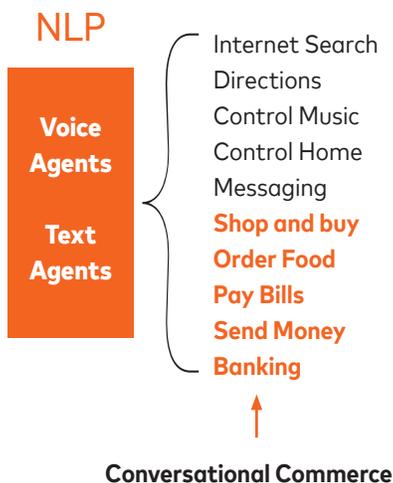


Conversational
commerce:
**A new opportunity
for card payments**



MERCATOR
ADVISORY GROUP

Introduction: The Emerging Era of Natural Language Processing and Conversational Commerce

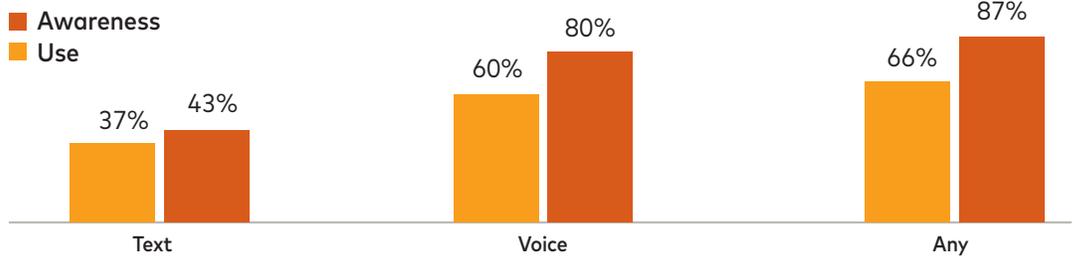


Science fiction has long imagined humans interacting with machines using the same language that we use to interact with each other. Until very recently however, humans had to learn to speak computer languages; be that with punch cards, coding, the graphical user interface or a limited set of predefined voice commands. Now however, with advances in machine learning and artificial intelligence, the onus of that education is moving to computers. The rapidly developing field of natural language processing (NLP), a subset of artificial intelligence technology, is making what science fiction imagined a reality. Today humans can address a smart phone, connected speaker or other interface the same as they might a friend on the other end. In fact two out of three U.S. adults are already engaging with technology this way. They are regularly asking for directions or registering complaints with retailers through text-based chatbots on merchants' websites. A growing number of consumers have expanded these interactions to e-commerce activities, using natural language technology to make purchases, pay bills, send money, or bank online. Survey Research indicates that nearly 9 out of 10 adults in the United States are aware of NLP technologies and are beginning to grasp their beneficial impact on their digital lives.

This paper summarizes results from an online U.S. consumer survey of 3,000 adult panel members conducted in August 2017 in partnership with Mercator Advisory Group. The survey questionnaire explored a wide range of awareness, attitudinal, and behavioral questions about U.S. consumers' current and future use of NLP technologies.

NLP Awareness and Use

(Base=All)



NLP Forms and Platforms

The survey results presented here are divided into two categories. One is voice-based NLP agents such as Apple’s Siri, Amazon’s Alexa, and Google Assistant. The other is text-based chatbots that consumers commonly use to interact on Facebook Messenger, Twitter, iMessage, or directly on business websites. The survey finds that two-thirds of the consumers who participated in the survey are already using natural language processing technology today.

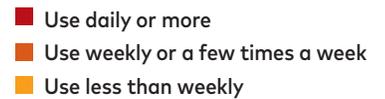
The most common uses for both voice-based and text-based agents are basic informational tasks like performing an internet search, finding the nearest restaurant, gas station, or store, getting driving directions, and giving simple commands to make phone calls, play music, and read or send texts or emails.

As with most new technologies, awareness and usage of both voice and text agents is higher among early adopters, usually young adults and affluent consumers. Because these technologies are freely available online or on mobile devices, the barriers to trial and adoption are low.

