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VOICE COMMERCE: CURRENT LANDSCAPE, KEY DRIVERS AND FUTURE PROSPECTS IN THE INDIAN MARKET

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Abstract:

The digital era has revolutionised commerce, with e-commerce dominating the worldwide market. In recent years, Voice commerce has supplanted traditional e-commerce with voice assistants, allowing users to connect with information systems through voice-based discussions rather than written text. Voice commerce is a paradigm shift from visual and text-based interfaces to a conversational and natural shopping experience. The purpose of this research is to explore the current state, key drivers, and future prospects of voice commerce in India. This study examines how voice assistants, smart speakers, and Natural Language Processing (NLP) advancements are reshaping consumer purchasing behavior and business operations in the Indian market. The methodology adopted for this study is descriptive in nature, relying on secondary data sources such as industry reports, market research studies, and scholarly literature. The findings indicate that rising smartphone penetration, improvements in AI-driven voice recognition, and growing digital literacy are accelerating voice commerce adoption in India. However, challenges such as security concerns, lack of trust, regional language barriers, and data privacy issues hinder widespread adoption. Despite these obstacles, voice commerce offers significant opportunities for businesses investing in localized AI, personalized voice interactions, and strong security measures. To unlock its full potential, companies must enhance vernacular language support, build consumer trust, and ensure ethical AI-driven personalization.

Keywords: Voice Commerce, Smart Speakers, Voice Assistants, E-commerce, Natural Language Processing.

1. INTRODUCTION:

Technological advancements are constantly reshaping the landscape of commerce, the shift from traditional e-commerce to voice commerce stands as a significant transition. As customers seek

more seamless and convenient ways to interact with technology, voice-enabled devices have emerged as a transformational force, transforming the way people conduct online transactions. This transition from the traditional clicks and taps of e-commerce platforms to the hands-free, voice-activated interfaces reflects not merely a technological shift, but a fundamental change in the way we interact with the digital marketplace (Böhm et al., 2022).

Voice commerce is a subset of e-commerce that uses voice assistants to interact with consumers (Kraus et al., 2019).These assistants, integrated into smartphones, vehicles, televisions (Mittal & Manocha, 2022), and smart speakers (McLean & Osei-Frimpong, 2019) can interpret and respond to human speech. They allow customers to use voice technology to search, compare, and purchase products(Olson & Kemery, 2019), as well as communicate with non-human agents (Al Shamsi et al., 2022).Voice commerce, which uses voice recognition technology, is projected to grow at a 29.6% CAGR, reaching $421.7 billion by 2029 (Business Research Company, 2025). As voice commerce is booming worldwide, research questions arise: (a) what is the current state of voice assistants or smart speakers' adoption, and customer acceptance of voice commerce in India? (b) what are the challenges and opportunities in adopting voice commerce? (c) what is the future of voice commerce in developing countries like India? While the market is primed for innovation, little research has been conducted to determine the current landscape of voice commerce. This study seeks to close that gap by investigating the opportunities and challenges that influence Indian consumers' shift from traditional e-commerce to voice-powered shopping.

The shift from traditional e-commerce to voice commerce is transformative in the retail industry, leveraging voice-enabled devices and artificial intelligence to redefine the shopping experience. This shift offers convenience for consumers but also presents opportunities and challenges for businesses. Therefore, the main objectives of the research are:(a) To study the current landscape of voice commerce (b) To explore the key drivers and future prospects of voice commerce in India (c) To identify challenges and opportunities in voice commerce. By examining consumer behaviors and forecasting future trends, it aims to provide insights for businesses navigating this dynamic landscape.

2. CONCEPTUAL BACKGROUND:

The transition from traditional e-commerce to voice commerce signifies a significant change in how people interact with digital platforms for shopping and transactions. This conceptual foundation seeks to explain the underlying dynamics behind this dramatic transition, focusing on important technological advancements, and consumer behaviors that have driven the rise of voice commerce.

