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Voice Shoppers: From Information Gaps to Choice Gaps in Consumer Markets

Noga Blickstein Shchory

Michal S. Gal

Voice Shoppers

FROM INFORMATION GAPS TO CHOICE GAPS IN CONSUMER MARKETS

Noga Blickstein Shchory[†] *& Michal S. Gal*[††]

INTRODUCTION

Consumer: Find me a notepad.

Voice shopper: I found an offer of one Staples yellow notepad for the price of $4.99.

Consumer: Make an order.

Voice shopper: It will arrive in two hours.

Voice shoppers are artificial intelligence-based algorithms installed on digital voice assistants, such as Alexa, Siri, and Google Assistant, that buy products in response to verbal requests from consumers.[1] They can be used to execute

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[†] Noga Blickstein Shchory is a member of the Center for Cyber, Law and Policy at the University of Haifa, and an attorney at the District Attorney's Office in Tel Aviv (Fiscal and Economy).

[††] Michal S. Gal is Professor and Director of the Center of Law and Technology, University of Haifa Faculty of Law, and the President of the International Association of Competition Law Scholars (ASCOLA).

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[1] The voice-activated software on which voice shoppers are installed on were also mentioned in the literature as voice assistants. *See, e.g.*, Valérie Rabassa et al., *Conversational Commerce: Do Biased Choices Offered by Voice Assistants' Technology Constrain Its Appropriation?*, 174 TECH. FORECASTING & SOC. CHANGE (2022); EUROPEAN COMM'N, COMMISSION STAFF WORKING DOCUMENT: PRELIMINARY REPORT—SECTOR INQUIRY INTO CONSUMER INTERNET OF THINGS 14 (2021)); EUROPEAN DATA PROT. BD., GUIDELINES 02/2021 ON VIRTUAL VOICE ASSISTANTS: VERSION 2.0 8 (2021) (using the terminology "virtual voice assistants"); Mark Giancaspro, *"Alexa, Call My Lawyer!" Determining Liability for Unauthorized Purchases Made on Voice-Based Virtual Assistants*, 123 W. VA. L. REV. 117 (2020) (using the terminology "voice-based virtual assistants"). Voice shoppers are a sub-group of digital assistants. To avoid confusion, we use "digital

purchases of both products and services (hereinafter together: products).[2]

Voice shoppers are fast becoming the main gateways to shopping. As Google recognized, the "[v]oice platform will become the future of search . . . [and] Alexa and others may increasingly be a substitute for [s]earch."[3] Indeed, in recent years the use of voice shopping has increased exponentially. For example, "62% of voice-enabled speaker owners have bought items via voice commerce,"[4] and between 2018 and 2019, the share of monthly active smart speaker voice commerce users in the United States rose from 13.6 percent to 15 percent.[5] A 2018 survey among one thousand Americans aged eighteen to sixty-four years with online access found that 40 percent reported using voice shopping on a monthly basis and 10 percent reported doing so daily.[6] Such usage is mainly driven by men, younger consumers, and families with young children.[7] The COVID-19 pandemic has amplified the trend of increased voice shopping usage:[8] the number of US consumers with voice shopping

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assistants" for any algorithmic assistant, "voice assistants" for voice-activated digital assistants, and "voice shoppers" when referring to their shopping function.

[2] These include, inter alia, everyday household items, apparel, entertainment, games, electronics, travel, groceries, furniture, appliances, prepared meals, or local services (such as dry cleaning). *See* VOICEBOT.AI, VOICE SHOPPING CONSUMER ADOPTION REPORT 24 (2018), https://voicebot.ai/wp-content/uploads/2018/06/voice-shopping-consumer-adoption-report-june-2018-voicebot-voysis.pdf [https://perma.cc/4EVZ-YAJJ]; *see also The Rise of Virtual Digital Assistants Usage—Statistics and Trends*, GO-GLOBE (Apr. 27, 2018), https://www.go-gulf.com/virtual-digital-assistants/ [https://perma.cc/SYD9-UECR].

[3] Complaint ¶¶ 141 & 164, U.S. v. Google LLC, No. 1:20-cv-03010 (D.D.C. Oct. 20, 2020), ECF No. 1 [hereinafter Google Complaint] (internal quotation marks omitted), https://www.justice.gov/opa/press-release/file/1328941/download [https://perma.cc/FR9P-2ZTC].

[4] Ayat Shukairy, *The State of Voice Shopping—Statistics and Trends*, INVESP (Apr. 25, 2022), https://www.invespcro.com/blog/voice-shopping/ [https://perma.cc/TG5C-DH2X].

[5] VOICEBOT.AI, SMART SPEAKER CONSUMER ADOPTION REPORT 17 [hereinafter VOICEBOT MARCH 2019] (2019), https://voicebot.ai/wp-content/uploads/2019/03/smart_speaker_consumer_adoption_report_2019.pdf [https://perma.cc/86CA-63E4].

[6] PWC, CONSUMER INTELLIGENCE SERIES: PREPARE FOR THE VOICE REVOLUTION 2, 4 (2018), https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/voice-assistants.html [https://perma.cc/848L-UAXK]. Voicebot's 2018 report found that "26.1% of smart speaker owners have used [a] voice . . . shopp[er] compared to 21.2% of the general population." VOICEBOT.AI, VOICE SHOPPING CONSUMER ADOPTION REPORT 18 (2018), https://voicebot.ai/wp-content/uploads/2018/06/voice-shopping-consumer-adoption-report-june-2018-voicebot-voysis.pdf [https://perma.cc/4GRC-C7JA]. Among the former, 16% use their voice shopper monthly. *Id.* at 19.

[7] *See* PWC, *supra* note 6, at 3–4.

[8] Karen Scates, *The Rapid Growth of Voice Commerce and Touchless Payments During a Pandemic*, SOUNDHOUND (Dec. 22, 2020), https://voices.soundhound.com/the-rapid-growth-of-voice-commerce-and-touchless-payments-during-a-pandemic/ [https://perma.cc/545Q-6CNL]; *see Pandemic Drives Consumer, Business Interest In Voice-Assisted Commerce*, PYMNTS (June 25, 2020), https://www.pymnts.com/voice-activation/2020/pandemic-drives-interest-in-voice-assisted-commerce/ [https://perma.cc/5M9L-BSC2]; *see also* Bret Kinsella, *Voice Shopping Rises to 45 Million U.S. Adults in*

experience rose by 120 percent (from 20.5 to 45.2 million) between 2018 to 2021, and the average order size rose by over 16 percent.[9] Accordingly, the US market for voice shoppers is projected to grow from a market value of $4.6 billion in 2021 to $19.4 billion by 2023.[10]

This growing use of voice shoppers is shaking up markets. It is reshaping consumer-supplier relationships by distancing them from one another and replacing direct transactions with a shopping intermediary. It is also transforming the business models of suppliers by limiting their ability to increase consumer demand through traditional online channels (e.g., by promoting their products on e-commerce sites or via search ads). Instead, suppliers must attempt to affect the choice of the shopping intermediary. As we will show, this new business environment confers advantages on brand name products and on suppliers that enter commercial partnerships with voice shoppers. Voice shoppers also disrupt the business models of search services that largely rely on revenues from ads, especially query motivated ads. Indeed, the complaint recently brought by the Department of Justice against Google alleges, inter alia, that to combat query erosion in its core search business, "Google has turned its sights to emerging search access points, such as voice assistants, ensuring that they too are covered by [its exclusionary] anticompetitive scheme."[11]

As part of our new artificial intelligence powered economy, voice shoppers bring many benefits. They offer a one-stop shop for purchasing many types of products, and they are installed on devices that are portable and easy to operate, while offering a myriad of additional nonmonetary services (e.g., reading out weather forecasts). But most importantly, voice shoppers save the consumer valuable time and decisional energy by limiting the consumer's involvement in the transaction.[12]

A voice shopping transaction works like this: the consumer verbally expresses a general need for a product and empowers the voice shopper to choose an option. The voice shopper then searches for a product and verbally provides

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2021, VOICEBOT.AI (Dec. 24, 2021, 11:53 AM), https://voicebot.ai/2021/12/24/voice-shopping-rises-to-45-million-u-s-adults-in-2021/ [https://perma.cc/P27M-54RS].

[9] *Id.*

[10] Eric Hal Schwartz, *Voice Assistant Transactions Will Reach $19.4B by 2023: Report*, VOICEBOT.AI (Aug. 5, 2021, 4:00 PM), https://voicebot.ai/2021/08/05/voice-assistant-transactions-will-reach-19-4b-by-2023-report/ [https://perma.cc/DJ39-5VZD].

[11] Google Complaint, *supra* note 3, ¶ 12.

[12] *See* Michal S. Gal, *Algorithmic Challenges to Autonomous Choice*, 25 MICH. TECH. L. REV. 59, 60 (2018) (discussing that technological advances have replaced the element of choice in many transactions).

limited details on the chosen product. In response, the consumer may ask to hear another option (generally only one more is enabled), conclude the transaction, or do nothing.[13]

Accordingly, once the consumer chooses to use a voice shopper, her subsequent choices are severely limited. Typically, the only parameters she is given are the product's brand and price, though a limited set of additional product details can sometimes be provided upon request. The consumer's choice is therefore largely dichotomic: to buy the product offered or not. She does not review a menu of purchase alternatives. She is not given information on other qualities of the product offered, the relative price and quality of alternatives, deviation of the price from the market price, or the set of products from which the choice was made. More importantly, she is not likely to be aware of the decisional parameters employed by the voice shopper and their relative weight in deciding which product to recommend. Nor is she likely to be mindful that the shopping algorithm may be employing dynamic pricing—a practice wherein the price of an item is constantly adjusted by using big data to fit a consumer's assumed willingness to pay.[14] Under such conditions, we argue, the consumer's final purchase instruction cannot be treated as the exercise of informed choice. Rather, the employment of the voice shopper creates what we call a "choice gap." This gap is distinct from the commonly recognized information gap that exists when suppliers possess more information than consumers.[15] While both gaps can be present simultaneously, this need not be the case.

The nature of voice shoppers increases the choice gap relative to other intermediaries, including brick and mortar intermediaries (e.g., shops) and online ones (e.g., search engines). A standard Google Search, for example, provides search results in the form of blue links, along with verbal descriptions and often images. So, while the search engine's

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[13] For fuller description, see *infra* Section II.A.

[14] ARIEL EZRACHI & MAURICE E. STUCKE, VIRTUAL COMPETITION: THE PROMISE AND PERILS OF THE ALGORITHM-DRIVEN ECONOMY 83–144 (2016); Noga Blickstein Shchory, *Price Discrimination "Just For You"—A Proposal to Increase Enforcement of Vertical Restraints That Are Designed to Sustain Personalized Pricing*, 17 J. BUS. & TECH. L. 53, 58, 62 (2022); *see* ARIEL EZRACHI & MAURICE E. STUCKE, DIRECTORATE FOR FIN. & ENTER. AFFS.—COMPETITION COMM., ORG. FOR ECON. COOP. & DEV., ALGORITHMIC COLLUSION: PROBLEMS AND COUNTER-MEASURES 3, 10 (2017); *see also* Rajnish Shankhdhar & Dr. Pragyan Dangwal, *Exploring Behavioral Pricing Practices on E-Commerce*, 3 INT'L J. HUMS. & MGMT. SCI. 179 (2015).

