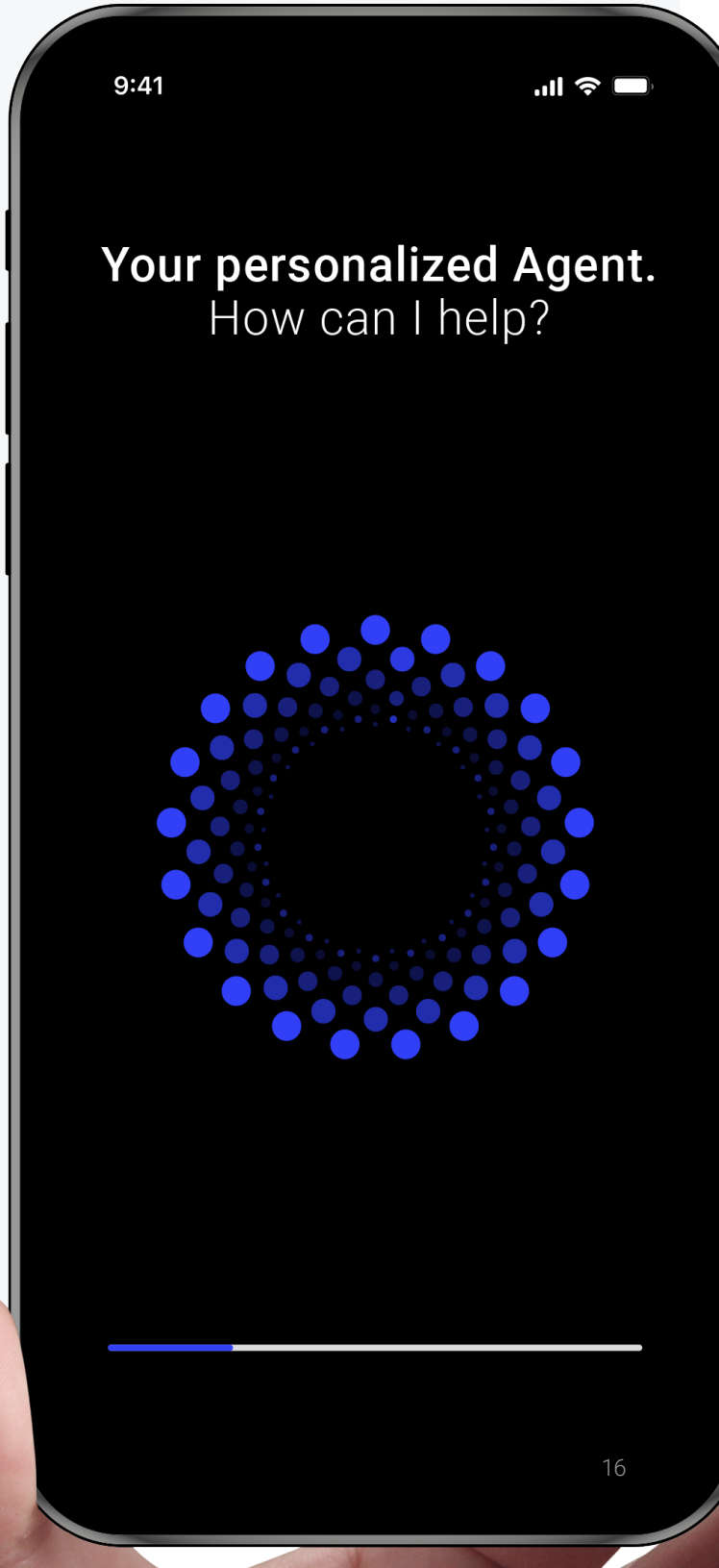
Virtual agents are unable to be proactive and personalize experiences, because they are not supplied with adequate data on the mobile device. This inhibits them from delivering the best resolution in any given scenario. When device intelligence is supplied to DeviceAI managing a customer journey, the virtual agent can achieve business- and customer-optimal results. Let's consider this with a device care journey.



of customers have interacted with a virtual agent (chatbots) operator applying dDLM concepts[11]



of customers say virtual agents or chatbots are very effective[12]



In Practice: The Virtual Agent pt. II

Device care journey on operator mobile app without AI driving virtual agent

STEP 1

Chatbot provides generic greeting with static category selection

Risk of user dropping from journey if the generic list of issues proposed by the agent is not the customer's problem.

