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Shifting Left

Harnessing AI to Deliver a Consistent, Engaging Customer Experience

prepared for SCTE•ISBE by

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Introduction

Artificial intelligence and automation are coming to the foreground. As machine learning advances, artificial intelligence (AI) will continue to build an influence over all parts of the business and the customer experience. By 2021, nearly one in six customer service interactions globally will be handled by artificial intelligence. And, improved AI technologies will automate parts or all of up to 40 percent of customer service needs by 2019.[1] Indeed AI is a powerful tool at communications services providers (CSPs) disposal that can be deployed to differentiate service delivery.

Content

AI can have dramatic impact on engaging customers and delivering the expeditious and personalized experience they desire. Chatbots, for example, are becoming a common channel for customer interaction. However, the ability for AI to improve the customer experience goes far beyond the applications we typically imagine occurring at the point of customer contact. When a customer initiates an interaction, this "reactive" care is an important element of the customer journey that needs to run efficiently and with positive customer outcomes. It is a natural area for CSPs to apply AI, analytics and other digital technologies. But CSPs also need to be more proactive and predictive in managing the customer experience and herein lies the hidden AI opportunity.

Truly transforming the customer experience requires CSPs to "shift left" in their use of AI: from reactive to proactive to predictive customer care (Figure 1). Shifting left enables the CSP to move from one-to-one customer care to one-to-many customer care. This reduces the cost of care and, by pre-empting problems rather than reacting to them, CSPs can deliver a consistent and reliable experience that results in customer satisfaction.

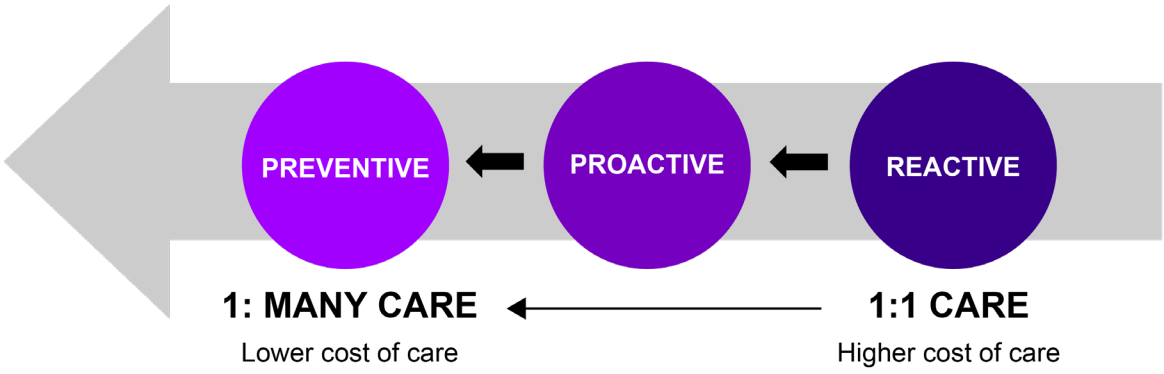

Figure 1 - Shifting Left in Customer Care

1. Three Areas of AI-Assisted Care

Three distinct areas are ripe for using AI in customer care. Each can be tackled independently, but all should be on the customer experience roadmap.

- Reactive care – Applying AI to predict why a customer is calling and get the caller to the right channel and method of interaction.

- Proactive care – Deploying AI to identify potential or likely issues with a customer's service and taking proactive actions to resolve or advise the customer.
- Predictive care – Integrating AI to identify and resolve potential problems within the network before they materialize or, if an issue does occur, accelerate the resolution to minimize impact.

1.1. Reactive Care

By embedding Artificial Intelligence into reactive customer care, companies can anticipate, engage, and satisfy customers on a one-to-one basis and cost-effectively deliver best-of-breed customer engagement. Analytics and digital conversion capabilities enable CSPs to predict why the caller is calling, move them to the right channel and method of interaction, (preferably digital) and, where possible, automate the interaction. Virtual agents automate chat experiences – both transactional and informational. Human agents are empowered with intelligent automation tools to drive higher concurrency. And, contextual information is available across all channels to create a unique omni-channel experience.

Multiple human and technology components are needed to provide AI-powered reactive care (Figure 2).

