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Market Insight: How to Exploit Conversational Artificial Intelligence to Drive Digital Commerce

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Digital commerce has evolved from "mobile first" to "AI first" to focus on enhancing the user experience. Conversational AI reduces friction to purchase. Technology product management leaders of digital commerce vendors must pilot voice-driven customer experiences to build new revenue opportunities.

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Overview

Key Findings

- Digital commerce vendors risk being left behind if they do not test and leverage the early benefits of implementing natural-language interfaces, both to gain contextual learning and to ease language variants globally.
- Natural-language processing and voice-driven user interfaces continue to become more accurate. Their adoption is being stimulated by the growth of endpoints from voice-enabled devices and voice-enabled apps.
- Digital commerce leaders are actively engaging in near-commercial, large-scale "trials" of conversational platforms to drive consumer revenue growth and retention.
- The integration of APIs and an existing knowledge base is limited for conversational platforms due to perceptions that it is a B2C mobile and VPA wireless speakers play. Digital commerce vendors prefer to wait and see, and have not yet developed business metrics to track voice-enabled revenue.

Recommendations

To exploit the personal technologies market dynamics, technology product management leaders should:

- Audit organizational readiness by reviewing staff competences for integrating conversational platforms as part of an internal application strategy.
- Persuade internal IT and business stakeholders to incorporate a conversational platform as part of digital commerce strategy, with considerations for the ecosystem, the organization's strengths and product management.
- Create a business case and conversational platform abilities by defining business ROI metrics that are required to conduct a pilot project or test within the next 90 days.

- Shortlist multiple conversational platform vendor partners for pilot projects by creating a product roadmap within next six months.

Strategic Planning Assumptions

By 2018, over 2 billion people will use conversational AI to regularly interact with VPAs, VCAs and other AI-enabled smartphones and connected devices.

By 2020, 40% of users will be primarily interacting with new applications that support conversational UIs with AI.

By 2020, 25% of households using a VPA speaker will have two or more devices.

Analysis

This document was revised on 14 August 2017. The document you are viewing is the corrected version. For more information, see the [Corrections](http://www.gartner.com/technology/about/policies/current_corrections.jsp) (http://www.gartner.com/technology/about/policies/current_corrections.jsp) page on gartner.com.

"Say what you want" — and have it heard by a connected personal or Internet of Things (IoT) device, then have your payment processed and the item delivered to your doorstep. Imagine: No more hassle, no more lengthy searches in cluttered marketplace apps and no more price comparisons. Certainly, this scenario is the realization of a utopic goal for digital commerce providers globally.

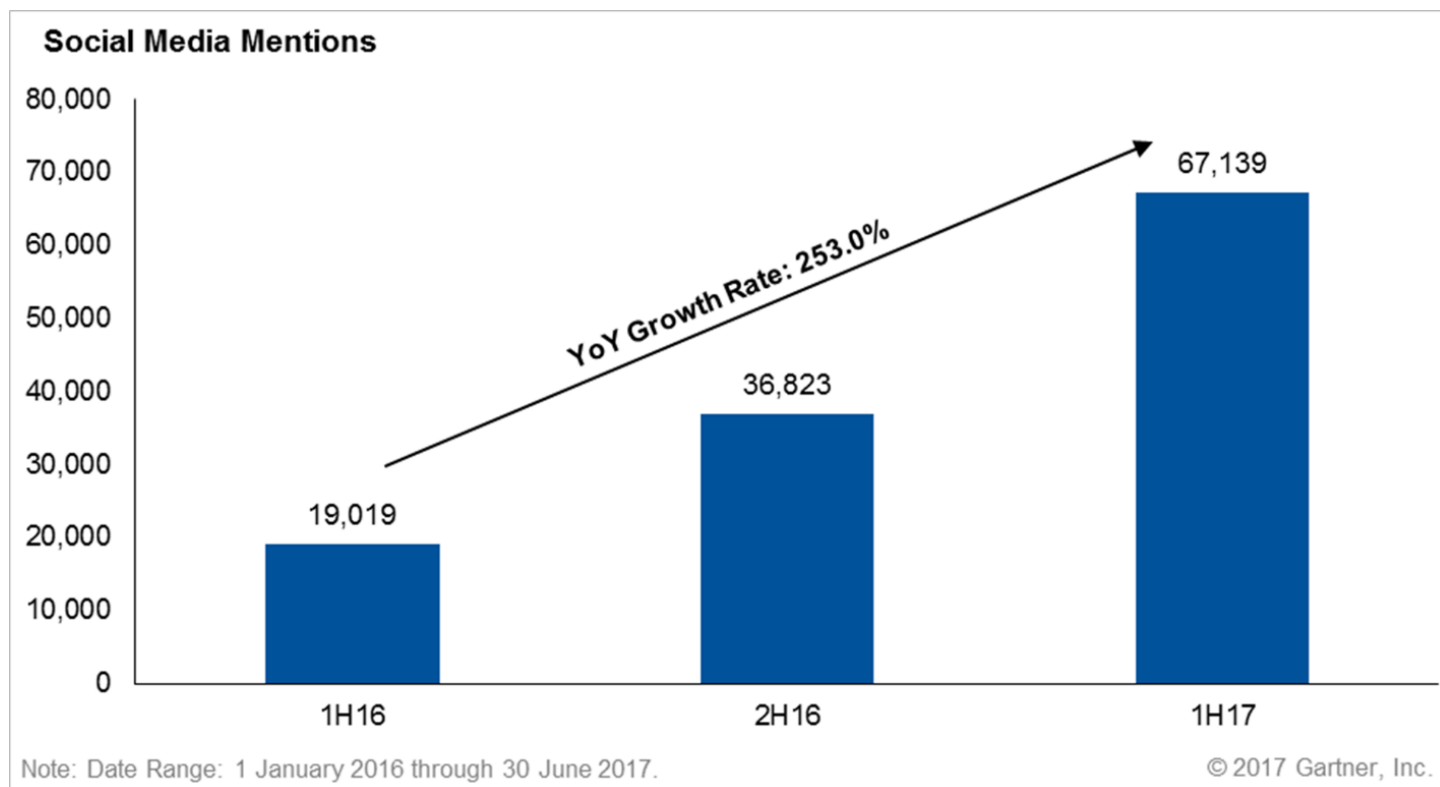
Investing in the Customer Experience of the Future

