Exploring the implications of Consumer Use of Voice Search Technology on Marketing Practice

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Abstract:

The purpose of this conceptual paper is to explore the implications of consumer use of voice search technology on marketing practice. Voice search technology essentially allows consumers to search the internet or apps via voice command for products and therefore heralds a change in online consumer search behaviour. Notably differences include a shift from typed to spoken queries consisting of key sentences rather than keywords and the tendency to use unbranded, and near me search (Chatmeter, 2018b). The literature base consists mainly of practitioner press making predictions about the future of voice search technology. This paper adds to knowledge on this exploratory topic by proposing a conceptual framework which outlines key characteristics of consumer voice search behaviour and the implications for marketing practice.

Keywords: consumer behaviour, voice search technology, smart assistant modality

"Recently, my 4-year-old daughter picked up my old Timex watch. After playing with it for a few minutes, she discovered that the face of the watch lit up when she pushed a button on the side. She grew excited and told the watch: "Call Grandma Hall!" Needless to say, my mother's face did not appear on my aged Timex, which disappointed her greatly" (Hall, 2018, para 4).

1. Introduction

Nowadays children are growing up talking to smartwatches, smartphones, and smart speakers. But not just children, people of almost every age are ordering food, shopping online, checking the weather forecast, controlling other devices, and scheduling tasks via their voice assistants. Recent research found that 65% of smart speaker owners state they do not want to live without their assistant anymore (Social Report, 2018). Furthermore, trend research expects "a future of voice-activated everything, from alarm clocks to refrigerators, lightbulbs, mirrors, and microwaves" (Vogel, 2019, para 1). Subsequently, experts are convinced that voice-enabled advertising will make its way to smart assistants, just like Google AdWords but in an audio version. Ismail (2018) projects it is only a matter of time before firms like Amazon unveil an advertising option for virtual digital assistants such as Alexa. Currently, when talking about voice search, it mostly involves one of two devices: smartphones or smart speakers. Users either talk to, for example, Siri on their iPhone or Alexa on their Amazon Echo smart home assistant. Consumer search behaviour using smart assistants is different, denoting a shift from typed to spoken queries, and as a result marketing practitioners need to respond. But what does the rise of smart voice technology, a term suggested by Mendez (2019) to stress the intelligence of voice technology, mean? Many newspaper articles, blog entries, expert predictions and guidelines have been written about voice search and how it will influence marketing and business. However, to-date academic research tends to focus mainly on the technical features of voice search technology, and there appears to be limited research undertaken to explore how consumers interact with smart devices and voice assistants (Hoffman & Novak, 2018; Jeng et al., 2016; Kowalczuk, 2018; Kuligowska & Lasek, 2005; Lopatovska et al., 2018).

2. Theoretical Review

2.1 Consumer adoption of voice search technology

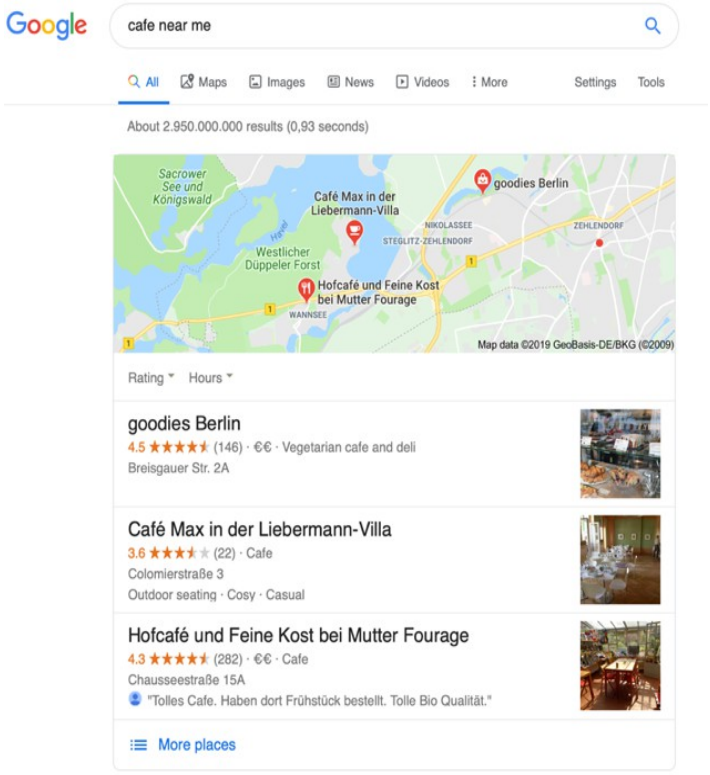
Kowalczuk (2018) found that functional capability and system quality are key factors influencing consumer adoption and perceived usefulness of smart technology. Searching via voice technology is generally perceived as more challenging than a typed inquiry due to the number of errors that may arise such as failed voice recognition. Not surprising, Jeng, Jiang and He (2016) found that voice search was perceived most useful during situations in which the user's hands were unavailable, for example, when driving or cooking. This is possibly why Google Glasses and Google Watch do not have a keyboard anymore and can only be regulated via voice command (Alpar, Koczy and Metzen, 2015). Lopatovska et al. (2018) found that there are situations where people avoid using voice search, specifically when in public places as it is not yet perceived as a socially acceptable behaviour. Consumer adoption of smart assistants is also impeded because they often record conversations and therefore may pose privacy threats (Lopatovska et al., 2018), and because they store data and connect with the cloud making them a potential target of criminals and hackers (Lei et al., 2017; Wirtz et

al., 2018).