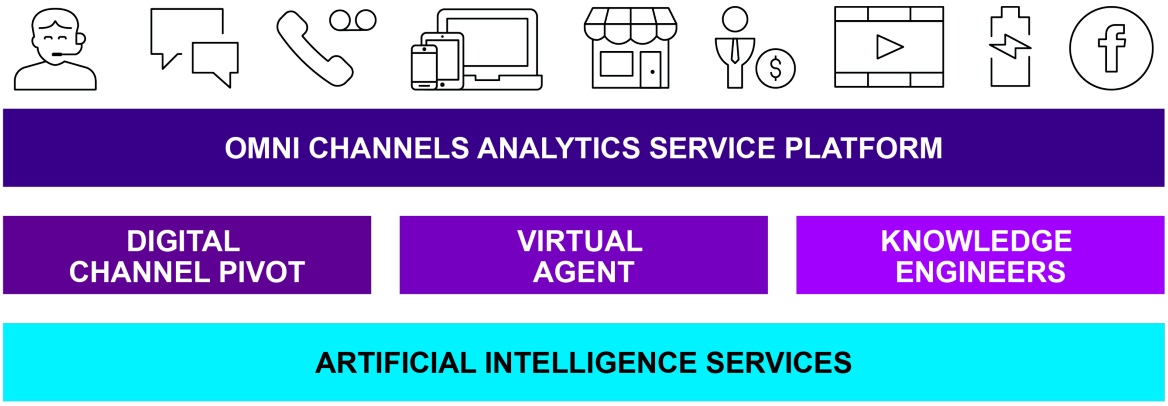

Figure 2 - Components of Reactive AI-Powered Care

- An omni-channel analytics services platform is used to analyze the effectiveness of the digital channel pivot and to inform the cognitive services with historic interaction details
- A digital channel pivot confirms the customer's intent, determines the best channel for handling/resolving the customer's intent and pivots the customer's interaction accordingly
- A digital assistant (or Virtual Agent) leverages the AI services to execute back and forth conversations in natural language
- Knowledge engineers are highly specialized chat workers who serve three functions: AI trainer, AI enhancement designer and chat agent
- Artificial intelligence services are cognitive services that support the Digital Assistant in orchestrating a human-like and context-aware dialogue with the customer.

The use of AI in these ways can create many benefits, the first of which is a differentiated customer experience. CSPs can intelligently drive customers to digital experiences; provide conversational interactions through digital assistants, increase digital adoption and containment and ultimately eliminate calls to centers. AI agent-assist improves agent performance and customer outcomes. All of these factors

drive a reduction in the cost of customer care, often by more than 30%. Global corporations implementing intelligent customer care are seeing impressive results. When customers are offered the opportunity to opt into a digital experience instead of speaking to an agent, more than 30% of customers choose this route and as high as 85% give the experience a "thumbs up." By intelligently driving customers to digital experiences, these organizations are reducing cost and providing customers with a positive experience and the significant benefit of resolving their issues more quickly.

1.2. Proactive Care

AI-powered proactive care focuses on detecting an issue in near real-time in order to try to solve it before the customer is aware or, alternatively, reach out proactively to inform the customer of the issue and its resolution plan.

Proactive care gathers data directly from both the network and the customer's home and uses current contextual information to monitor service quality and identify and address immediate issues before the customer notices them. Within the proactive monitoring of the line, a predefined set of parameters is gathered from the customers' home /devices and enriched with data from other backend/network system data. QPIs and KPIs are compared with predefined thresholds in order to continuously evaluate network performances and proactively identify issues on the line (e.g., CPE Health, VOICE issue, WAN issue, WLAN issue).

When an alarm is raised (e.g. a KPI is over threshold), a worker can proactively perform a network optimization action to try to solve the issue. Automated workers can trigger automatic recovery actions such as automatic reboots or firmware upgrades to avoid trouble ticket openings. CSPs can identify the most critical customers likely to perceive service degradation, proactively notify them of the issue and suggest "work around" options while the issue is being resolved. In instances where the CSP can't preempt customer impact, front line agents have detailed information at their fingertips to address customers' questions with accuracy when they call in.

Just as with reactive care, multiple components are needed to provide AI-powered proactive care (Figure 3).

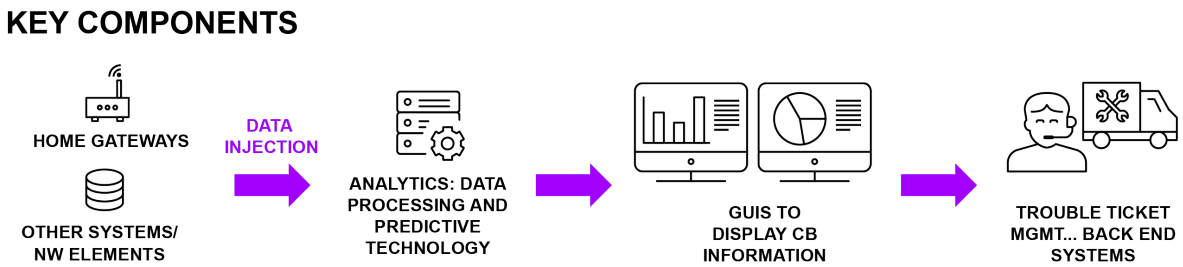

Figure 3 - Components of Proactive AI-Powered Care

- An **analytics layer** collects, processes and is the engine for visualization and proactive capabilities
- An **interface layer** displays the collected data for single and aggregated views, use cases, KPIs and alerts
- **Integration** with back-end systems allows for retrieving data to enable the use cases and

trigger recovery actions

- **Proactive use cases** utilize the huge amount of data and the power of the analytics layer

Through proactive care, CSPs can address customer claims with accurate information, prevent trouble tickets from being opened and reduce customer calls – all of which lead to reduced operational expenses, average handle time and overall time to repair. Better experiences lead to less customer churn, improved customer loyalty and build long-term customer relationships. Through proactive care one major European telecommunications company was able to identify 25% of new activated lines that were affected by service degradation, 90% of which were proactively resolved. Trouble tickets were reduced by 10% in the first period after line activation.