Conversational platforms are already available in the market today, with more in the pipeline as beta projects from smaller artificial intelligence (AI) vendors come to fruition. Conversational platforms signal a paradigm shift for digital commerce.

According to Gartner research, conversational platforms display five common characteristics (see "[Conversational AI to Shake Up Your Technical and Business](https://www.gartner.com/document/code/315689?ref=grbody&refval=3781363)" (<https://www.gartner.com/document/code/315689?ref=grbody&refval=3781363>)). As such, product management leaders need to ensure that the platform is conversational, AI-rich, pervasive, proactive and general-purpose.

Digital commerce vendors have invested time and resources in developing strategies that assume the use of traditional user interfaces. However, between 1H16 and 1H17 alone, Gartner Social Media Analytics show that user discussions around conversational platforms, in the context of digital commerce, increased significantly with a year-over-year (YoY) growth of 253%, as evidenced in Figure 1.

Figure 1. Social Media User Analysis — Conversational Platform Mentions Since January 2016



Source: Gartner (August 2017)

Social media conversations were primarily driven by the following:

- User conversations have shifted from the crowded app-based ecosystem toward conversational AI platforms (CAPs) as vendor priorities shift toward streamlining customer experience (CX) to increase conversion rates.
- The year 2016 appears to be a tipping point, primarily driven by the rising use of Google and Facebook chatbots, as well as the rise of Amazon Alexa in digital commerce.

As conversational platforms proliferate, new product management practices are required to transform and manage the implications for a voice-driven user experience (UX) and other associated applications.

Technology product management leaders will need to plan for new challenges and the introduction of conversational AI into digital business platforms. Additional resources and governance need to be in place for the shifts in the development and operations of conversational platforms in the sphere of digital commerce.

