5. Voice Commerce: The Rise of Smart Speakers in Shopping

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ABSTRACT:

Voice commerce, or V-commerce, is one of the quickly evolving business models and technologies that emerged from e-commerce. Voice-based interfaces and improved machine-human interaction are key components of V-commerce, which aims to facilitate and enhance e-commerce transactions. V-commerce offers more transaction volumes and income, as well as greater cost-efficiency for businesses, in addition to making it easier for customers to interact. V-commerce's success depends on its uptake by customers who do e-commerce transactions, just like any other innovation. This study examines the impact of smart speaker use on customers' search, buying, and consumption patterns for digital content. The adoption of smart speakers is positively correlated with the increased purchase of digital content, but negatively correlated with the average rate of content completion, according to our analysis of a unique panel data set that includes information on household patterns of digital content (such as video on demand [VOD]) transaction, consumption, and smart speaker usage. We will talk about it in this paper. Voice Commerce: Smart Speakers' Ascent in Retail.

KEYWORDS:

Voice Commerce, Smart Speakers, Shopping, Technologies, Voice-Based Interface, Machine-Human Interaction, Amazon Alexa, Google Home, Apple Siri, Voice Commands, Virtual Assistants, Voice-Enabled Devices

Introduction:

Voice commerce, sometimes referred to as v-commerce, is a cutting-edge technology that lets customers make purchases by utilizing voice instructions. The popularity of speech commerce as a method of online shopping has grown with the introduction of smart speakers and virtual assistants like Apple Siri, Google Home, and Amazon Alexa. Customers can use voice instructions to buy goods and services through voice commerce, a subset of electronic commerce. To start and finish transactions, smart speakers, virtual assistants, and other voice-activated gadgets are used.

Voice commerce allows customers to shop online without a keyboard or screen. Rather, users merely communicate with their gadget, which will translate their voice and complete the transaction. For instance, if a user asks their smart speaker to buy pizza, the device will use their pre-configured payment details to process the order. [1]

The Rise of Voice Commerce:

Voice commerce, or V-commerce, is the practice of enabling online shopping through the use of virtual assistants and voice-activated gadgets. Customers may now shop for goods and services with just speech commands thanks to the popularity of smart speakers and voice-activated gadgets like Google Assistant and Alexa from Amazon. Shopping is now easier and more accessible than ever thanks to this technology, which has completely changed how we engage with e-commerce sites.

The Benefits of Voice Commerce:

For Consumers:

- Speed and Convenience: Voice shopping is quick. Users may just give a command rather than waiting for pages to load or scrolling through endless product lists. Voice shopping provides quick results with little work, whether you're looking for a pair of shoes or a supermarket order.
- Hands-Free Shopping: Voice commerce enables users to purchase while multitasking, whether they are driving or cooking in the kitchen. Busy people who are constantly on the go or have their hands occupied with other duties are increasingly choosing this hands-free feature when they purchase.
- Personalization: Voice assistants can offer tailored product recommendations, targeted promotions, and recommendations as they learn more about customer preferences. The purchasing experience is improved by this customization, which makes it seem better suited to each person's requirements.

For Businesses:

- Enhanced Customer Engagement: Voice commerce gives companies and their clients access to new avenues of connection. Voice interactions allow brands to interact with consumers, which facilitates relationship building and loyalty.
- New Sales Opportunities: Voice shopping gives companies an extra sales channel, particularly in cutthroat sectors where it can be challenging to stand out. In high-traffic areas like homes and cars, voice-activated shopping provides a simple and direct way to connect with customers.
- Better Data Collection and Analytics: Voice assistants gather useful information about preferences, feedback, and buying habits. Businesses can use this information to improve customer service, inventory control, and marketing tactics. [2]

The use of smart speakers is rapidly expanding. It is projected that the number of smart speakers would rise from 100 million to 230.5 million worldwide between 2018 and 2022. Throughout the client experience, smart speakers can be utilized at various stages.

These gadgets are used to investigate information about products, alternatives, and costs during the pre-purchase period, or preparation. Users can utilize smart speakers to conduct transactions during the purchasing phase and to receive updates on delivery status and other information during the post-purchase phase.