1.3. Predictive Care

Predictive care focuses on detecting and preventing potential issues before they occur or, if an issue does occur, accelerate the resolution to minimize impact. The issue could be at the customer or network location and activities to prevent disruption are carried out in the background.

Using a combination of customer and network data, insight based on AI and prediction capabilities help identify factors that are causing current problems or are likely to cause future problems. After a training phase, the machine learning algorithms run over processed data in order to assign a risk score to each line showing the likelihood that line will be affected by a specific type of issue (e.g. instable line, slow connection, etc.). Algorithms identify customers at the highest risk of issue (for a specific issue category), and trigger automatic recovery actions towards external systems, such as automatic reboots or firmware upgrades, to prevent an issue from occurring. Robotic Process Automation is used for preventive incident management, automated ticket resolution and assisted second level troubleshooting. These actions provide a seamless experience using analytics-driven operations, and an AI/ML powered robotics workforce to augment humans in network operations centers.

Components needed to provide AI-powered preventive care include AI-driven assurance, a network operations center and robotic incident management (Figure 4).

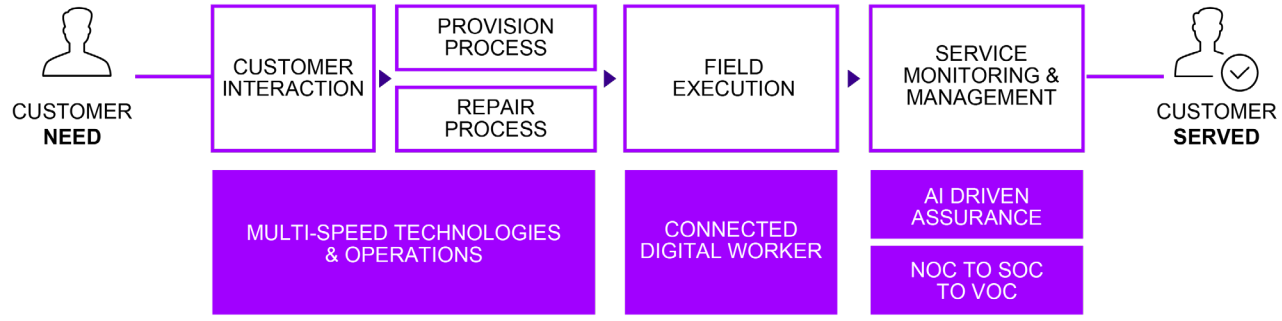

Figure 4 - Components of AI-Powered Preventive Care

- **AI-driven assurance** anchors intelligent data-driven operations around the customer, using a mixed workforce of humans, robots and AI entities to enhance customer experience and operational effectiveness.
- The **Network Operations Center** (NOC) evolves not just to a Service Operations Center (SOC) that facilitates service-centric operations, but all the way to a new digital services operations model that leverages analytics capabilities to capture the Voice of the Customer (VOC).
- **Robotic incident management** employs digital bots that recognize alarms and automatically process tickets until closure, interacting with humans through AI user interfaces.

Benefits of predictive care include increased operational efficiency and reduced operating cost. But importantly, the customer experience impact is substantial. Through predictive capabilities CSPs are resolving issues before they happen that could potentially impact hundreds of thousands of customers at a time. One organization implementing predictive node failure achieved an 18% reduction in level one supporting resources and a 10% reduction in customers calling due to technical issues.

Making the Shift Left

Artificial Intelligence will soon be the foundation for delivering a consistent, engaging customer experience. Right now its use across reactive, proactive and predictive care is differentiated. Soon it will be a strategic necessity. Virtual agents, trained by AI, will be deployed in service delivery. Issues will be identified in near real-time and measures will be initiated to proactively correct and mitigate customer impact. And, service issues will be greatly reduced through intelligent issue prevention.

There are no real dependencies between these three AI-enabled areas and the technological capability is available now to support them all. But, if the CSP makes inroads in reactive care, the savings produced can be used to "shift left" to proactive care. Then savings achieved in proactive care can be used to "shift left" once again and, through predictive care, preempt potential issues before they occur.

Abbreviations

AI	artificial intelligence
CSP	communications services provider
NOC	network operations center
SOC	service operations center
VOC	voice of the customer

Bibliography & References

[1] Gartner, Inc. *Hype cycle for CRM Customer Service and Customer Engagement*, 2017, July 2017. Gartner, Inc. *Predicts 2018: CRM Customer Service and Customer Engagement*, December 2017.