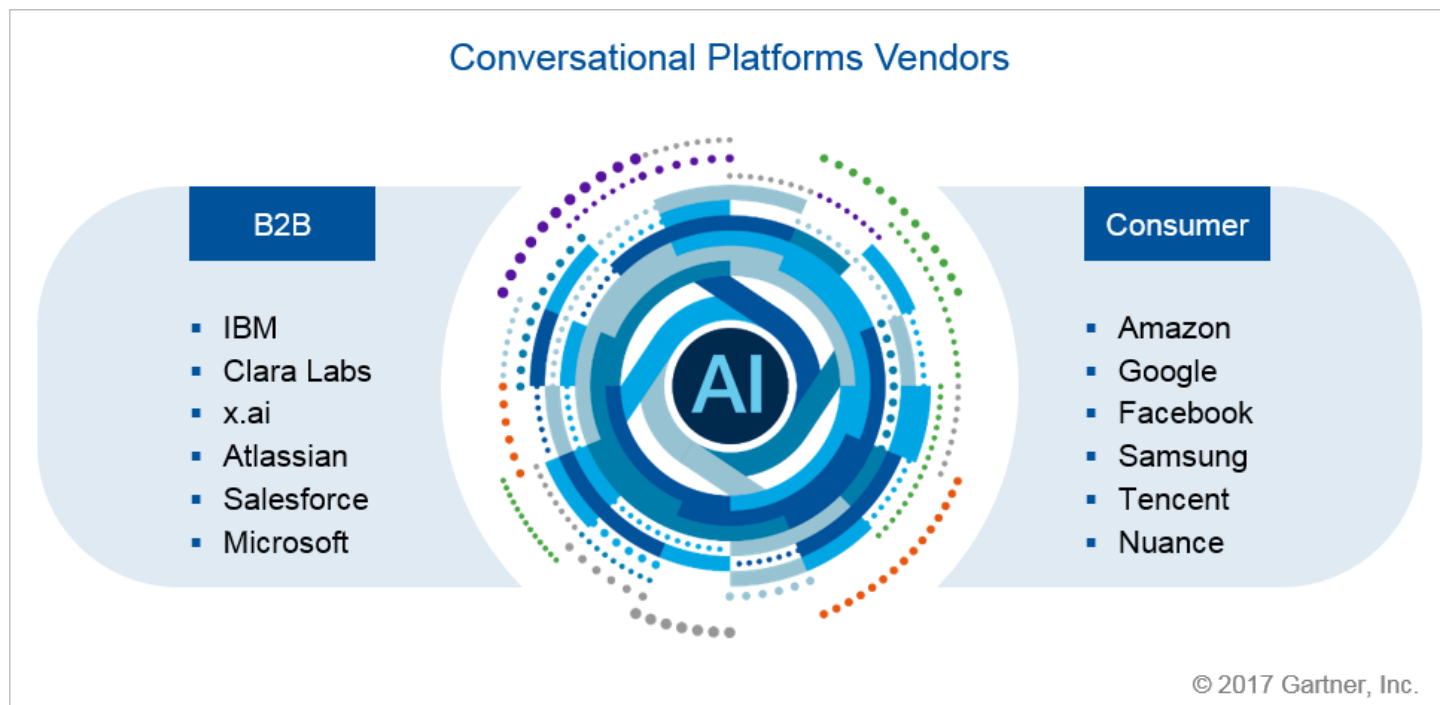
Tapping Into New Revenue

Gartner predicts that new business revenue created via AI will amount to \$300 billion by 2020. However, product management leaders remain flummoxed on how to create new and viable revenue streams through conversational AI. There will not necessarily always be new revenue streams, but revenue can be created incrementally over and above existing methods of search and discovery in digital commerce. Voice-enabled conversational commerce works best for lower-value purchases and to drive the repurchasing of consumable items, such as diapers and toiletries.

With conversational platforms, the "friction free" aspect of a voice-enabled CX comes into play because customers do not have to manually input further search or discovery requirements to effect a purchase. When it comes to higher value purchases and consumers wanting more visual information to support the purchase decision, a tantalizing CX could be enhanced by multimodal virtual personal assistant (VPA)-enabled speakers with integrated display screens.

Figure 2 indicates the major vendors of conversational AI platforms and the audience types they currently focus on. Product management leaders also need to be aware of specialist vendors, such as mmuze, for voice-enabled digital commerce and marketing.

Figure 2. Major Vendors of Conversational Platforms



Source: Gartner (August 2017)

Why Act Now?

Leaders in digital commerce have already deployed the use of chatbots and VPAs (see Notes 1 and 2). Specifically, Gartner's Social Media Analytics shows YoY growth of 141% between 1H16 to 1H17 in social media conversations discussing VPAs, with a strong focus on the personalization of digital commerce services and the fulfillment of orders. With significant developments and innovations, technology product management leaders need to update governance and effectively support conversational platform initiatives to achieve success. Existing product planning strategies need to be transformed to incorporate this new paradigm, to be in sync with both business and IT needs.

Product management leaders must understand the implications of conversational AI, and how to support and develop applications for this new breed of digital commerce. This will drive a maturation of the competencies in dealing with natural-language processing (NLP) (see Note 3) and increase operational efficiencies. Strategies must transform to address the potential end users' market that is not yet being served, except by a few conversational platform giants such as Amazon or Google. Conversational platforms will represent a new paradigm shift as they lower the requirements for device/computer literacy (ergo, the consumers' friction to purchase).

Background and Context

Early Leaders Lend a New Voice to Digital Commerce

Gartner defines digital commerce as:

"Buying and selling interactions among businesses, people and things for products/services via digitalization technologies. These interactions result in a valued transaction for the customer, based on a combination of factors, including good customer experience, inexpensive price, timeliness, ease of use, clear policies and others."