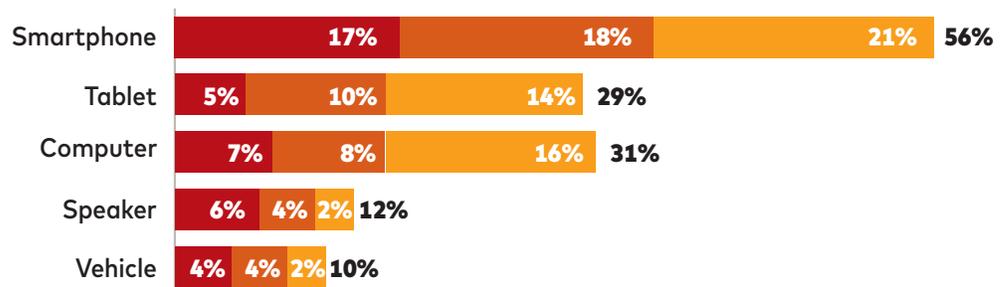
Non-users’ main reasons for not having adopted NLP capabilities are lack of awareness of their benefits, not having a device that supports the feature, or not knowing how to access the feature. These reasons suggest that the normal process of technology upgrades and discovery of new features will lead to rapid expansion of the NLP user base.

Any NLP Use and Frequency

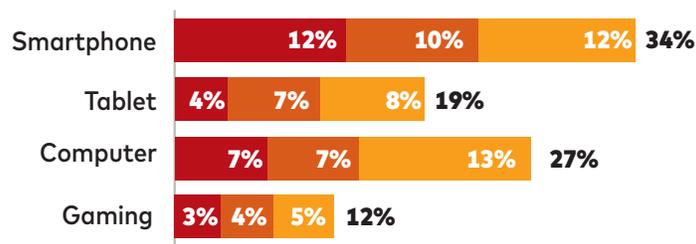
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VOICE



TEXT



Voice Agents

The ubiquity of smartphones that have integrated voice-based agents has resulted in over half of the people surveyed indicating they use voice NLP on smartphones, one-third of them doing so daily or more. The survey respondents commonly use voice controls on a variety of other voice-enabled electronics as well. Those who own dedicated devices like smart speakers show the highest frequency of use: 50% engage with the voice agent daily. Handsfree convenience also seems to play a role in the vehicle with 4 in 10 connected car users employing this voice feature daily or more frequently.

Text Agents

Text agents are most commonly used via smartphone: 34% use a smartphone to engage a text-based chatbot, 13% do so daily or more frequently. Usage of text chatbots via computer is nearly as high. This demonstrates that consumers are willing to engage in the text-based interface through a variety of digital channels.

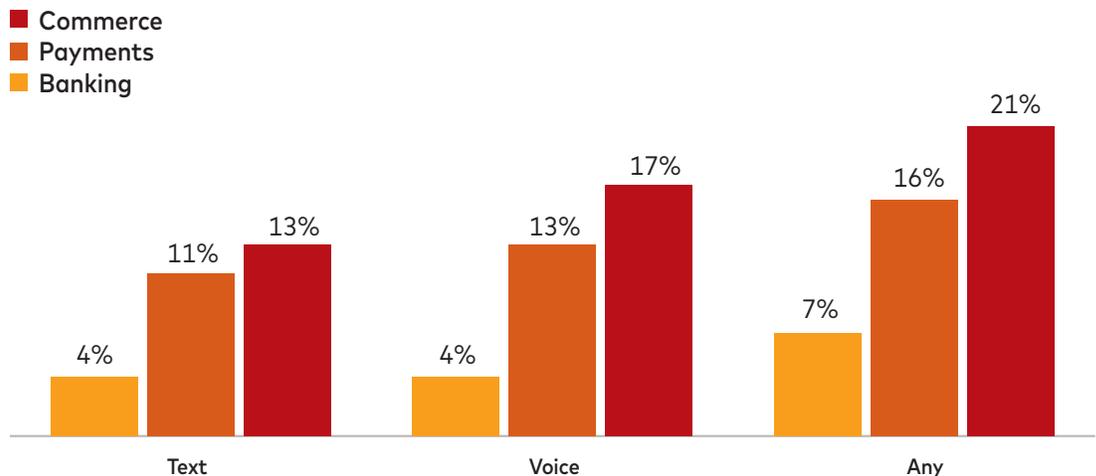
A Solid Base of Conversational Commerce Users

Notably, some users have already gone beyond basic informational tasks and actions to engage in more complex digital experiences. Of the U.S. adults surveyed, 21% indicated that they use voice and/or text agents to shop, buy, pay bills, bank, or send money. These extensions from the core activities show the growing importance of conversational commerce. Sixteen percent use voice or text agents to initiate payments for goods or services today.