STEP 2

User selects or inputs mobile device issues

STEP 3

Chatbot provides generic, non-personalized information

Limited resolution capability and complication for user with high risk of drop-off from the journey and increased dissatisfaction.

STEP 4

Chatbot has to redirect user for further information – becomes manual process for user

Journey likely ends and customer becomes dissatisfied with lack of resolution. This causes a lost opportunity to potentially monetize further down the journey.

Device care journey on operator mobile app with AI driving virtual agent

STEP 1

Virtual agent provides personalized intro actioning device history

Customer is more likely to engage with the virtual agent and commence the journey.

STEP 2

User selects or inputs mobile device issues

STEP 3

User provided with live data to pinpoint device issue with explanation of fault

Mobile operator has capability to reach total or near-total resolution with much lower risk of customer journey drop-off.

STEP 4

Personalized & contextual resolution / offer based off the unique user needs

Customer much more likely to continue journey with a highly personalized promotional offer.

Impact at a tier-1 telecom carrier

TELUS

Objective

Leverage a customized journey with a GenAI-driven chatbot to increase marketing promo engagement and retail store visit intent

4x

increase customer engagement with the GenAI-driven, chatbot-guided journey

1.5x

increase in device diagnostic tests completion (for DeviceAI to collate insights)

3x

increase in actioning a marketing promo when offered by the virtual agent

1.5x

increase opening of the retail store finder tool

Read More

MCE Systems: Pioneering Real-World AI for Mobile Operators

With the AI hype in full swing and pressure on the CLV, now is the time to implement more digitization across customer processes and then identify concrete business cases where GenAI can enhance customer experience. When done correctly, mobile operators can see the change across metrics associated with CLV. An important factor in finding success lies in having the right partner who can put the data, digitization and applied AI together into a concrete, quantifiable business case.

Backed by over 20 years experience working with mobile device lifecycle management in the telecommunications industry, MCE is pioneering the next generation of AI for telecommunications with real-world application. Its core dDLM platform delivers digitization and intelligence to customer engagement across 10 different unique journeys – from onboarding to insurance attachment to device care to warranty exchange to trade-in or upgrade. With dozens of customers and partners worldwide, MCE is one of the foremost technology leaders in the telecommunications industry, delivering mobile operators the capacity to provide the experience their customers need.

Customers

Awards

References

1 Skidmore, C., & Wardle, J. (2024, August 26). Profits still strong: 2024 Telecommunications Benchmarking study. https://www.mossadams.com /articles/2024/08/2024-telecommunications-benchmarking-study

2 Arden, A., Mooney, C., & Marino, J. (2025, January 13). U.S. Telecom And Cable 2025 Outlook: Convergence, Consolidation, And Disruption. https://www.spglobal.com/ratings/en/research/articles/250113-u-s-telecom-and-cable-2025-outlook-convergence-consolidation-and-disruption-13377186

3 Telecom NPS Benchmarks and CX Trends in 2023 | NPS in Telecoms. (2023, March 16). Customer Gauge. https://customergauge.com/benchmarks/blog/telecommunications-nps-benchmarks-and-cx-trends

4 The value of getting personalization right—or wrong—is multiplying. (2021, November 12). McKinsey & Company. https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/the-value-of-getting-personalization-right-or-wrong-is-multiplying

5 Hackl, R., (2023, June). Telco NPS is at Risk During the Smartphone Lifecycle. https://mce.systems/wp-content/uploads/pdf/MCE-2023-dDLM-Research-Topline-Report.pdf

6 What are customer expectations, and how have they changed? (n.d.). Salesforce. https://www.salesforce.com/resources/articles/customer-expectations/

7 Begonha, D., Ghidoni, J., & Salo, O. (2024, May 28). Model makeover: Turning a telco into a customer-centric techco. McKinsey & Company. https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/model-makeover-turning-a-telco-into-a-customer-centric-techco