2.2 Characteristics and application of voice search technology

A major capability of artificial intelligence (AI) is natural language processing which refers to the ability to understand, analyse and process human language without the interference of a human being (Wagener, 2019). Coding language was long the communication base between humans and machines. However, natural language is the standard now being pursued to make information exchange more free flowing (Wagener, 2019). For many years, Google trained users to search the web in a certain way: typing a few keywords into the Google search engine via the keyboard on a PC, notebook, tablet or smartphone. Subsequently, a whole new industry was brought to life: Search Engine Optimisation and online advertising. Due to ever-developing smart technology, it is now 'voice search' that plays a more important role. But a voice command differs essentially from a typed query as it involves complete sentences instead of just a few keywords. Butler (2019) explains that it is important that firms rethink natural language and optimise for what can be understood as conversational search by providing answers to the questions 'what', 'who', 'where', 'when', 'why' and 'how'. Furthermore, firms should keep in mind when optimising for voice search that smart assistants not only source information from Amazon and Google, but also use directories like Yelp and Foursquare (Uberall, 2019). Hence, it is important that firms have their company information such as address, opening hours, and even the business name consistent across all their different platforms. Up-to-date contact information is also important as a key type of voice search is 'near me search'.

Figure 1. Screenshot of results using 'Hey Google' voice search to find 'a cafe near me'



Using 'Hey Google' voice search to find cafes near me the results page in Figure 1 shows the list of cafes in the researcher's immediate environment based on their GPS data. The top three

search results are presented in a box which Google calls the local 3-Pack (shown in Figure 1). Chatmeter (2018a) found that 76% of mobile searches using 'Hey Google' to find a product or service nearby resulted in same-day in-store visit. The Voice Search Readiness Report (2019, p. 25) explains that when business information is missing or wrong, "it is sales you are losing at the end of the day" as "users conducting voice search queries for local business information have almost certainly decided to visit the store with purchasing intent". Interestingly, 'near me search' is usually non-branded as it is not about finding the nearest Starbucks but rather about finding the most convenient and nearest option to get a coffee. The phenomenon of unbranded search therefore provides another insight into how searching via voice is different from typing a query (Chatmeter, 2018b).

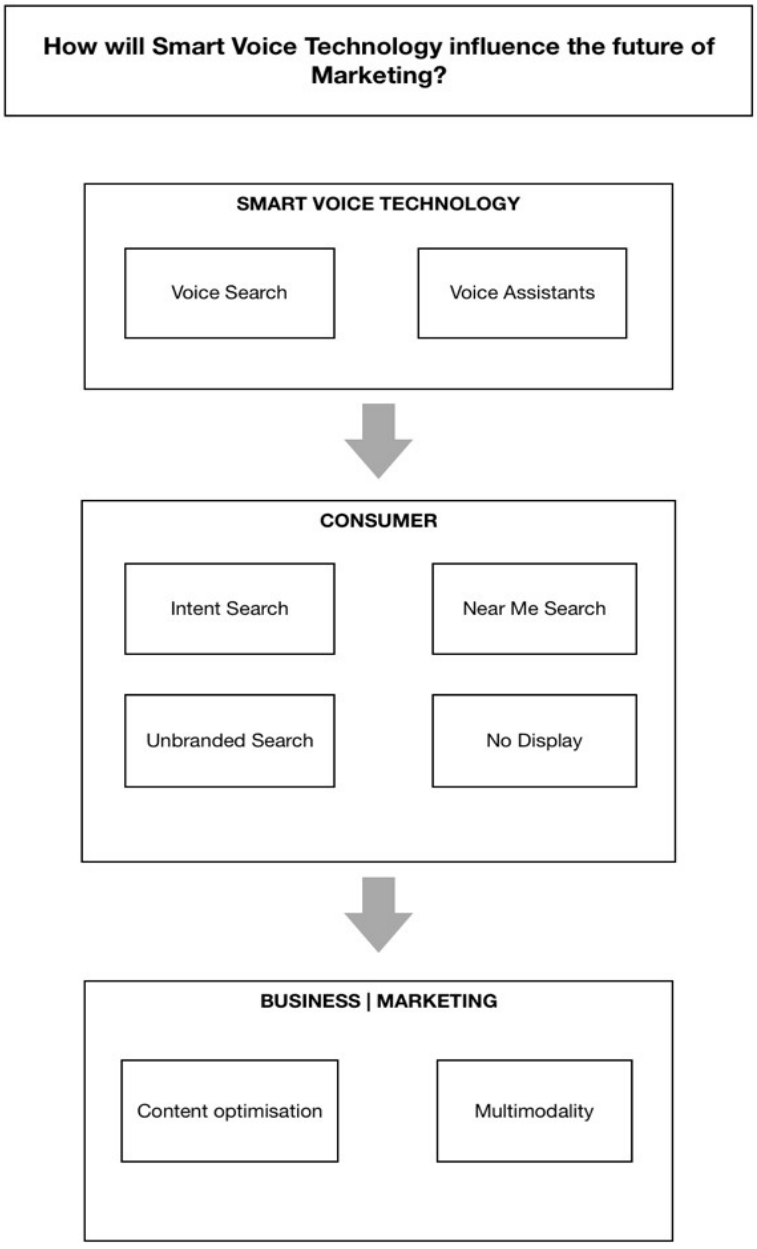
Another key concept is 'intent search' which refers to the consumer's intention for using voice search technology (Yext, 2019b). Google classifies online search intentions into three types: 1. '*Do'*, meaning transactional or commercial consumer drivers such as "pizza near me" or "deals on outdoor Bluetooth speakers", 2. '*Know'*, meaning informational or investigational consumer drivers such as "how tall is Tom Cruise" or "what's the capital of Croatia" and, 3. '*Go'*, meaning navigational consumer drivers which means a search that is branded and paired with keywords such as "NIKE Berlin" and "Amazon purchase FAQs" (Yext, 2019b). Finally, it is possible for the consumer to use voice technology like Siri or Alexa without even looking at the display, a challenge in particular for product-driven businesses that rely on show casing their offerings. This paper proposes that reflecting on how to combine visual and auditory aspects in voice search technology is important for business. Forrester (2017) explains that this is where Amazon is leading with its Echo Look, Spot and Show products which are all smart assistants with a screen.