[15] *See* Noga Blickstein Shchory, *Information Asymmetries in E-Commerce: The Challenge of Credence Qualities*, 20 J. HIGH TECH. L. 1 (2020); *see also* INÉS MACHO-STADLER & J. DAVID PÉREZ CASTRILLO, AN INTRODUCTION TO THE ECONOMICS OF INFORMATION: INCENTIVES AND CONTRACTS 3–4 (2d ed. 2009).

algorithm chooses the order in which results appear,[16] the user can still browse all the search results. Hence, the choice gap is much less pronounced with online search engines. In contrast, voice shoppers are more of a gatekeeper to shopping than search engines have ever been.

While this inherent reduction in choice—and, therefore, time and decisional energy—is partly what attracts consumers in the first place, the resultant voluntary transfer of decision making from consumers to voice shoppers raises concerns relating to efficiency, psychology, and liberty.[17] This article focuses on the concern that the choice gap leads to transactions that deviate from consumer preferences. As argued below, some of these deviations are not random and result from choices made by the voice shopper, such as which set of products to compare and what weight to give each decisional parameter. This is troublesome for three main reasons. First, data show that most consumers simply accept the voice shopper's first offer based on the minimal information provided.[18] Second, the decisional parameters used by the voice shopper are largely unknown to the consumer. Even consumers who seek out information on how a specific choice was made will find only general and vague parameters.[19] Third, currently, two dominant voice shoppers (Amazon and Google) enjoy natural comparative advantages,[20] thereby creating high hurdles to the entry and expansion of competing voice shoppers. In such an environment, it is more difficult to ensure consumers get what they want, rather than what voice shoppers seek to sell them.

This reality, where transactions systematically deviate from consumers' preferences, is disturbing on more than one level. Such deviations may reduce the welfare of the individual consumer. Of course, for each individual shopper, the costs of such deviations may be outweighed by the benefits of using a voice shopper, especially given that most transactions are small.[21] However, the aggregate price of such deviations across

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[16] Google, for example, orders results by relevance to the query, after paid ads, which are clearly marked. Google calls its neutral results "organic," defining them as a "free listing in Google Search that appears because it's relevant to someone's search terms." *See Organic Search Result*, GOOGLE: GOOGLE ADS HELP, https://support.google.com/google-ads/answer/6054492?hl=en [https://perma.cc/542N-GEEF].

[17] Gal, *supra* note 12, at 75–80.

[18] *See infra* Section II.C.

[19] *See infra* Section II.A.

[20] *See infra* Section II.C.

[21] Richard Kestenbaum, *Conversational Commerce Is Where Online Shopping Was 15 Years Ago—Can It Also Become Ubiquitous?*, FORBES (June 27, 2018, 6:46 PM), https://www.forbes.com/sites/richardkestenbaum/2018/06/27/shopping-by-voice-is-small-now-but-it-has-huge-potential/?sh=5b32951037ac.

all consumers might be very large.[22] Reflecting the extent of these concerns, the Organization for Economic Co-operation and Development (OECD), an intergovernmental organization with thirty-eight member countries, including the United States, recently organized a special international panel on how to limit potential consumer harms arising from the use of voice shoppers.[23] But the harm goes much deeper. As elaborated below, systematic deviations from consumer preferences affect the functioning of markets.[24] Yet markets cannot be relied upon to fix this problem.

Despite the game changing effects of this switch to semiautomated shopping, this systematic market failure is currently undertreated. Consumer protection laws largely focus on safeguarding the availability and verity of information regarding alternative products to ensure the consumer can make an informed choice. As such, they do not offer an efficient remedy where the information is not accessed by the consumer.[25] Antitrust laws are also largely ill-suited to the task. Such laws apply to unilateral conduct only if the voice shopper enjoys a monopoly position and if the conduct monopolizes the market by creating artificial barriers to competition.[26] Furthermore, introduction of more competition into the market for voice shoppers is difficult, as it is characterized by high, natural entry barriers.[27]

Accordingly, voice shopping needs to be governed by a legal paradigm that protects consumer welfare and the proper functioning of markets, while also recognizing the benefits of systematic and voluntary delegation of both the information gathering and the product choice itself to an algorithmic intermediary. To that end, we suggest the application of agency law. Indeed, the two fundamental characteristics of agency relationships—delegation of power to another to decide in one's stead and the lack of real-time information on the agent's decisions to ensure he does not deviate from one's interests—exist here. This consumer-voice shopper relationship, which goes beyond standard seller-consumer interactions, justifies an acknowledgement that voice shopping's legal nature is one of agency.

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[22] *See infra* Section II.B.

[23] ANNA BARKER ET AL., ORG. FOR ECON. COOP. & DEV., ROUNDTABLE ON DIGITAL ASSISTANTS AND VOICE CONTROLLED E-COMMERCE (2019), https://one.oecd.org/document/DSTI/CP(2019)10/FINAL/en/pdf [https://perma.cc/6XP7-ELAC]. Michal Gal served as one of the experts on the panel.

[24] *See infra* Section II.B.

[25] *See infra* Section IV.A.

[26] *See infra* Section III.B.

[27] *See infra* Sections II.C and III.B.

Agency law enables the application of fiduciary, performance, and information duties that protect consumers' interests in the transaction, rather than protecting consumer choice. Applying such duties would mandate that purchases made by the voice shopper, further the consumer's interests, and restore the consumer's control in the purchase.

We are not the first to recognize the unique challenges posed by voice shoppers. Some scholars focused on contractual problems raised by mistaken orders.[28] We identify and discuss a wider problem and explain why previously proposed solutions are inefficient. Rabassa et al. argue that voice shoppers make biased recommendations and propose to remedy this misalignment of choices by increasing the transparency of voice shopper decisions.[29] Ezrachi and Stucke review digital assistants as a tool that people use to communicate with the world, and they point to social, political and economic concerns.[30] They argue that any form of ex post intervention of antitrust laws is insufficient, and suggest, inter alia, the application of regulatory instruments to "ensure that the platform's incentives are aligned with users' interests, and prevent some of the market dynamics which could give rise to exclusionary or exploitative effects."[31] While we agree with this general suggestion, in this article, we go further to explore how exactly such tools could be designed.

Several scholars, including Gal, Giancaspro, and Scholz, previously suggested the application of agency law to voice shoppers.[32] Yet the main concerns addressed in those papers are contractual liability and risk allocation problems, rather than consumer protection or market functioning. Furthermore, this article is the first to analyze the systemic market-wide problems created by voice shoppers, focusing not only on individual consumers but also on the proper functioning of markets. It is also the first to identify and analyze the choice gap, propose a

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[28] Lauren Henry Scholz, *Algorithmic Contracts*, 20 STAN. TECH. L. REV. 128 (2017); Giancaspro, *supra* note 1; Samir Chopra & Laurence White, *Artificial Agents and the Contracting Problem: A Solution Via an Agency Analysis*, 2009 U. ILL. J.L. TECH. & POL'Y 363 (2009); Vincent Ooi, Contracts Formed by Software: An Approach from the Law of Mistake 1–2, 13, 16 (2019) (unpublished manuscript), https://ink.library.smu.edu.sg/caidg/3/ [https://perma.cc/QC4J-J6XS].

[29] Rabassa et al., *supra* note 1, at 9. A similar suggestion was drafted towards other types of AI. *See, e.g.*, Argyro P. Karanasioua & Dimitris A. Pinotsis, *A Study into the Layers of Automated Decision-Making: Emergent Normative and Legal Aspects of Deep Learning*, 31 INT'L REV. L. COMPUTS. & TECH. 13–14 (2017).

[30] Maurice E. Stucke & Ariel Ezrachi, *How Digital Assistants Can Harm Our Economy, Privacy, and Democracy*, 32 BERKELEY TECH. L.J. 1239, 1240–41 (2017).

[31] *Id.* at 1293, 1296.

[32] Gal, *supra* note 12, at 98; Giancaspro, *supra* note 1, at 127–30; Scholz, *supra* note 28, at 164–69. For arguments rejecting the agency approach in the contract law context, *see* Ooi, *supra* note 28, at 12–14.

strong basis for recognizing an agency relationship in the voice shopper-consumer interaction, and suggest how to shape agency law to deal with the unique challenges that arise in the context of voice shoppers.

The relevance of our suggestions go well beyond voice shoppers because voice shoppers are, in essence, a private case of algorithms that shop on the consumer's behalf.[33] A growing number of such algorithms increase the choice gap even further by not only choosing the product but initiating the transaction and placing the order, all without the consumer's involvement.[34] Such algorithmic consumers are already used in some markets (e.g., smart washing machines that buy detergent when it begins to run low)[35] and many more are being designed.[36] As algorithms that make choices for consumers become more commonplace, the need to create an efficient and effective framework for their legal responsibilities grows. If our argument for an agency relationship in the case of voice shoppers is accepted, then it can be applied, with required adjustments, to such algorithmic consumers.

The article proceeds as follows: Part I describes and characterizes voice shoppers. Part II analyzes the market failure concerns raised by their use. Part III shows why consumer protection and antitrust laws are inadequate to protect consumers and suppliers in this changing environment. The heart of the paper is Part IV, which proposes recognition of an agency relationship between voice shoppers and consumers as a means to protect the latter's interests and address the market failures outlined previously. We analyze various unique and interesting issues raised by this suggestion, including how much information the algorithm must seek, under what conditions the algorithm can limit the suppliers from whom offers are sought, the level of ex post control it must grant consumers, and how it should deal with their personal data and information. Such questions will surely be confronted by courts in the near future.

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[33] Michal S. Gal & Niva Elkin-Koren, *Algorithmic Consumers*, 30 HARV. J.L. & TECH. 309, 313–17 (2017); Gal, *supra* note 12, at 64–66; EZRACHI & STUCKE, *supra* note 14, at 191–202.

[34] Gal & Elkin-Koren, *supra* note 33, at 316–17; EZRACHI & STUCKE, *supra* note 14, at 194–95.

[35] Stan Higgins, *IBM Reveals Proof of Concept for Blockchain-Powered Internet of Things*, COINDESK (last updated Sept. 11, 2021, 7:27 AM), https://www.coindesk.com/markets/2015/01/17/ibm-reveals-proof-of-concept-for-blockchain-powered-internet-of-things/ [https://perma.cc/5BZ3-KZCA].

[36] *See, e.g.*, Gal & Elkin-Koren, *supra* note 33, at 309–10 (2017).

I. FUNDAMENTALS OF VOICE SHOPPERS

This Part introduces voice shoppers by describing the user experience, their benefits, and the choice gap they create. As will be argued, voice shoppers offer a tradeoff: increased efficiency in place of informed consumer choice. The reduction of choice is what calls for legal intervention that will be reviewed in the following sections.