These early adopters aren't just experimenting either, the data suggests that they are forming new purchasing habits, the most common being using text or voice commands to order food or beverages and performing general e-commerce activities. Among those two user segments, 6 in 10 do transactions via NLP weekly or more frequently. Users have identified benefits of both voice and text with those who prefer voice agents for purchasing activities, citing ease and speed over texting. Those preferring text agents cite text's accuracy compared to voice as well as privacy while in the presence of others as critical differentiators. With these rapidly emerging technologies and behaviors, a service provider's lack of NLP capability has the potential to inhibit customers' engagement with the provider. In categories like banking where banks have just begun to offer NLP service the data shows a disconnect between consumer desires and use. Just 7% of survey respondents communicate with banks via NLP agents today.

Conversational Commerce Use by Agent Type

(Base=All)



Early Enthusiasm and Rational Concerns

The adoption of NLP services is typical of consumer applications. Adopters generally start with informational and recreational activities and later move on to more complex tasks such as shopping and financial inquiries or transactions. With two-thirds of U.S. consumers making use of either voice-based or text-based NLP agents as noted, 1 in 5 for commerce purposes, these applications are off to a strong start. Indeed, more than half of our survey respondents agree that voice agents and text agents will be common means of interaction within five years.

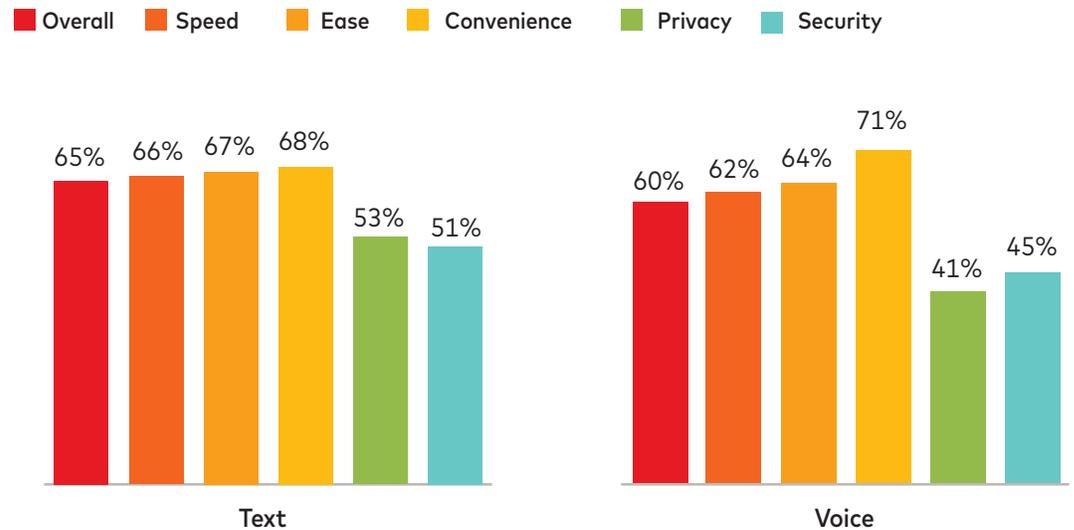
Users of each NLP agent type express high satisfaction with the technology's convenience and ease of use, positive indicators for future growth. But they also express caution when considering commerce applications of voice and text agents. Security and privacy are the two areas where their satisfaction is markedly lower. Of the security and privacy concerns measured, over 7 in 10 users surveyed are concerned their payment cards could be compromised, that personal information might reach fraudsters, or that too many companies would solicit their business.

Within commerce uses, consumers' level of comfort with using conversational agents depends upon the task. In response to a question asking individuals to rate their potential comfort using voice agents and text agents, the familiar task of purchasing goods and services evoked the least concern, while conducting bank transactions, sending money to another person, paying bills or mortgage/rent, or checking bank account information all evoked higher levels of concern.

These concerns about security and privacy are also dampening the opportunity for conversational commerce growth, with just 1 in 3 consumers expressing comfort with voice agents and 1 in 4 expressing comfort with text agents for purchase transactions. As discussed later in this study, consumers are looking for reassurance from some specific user experiences in making purchase transactions.