Determinants of the acceptance of smart speakers in voice commerce:

According to the model created for this study, performance expectancy, hedonic motivation, perceived pricing value, and prior experience with smart speakers are the main elements that favorably influence people's acceptance of using them to get information and make a purchase.

It is thought that intended usage is negatively impacted by perceived risk. Through the concepts of hedonic motivation and performance expectancy, the effort expectancy of smart speakers influences their acceptance indirectly rather than directly.

Expectations for performance: Convenience, time savings, and "hands free" functionality are the primary justifications given by consumers for utilizing smart speakers in online shopping. Some customers seem to find it simpler and faster to use spoken commands rather than a conventional keyboard.

Hedonistic motivation: Furthermore, hedonistic factors influence a technology's adoption. Hedonic motivation, as it relates to voice commerce, is the degree to which a customer finds using smart speakers to be enjoyable, engaging, thrilling, and pleasant. When using smart speakers for shopping, users may enjoy interacting and communicating with the gadget or artificially intelligent voice assistant. The capacity of smart speakers to learn (depending on artificial intelligence being present in the voice assistant software) has consumers captivated.

Effort expectancy: In the context of voice commerce, effort expectancy is the degree to which users believe a smart speaker is simple to use and understand. Many people have never used smart speakers before, and the technology is still in its infancy. As a result, many people think it's absolutely new to use voice commands for online buying without a visual representation. This may be a significant initial deterrent to use.

These days, voice-recognition technology is commonplace. Voice assistants that can respond to inquiries in a matter of seconds are integrated into the majority of smartphones, and smart speakers such as the Amazon Echo are now commonplace in many homes, where users may listen to music, conduct research, play games, or even shop. Users are getting used to receiving a response in a matter of seconds after using the speaker's "wake word."

Most individuals probably never consider how data centers operate in the background to support these amazing capabilities as they use their devices more and more in their daily lives. These technical advancements are made possible by data centers, and as more customers use voice technology, there will probably be a significant increase in demand for these facilities. [3]

Review of Literature:

According to Fortune Business Insights (2023), the global market for smart speakers, which represent a major example of voice-based internet interface, is also anticipated to reach $34.24 billion by 2028, exhibiting a Compounded Annual Growth Rate (CAGR) of more than 20% in the 2020s. Over one-third of Americans used a smart speaker in 2017.

According to Simms (2021), 20% of all Google searches are thought to be conducted on mobile devices, with voice searches accounting for half of those queries. speech-commerce, often known as V-commerce, is a result of e-commerce services' utilization of speech interfaces. Retailers are aware that consumer preferences for e-commerce transactions could shift significantly.

They are making swift adjustments to make sure they can take advantage of V-commerce in terms of faster, more cost-effective, and more efficient client service. Additionally, there is a rising interest in learning about the peculiarities of voice-interfacing patterns and how adjusting voice-interface systems to these patterns might result in better customer transaction results. [4]

The adoption of voice assistant technology in the Indian retail industry was examined by Khan and Dube (2019), who focused in particular on customer perceptions and usage intentions. The authors found that even while people were aware of voice-assistant technology, widespread adoption was still necessary. Additionally, the study found that consumer intention to use voice assistant technology in retail settings was highly influenced by factors such as perceived utility, perceived enjoyment, and ease of use. Security and privacy concerns, however, were identified as major adoption barriers. [5]

Big data and the digital revolution have opened the door for the usage of new tools and applications in marketing and management practices. In order to express the new digital consumer journey, the digitalization process has produced new media, channels, and touchpoints (Schweidel et al., 2022). In particular, the advancements in artificial intelligence (AI), machine learning (ML), and deep learning (DP) in contemporary society necessitate that managers and academics reconsider and reorganize the interaction between humans and technical applications. Recent research has examined the application of these innovations in a variety of human activity domains, with a focus on marketing initiatives pertaining to one of their most effective retail applications: chatbots that enable users to communicate with voice assistants using their voices thanks to Natural Language Processing (NLP). [6]

Objectives:

- To Study the Voice Commerce
- To Explain the Rise of Smart Speakers in Shopping
- To Evaluate Voice commerce work
- To Explain the Impactful Benefits of Voice Search Ecommerce

Research Methodology:

The purpose of this study is to ascertain how the adoption of smart speakers for voice purchasing is impacted by perceived danger, privacy concerns, and smart speaker learning capabilities. In order to achieve this, we proposed a conceptual model that we tested using a mixed methods research design, drawing on the interpersonal theory of personality and the theory of reasoned action (TRA). The study makes use of information from secondary sources, including government publications, media, research journals, book chapters, articles, and reports. Relying on secondary sources is crucial because of the wide range of the research topic and the dispersed nature of data sources.

Result and Discussion:

Voice commerce work:

Customers that use voice commerce speak commands into Amazon Alexa, Echo, or another device from the outside. After that, the program produces results and gives them back to the users. However, a closer examination reveals that voice commerce is more intricate, with multiple processes that are all concealed. [7]
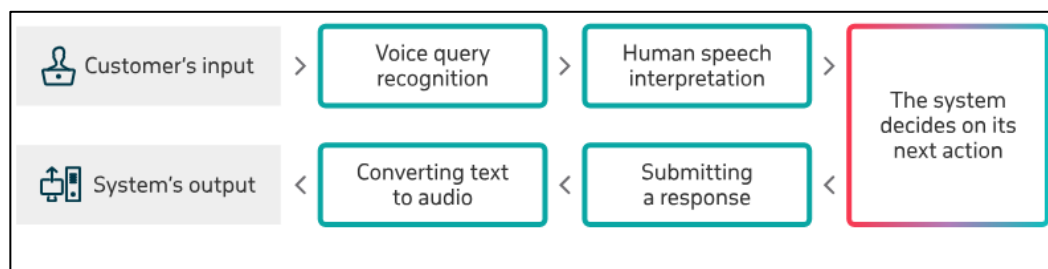
Figure 1: The Process of Voice Commerce

- A voice command is first uttered by the customer, such as "Alexa, I want to buy a vacuum cleaner with a targeted spray nozzle." Which offers are available for purchase?
- After that, the technology translates the voice to text and deduces its meaning.
- The voice commerce system interprets the voice command and makes a decision.
- The algorithm translates it to text and then to audio after figuring out which response would be most pertinent to the user.
- The user is then given a speech answer, which could sound like this: "There is one product that might be a good fit for you. Do I need to place an order?

Natural language processing (NLP) is used by voice assistants to decipher customer requests and respond accordingly. A user might say, "Alexa, I want to buy hand soap," for instance. In order to help the customer locate the best product for their request, Alexa will then ask questions. This process is similar to interacting with an in-store salesperson who can make product recommendations. To expedite the process, voice assistants can also access a user's past purchases. In the aforementioned scenario, Alexa might just add the hand soap that the user has frequently bought to the cart by looking through their Amazon history.

The voice assistant's built-in artificial intelligence enables it to provide user-specific product recommendations.

Payment processing is even possible with voice commerce. For example, Google Pay and Google Assistant work together to allow speech and peer-to-peer payments at specific stores. With Google Assistant, one can just say, "Hey Google! Give Maria $15 so she can buy the movie tickets. Depending on the device, the user is then asked to verify and approve the voice payment via a facial scan, voice match, or fingerprint.

Information Flows from Speech to Online Purchase:

The gadget uses Automatic spoken Recognition (ASR) to evaluate the spoken command when a user specifies a specific activation command (Hey Siri, OK Google, etc.). Using internal and external API connections, the data is sent to Natural Language Understanding (NLU) for answer formulation and backend command execution.