A. The User Experience

The user experience with voice shoppers consists of four stages: setting up an account, activating the voice shopper, requesting a recommendation for a product, and approving the transaction. The first stage is performed only once, and the other three are repeated for each transaction. For clarity, we zoom into the purchase process with the most common voice shoppers: Alexa and Google Assistant.[37]

The first stage requires the consumer to set up the virtual assistant on the appropriate hardware.[38] Alexa, for example, is installed by default on Amazon's smart speakers but can also be installed on other brands of smart speakers (such as Ford cars)[39] or on iOS or Android smartphones through the Amazon Alexa app.[40] Google Assistant is preinstalled on Google Home speakers, many Android phones, and can also be installed on other devices and on iOS operating systems.[41] The consumer is required to create a user account by providing certain basic information like name, address, telephone number, and credit or debit card numbers. Preexisting users log into their Amazon Prime or

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[37] We refer to the general voice shopping application, rather than to unique features designed for specific interactions.

[38] J.D. Biersdorfer, *Put Alexa and Siri to Work*, N.Y. TIMES (last updated Jan. 24, 2020), https://www.nytimes.com/2020/01/22/technology/personaltech/how-to-alexa-siri-assistant.html.

[39] Sean Szymkowski, *Ford's Adding Amazon's Alexa to 700,000 Vehicles this Year*, CNET (May 14, 2021, 7:41 AM), https://www.cnet.com/roadshow/news/ford-amazon-alexa-skills-software-update/ [https://perma.cc/8LX3-ZM99].

[40] *Get Started with the Free Alexa App*, AMAZON, https://www.amazon.com/b?ie=UTF8&node=18354642011 (last visited Oct. 3, 2022).

[41] *Services and Smart Devices that Work with Google Assistant*, GOOGLE, https://support.google.com/googlenest/answer/7639952?hl=en [https://perma.cc/28N9-GNZC]; Christian de Looper, *Google Assistant: Here are all the Phones and Devices with Google's AI*, TECHRADAR (May 17, 2017), https://www.techradar.com/news/google-assistant-here-are-the-phones-and-devices-with-googles-ai-helper [https://perma.cc/B3KG-Q8XN].

Gmail account.[42] Once the account is set up, the voice assistant is constantly listening and waiting for the consumer to use it.[43]

In the next stage, the consumer activates the voice assistant by using a "wake up" expression.[44] Both voice assistants offer a built-in voice shopping function that users can switch on or off as desired.[45] When this function is on, the consumer can make purchases using verbal commands. When it is off, the consumer can still search for products, add items to a virtual shopping cart, and track orders.[46]

Next, the consumer speaks a command to search for a product.[47] In response, the voice shopper searches through a selection of products and makes a recommendation. Both Alexa and Google Assistant recommend only one item at a time that the user can approve or decline. If the user rejects the recommendation, she can ask to hear another one.[48] While no official guidelines exist, a test performed on Alexa by OneSpace, an e-commerce analytics company, found that Alexa never recommends more than two alternatives.[49] On the third try, it responds: "That's all I can find for [product] right now. Check your Alexa app for more options."[50] The consumer can then elect

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[42] *See* Christian Wait, *Can You Use Alexa Without Amazon Prime?*, PCGUIDE (last updated July 22, 2022), https://www.pcguide.com/smart-home/faq/can-you-use-alexa-without-amazon-prime/ [https://perma.cc/35KF-V9AJ]; *Buy Physical Goods with Your Google Assistant Device*, GOOGLE, https://support.google.com/assistant/answer/7573530 [https://perma.cc/J9J2-TP7V]; Alexandra Barcelona, *What is Voice Shopping, and How Does it Work?*, DOTCMS (Apr. 8, 2018), https://dotcms.com/blog/post/what-is-voice-shopping-and-how-does-it-work- [https://perma.cc/T5LR-76EE].

[43] EUROPEAN DATA PROT. BD., *supra* note 1, at 10.

[44] EUROPEAN COMM'N, *supra* note 1, at 21; MAJORITY STAFF OF SUBCOMM. ON ANTITRUST, COM. & ADMIN. L. OF COMM. ON THE JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS 121 (2020) [hereinafter HOR REPORT], https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf?utm_campaign=4493-519 [https://perma.cc/L7E2-UGHB].

[45] *Help & Customer Service*, AMAZON, https://www.amazon.com/-/he/gp/help/customer/display.html?ref_=hp_left_v4_sib&nodeId=GLSQSWPWZMLR3RA5 (last visited Sept. 12, 2022); *Buy Physical Goods on Your Phone*, GOOGLE, https://support.google.com/assistant/answer/7384588 [https://perma.cc/XSM6-2PSD].

[46] *Manage Voice Purchasing Settings*, AMAZON, https://www.amazon.com/gp/help/customer/display.html?nodeId=201952610 (last visited Sept. 23, 2022); *Buy Physical Goods on Your Phone*, *supra* note 45.

[47] EUROPEAN COMM'N , *supra* note 1, at 21; *Place Orders with Alexa*, AMAZON, https://www.amazon.com/gp/help/customer/display.html?nodeId=201807210 [https://perma.cc/DS5E-6NQV].

[48] Victoria S. & Vlad V., *What's Voice Commerce and Is It the Next Big Thing in Ecommerce?*, RUBYGARAGE, (Nov. 7, 2018), https://rubygarage.org/blog/what-is-voice-commerce [https://perma.cc/78PP-TT4K].

[49] Alex Chrum, *Alexa Voice Shopping & Amazon Content: A Primer for Brands*, ONESPACE, https://www.onespace.com/blog/2018/02/alexa-voice-shopping-amazon-content-a-primer-for-brands/ [https://perma.cc/7AXE-92XL].

[50] Mike Feibus, *Why Aren't More People Using Alexa to Shop? It May Because We Love to Price Compare*, USA TODAY (last updated Aug. 26, 2018, 4:47 PM),

to view a list of alternatives on her phone.[51] This limitation on the number of recommendations available through the voice shopper is a programming choice because there is no technological barrier to adding more options. Its benefits are the simplicity and ease of voice shopper's use as well as the savings of consumers' time and attention. Indeed, listening to and comparing numerous proposals delivered orally may require more decisional energy than viewing a set of alternatives, thus negating the very purpose of these applications.

When proposing a product, both applications provide only minimal information.[52] Alexa begins by stating the item's brand name and price.[53] If the user says, "Tell me more," Alexa will then report the item's average rating, the number of customer reviews, and some basic product characteristics.[54] This scarcity of information is even more pronounced in Google Assistant that only provides the product's brand and price, and no further information can be requested.[55] These limited product descriptions are also part of the companies' business model rather than a technological constraint. As with the restricted number of options, the aim is probably to avoid placing too many demands on the consumer's attention, given that information delivered orally takes longer both to provide and to process than information delivered visually.[56] Voice shoppers thus offer a tradeoff: increased efficiency in place of informed consumer choice.

Finally, the consumer decides whether to order the product offered. Placing an order via Alexa is a one-step process. The user merely says, "Order [item]."[57] With Google Assistant, the user says, "Add [product] to my cart."[58] The user may then add additional items to the basket. When the user is ready, she

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https://www.usatoday.com/story/tech/columnist/2018/08/26/one-more-reason-people-may-avoid-shopping-amazons-alexa-analysis/1042774002/ [https://perma.cc/WA3G-5YJF].

[51] *Id.*; *see also* BARKER ET AL., *supra* note 23, at 3.

[52] This is a common feature in voice shoppers. BARKER ET AL., *supra* note 23, at 4.

[53] Chrum, *supra* note 49.

[54] *Id.*

[55] Alistair Charlton, *Voice Shopping with Amazon Alexa and Google Assistant: Everything You Need to Know*, GEAR BRAIN (Mar. 11, 2020), https://www.gearbrain.com/voice-shopping-with-alexa-explained-2534870941.html [https://perma.cc/9T5P-Y8X9].

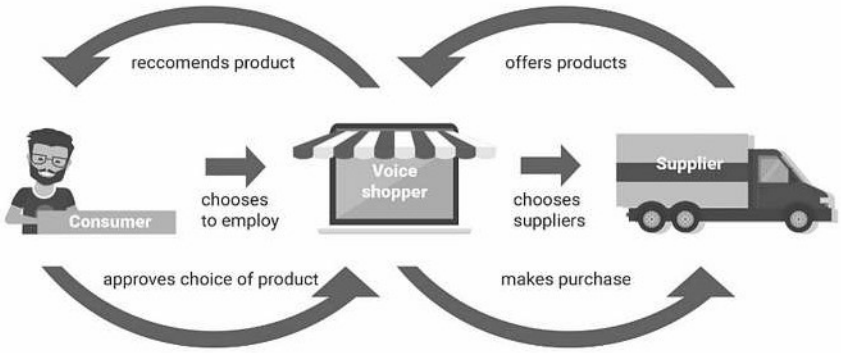
[56] Some voice commerce transactions combine vocal with textual communication. *See* BARKER ET AL., *supra* note 23, at 4; Kurt Munz & Vicki Morwitz, Sound Judgment: Evaluability and Memory in Speech-based Product Evaluation and Choice 2, 5–6 (2022) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3462714 [https://perma.cc/784F-457D].

[57] *Place Orders with Alexa*, *supra* note 47.

[58] *Buy Physical Goods on Your Phone*, *supra* note 45.

says "[c]heck out,"[59] and then confirms the order by saying, "place order."[60] Alternatively, the user may skip the shopping cart by ordering Google Assistant to "buy/purchase/order [item]".[61] The purchasing process when using a voice shopper is illustrated in Figure 1 below.

Figure 1: The purchasing process with voice shoppers.



B. The Creation of the Choice Gap

In the previous Section, we saw the scarcity of intervention points between the user and the algorithm's performance. Voice shoppers require only general authorization from consumers to make a purchase. This means that consumers not only are removed from suppliers, but they also relinquish the opportunity to make an informed choice about the product. We call this the "choice gap." As noted above, the choice gap should be differentiated from the commonly recognized information gap. It is not that the consumer cannot obtain the relevant information from suppliers. Rather, it is that even if such information can be easily obtained, the consumer enters the transaction without selecting the product to be purchased. Furthermore, the consumer is not even aware of the decisional parameters used by the voice shopper when they choose which product to propose.[62] While this

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[59] Rachel Murphy, *Google Assistant Can Help You Shop at Walmart—Here's How*, REVIEWED (last updated Oct. 28, 2020), https://reviewed.com/smarthome/features/how-to-use-google-assistant-to-shop-at-walmart [https://perma.cc/359H-47XB].

[60] Isaac Yuen, *Payments and E-Commerce on Voice Assistants: Alexa, Google Assistant, and Cortana*, CHATBOTS MAG. (July 2, 2017), https://chatbotsmagazine.com/payments-and-e-commerce-on-voice-assistant-alexa-google-assistant-and-cortana-b4336c98dcd2 [https://perma.cc/J7UF-QJG7].