2.1.E-commerce and Voice Commerce:

Commerce has continually advanced by moving alongside and making use of technological

developments such as the Internet (Steinicke, 2016). As a result, E-commerce evolves, which refers to the purchase and sale of goods and services online through fixed or mobile devices (Lee et al., 2007; Wareham et al., 2005). Over the period, Voice recognition technology has replaced the online point-and-click decision-making process with spoken command methods (De Regt, & Barnes, 2019). Artificial intelligence, cloud computing, and machine learning are some of the technological advancements that have contributed to this transition. Consumers are becoming more open to conversational user interfaces like smart speakers and virtual voice assistants. So, Voice commerce involves buying and selling of goods and services using voice assistants through digital channels (Mari et al., 2020; Sun et al., 2021). Voice commerce enables self-service transactions via mobile phones and other connected devices by using natural language speech recognition technology (Dennis & Harris, 2002).Voice commerce and e-commerce are both online avenues for purchasing products and services. Voice commerce is distinguished from e-commerce by its emphasis on verbal communication, non-haptic interactions with voice assistants, and a humanoid interface powered by AI and natural spoken language. It is more proactive because voice assistants are constantly listening and provide limited curated information, whereas e-commerce takes a reactive, on-demand approach (Böhm et al., 2022). Table 1 shows the difference between traditional e-commerce and voice commerce.

Table 1: Difference between e-commerce and voice commerce

Basis	E-Commerce	Voice Commerce
Purpose	Purchase and sale of goods and services online through websites and mobile apps	Purchase and sale of goods and services through voice assistants using digital interfaces.
Interface	Websites, mobile apps	Voice-enabled devices such as smart speakers, voice assistants, smartphones with voice assistants, etc.
Interaction	Visual and text-based	Voice-based
Input	Keyboard, mouse, touchscreen	Voice commands and natural language processing
Product discovery	Browse categories, search, and view images & descriptions	Asking queries and getting voice recommendations.
Purchase process	Clicking buttons, adding items to the cart, and checking out	Voice commands for the selection of products and payment authorization

| accessibility | needs both manual and visual dexterity | Hands-free experience, potentially more useful for disabled people |

3. CURRENT STATE OF VOICE COMMERCE:

Smart speakers have witnessed significant growth in consumer technology, leading to an increase in online buyers adopting AI-enabled e-commerce platforms such as voice assistants, and augmented, virtual, or mixed realities to make purchases (Barhorst et al., 2021; Rabassa et al., 2022). Voice assistants are widely used and commercially viable, with options ranging from self-contained devices to mobile phones and desktop agents (Ammari et al., 2019).

With an estimated 130 million VA users in the United States by 2025 (Statista, 2022), these technologies provide rapid, frictionless, and memorable online shopping experiences. Businesses use the latest technologies to fulfill customer needs (Fanderl et al., 2019), resulting in seamless and memorable shopping experiences. Smart speakers and voice assistants have changed the way customers make decisions, especially for voice searches and purchases (Dwivedi et al., 2021). Voice commerce, which uses voice recognition technology, is projected to grow at a 29.6% CAGR, reaching $421.7 billion by 2029 (Business Research Company, 2025). The following section dives into the booming world of voice commerce.

3.1. Increased adoption of voice assistants and smart speakers:

Smart speakers offer hands-free convenience, allowing users to control tasks, access information, and make purchases through voice commands, making them essential lifestyle companions in both residential and commercial settings. In the United States, voice assistant users accounted for about half of the population in 2022 with an estimated 142 million users. By 2026, there will be 157.1 million voice assistant users worldwide (Statista, 2023c). As per IMARC's report, the global smart speaker market size reached US$ 8.2 Billion in 2023. Looking ahead, IMARC Group predicts the market to reach $54.0 billion by 2032, with a compound annual growth rate (CAGR) of 22.61% from 2024 to 2032. More than eight billion digital voice assistants—roughly equivalent to the world's population—are predicted to be in use by 2024. The tech ARC Report states that more than a million smart speakers were shipped to India in total in 2021. A total of 463.4 crore rupees ($63.6 million) worth of smart speakers were supplied. Voice-Based Assistants, or VBAs, are becoming more popular in India due to innovative and smart technology (Singh, 2019).