The first movers using conversational platforms for digital commerce are actively engaging in near-commercial, large-scale "trials." The earliest iteration is the combination of a conversational platform paired with a digital commerce marketplace. Amazon is an example of a digital commerce giant taking the lead. With its reputation for CX innovation, it was the first to launch "one-click buying" in 1999. Its offerings have evolved into the VPA-enabled Echo speaker as a personal assistant and Alexa as a service, which offers more than 12,000 skills.

With the conversational AI tide sweeping in, Amazon saw yearly sales of its Amazon Echo VPA wireless speakers grow to tens of millions of units, twice the YoY growth in 2016. Based on a report from Experian and Creative Strategies, in the past year, 32% of Amazon Echo users in the U.S. have already made a purchase via Alexa. ¹ ([#dv_1_unpacking_the](#)) Amazon Echo owners are also reported to be spending more on Amazon than before they purchased the device.

While Amazon remains tight-lipped on the actual sales generated through Echo devices, other vendors such as Google, Microsoft, Baidu, Samsung and Apple have joined the push to proliferate their conversational platforms. Amazon has been reported to sell items cheaper via the Alexa service ² ([#dv_2_how_amazons](#)) on Echo devices than through its own website. eBay recently joined the Partnership on AI, ³ ([#dv_3_ebay_joins](#)) ostensibly to participate more actively in furthering the knowledge of AI and its application for digital commerce.

By 2018, over 2 billion people will use conversational AI to regularly interact with VPAs, VCAs and other AI-enabled smartphones and connected devices.

NLP liberates users from learning more user interfaces. Early leaders in conversational AI benefit tremendously, as users engage and continue to help change the game for training, onboarding and assistance. Such trends ultimately determine how applications are designed and will evolve from being developed directly for users to use, to applications for apps and systems to use and extend upon each other. As dependability on digital commerce deepens, early conversational platforms benefit from a virtuous cycle of valuable lessons in purchase conversions, customer retention and satisfaction.

By 2020, 40% of users will be primarily interacting with new applications that support conversational UIs with AI.

With the new generation of VPAs and virtual customer assistants (VCAs) hitting the market, product management leaders can be overwhelmed by the number of conversational platform vendors. Many of these vendors have not evinced a significant revenue stream. In digital commerce especially, the buzz has mainly been in the space of VCAs and customer-service-centric chatbots.

By mid-2016, Google had announced that 20% of searches performed on apps and Android devices were done through voice. In China, Baidu reported a 400% increase in speech-to-text APIs calls since 2Q14.

By 2020, 25% of households using a VPA speaker will have two or more devices.

Google Home, a new VPA wireless speaker with Google Assistant, has stirred up consumer interest with its integration across multiple Google apps and services. By December 2017, Apple will launch its HomePod, ⁴ (#dv_4_homepod_apple) a Siri-enabled speaker, into the VPA arena. Sonos has also announced that it will be incorporating the Amazon Alexa service into its new speaker lineup. Ainemo's inaugural personal device, Xiaoyu (pronounced "shao yoo," meaning "Little Fish"), is available with a capacitive touchscreen, facial recognition, NLP and a remote-monitoring camera. Xiaoyu delivers a multimodal VPA user experience. The solution runs Baidu's DuerOS and has access to a China-specific ecosystem of services such as ordering food, purchasing movie tickets and cleaning services.