[61] Charlton, *supra* note 55.

[62] FRANK PASQUALE, THE BLACK BOX SOCIETY 59–100 (2015).

choice gap is the main benefit that voice shoppers create for consumers, it is also its strongest pitfall.

The choice and information gaps can exist simultaneously. Interestingly, an inverse relationship between these gaps can arise. Consumers may reasonably assume that the voice shopper can collect relevant information about a product more efficiently than themselves and that its recommendations are based on such information.[63] This potential reduction in the information gap may strengthen the consumer's incentive to delegate the selection of the product to the voice shopper. By doing so, it is not information the consumer gives up—it is choice.

It is important for this analysis to understand what types of parameters voice shoppers may employ. As Gal suggests, there are four types of digital purchase algorithms that vary in the level of the algorithm's discretion.[64] The first group consists of "stated preference[] algorithms."[65] These algorithms execute the precise instructions of the user as to the product, brand, or supplier (e.g., "purchase ten AAA Duracell batteries from Walmart").[66] The second group is "Menu of Preferences Algorithms," which present the user with a limited range of options.[67] Algorithms of the third type, "Predicted Preferences Algorithms," are designed to simulate and mimic the consumer's preferences.[68] Finally, the fourth group comprises "Paternalistic Algorithms" that can be programmed to choose on behalf of the consumer in keeping with the consumer's long term preferences, even if that means overriding his immediate preferences.[69] For example, the algorithm might be programmed to refuse to make a purchase that exceeds a predefined budget or that does not comply with a consumer's diet. Where the algorithm is not operated by the consumer, we add a fifth type, "operator preferences algorithms" that base choices on the preferences of their operator (for example, prioritizing the operator's brands).

Voice shopper algorithms are usually a combination of the first three types, with possibly some elements from the fifth. Let us look first at Alexa. Alexa runs its search over Amazon Prime products only.[70] Prime is an Amazon service that provides

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63 *See infra* Section I.C.
64 Gal, *supra* note 12, at 66–67.
65 *Id.* at 71.
66 *Id.*
67 *Id.* at 67.
68 *Id.* at 67–68.
69 *Id.* at 69–70.
70 Chrum, *supra* note 49.

registered Amazon users with fast, free delivery of eligible products, exclusive deals, and additional benefits.[71] This structure, alone, is a menu of preferences. Within the Prime menu, Alexa then adheres to the following parameters: first, it listens for a well defined specific request—e.g., "order five Jaffa oranges from Whole Foods."[72] This option combines the menu of preferences algorithm with a "stated preferences" element. If Alexa receives such a request, it will place the order. Interestingly, a recent study indicated that 14 percent of smart speaker users used their voice shopper at least once to reorder products they purchased in the past.[73]

If the consumer does not make a defined request, Alexa searches through the consumer's order history for a similar item the consumer already purchased through Amazon. This combines the menu of preferences with a "predicted preferences" component. In the case of a reordered product, it may have been chosen by the voice shopper in the original transaction, so in its second transaction, the consumer fell into the choice gap twice by the voice shopper.

If the consumer does not have an order history for the desired item, Alexa will propose an "Amazon's Choice" product, if available. Amazon defines "Amazon's Choice" as a curated collection of products which are "highly rated, well-priced[,] and available to ship immediately."[74] Amazon's Choice attraction to merchants is reflected in a study that found for products with no purchase history, Amazon's Choice was the first recommendation 54 percent of the time and the second one in only 4 percent. Whereas the top search products were the first recommendation in 40 percent and the second one in 90

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[71] *Explore My Benefits*, AMAZON, https://www.amazon.com/amazonprime [https://perma.cc/MG93-TZMA]; *Amazon Prime Shipping Benefits*, AMAZON, https://www.amazon.com/gp/help/customer/display.html?nodeId=202075470 [https://perma.cc/TBZ6-MU7P].

[72] *See, e.g.*, *How to Order Groceries with Alexa*, AMAZON, https://www.amazon.com/b?ie=UTF&node=21341306011 (last visited Sept. 12, 2022).

[73] *5 Ways Consumers Interact with Smart Speakers*, MIND STREAM MEDIA GRP. (2021), https://mindstreammediagrouatcom/introduction-smart-speakers-voice-search-brand-advertisers/ [https://perma.cc/XZK5-47PC].

[74] *Amazon's Choice: Frequently Asked Questions*, AMAZON, https://www.amazon.com/b?ie=UTF8&node=21449952011 (last visited July 21, 2022); Don Reisinger, *What is Alexa Voice Shopping, and How Do You Use It?*, TOM'S GUIDE (May 31, 2019), https://www.tomsguide.com/us/alexa-voice-shopping-tutorial,news-25370.html [https://perma.cc/4WGZ-SDB8]; James Stables, *How to Use Alexa: Features, Tips and Tricks in our Complete Guide*, AMBIENT (June 29, 2022), https://www.the-ambient.com/how-to/alexa-voice-shopping-guide-880 [https://perma.cc/GJD4-KDVM].

percent.[75] While the algorithm that favors the Amazon's Choice label is not transparent, it is said to rely on features of products previously purchased by the user (content-based filtering) and products purchased by similar groups of consumers (user collaborative filtering).[76] Brands can neither apply nor pay to be awarded the Amazon's Choice badge,[77] though all merchants that sell through Amazon pay a commission and fees for its services.[78] If there is no Amazon's Choice product, Alexa will recommend a top-ranking item that matches the supplied keyword phrase.[79] Accordingly, both options combine a menu of preferences and predicted preferences with different weights.

All in all, "Alexa's recommendations for unbranded searches bias toward prior purchases, Amazon's Choice products and its own private labels."[80] For example, "if you say 'Alexa, order me batteries,' you're more likely to get Amazon batteries than Duracell or Energizer[;] [f]or paper towels, Amazon's Choice is Presto, not Bounty or Scott."[81] One study found that "[i]n about 5% of Alexa's first recommendations . . . Alexa's script skips over the Amazon's Choice or top search result."[82] Instead, it suggests "product listings marked 'sponsored' on Amazon.com[,]" while not disclosing the product is sponsored.[83] When asked whether Alexa is trained to favor Amazon products when users shop by voice, Amazon's chief executive officer at the time, Jeff Bezos, responded that "it wouldn't surprise me if Alexa sometimes does promote our own products."[84]

Google Assistant enables consumers to purchase items via voice shopping from retailers partnered with Google

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[75] AARON CHERIS ET AL., BAIN & CO., BAIN RETAIL HOLIDAY NEWSLETTER: DREAMING OF AN AMAZON CHRISTMAS? 5 (2018), https://media.bain.com/Images/Retail_Holiday_Newsletter_2017_2018_Issue_2.pdf [https://perma.cc/87AT-59YU].

[76] Rabassa et al, *supra* note 1, at 2–3.

[77] *Amazon's Choice: Frequently Asked Questions*, *supra* note 74.

[78] Prachi Juneja, *The Business Model of Amazon*, MGMT. STUDY GUIDE, https://www.managementstudyguide.com/business-model-of-amazon.htm [https://perma.cc/BGX4-Q364].

[79] Chrum, *supra* note 49; Todd Haselton, *Here Are a Bunch of Things You Can Do with Your New Amazon Echo*, CNBC (Dec. 25, 2018, 3:00 PM), https://www.cnbc.com/2018/12/24/amazon-echo-tips-and-tricks.html [https://perma.cc/NQ5N-35LB].

[80] CHERIS ET AL., *supra* note 75, at 5; *see also* Adrianne Jeffries & Leon Yin, *Amazon Puts Its Own "Brands" First Above Better-Rated Products*, MARKUP (Oct. 14, 2021, 8:00 AM), https://themarkup.org/amazons-advantage/2021/10/14/amazon-puts-its-own-brands-first-above-better-rated-products [https://perma.cc/L7TR-FPAX] (arguing that "Amazon Puts Its Own 'Brands' First Above Better-Rated Products").

[81] Nathaniel Meyersohn, *Amazon's Alexa is the Biggest Challenge for Brands since the Internet*, CNN BUS. (May 10, 2018, 12:07 PM), https://money.cnn.com/2018/05/10/news/companies/alexa-amazon-smart-speakers-voice-shopping/index.html [https://perma.cc/BSQ8-9XTC]; *see* HOR REPORT, *supra* note 44, at 311.

[82] CHERIS ET AL., *supra* note 75, at 5.

[83] *Id.*

[84] HOR REPORT, *supra* note 44, at 311.

Express—including Walmart, Costco, Target, Home Depot, PetSmart, and Walgreens—its same-day or overnight delivery service.[85] Google Assistant's business model is pay-per-sale, meaning Google receives a commission for every sale made through its voice shopper.[86] Accordingly, although Google does not sell its own products through the voice shopper, there is an incentive to increase both the number and value of sales. The user can request a specific purchase from a particular partner by saying, "add [product] from [store] to my cart."[87] She can also reorder from her order history, including the history collected by Google's selling partners.[88] Should the consumer not request a specific product, Google Assistant will recommend a product from Google Shopping by using the consumer's shopping history on Google or browsing history.[89] Google Assistant limits purchases to up to one hundred dollars, pretax.[90]

Alexa and Google Assistant do not provide the consumer with the considerations that go into pricing or how the voice shopper operator (operator) makes a profit from each transaction. Operators can earn profits from purchases in three main ways: adding a processing and delivery fee to each product, receiving a commission from suppliers, or buying products and pricing them to maximize the operator's profit.

C. Benefits to Consumers

Voice shoppers offer consumers significant benefits that will be described in this subpart. First, they are based on search algorithms that offer speed and sophistication by quickly scanning for available products, processing and comparing them, and matching the features of these products with preference parameters embedded in the algorithm. As such, they reduce consumer search costs.[91] This is no small feat. Acquiring relevant information about a product may be costly and is not

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[85] Victoria S. & Vlad V., *supra* note 48.

[86] Olivia MacCunn, *What are Google Shopping Actions?*, BIDNAMIC (Apr. 26, 2022), https://www.bidnamic.com/resources/what-are-google-shopping-actions [https://perma.cc/N6VE-9QS7].

[87] *Buy Physical Goods on Your Phone*, *supra* note 45.

[88] For example, Google offers Walmart shoppers the ability to link their Google Express and Walmart accounts, giving Google access to the shopper's stored history of Walmart product purchases. Customers can then easily reorder products they have bought in the past. *See* Victoria S. & Vlad V., *supra* note 48.

[89] *Recommendations & Personalization*, GOOGLE, https://support.google.com/googleshopping/answer/9116422?hl=en#zippy=%2Cgoogle-uses-buy-on-google-order-history-and-browsing-history [https://perma.cc/9GRD-2Y7D].

[90] Charlton, *supra* note 55.