3.2. Growing customer acceptance of voice commerce:

Voice commerce is gaining popularity worldwide, with over a billion voice searches conducted monthly, driven by smartphones and smart speakers, and advancements in natural

language processing, enhancing user confidence in voice-powered shopping. From 4.6 billion US dollars in 2021 to 19.4 billion US dollars in 2023, the total transaction value of e-commerce purchases done using voice assistants is anticipated to increase globally (Statista 2023a). Due to the growing possibilities for voice assistants to make purchases, particularly through smartphones and other smart devices in the house, there has been a 400% increase in just two years. India is an ideal market for the adoption of voice commerce, with over 650 million people online and a growing digital population. The country's diverse languages and accents make voice commerce more appealing. According to a recent report by WAT Consult, Dentsu India's digital agency, the popularity of voice commerce in India is increasing. The report predicted that the number of voice commerce shoppers in India will reach 168 million by the end of 2022, up from 83 million in 2021—an astonishing 103% increase in only one year. Additionally, In high-growth economies like India, increasing voice assistant adoption and customer engagement are accelerating e-commerce expansion, expected to reach $300 billion by 2030 (Statista, 2024). Voice commerce offers a natural user experience, making it a game changer for retailers and e-commerce businesses.

4. Key Drivers of Voice Commerce in India:

Voice commerce in India is being driven by several technological, economic, and behavioral factors. The increasing penetration of smartphones, AI advancements, and changing consumer preferences are accelerating the adoption of voice-based transactions.

4.1. Increasing Smartphone & Internet Penetration:

India has experienced rapid digital transformation, with smartphone adoption surpassing 1.15 billion users as of 2025 and 806 million internet users as of 2024 (Kemp, 2025). The availability of affordable smartphones and low-cost data plans has encouraged digital adoption, including voice-based transactions. Additionally, initiatives such as the *Digital India program* have accelerated digital inclusion, encouraging consumers to embrace online services, including voice commerce. Moreover, India's 4G and emerging 5G networks are enabling faster and more reliable voice search and commerce interactions, especially in rural areas where literacy rates are lower, making voice a preferred mode of interaction (Kemp, 2025).

4.2. Advancements in AI & Natural Language Processing (NLP)

The success of voice commerce heavily depends on AI-powered voice assistants like Google Assistant, Amazon Alexa, and Apple Siri, which use NLP to process speech and generate accurate responses. Indian companies are increasingly integrating regional language support into their AI models, making voice commerce more accessible to non-English-speaking users (Dogan, 2024).For instance, Google's speech recognition technology for Hindi and other regional languages has achieved 95% accuracy, making voice-based transactions smoother. Similarly, Amazon Alexa now supports Hindi and Hinglish, catering to millions of Indian users (Schwartz, 2022).

4.3. Rise of Digital Payments & E-commerce:

The Unified Payments Interface (UPI) has revolutionized digital transactions in India, with voice-enabled payments emerging as a new trend. Companies like Google Pay and PhonePe have introduced voice-assisted payment features, allowing users to conduct transactions using voice commands (Chaurasiya et al., 2024). E-commerce giants like Flipkart and JioMart are leveraging voice commerce by enabling voice search and ordering features. Flipkart reported a 3X increase in voice searches for shopping queries in Tier 2 and 3 cities (Joshi& Kannan, 2021).

4.4. Consumer Preference for Convenience & Hands-Free Interaction:

Voice commerce in India is growing due to consumer preference for hands-free convenience in an increasingly fast-paced world. It eliminates the need for manual typing, making shopping and digital interactions seamless and efficient. A KPMG (2023) report states that 62% of Indian consumers prefer voice-based searches while multitasking, such as driving or cooking. Beyond convenience, voice commerce enhances accessibility for elderly users, visually impaired individuals, and those with limited digital literacy by offering a more natural and intuitive shopping experience (Kumar et al., 2024).With AI-driven voice assistants improving regional language recognition, voice commerce is becoming more inclusive and widely adopted. As technology advances, it is poised to reshape digital shopping experiences in India, catering to diverse consumer needs.

4.5. Vernacular Language Adoption:

India's linguistic diversity is a major driver of voice commerce adoption, with 70% of Indians preferring online interactions in their native languages (Dogan, 2024). To meet this demand, Google, Amazon, and Microsoft are investing in multilingual NLP models supporting Hindi, Tamil, Telugu, Marathi, and other regional languages. The voice-based queries in regional languages grew by 45% in rural areas, highlighting the rising demand for vernacular AI solutions (Rangarajan, 2022). As voice recognition technology improves, businesses that incorporate regional language support into their platforms will expand their consumer base, making voice commerce more inclusive and accessible across India's diverse population.