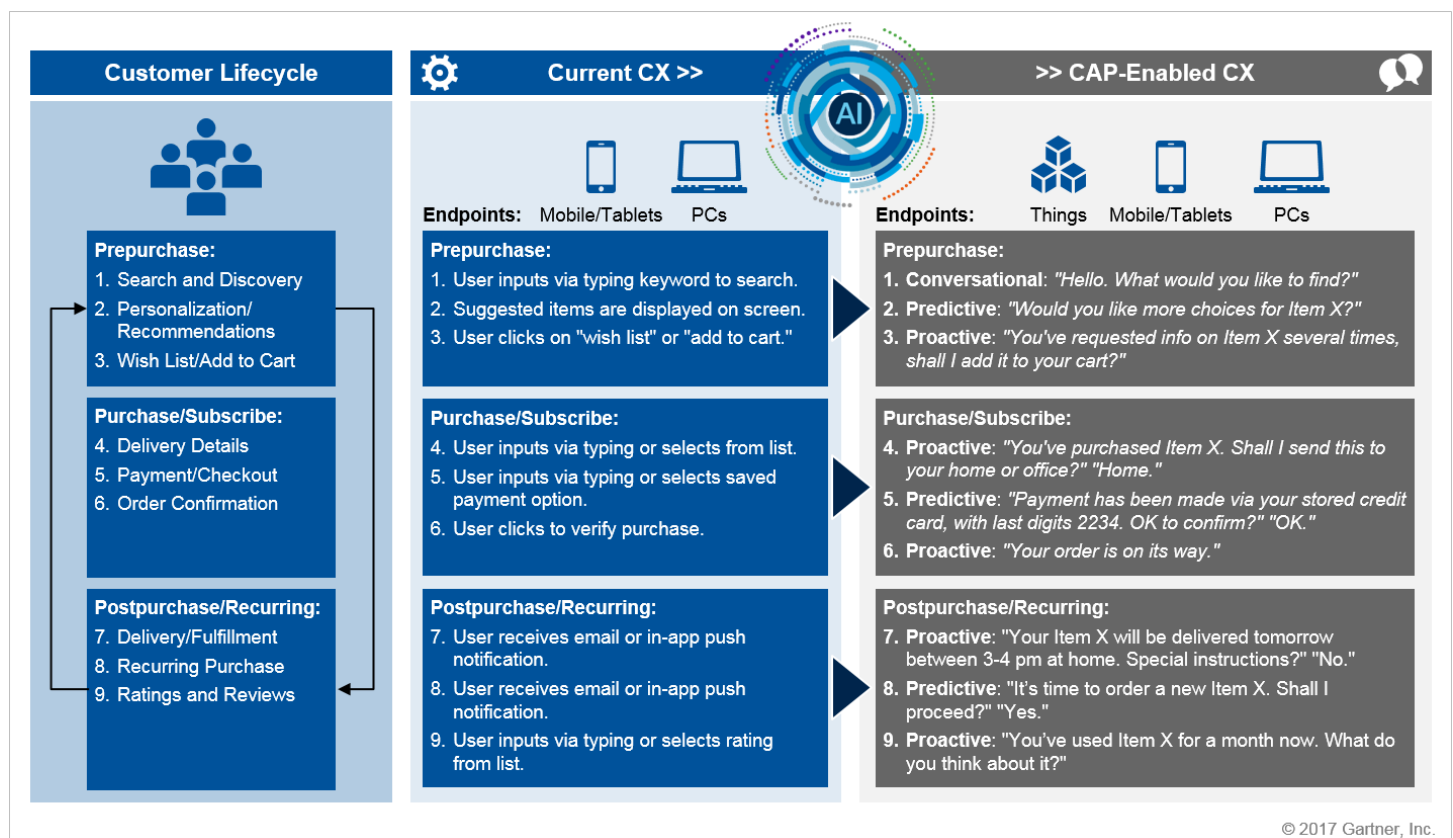
Gartner predicts that by 2020, 30% of digital commerce revenue growth will be attributed to AI technologies (see "[How to Apply Artificial Intelligence to Digital Commerce](https://www.gartner.com/document/code/300290?ref=grbody&refval=3781363)" (<https://www.gartner.com/document/code/300290?ref=grbody&refval=3781363>)). Through the uplift from the rising ocean of endpoints in smartphones and VPA-enabled devices, conversational platforms will provide an incontrovertible thrust to lower the users' friction to purchase.

The Impact

How Voice-Driven Apps on Conversational Platforms Can Drive Digital Commerce

Product management leaders who want to integrate conversational platforms into digital commerce can refer to the flow diagram in Figure 3 as a starting point for crafting the CX for their users. They can also use this to engage internal IT and business stakeholders in the vision of a conversational AI-enhanced digital commerce platform. Before doing so, it will be useful to refer to "[How to Apply Artificial Intelligence to Digital Commerce](https://www.gartner.com/document/code/300290?ref=grbody&refval=3781363)" (<https://www.gartner.com/document/code/300290?ref=grbody&refval=3781363>) to gain a strategic overview.