[91] Gal, *supra* note 12, at 71; BARKER ET AL., *supra* note 23, at 6.

necessarily cost effective for small, everyday transactions.[92] Second, and relatedly, voice shoppers are not subject to the human problem of information overload, wherein information above a certain point is beyond our capacity to process,[93] leading to distraction and confusion in the decision-making process.[94] As famously observed by Herbert Simon, "a wealth of information creates a poverty of attention."[95] Third, the algorithm may be better at scanning consumer contracts and finding problematic contractual terms.[96] Fourth, once the product is chosen, voice shoppers save time and attention by making the purchase,[97] thereby reducing transaction costs. Fifth, voice shoppers are potentially free from human biases.[98] Sixth, a voice shopper that serves many consumers may use inferences from consumers with similar features to suggest a product that better fits the current user's preferences.[99] And finally, when a voice shopper represents many consumers, it may enjoy buying power.[100] Accordingly, the voice shopper can strike a better deal. In short, voice shoppers have the potential to be the best intermediaries that ever existed for mass consumption.

Additional advantages result from the fact that voice shoppers interact with users verbally in spoken natural language.[101] They capture, transcribe, and process the language, use smart features to interpret (e.g., dialogue-based ontologies), and translate language into an instruction for the algorithm (e.g., seek a product, make a suggestion, or purchase the

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[92] *See, e.g.*, DANIEL J. LEVITIN, THE ORGANIZED MIND 3–4 (2014 (discussing the information-cost approach in everyday decisions); Jon D. Hanson & Douglas A. Kysar, *Taking Behaviorism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV 630, 695 (1999) (discussing the information-cost approach in product liability).

[93] *See* THOMAS H. DAVENPORT & JOHN C. BECK, THE ATTENTION ECONOMY: UNDERSTANDING THE NEW CURRENCY OF BUSINESS 20, 54–71 (2001); Omri Ben-Shahar & Carl E. Schneider, *The Failure of Mandated Disclosure*, 159 U. PA. L. REV. 647, 709–29 (2011) (describing the information overload conundrum facing consumers in mandated disclosures); Wayne R. Barnes, *Social Media and the Rise in Consumer Bargaining Power*, 14 U. PA. J. BUS. L. 661, 668–74 (2012).

[94] *See* DAVENPORT & BECK *supra* note 93, at 203.

[95] Herbert A. Simon, *Designing Organizations for an Information-Rich World*, *in* COMPUTERS, COMMUNICATION, AND THE PUBLIC INTEREST 37, 40–41 (Martin Greenberger ed., 1971).

[96] Gal, *supra* note 12, at 101.

[97] Kane Simms, *How Voice Assistants Could Change the Way We Shop*, HARV. BUS. REV. (May 15, 2019), https://hbr.org/2019/05/how-voice-assistants-could-change-the-way-we-shop [https://perma.cc/CS53-PNZK].

[98] Gal & Elkin-Koren, *supra* note 33, at 321; Gal, *supra* note 12, at 61, 65, 71–72.

[99] Kristen Stephens, *Personalization Is the Key to Custom Voice Experiences*, SOUNDHOUND (May 25, 2021), https://voices.soundhound.com/personalization-is-the-key-to-custom-voice-experiences [https://perma.cc/4V78-VKFE].

[100] Gal, *supra* note 12, at 101–02.

[101] EUROPEAN DATA PROT. BD., *supra* note 1, at 7–8, 37–39.

product).[102] In doing so, they create an experience that resembles a normal human interaction.[103] This also enables the consumer to keep her hands free for other tasks and provides greater accessibility for illiterate or visually impaired users.[104]

Furthermore, voice shoppers are often a standard function of voice-operated digital assistants that are installed on portable and sturdy stand-alone hardware like stand-alone speakers, smartphones, or smart watches.[105] You can take Siri to your shower or put Alexa in your home, car, or office. Such digital assistants offer the user a one-stop shop for numerous services beyond voice shopping, including connecting with contacts, listening to music, setting alarms, maintaining a daily planner, and searching for information such as the weather or traffic directions.[106] Users can also install additional applications, such as allowing the voice assistant to order the user's usual drink from the nearest Starbucks or summon an Uber or Lyft.[107] Such services are operational anytime, anywhere. Digital assistants have been found to perform some of these services better than humans.[108] This has important implications for our analysis, as the efficiency of digital assistants in performing some tasks may affect users' perceptions regarding their efficiency and impartiality when acting as voice shoppers.

II. VOICE SHOPPERS CREATE MARKET FAILURES

Many of the efficiencies involved in using voice shoppers result from placing choice in the virtual hands of a shopping algorithm. Yet efficiency is a double-edged sword: as we noted, to free up the consumer's time and attention and reduce her search and transaction costs, the information she receives is minimal. She normally only receives information about the product's brand and cost, and can compare it, at best, to one

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[102] *Id*; Simms, *supra* note 97.

[103] *See* Rabassa et al., *supra* note 1, at 3.

[104] Oliver Budzinski et al., *The Brave New World of Digital Personal Assistants: Benefits and Challenges from an Economic Perspective*, NETNOMICS: ECON. RSCH. & ELEC. NETWORKING 177, 185 (2019); *The Rise of Virtual Digital Assistants Usage—Statistics and Trends*, *supra* note 2 (explaining that surveys show that users value the assistant's hands-free nature (55%), the fun of using it (23%), the natural feeling of spoken language as compared to typing (22%), and the improved accessibility for children (14%)).

[105] BARKER ET AL., *supra* note 23, at 7.

[106] EUROPEAN COMM'N, *supra* note 1, at 20; Stucke & Ezrachi, *supra* note 30, at 1242; VOICEBOT MARCH 2019, *supra* note 5, at 15–16; Matthew B. Hoy, *Alexa, Siri, Cortana, and More: An Introduction to Voice Assistants*, 37 MED. REF. SERVS. Q. 81, 82–83 (2018).

[107] Hoy, *supra* note 106, at 83.

[108] Gal & Elkin-Koren, *supra* note 33, at 309–22.

other product. She does not receive a visual image of the offer, and she does not know exactly how the choice in each particular transaction was made or how the offer was priced. Accordingly, voice shoppers distance consumers from information about the product, its selection, and the pricing process and encourage them to blindly rely on the shopper's recommendations.

The problem with this shift in consumer choice lies in the risk that the products purchased may deviate from consumers' preferences. Below we analyze the causes of such deviations. Some are unavoidable and result from technical limitations of the technology, some reflect simple mistakes, and some are based on programming and business model choices. We then analyze the welfare effects of such deviations. Finally, we show how market conditions limit the ability of market forces to remedy intentional deviations.

The shift in consumer choice also raises additional issues, such as autonomy and free choice, harm to consumers' ability to make choices (their "decision muscle"),[109] or increased potential for privacy violations and security breaches.[110] These lie beyond the scope of this article.

A. The Implications of the Choice Gap: Systematic Deviations from Consumer Preferences

Several factors might create discrepancies between choices made by voice shoppers and consumer preferences. The most straightforward cause of misalignment involves simple mistakes or misunderstandings of user requests. For example, the algorithm may mistakenly place an order based on something overheard in a background conversation[111] or fulfill an order made by a nonauthorized user, such as a mimicking parrot.[112] These situations are generally of an ad hoc nature and therefore are unlikely to lead to systematic market failure.

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[109] Gal, *supra* note 12, at 84–91; Budzinski et al., *supra* note 104, at 189; Przemysław Pałka, *Algorithmic Central Planning: Between Efficiency and Freedom*, 83 LAW & CONTEMP. PROBS., 125, 148 (2020).

[110] Giancaspro, *supra* note 1, at 145; BARKER ET AL., *supra* note 23, at 2.

[111] Mark Sweney, *Hey Alexa, Is It True a TV Advert Made Amazon Echo Order Cat Food?*, GUARDIAN (Feb. 14, 2018, 1:00 PM), https://www.theguardian.com/technology/2018/feb/14/amazon-alexa-ad-avoids-ban-after-viewer-complaint-ordered-cat-food [https://perma.cc/EMU2-Q3W8]; Gia Liu, *Hey, I Didn't Order This Dollhouse! 6 Hilarious Alexa Mishaps*, DIGIT. TRENDS (Mar. 5, 2018), https://www.digitaltrends.com/home/funny-accidental-amazon-alexa-ordering-stories/ [https://perma.cc/XET7-R5AZ].

[112] *Parrot Uses Alexa to Order Items, Play Music While Owner Is Away*, KCRA (Dec. 17, 2018, 2:47 PM), https://www.kcra.com/article/parrot-uses-amazon-alexa-to-order-items-while-owner-is-away/25595950 [https://perma.cc/78XX-JYK2].

Additionally, they involve an unintentional failure in the algorithm that voice shopper operators are motivated to fix.[113]

The second cause of misalignment stems from inherent limitations in the algorithm's decision-making abilities. Such deviations are almost inevitable because an algorithm has limited capacity to correctly analyze a consumer's preferences, especially given that people sometimes change their preferences.[114] The risk of such deviations increases with the voice shopper's discretion. Even where the consumer provides a specific purchase instruction by stating the desired brand, the recommended product may deviate from the consumer's preferences in some respects such as price. The risk of deviations also increases if the algorithm needs to rely more on predicted preferences, especially in cases where people's priorities may differ from the average. Suppose, for example, a certain consumer places more value on a quality that others generally disregard, such as ethics in the production process, yet the algorithm is not aware of this fact and bases the choice on what the average consumer prefers. Due to the choice gap, the consumer might not be aware of this misalignment. Another misalignment that could result from the limitations of the algorithm involves its external manipulation by third parties, such as triggering the voice shopper to sell counterfeit brands.[115] In a different article, we studied techniques of external influence applied by third parties over search algorithms to manipulate their results, including black hat SEOs, false ratings and reviews or click fraud.[116] While the full discussion of these practices exceeds the scope of this paper, it is relevant to recognize such external manipulations as limiting voice shoppers' algorithms' accuracy.

Such systematic deviations that stem from or are enabled by the voice shoppers' limited abilities are, by definition, unintended and generally do not serve either the operator or the consumer. Accordingly, both parties have an incentive to fix this problem. Potential solutions involve enabling the consumer to register general preferences, such as for suppliers which meet certain ethical standards in production. Yet as possible

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[113] Blickstein Shchory, *supra* note 15, at 30–32; Barnes, *supra* note 93, at 694.

[114] Gal & Elkin-Koren, *supra* note 33, at 323.

[115] *See, e.g.*, Shane Shifflett et al., *'Amazon's Choice' Isn't the Endorsement It Appears*, WALL ST. J. (Dec. 22 2019, 12:19 PM), https://www.wsj.com/articles/amazons-choice-isnt-the-endorsement-it-appears-11577035151 [https://perma.cc/M3BY-88YV] (finding that Amazon's algorithm also promoted counterfeit brands).

[116] Noga Blickstein Shchory & Michal S. Gal, *Market Power Parasites: Abusing the Power of Digital Intermediaries to Harm Competition*, 35 HARV. J.L. & TECH. 73 (2022).

decisional parameters are numerous and the consumer may give them different weights for different products, this solution is not likely to be efficient. Another more interventionist possibility is to make the algorithm more sensitive to learned consumer preferences. This solution has its own limitations, such as harms to a consumer's privacy.