Satisfaction by Agent Type

(Base=Users of each agent)



Supporting Conversational Commerce and Related Card Payments

One way to grow the nascent conversational commerce environment will be to motivate consumers through improvements to the experience and increase their awareness of the benefits. The survey asked for feedback on a variety of potential improvements to voice and text agents. The responses show that the ability to link with human agents if needed to carry out instructions would provide reassurance in using either voice or text, as would providing more relevant voice responses or lists of text answers or solutions. With regard to payments specifically, many consumers expressed a preference to use a password or code for purchases. At this still early stage of adoption, about 1 in 3 potential users say that no improvement could motivate them to try these agents. These holdouts will clearly need encouragement to try these services and then positive experiences to expand their usage.

Payment card accounts are of course central to enabling online commerce, and by extension, conversational commerce. Credit card and debit card accounts are widely preferred by the U.S. consumers surveyed for use with online retailers and other online purchases. The most preferred means of using these payment methods for online transactions is to enter the card information at checkout; the second most preferred is using a card on file with the e-commerce merchant.

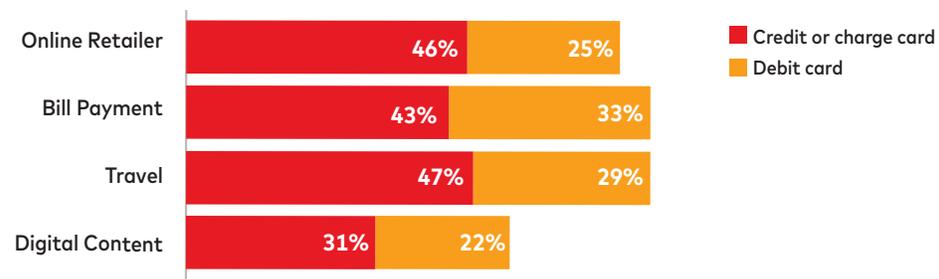
The order of these payment preferences is the reverse for users of conversational commerce. Among those open to using conversational agents in purchases, 37% would prefer to use a card previously set up with the merchant (i.e., a card on file) and 21% would prefer to add card information at time of checkout. As indicated previously conversational transactions are likely to create habits and include repeat purchases that are streamlined by using stored payment information.

In the e-commerce environment, buyer expectations have been shaped by evolving best practices for checkout page layout, navigation, and card-on-file storage. In a conversational environment without the visual cues and immediate feedback offered by a checkout web page, it is anticipated that the actual entry of payments credentials will remain with the traditional visual experiences provided by companion apps and profile pages. Therefore, at this critical step, consistency of user experience and ease of use in entering payments credentials accurately and securely are especially important to support payment acceptance at merchants.

Providing validation of payment card available at the time of purchase, as well as confirmation about which payment card was used is considered a highly important part of the consumer journey with 90% of consumers looking for this confirmation.

Preferred Card for Online Payments

(Base=All)

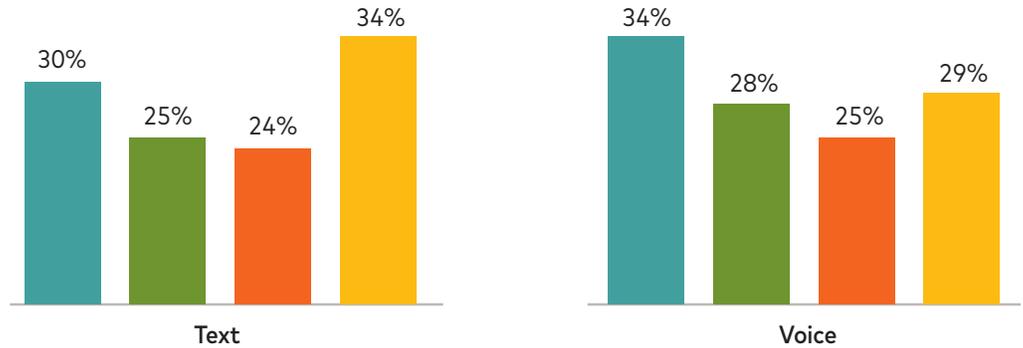


Completing a transaction without any confirmation of which payment method was used is unfamiliar and disorienting for consumers. Even today's most streamlined online checkout experiences still provide guidance to the consumer on what payment method is used, and consumers have clearly indicated this preference in conversational commerce as well.