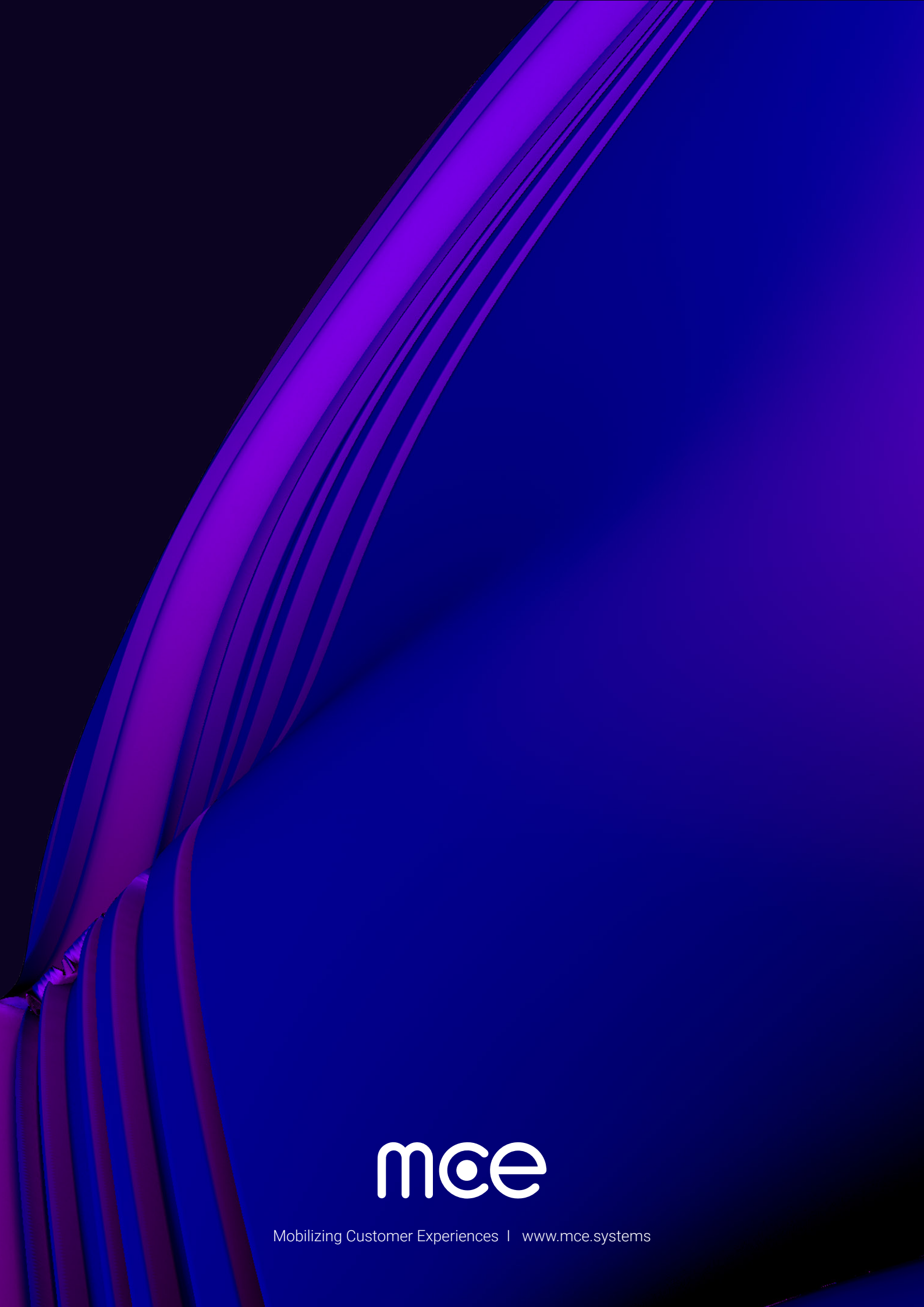
8 Of Consumers, 70% Are Excited about GenAI in the Workplace, but Only 43% Are Enthusiastic about Its Impact on Daily Life. (2024, April 24). Boston Consulting Group. https://www.bcg.com/press/24april2024-consumers-genai-in-the-workplace-and-daily-life

9 Cisco AI Readiness Index. (2025, January 22). Cisco. https://www.cisco.com/c/m/en_us/solutions/ai/readiness-index.html#blade_measuring-readiness

10 State of AI in Telecommunications: 2024 trends. (2024). NVIDIA. https://resources.nvidia.com/en-us-ai-in-telco/state-of-ai-in-telco-2024-report?nvid=nv-int-bnr-963424-vt26&xs=582167#page=1

11 Ujet. (2022). Critical state of automation in customer experience. UJET. https://ujet.cx/resources/reports/critical-state-of-automation-customer-experience-2022-report-lp

12 Revolutionize retail with AI everywhere. (2024, January). IBM Institute for Business Value. IBM. https://www.ibm.com/thought-leadership/institute-business-value/en-us/report/ai-retail


mce
Mobilizing Customer Experiences I www.mce.systems