The third cause is programmatic and intentional: code-based limits, constraints, or biases in the algorithm's searches and suggestions. These begin at the level of the initial search. To illustrate, recall that Alexa only works with Amazon Prime products[117] and Google Assistant only shops from suppliers who partner with Google Express.[118] The result is the algorithm does not scan the entire web for product offers. While such limitations are spelled out in the voice shopper's contractual terms, consumers may not be aware of their implications or may be biased to ignore them.

Moving from the search to the point where the voice shopper suggests a product, voice shoppers may engage in two main types of manipulation and abuse of the choice gap.[119] One concern is that the algorithm might exploit consumers' vulnerabilities, bounded rationality, or trust to manipulate them into more numerous or costlier purchases.[120] For example, the algorithm may use personal data collected on the user to engage in dynamic pricing, changing the price of an item in line with perceived changes in the consumer's price sensitivity (e.g., charging a higher price for sweets in the evening), or the voice shopper may engage in price discrimination, making different offers to different consumers based on their assumed price sensitivity.[121] The second and more important of these concerns is that the voice shopper will be designed to serve the interests of the algorithm's operator.[122] As we have seen, a voice shopper may be programmed to favor products supplied directly by the operator or by an integrated supplier, such as Amazon owned Whole Foods. Or it may favor products which will earn the operator a larger commission, thereby increasing the latter's

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117 *See supra* Section I.B.

118 *See id.*

119 Gal, *supra* note 12, at 101–02.

120 Budzinski et al., *supra* note 104, at 187; Stucke & Ezrachi, *supra* note 30, at 1266.

121 HOR REPORT, *supra* note 44, at 124–25 (discussing that, as algorithms collect these large amounts of personal data, "[t]here is [] a significant potential for misuse of [these] data to harm competition or consumers").

122 *Id.* These concerns reflect and increase similar concerns raised with regard to advertising, which takes the consumer away from his natural preferences to those shaped by the advertiser. *See, e.g.*, JOHN KENNETH GALBRAITH, THE AFFLUENT SOCIETY (40th anniversary ed., 1998).

own revenues, especially if the consumer is not mindful of the potential for a cheaper option. As the Congressional Bipartisan Subcommittee recognized, the design of most voice assistants "amplifies the ability . . . to favor their services as a default or as a response with limited choice."[123] As a result, voice assistant ecosystems are characterized by "a high propensity for lock-in and self-preferencing."[124] Indeed, one study found that Amazon did not always promote the cheapest and best alternatives.[125]

This subpart reviewed voice shoppers' constraints, biases, and abuses, real or potential. They all raise concerns of systematic deviations between voice shoppers' choices and consumer preferences. We now explore the welfare effects of this market failure.

B. The Welfare Effects of Systematic Deviations

This market failure is troubling on more than one level, especially because voice shoppers are becoming new gateways to shopping. Choice deviations reduce consumers' welfare. Yet, as noted above, even if the consumer is aware of such deviations, she may continue to use the voice shopper.[126] This may create a collective action problem: while for each consumer the costs of such deviations may be outweighed by the benefits of using the voice shopper, the aggregate price tag of such deviations might be high.[127]

But the harm of the choice gap, manifested in the deviations of the algorithm from consumer choice, goes much deeper to the proper functioning of markets because it undermines the assumption that the choices made by consumers reflect their preferences. Such choices, in aggregate, determine which products will succeed in the market and which will fail. Current demand also helps shape the attributes of products offered in the future, including quantity, quality, and price. If products are systematically purchased despite not reflecting consumers' true

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[123] HOR REPORT, *supra* note 44, at 125.

[124] *Id.* at 16.

[125] Julia Angwin & Surya Mattu, *Amazon Says It Puts Customers First. But Its Pricing Algorithm Doesn't*, PROPUBLICA (Sept. 20, 2016, 8:00 AM), https://www.propublica.org/article/amazon-says-it-puts-customers-first-but-its-pricing-algorithm-doesnt [https://perma.cc/X2GP-866B].

[126] *See supra* Section I.C.

[127] *See* Boris Holzer, *Political Consumerism Between Individual Choice and Collective Action: Social Movements, Role Mobilization and Signaling*, 30 INT'L J. CONSUMER STUD. 405, 405–06 (2006).

preferences, this fundamental function of markets is undermined to the detriment of both consumers and suppliers.[128]

Such misalignments also create hurdles for competition given the role of voice shoppers as intermediaries between consumers and suppliers. Such hurdles might not be intentional. This can be exemplified by reliance on past purchases that could lead to self-perpetuating deviations and make it harder to switch products. But more importantly, if a voice shopper's default options give preference to some suppliers, they limit the access of other suppliers to consumers. Indeed, the Amazon's Choice badge, which serves as a key decisional parameter of Alexa's algorithm, is argued to be awarded most readily to products made by Amazon-owned firms.[129] Voice shoppers might also exploit suppliers who are desperate to collaborate with their operators.[130] They can thus further heighten the barriers to competition already erected by dominant search engines.[131]

One way to envision the harm to the proper functioning of markets is to imagine that a new supplier has come up with a higher quality product, one that many consumers might prefer over existing ones. To sell to consumers using voice shoppers, this product would have to be selected by the voice shopper as its single or topmost recommendation. With voice shoppers programmed to recommend products from previous purchases or from its affiliates, the new supplier's chances of reaching consumers via this route are slim to none. Furthermore, as Ezrachi and Stucke suggest, the habit of using voice shoppers reduces users' exposure to—and incentive to seek—outside options, whether in the digital or in the physical sphere.[132] The supplier may then invest in ads, hoping consumers will specifically request his new product. But ads may have little value in the voice shopper ecosystem. Search-initiated ads are irrelevant since the algorithm is the one searching for the product. Alternatively, the supplier can invest in impression ads (e.g., TV or radio ads) or ads linked to general internet searches. However, such ads are less targeted by nature because they cannot be linked to the moment when the consumer is thinking about buying a certain product. Furthermore, even if the consumer specifically requests the new supplier's product, the

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[128] Yesha Yadav, *How Algorithmic Trading Undermines Efficiency in Capital Markets*, 68 VAND. L. REV. 1607, 1616–17 (2015); ROBERT S. PINDYCK & DANIEL L. RUBINFELD, MICROECONOMICS 23 (8th ed. 2013).

[129] CHERIS ET AL., *supra* note 75, at 5; Jeffries & Yin, *supra* note 80.

[130] HOR REPORT, *supra* note 44, at 126, 313.

[131] Rabassa et al., *supra* note 1, at 4.

[132] Stucke & Ezrachi, *supra* note 30, at 1267.

voice shopper may be programmed to try and divert the consumer to an alternative. The new supplier's ad campaign may thus be both more expensive and less effective than it might have been in the absence of voice shoppers, making it harder to change demand patterns.

The result is a market failure in the form of potential harm to aggregate consumer welfare and to the proper functioning of markets. We now explore whether market conditions can help solve this market failure.

C. Markets Cannot Solve the Problem

Verifying that market forces cannot remedy the market failure is integral to determining whether regulatory intervention is necessary. As elaborated in this section, market conditions increase the negative effects of choice deviations on consumers and on the proper functioning of markets.

We first ask why consumers might choose to use a voice shopper that creates choice deviations, rather than switch to another, more accurate voice shopper. Several reasons provide an answer. First, consumers may not be aware of such deviations. In a survey by Rabassa and colleagues, many users expressed concern their query will not be correctly understood, and some expressed fear of receiving biased offers.[133] This may result from the "black-box" effect: the consumer has limited information on how the recommended product was selected or on the exact group of products from which it was selected.[134] Even the general decisional parameters provided to her are vague. Indeed, how many consumers know on what basis Amazon awards the Amazon's Choice badge, the default product selected by Alexa in the absence of a specific request or order history? Further, how many consumers know which firms have partnered with Google Express, and that, as a result, only Google Express products are offered?

Second, even if information about the voice shopper's deviations were easily obtainable, it would generally not be worth the consumer's time to check these details. This is particularly so given that most voice shopper transactions are small and the specific decisional parameters may differ between products.[135] The voice shopper may further reduce the consumer's alertness by deviating just a bit (e.g., in pricing),

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[133] Rabassa et al., *supra* note 1, at 6–7.

[134] *See* PASQUALE, *supra* note 62, at 59–60.

[135] *See supra* Section II.A.

taking advantage of the choice gap without it being too obvious. As noted above, the harm from each individual deviation may be minimal, only in aggregate is it significant.[136]

Third is the tendency of consumers to assume that algorithms make better decisions because they are based on data and artificial intelligence.[137] This does not necessarily imply that consumers think algorithms make the *best* decisions, but rather that algorithms have the capacity to make better decisions compared to consumers given their limited time resources. Fourth, the fact that consumers deal with the operators of voice shoppers in other spheres may create or strengthen an assumption that the product offered was objectively chosen as the best for their needs, so as to suit the preferences of the average consumer or each individual consumer.[138] Indeed, with respect to Amazon's Choice, the fact that this label was initially created for a context where more information is provided (i.e., shopping via the Amazon website) may strengthen the assumption that the badge reflects good value.[139] Similarly, consumers might assume because Google's search engine covers the entire web, its shopping assistant will do the same. This relative trust in the algorithm's choices is reflected in consumer conduct. A recent report shows that 85 percent of consumers selected the brand proposed by the voice shopper even if they specifically requested a different brand.[140] In fact, after a different brand was recommended, only 25 percent asked to see more options, and only 10 percent decided to abandon the purchase altogether.[141] This implies choosing to employ a voice shopper is generally a choice about how to make choices.

But even if consumers are aware of such deviations and want to switch voice shoppers, current market conditions limit their options. As of today, two tech giants dominate the market for voice assistants: Amazon and Google.[142] Other firms that

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[136] Holzer, *supra* note 127, at 405–06.

[137] Nizan Geslevich Packin, *Consumer Finance and AI: The Death of Second Opinions?*, 22 N.Y.U. J. LEGIS. & PUB. POL'Y 101, 101 (2020); Budzinski et al., *supra* note 104, at 185–86.

[138] Budzinski et al., *supra* note 104, at 181, 183.

[139] On the Amazon website, the Amazon's Choice badge serves as an additional piece of information which can be disregarded by the consumer or weighed against other parameters. When voice shopping, it becomes the default choice. HOR REPORT, *supra* note 44, at 311.

[140] *Voice Commerce Might Present a Loyalty Problem for Brands, but Not Immediately*, MKTG. CHARTS (Aug. 31, 2018), https://www.marketingcharts.com/brand-related/brand-loyalty-105533 [https://perma.cc/VLJ5-4GX6].