Leading Improvements by Agent Type

(Base=All)

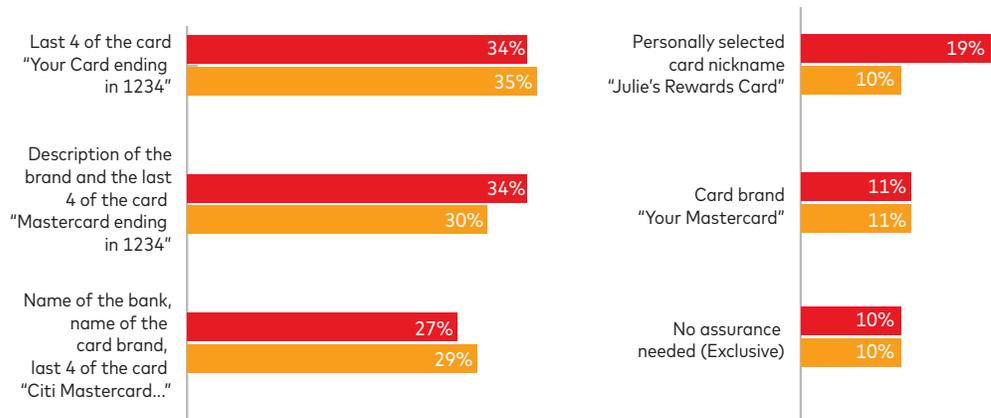
- Can connect human operators
- Password/Code for purchases
- Relevant responses/solutions list
- No improvements or interest



Preferred Transaction Confirmation

(Base=Would consider using conversational commerce)

- Voice
- Text



Proliferation of Devices and Agents Add Complexity in Supporting Payments

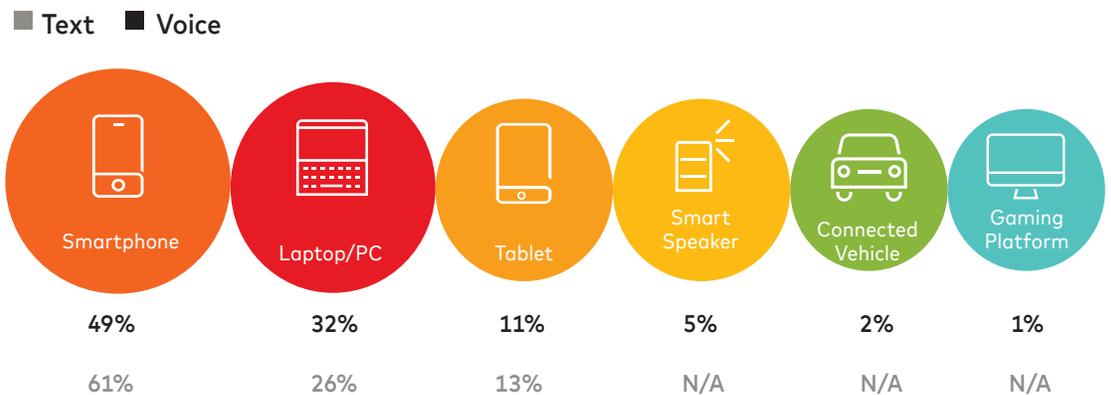
Financial institutions, merchants, and merchant services providers will need to support an array of devices as well as the two types of conversational agents. While smartphones and PCs will be the critical platforms to support initially, smart speakers are rapidly gaining adoption as evidenced by the 10% ownership levels found by this survey.

Similarly, payments stakeholders will need to accommodate a range of conversational agent/device combinations. Today's voice agent users focus primarily on Siri, OK Google/Google Home, and Alexa. This mix of technologies is sure to change as new devices are introduced that will drive changes in user base of each of the different voice agents.

Users of text agents today gravitate to Facebook Messenger, Twitter, iMessage, SnapChat, and Skype. Besides these common agents, they use chatbots embedded in merchant websites for various customer service functions.

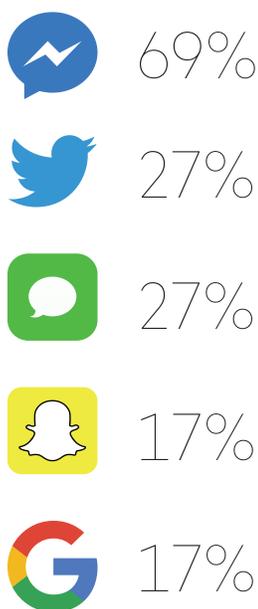
In this environment where a stored credential may be the only way to pay, trust in the platform and its provider will be critical. We asked survey respondents to rate their trust in a variety of leading brands to provide services via voice or text agents. In general, leading e-commerce, financial, and wireless telecom brands/categories received the highest ratings, reflecting their ubiquity serving consumers in a trusted role. Not far behind were leading technology brands that serve consumers in a virtual environment daily. Lower ranked were specific retailer brands with which some consumers surveyed may not have experience in either a physical or a virtual commerce situation. While it was clear that some individual brands had established a distinctive position of trust, trusted intermediary brands tended to have an advantage in the emerging conversational commerce environment.