4.6. Government & Regulatory Push:

The Indian government is actively promoting AI-driven and voice-based fintech solutions under the Digital India initiative, aiming to enhance financial inclusion and digital accessibility. NITI Aayog and NPCI (National Payments Corporation of India) are leading efforts to develop AI-powered voice banking solutions, particularly targeting rural and semi-urban populations where digital literacy remains a challenge (Bhawnra& Singh, 2024). Furthermore, the Reserve Bank of India (RBI) has approved voice-based biometric authentication for digital banking transactions, significantly boosting consumer trust in voice commerce security (Bhatt, 2019). These measures are

expected to accelerate voice commerce adoption, making financial transactions more seamless, secure, and accessible for millions across India.

5. FUTURE PROSPECTS FOR VOICE COMMERCE:

Voice commerce is poised to transform the retail experience with advanced machine learning and natural language processing. The use of voice commerce is predicted to grow as users grow more comfortable with utilizing voice commands. Shopping will become more effortless with integration into wearables, smart homes, and cars, encouraging brand loyalty and improving accessibility for those with disabilities. The following are the drivers of prospects of voice commerce:

5.1. Multiplatform Integration:

Multiplatform integration plays a crucial role in the expansion of voice commerce, enabling seamless shopping experiences across multiple digital devices. Consumers can now make purchases using voice commands on smartphones, tablets, smartwatches, smart TVs, and even in-car infotainment systems (Mittal & Manocha, 2022). This allows retailers to engage customers across different touchpoints, improving convenience, accessibility, and user engagement. By integrating voice commerce with various platforms, businesses can enhance conversion rates, streamline the shopping journey, and create a more personalized, hands-free, and frictionless experience for consumers, ultimately driving higher adoption of voice-enabled transactions in the Indian market.

5.2. Enhanced Capabilities:

The field of voice commerce is experiencing constant progress due to developments in voice recognition technology, machine learning techniques, and natural language processing (Moriuchi, 2021).These advancements improve virtual assistants' understanding, response to user queries, personalized product recommendations (Pal et al., 2020), order tracking, payment processing, and loyalty program integration. Voice commerce platforms may increase customer satisfaction and loyalty by offering a more streamlined, individualized, and intuitive buying experience through the utilization of these cutting-edge features.

5.3. Impact on industries:

Voice commerce has the potential to transform various industries, including retail, e-commerce, technology, and consumer goods. Retailers can use voice-enabled platforms to offer personalized shopping experiences and drive sales (Ango, 2016; De Regt & Barnes, 2019). E-commerce platforms and technology companies can benefit from voice commerce adoption. It can also influence consumer behavior and brand engagement. In 2022, voice technology adoption is expected to grow significantly across various industries, with the banking, healthcare, life science, consumer, and electronics sectors expected to see the most significant usage (Statista, 2023b). The following figure depicts the use of voice assistants in various industries.
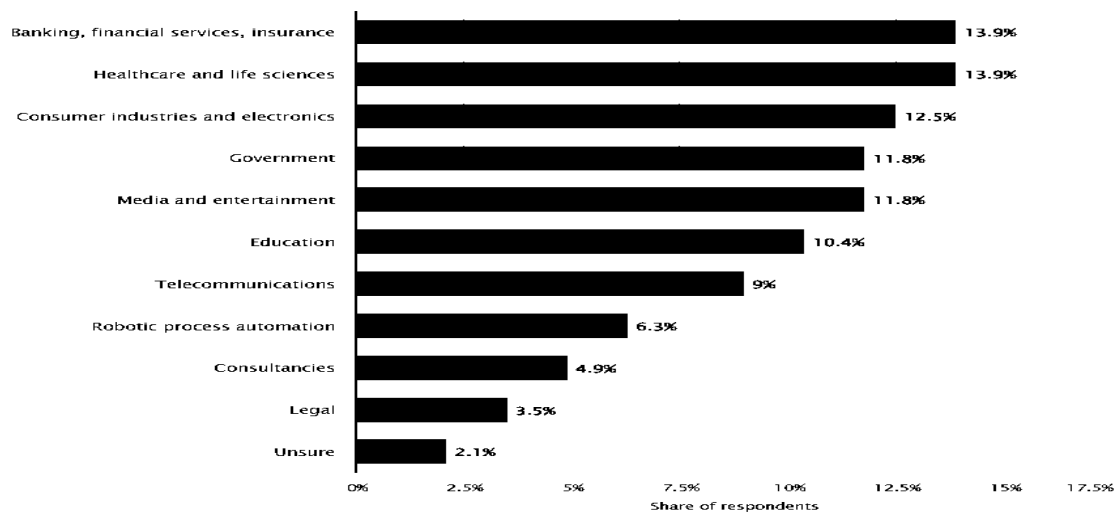
Fig. 1: Use of voice assistants in various industries