[141] *Id.*

[142] Budzinski et al., *supra* note 104, at 181; Bergur Thormundsson, *Global Intelligent Assistant Market Share in 2017 and 2020*, STATISTA (Mar. 17, 2022), https://www.statista.com/statistics/789633/worldwide-digital-assistant-market-share/

operate voice assistants include three tech giants based in China: Alibaba's AliGenie, Baidu's Duer, and Tencent's Xiaowei.[143] Trailing behind are Apple's Siri, Microsoft's Cortana, and Samsung's Bixby.[144] Facebook is also investing in a new voice assistant,[145] after its digital assistant "M" was discontinued.[146]

However, none of these firms are likely to disrupt the current market equilibrium in the United States, at least not in the short and medium turn. One main reason for this is Amazon and Google's dominance in their main markets creates spillover effects on the use of their voice shoppers. We identify five such effects.

First, to function, the voice assistant must be installed on hardware that provides the user with a microphone and speakers, such as a personal computer, a smartphone, or a smart speaker.[147] If the voice assistant's operator owns or partners with hardware firms or suppliers of operating systems, the voice assistant can be preinstalled on the device.[148] This creates substantial entry barriers for competing voice assistants. In practice, "[n]ew computers and new mobile devices generally come with a . . . preinstalled . . . voice assistant."[149]Alexa and Google Assistant are the default options installed on myriad devices. More than one hundred million Alexa-compatible devices have been sold,[150] and Alexa has been integrated with eighty-five thousand types of smart home products.[151] Google Assistant was integrated in over one billion individual devices and works on over ten thousand different smart home products.[152] This is no coincidence. The voice assistant is often part of a large package of search engine functionalities offered

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[https://perma.cc/EUQ7-QBND]; Victoria S. & Vlad V., *supra* note 48, at 3; HOR REPORT, *supra* note 44, at 122, 306.

143 Robert Dale, *Voice Assistance in 2019*, 26 NAT. LANGUAGE ENG'G 129, 130 (2020).

144 *Id.* at 130–31; EUROPEAN COMM'N, *supra* note 1, at 20.

145 Dale, *supra* note 143, at 131.

146 Casey Newton, *Facebook Is Shutting Down M, Its Personal Assistant Service that Combined Humans and AI*, VERGE (Jan. 8, 2018, 1:00 PM), https://www.theverge.com/2018/1/8/16856654/facebook-m-shutdown-bots-ai [https://perma.cc/XEV6-3RTA].

147 EUROPEAN DATA PROT. BD., *supra* note 1, at 3. By the end of 2018, 66.4 million adults (approximately 26.2%) in the U.S. owned smart speakers. VOICEBOT MARCH 2019, *supra* note 6, at 3.

148 Budzinski et al., *supra* note 104, at 180.

149 Google Complaint, *supra* note 3, ¶ 41.

150 Dieter Bohn, *Amazon Says 100 Million Alexa Devices Have Been Sold—What's Next?*, VERGE (Jan. 4, 2019, 4:00 PM), https://www.theverge.com/2019/1/4/18168565/amazon-alexa-devices-how-many-sold-number-100-million-dave-limp [https://perma.cc/LZH6-25HE].

151 Ron Amadeo, *Google Boasts 1 Billion Assistant Devices—10x Amazon's Alexa Install Base*, ARSTECHNICA (Jan. 7, 2019, 9:02 AM), https://arstechnica.com/gadgets/2019/01/google-assistant-flexes-on-alexa-announces-1-billion-strong-install-base/ [https://perma.cc/K4ET-W4AM].

152 Dale, *supra* note 143, at 129.

by these companies. Furthermore, the case brought by the Department of Justice against Google claims, "Google's preinstallation agreements also impose voice-search preferencing."[153] Such entry barriers are effective because users tend not to switch from the preinstalled option.[154]

Second, Amazon and Google enjoy comparative technological advantages. Both Alexa and Google Assistant are voice assistants with many functionalities that provide a one-stop shop, which may become the user's default option.[155] Indeed, Alexa is said to have over seventy thousand skills,[156] while Google Assistant supports over eighteen thousand actions.[157] As a result of learning economies, users have substantial positive experience with Google and Alexa in parameters such as answer correctness and how natural their responses feel.[158]

Third, due to their current dominance in their core markets, Google possesses vast quantities of information on people's web searches, and Amazon does likewise for consumers' product searches and general preferences.[159] This access to data creates a high hurdle to the degree consumers value the voice shopper's ability to make choices based on their past preferences or preferences of comparable consumers. Such advantages may even grow over time. Voice assistant algorithms typically learn by doing, creating a feedback loop so the more they are used, the better their performance.[160] This characteristic benefits incumbent market players that already enjoy a large consumer base.[161] Moreover—to the extent that the algorithm improves its recommendations to a particular consumer by studying his

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153 Google Complaint, *supra* note 3, ¶ 139.

154 *Id.* at ¶ 140.

155 *See* Google Complaint, *supra* note 3, ¶ 3, 90.

156 Bret Kinsella, *There Are Now More than 70,000 Alexa Skills Worldwide, Amazon Announces 25 Top Skills of 2018*, VOICEBOT.AI (Dec. 14, 2018, 2:11 PM), https://voicebot.ai/2018/12/14/there-are-now-more-than-70000-alexa-skills-worldwide-amazon-announces-25-top-skills-of-2018/ [https://perma.cc/CFS4-T6B3].

157 Bret Kinsella, *Google Assistant Actions Grew Quickly in Several Languages in 2019, Matched Alexa Growth in English* (Jan. 19, 2020, 12:00 PM), https://voicebot.ai/2020/01/19/google-assistant-actions-grew-quickly-in-several-languages-in-2019-match-alexa-growth-in-english/ [https://perma.cc/A4UZ-XD29].

158 Ana Berdasco et al., *User Experience Comparison of Intelligent Personal Assistants: Alexa, Google Assistant, Siri and Cortana*, 31 MULTIDISCIPLINARY DIG. PUBL'G INST. PROCS. 5–7 (2019).

159 *See* Gal, *supra* note 12, at 73; David Nield, *All the Ways Google Tracks You—And How to Stop It*, WIRED (May 27, 2019, 7:00 AM), https://www.wired.com/story/google-tracks-you-privacy/ [https://perma.cc/3KZN-GTZP]; Kate O'Flaherty, *The Data Game: What Amazon Knows About You and How to Stop It*, GUARDIAN (Feb. 27, 2022, 6:00 AM), https://www.theguardian.com/technology/2022/feb/27/the-data-game-what-amazon-knows-about-you-and-how-to-stop-it.

160 BARKER ET AL., *supra* note 23, at 3; HOR REPORT, *supra* note 44, at 123–24.

161 Stucke & Ezrachi, *supra* note 30, at 1248; BARKER ET AL., *supra* note 23, at 3. This problem may be partly moderated by mandatory data portability and interoperability.

consumption patterns—switching to a new voice assistant entails losing this history, creating a switching cost.[162] These comparative advantages may lead to consumer lock-in effects.[163] Fourth, voice shoppers operated by Amazon and Google enjoy benefits from using their operators' own cloud services.[164]

Lastly, both Amazon and Google enjoy economies of scale and scope in their core markets.[165] These economies of scale are also relevant to voice shopping. For example, take delivery: if the operator uses the same delivery service for all products ordered from all its services, the marginal delivery costs may be low relative to those of competitors.[166] Such economies can also arise from the caching of data from websites, including those of potential products.[167] The larger the number of products bought through their various services, the lower the per search costs of caching and the faster the speed of searches. While such additional costs may be miniscule for each transaction, in aggregate they may be significant. This in part answers why externalities that might result from deviations from consumer preferences in the sphere of voice shoppers—such as reputational harm—do not, by themselves, reduce the operator's incentives to deviate. The domination of Google and Amazon is also reflected in the global market for smart speakers where both dominate.[168] Consumers may, of course, decide to avoid voice shoppers and switch to search engines or even physical stores. So far, these alternatives have had a substantial impact on limiting the concerns raised by voice commerce.[169] Nonetheless, given the benefits and rapid growth of voice commerce, the power of these alternatives is wearing down.

In sum, current markets for voice shoppers are characterized by an oligopoly structure protected by high entry barriers, thereby limiting current and potential competition. These market conditions aggravate the market failure concerns associated with voice shoppers rather than remedy them.

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[162] HOR REPORT, *supra* note 44, at 125; BARKER ET AL., *supra* note 23, at 3.

[163] BARKER ET AL., *supra* note 23, at 3.

[164] HOR REPORT, *supra* note 44, at 124, 307.

[165] Google Complaint, *supra* note 3, ¶ 108–10; Lina M. Khan, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710, 715, 750, 753 (2017).

[166] Lina M. Khan, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710, 775 (2017).

[167] For advantages resulting from webpage caching, see Google Complaint, *supra* note 3, ¶ 35–38.

[168] Bret Kinsella, *Google To Be Smart Speaker Market Share Leader in 2022, HomePod to Pass 20 Million Units*, VOICEBOT.AI, (Feb. 12, 2018, 9:22 AM) https://voicebot.ai/2018/02/12/google-smart-speaker-market-share-leader-2022-homepod-pass-20-million-units/ [https://perma.cc/P75Z-4W2X].

[169] BARKER ET AL., *supra* note 23, at 3.

III. EXISTING LEGAL PROTECTIONS

This Part reviews the application of the main legal tools designed to protect consumer welfare to the new and emerging voice shopper technology.

We argue such laws do not efficiently address the concerns raised. The problem is their ingrained reliance on informed choice. The basic economic theory guiding our regulatory approach assumes for markets to function properly, sellers must offer consumers a wide range of products, and consumers should be able to exercise their choice in buying these products.[170] Two bodies of law are designed to protect these essential dynamics of a functioning economy: consumer protection laws, which attempt to secure consumers' ability to choose between products, and antitrust laws, which focus on limiting artificial barriers to competition to ensure that more products are offered in the market.[171] Both are insufficiently sensitive to transactions based on the choice gap.

A. The Inadequacy of Consumer Protection Laws

Consumer protection laws are designed to promote consumer welfare by ensuring consumers can make an informed choice between different products offered in the market.[172] As demonstrated below, these laws are largely ineffective when consumers give up the exercise of choice.

The most common tool used by consumer protection laws is mandatory information disclosure.[173] In our case, for example, disclosure can relate to the algorithms' limitations,[174] potential affiliations, whether certain suppliers are given preference, the exact decision-making parameters used to choose which product to recommend,[175] or the business model for pricing each product.

We distinguish between two points in time relevant to the use of such information. The first is choosing which voice shopper to employ. How much time the consumer might invest in studying the relevant information would depend, inter alia,

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[170] Ryan Calo & Alex Rosenblat, *The Taking Economy: Uber, Information, and Power*, 117 COLUM. L. REV. 1623, 1674 (2017); Neil W. Averitt & Robert H. Lande, *Consumer Sovereignty: A Unified Theory of Antitrust and Consumer Protection Law*, 65 ANTITRUST L.J. 713, 713–14 (1996).

[171] Averitt & Lande, *supra* note 170.