3. Conceptual Framework

The literature base is fragmented and consists mainly of practitioner press speculating about specific features of voice search technology such as key sentence search and the implications for firms, in this instance, local SEO. The Conceptual Framework in Figure 2 synthesizes current research to present key characteristics of consumer voice search behaviour and the implications for marketing practice. Figure 2 shows that two of the most common ways of using smart voice technology are through voice search such as using 'Hey Google' application to search the web and smart assistants like Amazon's virtual assistant. Figure 2 proposes that four factors are important when thinking about how smart technology changes online consumer search behaviour: 'intent search', 'near me search', 'unbranded search' and 'no display'. The conceptual framework proposes that when the consumer uses voice search technology they are prompted by 'do', a transactional or commercial intent, 'know', an informational or investigational intent, 'go', a navigational intent and possibly other, not yet identified, search intentions. Two unique characteristics of voice search behaviour relate to the consumer's tendency to use 'near me search' that is searching for something that is in the geographic proximity of the user, and unbranded search. Additionally, many users increasingly do not use their technological displays anymore, but listen only to the verbal answer provided by their smart assistant. Key implications of consumer use of voice search for business and marketing practice are next considered. Consumer use of 'near me search' which targets local businesses means it is important that contact information and opening hours are up-to-date on all directories like Yelp, Foursquare and Google My Business, and that firms invest in local SEO to be ranked high on search engine's results. This is why content optimisation is a key factor within the conceptual framework when it comes to the business and marketing side of the discourse. Keeping in mind that queries are often

unbranded is also challenging businesses, specifically researching what words and sentences consumers use to search for them and how to optimise the relevant content for this type of search behaviour. The concept of smart assistant multimodality has been identified as important, specifically with respect to how to visually and aurally present content.

Figure 2. Conceptual Framework



4. Research Objectives

RO1: To explore consumer intentions for using voice search technology.
RO2: To understand consumer search behaviour when using voice technology.
RO3: To investigate the potential of advertising in smart voice channels.
RO4: To make recommendations as to how firms can optimise for online voice search.

5. Conclusion and Recommendations

Challenges and opportunities arise, for both consumers and firms, with smart technology developments. Future research is recommended to focus on consumer search behaviour when using voice technology. Over the past decade consumers embraced the notion of having unlimited purchase options due to the dissemination of information over the web. The Conceptual Framework shows that in some instances consumers using voice search technology employ near me search and therefore the range of purchase options available is limited by geographic proxmity. Future research therefore should explore how search behaviour and firm offerings change when consumers only want to know about a handful of options. The potential of advertising in smart voice channels is also an important research topic which as of yet appears to have received limited attention. Future research exploring how firms can optimise for voice technology and how to monetarise advertising activities via voice technology is important. Smart voice has the potential to have an impact on how we communicate in the future, how businesses and consumers interact, and how marketing is executed.

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