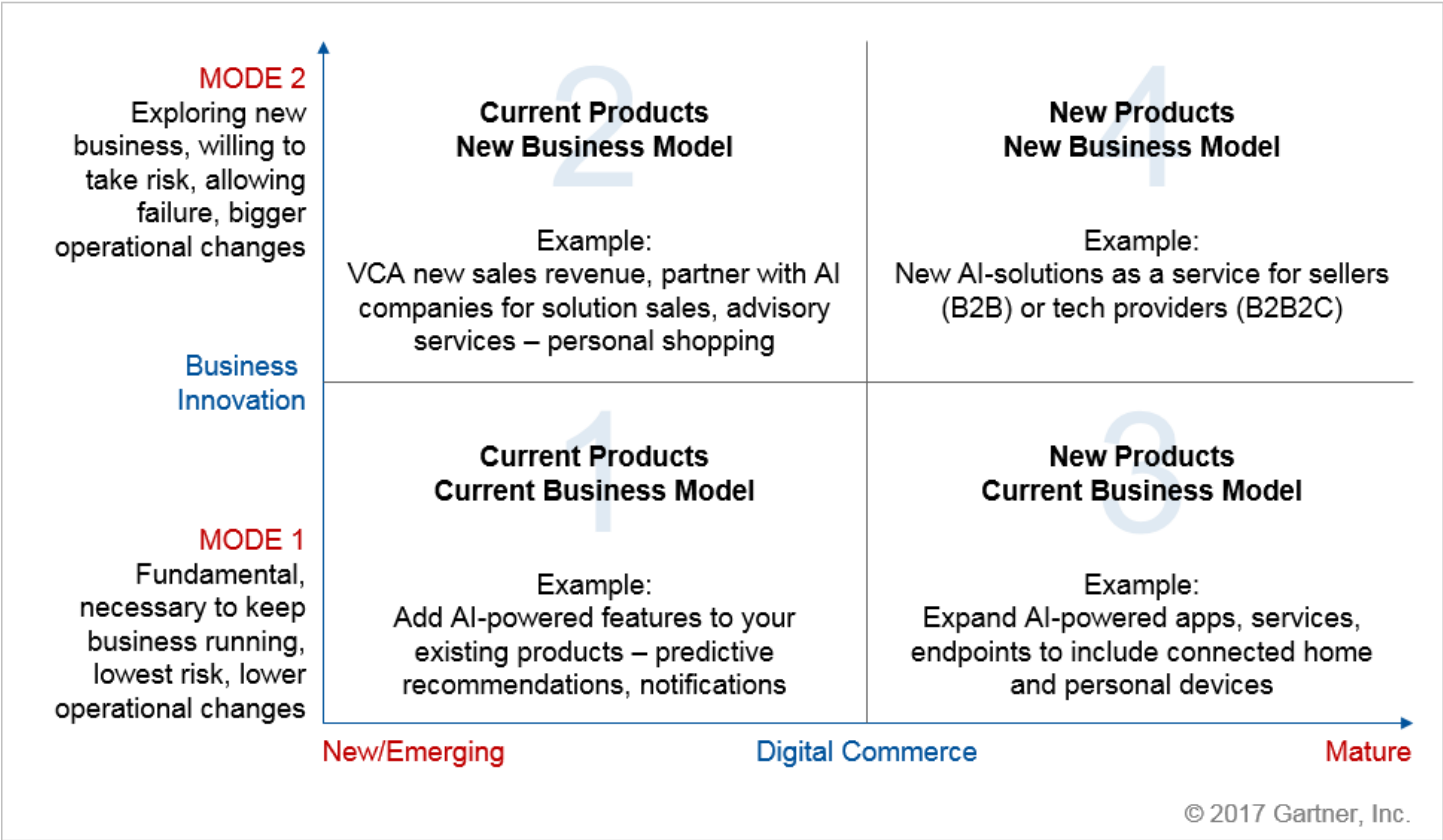
Figure 3. A Voice-Driven Digital Commerce CX



Source: Gartner (August 2017)

Figure 4 shows the various strategic models that product management leaders should consider before any preparations for implementation can begin. The consideration of the organization's familiarity and maturity levels with digital commerce play a significant role in determining a strategic model.

Figure 4. Four Strategic Models for the Application of Conversational Platforms



Source: Gartner (August 2017)

Likewise, the willingness of the business to innovate could result in a complete change of the business model of the organization itself. The resultant implication on the final CX will need to be carefully tailored to align with the intended commercial value brought by conversational platforms. Voice-driven experiences on conversational platforms lower the device/technology literacy requirements for the user. Especially for digital commerce, the aim is to create an engaging and unobtrusive agent that facilitates ease of purchase. In voice-driven commerce, the set of products for users to consider is streamlined to a singular choice, for example, AmazonBasics batteries when you purchase through Alexa. Product managers will need to create a UX that is effortless to "learn," yet deeply entrenched in the process of adding value to the digital commerce business.

The overall CX has to fulfill the characteristics of being conversational, AI-rich, pervasive, proactive and fit the general purpose of the entire digital commerce platform.

Integrating Conversational Platforms for Digital Commerce

AI for conversational platforms leverages natural-language interfaces and cutting-edge innovations in many ways. The use of conversational platforms can be a very hyped-up topic with chatbots, VPAs, messaging platforms and NLP fighting for attention. Processing the parallel innovations that are happening on a daily and weekly basis across industries can be distracting.