Device Most Likely to Use for Payments, Banking



Leading Text Agents in Regular Use

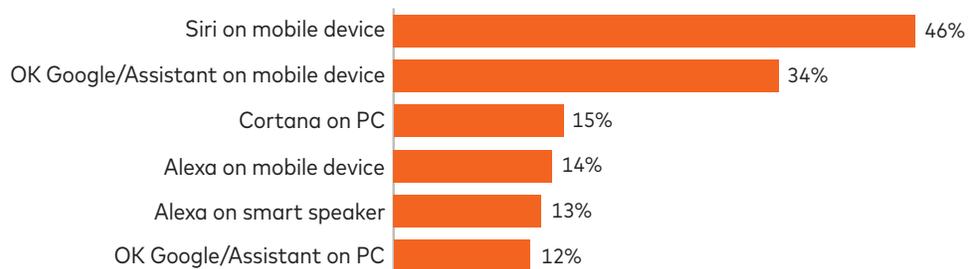
(Base=use text agents)



Given the variety of conversational agents, devices, commerce applications, and branded providers, the user experience for payments could vary widely—a situation that is not ideal since consistency of experience is critical for customer adoption and confidence of this technology. Payments stakeholders, including the card networks, have a critical role to play in developing and codifying these best practices in a way that will encourage the growing use of conversational commerce.

Leading Voice Agents in Regular Use

(Base=Use voice agents)



Implications for Payments Stakeholders

Conversational commerce is off to a fast start, driven by the broad availability of voice and text agents over smartphones, PCs, smart speakers, and other devices, and 2 in 3 U.S. consumers are using these agents for informational and recreational uses. On the heels of this broad adoption, 1 in 8 adults have used these technologies to initiate a purchase transaction, behavior sure to become more common as consumers gain experience with conversational commerce and merchants enable more opportunities to use it.

The ability to make payment card purchase transactions securely and accurately will be a cornerstone for further growth. Payments stakeholders should have strong self-interest in developing best practices that protect cardholders and encourage the responsible deployment of conversational commerce payment technologies. Consumers should not only feel in control of their payments but also have ongoing visibility into how they are making a purchase regardless of the interactive channel. Perhaps the most important questions to be resolved are how the user will be authenticated, the role of the merchant and issuer in performing that authentication, and the method by which the users will be assured they are participating in a safe and properly authenticated relationship. Additional areas of interest include the following:

Financial Institutions

- Most card issuers are already receiving card-not-present transactions initiated through conversational agents. These user interfaces will grow in importance as a source of card transactions that may have unique cardholder servicing characteristics.
- As conversational interfaces become common place, consumers will increasingly expect their card issuers to offer them the same convenience and ease of use in servicing their card accounts and potentially other banking accounts and functions.

Merchants

- Online merchants that do not yet support these interfaces today are likely to feel competitive pressure soon to add them.

- To avoid excessive disputes and servicing costs, merchants deploying payments via these NLP voice and text agents should adhere to emerging best practices shaping customers' user experience expectations. Guidance from payment networks regarding best practices for card acceptance via these agents will be increasingly important.
- Over time, best practices for card acceptance via conversational agents are likely to embrace standardized cardholder prompts, feedback, and confirmations customized for text and voice agents.
- Especially for voice agents, cardholders may have added interest in using a stored card capability with a card on file either with the platform itself or with the merchant. Building capabilities to enroll

customers in such a program, as well as employing best security practices for that stored information, will be critical for success.

Merchant Services Providers

- Acquirers, developers, and other merchant services providers will experience added demand for voice- and text-based checkout implementations. As noted above, emerging best practices and related network guidelines will help avoid excessive disputes by promoting cardholders' understanding of the conversational checkout process.
- These stakeholders will play a critical role in establishing a common user experience for voice and text interfaces as they are implemented to support card payments at checkout.

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