Source: Statista

5.4. The potential of voice commerce in India:

Voice commerce in India is a growing trend that involves integrating voice commerce capabilities across various digital platforms and devices, including smartphones, tablets, and smart TVs (Mittal & Manocha, 2022). This integration is crucial due to India's high smartphone penetration and rapid internet usage. Enhanced capabilities in voice commerce include natural language processing and voice recognition technology (Moriuchi, 2021), as well as integration with popular payment systems and e-wallets. These features can increase user engagement and drive growth in the e-commerce landscape. Voice commerce has the potential to significantly impact various industries in India, including e-commerce, retail, technology, and media. It can democratize access to online shopping, promote digital inclusion, and drive innovation in technology and media industries.

Voice assistant integration in e-commerce apps is expected to fuel significant development for Indian e-commerce enterprises. Approximately 75% to 80% of India's non-metro, Tier-2, and Tier-3 regions (known as "Bharat" consumers) remain untouched. Rangarajan (2022) suggests that the non-English speaking consumers of "Bharat" will benefit greatly from the ability to interact with applications in their language, replacing traditional shop-based purchasing experiences. Amazon now allows Indian consumers to interact with Alexa in Hindi, allowing them to question and provide commands in their language.

6. CHALLENGES AND OPPORTUNITIES:

While voice commerce has enormous potential, its path isn't without obstacles. Voice commerce offers challenges and opportunities in the digital landscape. Challenges include improving voice recognition and natural language processing, addressing privacy and security concerns (Agrawal et al., 2018), and investing in infrastructure and training. Accessibility must be addressed, including bridging the digital divide and ensuring that diverse groups may engage (Dogra &

Kaushal, 2021). Furthermore, a restricted product selection might hinder widespread acceptance, requiring development beyond established sectors. Ethical considerations in data collection and usage by tech giants would be of greater concern for users. However, the opportunities are equally appealing. Voice commerce provides unprecedented convenience for those with busy lifestyles, allowing for hands-free shopping and multitasking (Liao et al., 2019). Personalization powered by AI may customize recommendations and experiences, making purchasing more relevant and enjoyable (Tabassum et al., 2019).In addition, new marketplaces will emerge with vernacular support, catering to a variety of languages and cultures. To bridge the digital divide and consumers' benefits, an inclusive voice assistant that caters to the needs of diverse consumers must be designed. The combination of smart homes and IoT promises seamless control of our surroundings and easy transactions. The future of voice interactions demands innovative ethical marketing and advertising strategies. By tackling challenges and embracing opportunities, voice commerce can alter how we connect with businesses and reshape the future of shopping.

7. CONCLUSION AND FUTURE RESEARCH:

The transition from e-commerce to voice commerce represents an important evolution in how people interact with technology and conduct purchases. The current scenario of voice commerce reflects increased usage of voice assistants and smart speakers, demonstrating a shift in customer behavior towards more intuitive and seamless buying experiences. The growing popularity of voice commerce among customers highlights its potential to transform the retail sector. While voice commerce has numerous benefits, including convenience, personalization, efficiency, and enjoyment, it also has some drawbacks, including worries about security, privacy, and accuracy. However, as technology advances and user experiences improve, these limitations will likely decrease. Looking forward, the prospects of voice commerce in India are incredible, with the potential to revolutionize how businesses communicate with customers and generate sales. Rising internet penetration, rising disposable income, and a tech-savvy youth population provide fertile ground for expansion. However, overcoming barriers such as regional language support, trust building, and data security will be critical. To summarise, while voice commerce in India is still in its early stages, it has enormous potential to transform the buying experience. Businesses that embrace innovation and remove major impediments can position themselves to capitalize on the innovative potential of voice-enabled shopping experiences. Further research should look into vernacular language integration, voice-based product discovery, and ethical data collection and usage considerations. Furthermore, it is critical to understand customer behavior in the voice commerce landscape and its impact on traditional e-commerce.

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