It is important that product management leaders develop and maintain close collaborative planning and reviews (see Table 1). Digital commerce requires platforms that can tactically cover a wide variety of use cases to be established, as technology itself continues to mature.

Conversational platforms shift the burden of the user's learning to the actual interface itself. Therefore, the interface is responsible, through contextually relevant NLP, to determine what the user wants to achieve as part of the CX.

Table 1: Key Steps to Integrating Conversational Platforms in Digital Commerce

Actions ↓	Stakeholders ↓	Time Frame ↓

Identify potential conversational platforms based on audience usage and VPA application developers for partnerships by incorporating conversational AI into product and senior management planning meetings with key stakeholders.	CxOs and partners	Immediate
Audit and evaluate organizational readiness by reviewing staff competencies, trainings and API readiness.	Product management team and relevant functions	4-8 weeks
Leverage outputs from product management leaders to enable conversational platforms to drive consumer revenue growth through pilot projects. Integrate conversational AI as part of your application strategy with formed ideations, resources and budgets.	Strategy	3-6 months of formed ideations
Launch and provide vendor-supported development opportunities in product management to deliver narrowly scoped pilot projects for sales enablement.	Roadmap team	Within 90 days
Enhance your own digital commerce platform to deliver/integrate capabilities with the conversational platform by developing a roadmap of deliverables to be jointly developed by all stakeholders.	Roadmap team	6-9 months

Source: Gartner (August 2017)

In addition to the key steps above, product management leaders should take heed of the following points:

- *Measure ROI not only based on revenue, but also on peripheral business metrics* — such as percentage of voice-enabled purchases, manual versus automated voice search ratio and deflection rate of manual to voice-enabled sales — and lessons learned as benefits. Evaluate conversational platforms based on their strengths, but keep in mind that it is difficult to compare a natural-language interface against traditional interfaces that require extensive training and onboarding.
- *Audit and evaluate organization skills, review staff competencies, and learn from conversational platform vendors to upskill internally* (that is, linguistics, conversational UI and VPAs).
- *Launch and nurture your product management team* to integrate conversational platforms with exploration, use prudent validations from proofs of concept, and pave ways for digital business to benefit from these important experiences and investments.
- *Plan for integration and pilot projects with multiple conversational AI vendors to test their unique fit for use and anticipated evolution.* Note the rapid developments of key conversational platform vendors: Some may have a drastic service revision or have deprecated in a limited life cycle. Therefore, it is critical to have alternative backups. A joint six- to nine-month forward-looking roadmap will be required to review the development efforts and coming opportunities.

Conclusion

What You Must Do Today

Gartner estimates that over 2 billion people will use conversational AI to regularly interact with VPAs, VCAs and other AI-enabled smartphones and connected devices by 2018. The Background and Context section lays out the expected potential for integrating a conversational platform into digital commerce and lays out an expected CX as a starting point. Say what you want, the tipping point for the adoption of conversational AI is upon us.

Technology product management leaders have to begin converting key stakeholders in the digital commerce organization to get C-level sponsorship to integrate a conversational platform into the business. Product management leaders collaborate intimately with enterprise architects who will need to consider the new conversational AI technologies. Select a strategic vision (from Figure 4) that befits the organization.

To prepare for conversational commerce and drive maximum business value, auditing internal skills and resources should be performed in a critical and intensive manner. The key phases laid out in Table 1 should be completed on a timeline that enables the organization to be an "early entrant" in the paradigm shift in how users interact with digital commerce.

On this CX journey, technology product management leaders should stay tuned into the developments in IoT and upcoming Gartner documents on the business applications of conversational AI.

Acronym Key and Glossary Terms

AI	artificial intelligence
API	application program interface
B2B2C	business-to-business-to-consumer
B2C	business-to-consumer
CAP	conversational AI platform
CX	customer experience
IoT	Internet of Things
NLP	natural-language processing
ROI	return on investment
UI	user interface
UX	user experience
VCA	virtual customer assistant
VPA	virtual personal assistant
YoY	year over year

Evidence

Social Media Analytics

Methodology for analysis of social media conversations: We used automated social media listening tools to track users' responses on social media and public discussion forums. The time period for the analysis of the overall mention count was from 1 January 2016 through 30 June 2017. "Social media mentions" denote the inclusion of a monitored keyword in a textual post on a social media platform. High counts of mentions should not be considered an indication of positive sentiment by default. Social media sources considered for this analysis included Twitter, Facebook (publicly available information only), images (comments only), aggregator websites, blogs, news, mainstream media, forums and videos (comments only). All regions and major world languages were covered for the study. The conversation drivers mined from social media were an aggregate of the most popular discussions happening around conversational AI platforms over the above-mentioned time period.