**Key Players, Top Brain and Assistants:**
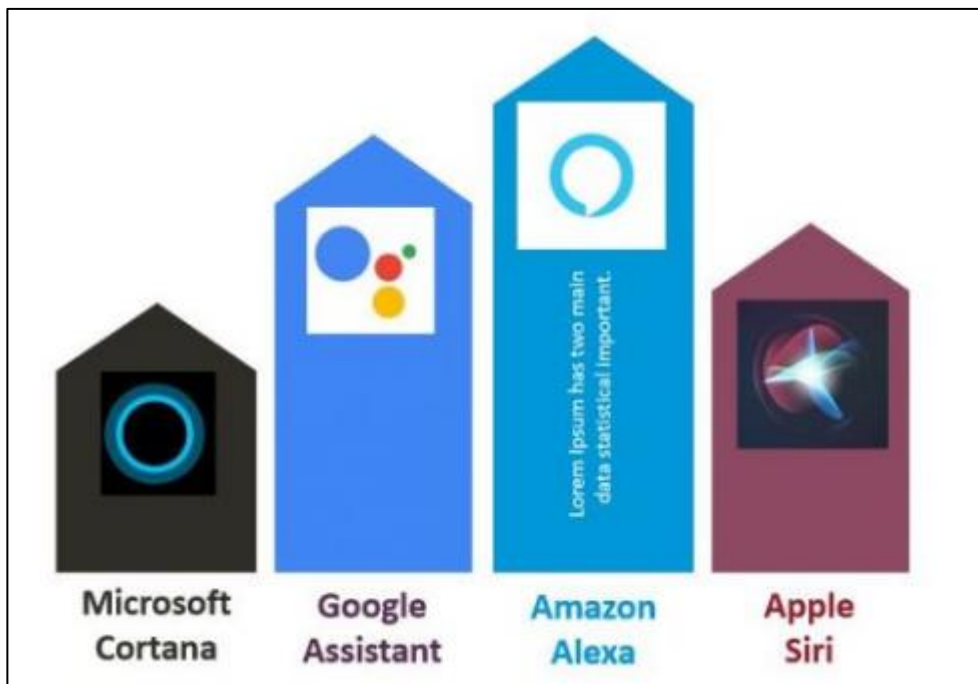
Figure 2: Top Brain and Assistants (Source https://community.nasscom.in/)

Amazon Alexa leads the voice search industry, in contrast to Google's dominance in text search. This seems to be mostly caused by variations in how users behave while utilizing voice search features across devices. It's interesting to note that, despite significant functional and usage similarities, consumers are far more likely to audibly communicate with smart speaker devices than with smartphones. [8]

The Rise of Voice Commerce: Examining Its Evolution:

Since its infancy, voice technology has advanced significantly. It's hard to recall a time when search tools on different platforms didn't include speech-to-text capabilities because they are now commonplace. The widespread use of voice technology has been greatly aided by well-known voice assistants like Google Assistant, Siri, Alexa, and others. It is anticipated that this tendency will continue with additional developments and integrations.
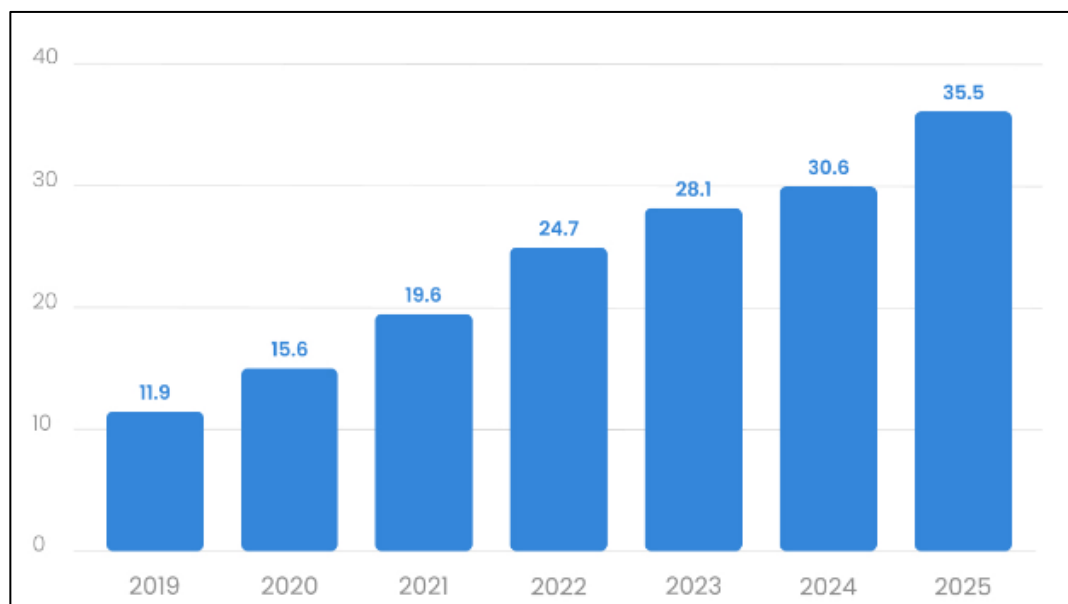
Figure 3: Shows smart speaker market revenue by 2025 (in billion US dollars).

The e-commerce sector is responsible for adopting new technology, and voice shopping has emerged as a major trend in online retailers. Its main advantage is the ease it provides to customers. This is true not just for younger consumers but also for older ones. [9]

Voice Commerce is Changing E-commerce Businesses:

Businesses can surpass customer expectations, boost revenue, and solidify their position in the era of speech-activated commerce by integrating voice-assisted devices seamlessly and making intelligent use of voice search data.

You can examine the specifics in the table below:

Table 1: Impactful Benefits of Voice Search Ecommerce:

Key point	How it works	Benefit
Elevating Customer Experience	Voice commerce orchestrates a seamless, hands-free shopping escapade for customers, eradicating the cumbersome manual browsing and typing ordeal.	The fusion with voice-assisted devices (first of all, virtual assistants) amplifies accessibility and convenience, fostering heightened customer contentment.
Syncing with Technological Progress	With the incessant advancement of voice technology, businesses must adeptly adapt to these dynamics to remain pertinent and cater to evolving customer predilections.	The amalgamation of e-commerce platforms with voice-assisted devices propels businesses into a burgeoning market segment of voice-savvy consumers.
Unlocking Valuable Insights Through Voice Search Data	You can gain invaluable information about customer behaviors, inclinations, and intents.	Businesses can decipher voice search queries to unravel trending products, emerging vogues, and fine-tune their marketing stratagems correspondingly.
Personalization Prowess and Tailored Recommendations	By leveraging the potential of voice search data, businesses can create personalized recommendations and customized offers tailored to the specific preferences of each customer and their past interactions.	This bespoke approach fosters heightened customer engagement, nurturing enduring customer loyalty.
Fine-tuning SEO	Progressive companies need to adjust their SEO strategies to account for new factors. The primary goal is to align with these voice-activated queries.	Crafting content and keywords to harmonize with conversational phrases and nuanced queries bolsters visibility, enticing a surge of voice search traffic.
Streamlined Purchasing Journey	Voice commerce streamlines the purchasing odyssey, empowering customers to seamlessly finalize transactions with alacrity.	The integration with payment gateways and robust authentication methods ensures a frictionless and secure checkout experience.

Potential Challenges with Voice Commerce:

Although voice shopping has many advantages, there are a few possible drawbacks to be aware of:

If voice assistants are not exposed to enough linguistic variety during training, they may find it difficult to grasp particular accents or non-native languages. Accessibility may be hampered by this.

- Environment background noise can cause mistakes and interfere with voice commands. Repeating themselves can irritate users.
- The collecting of voice data raises privacy concerns. Brands need to be open and honest about how they use and protect consumer voice data.
- For some purchases that could need input or visual examination, voice commerce is still restricted. Complicated transactions could cause issues. [10]

Conclusion:

Voice commerce is a cutting-edge technology that is transforming internet shopping. By giving customers a new method to shop, voice commerce has the potential to revolutionize the retail sector thanks to its efficiency, ease, and personalization. Voice commerce appears to be a game-changer in the e-commerce space as technology continues to influence how we live and communicate. A hands-free, customized buying experience, more convenience, and higher customer engagement are just a few advantages of voice-based commerce's ascent. Companies need to adjust to this new trend by making their websites voice search-friendly and looking for creative ways to include voice commerce into their plans. Businesses can stay ahead of the curve and offer their customers a smooth, user-friendly, and customized buying experience by embracing voice commerce.

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