The Social Media Analytics team members who contributed to this research include Anjali Grover, Ayush Saxena and Sindhu Jayakumar.

¹ "Unpacking the Breakout Success of the Amazon Echo." (<https://www.experian.com/innovation/thought-leadership/amazon-echo-consumer-survey.jsp>) Experian.

² "How Amazon's Alexa Will Make You Buy More Stuff." (<http://www.barrons.com/articles/how-amazons-alexa-will-make-you-buy-more-stuff-1496459052>) Barron's.

³ "eBay Joins Partnership on AI to Boost eCommerce Voice." (<http://esellercafe.com/ebay-joins-partnership-on-ai/>) eSeller Café.

⁴ "HomePod." (<https://www.apple.com/homepod/>) Apple.

Note 1

Definition of Bots

Bots are microservices or apps that can operate other bots, apps or services in response to event triggers or user requests. They may invoke other services or applications, often emulating a user or app, or using an API to achieve the same effect. These requests can be initiated via conversational UIs or in response to a change in state of a back-end application or database. Bots automate tasks based on predefined rules or via more sophisticated algorithms, which may have involved deep learning. When combined with conversational UIs, bots provide users with the ability to interact with applications in a manner similar to human-to-human communication; a bot used in this manner is often referred to as a "chatbot."

Note 2

Definition of Virtual Personal Assistants and Virtual Customer Assistants

VPAs and VCAs are applications that exploit "chatbots" with extended response repertoires often rooted in machine learning and linguistic inferences drawn from knowledge graphs. VPAs perform some of the functions of a human assistant. VCAs act on behalf of a company to simulate a conversation to deliver information and/or take action on behalf of a customer to perform transactions.

Note 3

Definition of Natural-Language Processing

NLP is the use of more than 20 different natural-language tool classes, such as knowledge graphs, speech-to-text, machine translation, automatic summarization, entity recognition, question answering, natural-language generation and sentiment analysis. It can ease human-computer interaction; help people to find, understand and act on natural-language content; and provide the foundation for inferences that make people more effective.

Recommended by the Authors

Market Insight: How Conversational Agents and Immersive Technology Will Disrupt Customer Experience Strategies in 2017 (<https://www.gartner.com/document/code/298806?ref=ggrec&refval=3781363>)

How to Apply Artificial Intelligence to Digital Commerce (<https://www.gartner.com/document/code/300290?ref=ggrec&refval=3781363>)

Strategic Considerations on Zero-Touch UI Design for a Superior Customer Experience (<https://www.gartner.com/document/code/318142?ref=ggrec&refval=3781363>)

Forecast Snapshot: VPA-Enabled Wireless Speakers, Worldwide, 2016 (<https://www.gartner.com/document/code/313022?ref=ggrec&refval=3781363>)

Enterprises Must Prepare 'Now' for the Disruptive Power of Conversational AI Platforms (<https://www.gartner.com/document/code/327554?ref=ggrec&refval=3781363>)

Market Insight: Conversational Commerce — Hype or Reality? (<https://www.gartner.com/document/code/311257?ref=ggrec&refval=3781363>)

Cool Vendors in AI for Conversational Platforms, 2017 (<https://www.gartner.com/document/code/326551?ref=ggrec&refval=3781363>)

Market Guide for Conversational Artificial Intelligence in China (<https://www.gartner.com/document/code/324212?ref=ggrec&refval=3781363>)

Market Insight: How to Collaborate and Compete in the Emerging VPA, VCA, VEA and Chatbot Ecosystems (<https://www.gartner.com/document/code/319851?ref=ggrec&refval=3781363>)

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[Strategic Considerations on Zero-Touch UI Design for a Superior Customer Experience](https://www.gartner.com/document/3663517?ref=ddrec&refval=3781363) (<https://www.gartner.com/document/3663517?ref=ddrec&refval=3781363>)

[Market Insight: Build a Comprehensive Wellness Platform for Maximum Consumer Engagement](https://www.gartner.com/document/3876966?ref=ddrec&refval=3781363)

(<https://www.gartner.com/document/3876966?ref=ddrec&refval=3781363>)

[Cool Vendors in Consumer Mobile Applications and Bots](https://www.gartner.com/document/3874666?ref=ddrec&refval=3781363) (<https://www.gartner.com/document/3874666?ref=ddrec&refval=3781363>)

[Survey Analysis: Balance Privacy Controls to Improve the VPA User Experience](https://www.gartner.com/document/3865392?ref=ddrec&refval=3781363) (<https://www.gartner.com/document/3865392?ref=ddrec&refval=3781363>)

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