[172] *Id.*

[173] Carl E. Schneider & Omri Ben-Shahar, *The Failed Reign of Mandated Disclosure*, REGUL. REV. (Jun. 15, 2015), https://www.theregreview.org/2015/06/15/ben-shahar-schneider-failed-disclosure/ [https://perma.cc/DTT4-MAES]

[174] Rabassa et al., *supra* note 1, at 2–3; Gal, *supra* note 12, at 93–95.

[175] Gal, *supra* note 12, at 73.

on his assumptions and perceptions regarding the performance of the voice shopper, as well as his individual sensitivity to potential deviations between the voice shopper's performance and his preferences. It would also be affected by his ability to understand the implications of this information, as well as his alternatives. Indeed, for the reasons articulated previously,[176] he might choose not to read any information supplied by the operator and employ the default option on devices he normally uses, operated by companies he generally trusts.

The second relevant point in time is the decision whether to accept a specific offer made by the voice shopper. In this case, the possibility that mandatory disclosure might lead consumers to actually read any information provided is even lower. First and foremost, consumers are attracted to voice shoppers because they are easy to use and save time and attention.[177] If using a voice shopper required devoting time and attention to a list of choice parameters then why use it?[178] Additionally, where choice parameters are numerous and product specific, absorbing the relevant information might become a burden to the consumer, especially when read out vocally.[179] Again, the fact that voice shopper purchases are generally small strengthens this conclusion.[180] Skipping a mandated disclosure notice, if allowed, would most likely become the default.

We can learn, by way of analogy, from the established critique of the assumption that users read websites' terms of service.[181] Ben-Shahar and Schneider show mandatory disclosure often fails to meet its ends while incurring high regulatory costs.[182] They also point out most consumers are likely to have trouble understanding, remembering, and analyzing the

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[176] *See supra* Section II.C.

[177] *See supra* Section I.C.

[178] Gal, *supra* note 12, at 74.

[179] *See supra* Section II.A.

[180] Kestenbaum, *supra* note 21.

[181] Florencia Marotta-Wurgler, *Are "Pay Now, Terms Later" Contracts Worse for Buyers? Evidence from Software License Agreements*, 38 J. LEGAL STUD. 309, 310 (2009); Shmuel I. Becher & Tal Z. Zarsky, *Online Consumer Contracts: No One Reads, but Does Anyone Care?*, 12 JERUSALEM. REV. LEGAL STUD. 105, 106 (2015); Florencia Marotta-Wurgler, *Even More Than You Wanted to Know About the Failures of Disclosure*, 11 JERUSALEM. REV. LEGAL STUD. 63, 63 (2015); Florencia Marotta-Wurgler, *Will Increased Disclosure Help? Evaluating the Recommendations of the ALI's "Principles of the Law of Software Contracts"*, 78 U. CHI. L. REV. 165, 168 (2011).

[182] Omri Ben-Shahar & Carl E. Schneider, *The Failure of Mandated Disclosure*, 159 U. PA. L. REV. 647, 651 (2011); OMRI BEN-SHAHAR & CARL E. SCHNEIDER, MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE 7–8, 12 (2014).

information provided in these terms of service,[183] and they cast doubt on whether it is possible for a regulator to simplify such information so consumers can better understand it.[184] In the present context, at the second point in time, there is also the likelihood that most consumers will not take account of the cumulative potential harm of the choice gap but will rather consider each transaction on an individual basis. Finally, regulators may encounter difficulties in ensuring disclosure requirements are met.[185]

What about the role of consumer protection laws in preventing manipulative tactics? The Federal Trade Commission Act, for example, prohibits "unfair or deceptive acts or practices in or affecting commerce."[186] Business torts, which prohibit "business conduct which is contrary to honest practice in industrial or commercial matters,"[187] also address manipulative behaviors.[188] However, due to the choice gap, the consumer does not exercise a choice that can be said to have been manipulated. As a result, product offers may be in line with contractual terms, and such laws cannot easily apply to deviations from consumer preferences.

An alternative tool also used in consumer protection laws is direct regulation: establishing a minimum quality standard or imposing other mandatory contractual conditions.[189] For example, voice shoppers might be mandated to operate on the basis of "neutrality, or [adhere to] requirements on what data must be included or excluded in undertaking specific tasks."[190] A

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[183] Wayne R. Barnes, *Social Media and the Rise in Consumer Bargaining Power*, 14 U. PA. J. BUS. L. 661, 674 (2012); *see* BEN-SHAHAR & SCHNEIDER, *supra* note 182, at 40–42 (2014).

[184] Shara Monteleone, *Addressing the 'Failure' of Informed Consent in Online Data Protection: Learning the Lessons from Behavior-Aware Regulation*, 43 SYRACUSE J. INT'L L. & COM. 69, 76–77, 100 (2015).

[185] Christopher Koopman et al., *The Sharing Economy and Consumer Protection Regulation: The Case for Policy Change*, 8 J. BUS. ENTREPRENEURSHIP & L. 529, 535 (2015); *see also* Margaret J. Radin, *Less Than I Wanted to Know: The Submerged Issues in More Than I Wanted to Know*, 11 JERUSALEM REV. LEGAL STUD. 53–55 (2015) (providing support of mandatory disclosure); *see* Ryan Calo, *Against Notice Skepticism in Privacy (and Elsewhere)*, 87 NOTRE DAME L. REV. 1027, 1027–30 (2012) (expanding on issues complying with regulations and discussing notice as a regulatory strategy).

[186] 15 U.S.C § 45(a)(1).

[187] Pro. Golfers Ass'n of Am. v. Bankers Life & Cas. Co., 514 F.2d 665, 671 (5th Cir. 1975); BUSINESS TORTS AND UNFAIR COMPETITION HANDBOOK 145–214 (3d ed. 2014).

[188] Blickstein Shchory & Gal, *supra* note 116, at 100–03.

[189] BEN-SHAHAR & SCHNEIDER, *supra* note 182, at 5; *See Buyer's Remorse: The FTC's Cooling-Off Rule May Help*, FED. TRADE COMM'N (May 2021), https://www.consumer.ftc.gov/articles/buyers-remorse-ftcs-cooling-rule-may-help [https://perma.cc/YL83-9HA9] (providing an example of such direct regulation).

[190] ANNA BARKER ET AL., ORG. FOR ECON. COOP. & DEV., ROUNDTABLE ON DIGITAL ASSISTANTS AND VOICE CONTROLLED E-COMMERCE 1, 4 (2019), https://one.oecd.org/document/DSTI/CP(2019)10/FINAL/en/pdf [https://perma.cc/BM86-BNTE].

main limitation of this option is such laws need to be specifically legislated and may be difficult to monitor and enforce.

The OECD highlighted the mitigating effect of postpurchase protections, such as a "right of withdrawal" for a prescribed period.[191] Yet such rules do not release the consumer from the time and costs entailed in returning products.[192] Furthermore, these tools assume the consumer will be made aware of the deviation from their preference and will know he could have made a better choice. This is unlikely.[193]

Finally, to increase consumer protection in the age of algorithms, some scholars suggest new tools that involve algorithms which act as intermediaries. Ben Shahar and Schneider, for example, call for a shift from disclosure to advice. One suggestion involves "information aggregators" that "collect information and convert it into useful forms like price comparisons, ratings, labels, seals and certificates."[194] Yet this suggestion might not fit voice shoppers because consumers want them to be accessible and easy to use, and an intermediate advisor will become a burden. For the same reason, the use of algorithmic consumers—algorithms operated by consumers to counteract the effects of algorithms used by suppliers and intermediaries[195]—might also be ineffective.

B. The Inadequacy of Antitrust Laws

Antitrust laws complement consumer protection laws by limiting the creation of artificial barriers to competition.[196] In doing so, they motivate the creation of a wider range of goods from which the consumer can make an informed decision.[197] In the case at hand, antitrust may indirectly reduce the market failure created by the choice gap. By limiting anticompetitive conduct, which prevents access of competing voice shoppers to consumers, they may strengthen competition among voice shoppers. This, in turn, may improve the quality of their services, so voice shoppers will better represent how the consumer would exercise his choice.[198] Indeed, the recent antitrust suit brought against Google includes the claim that it leveraged its dominance in the search market to

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191 *Id.*
192 *Id.* at 5.
193 *See supra* Section III.C.
194 BEN-SHAHAR & SCHNEIDER, *supra* note 182, at 187.
195 Gal & Elkin-Koren, *supra* note 33, at 327, 333.
196 Averitt & Lande, *supra* note 170, at 716.
197 *Id.* at 718–20.
198 Rabassa et al., *supra* note 1, at 8.

force contractual terms that created such entry barriers.[199] For example, it refused to license its Google Assistant to manufacturers of smart devices that simultaneously hosted another voice assistant.[200] Also, antitrust laws may protect against the erection of artificial barriers that limit the ability of suppliers of different products to reach consumers.[201] For example, they may prevent some types of limitations on data portability and interoperability that increase users' switching costs.[202]

Yet several factors limit the efficacy of antitrust laws in remedying the market failure resulting from the choice gap. First, as a precondition for limiting unilateral anticompetitive conduct, the infringer must possess monopoly power.[203] While voice shopper operators may enjoy significant market power, the monopoly benchmark is a high hurdle to meet.[204] Second, antitrust cases are notoriously slow.[205] Most importantly, antitrust law only applies to artificial barriers to competition.[206] However, as elaborated above, in the present case many barriers are a natural result from the characteristics of voice shoppers' markets rather than from anticompetitive conduct.[207] Accordingly, we cannot rely on antitrust to remedy the market failure identified in this article.

IV. PROPOSAL: THE USE OF AGENCY LAW DUTIES TO PROTECT CONSUMER RIGHTS

Given neither consumer protection nor antitrust laws can efficiently address the choice-related concerns raised by voice shoppers, we propose a different regulatory approach: the application of agency law to consumer-operator relationships. Agency law is the body of law governing everyday situations in

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[199] Google Complaint, *supra* note 3, ¶¶ 4–6.

[200] *Id.* ¶ 163.

[201] Averitt & Lande, *supra* note 170, at 716.

[202] ORGANISATION FOR ECON. COOP. & DEV., DATA PORTABILITY, INTEROPERABILITY AND DIGITAL PLATFORM COMPETITION: OECD COMPETITION COMMITTEE DISCUSSION PAPER 16 (2021), https://www.oecd.org/daf/competition/data-portability-interoperability-and-digital-platform-competition-2021.pdf [https://perma.cc/P4LM-Q2QA].

[203] Blickstein Shchory & Gal, *supra* note 116, at 94–96.

[204] *See, e.g.*, Fed. Trade Comm'n v. Facebook, Inc., 581 F. Supp. 3d. 34 (D.D.C. 2022) (dismissing of FTC's claim against Facebook); *see also* Sheelah Kolhatkar, *The Enforcer: Lina Khan's Battle to Rein in Big Tech*, NEW YORKER (Nov. 29, 2021), https://www.newyorker.com/magazine/2021/12/06/lina-khans-battle-to-rein-in-big-tech [https://perma.cc/35LN-9PFY].

[205] *See* Michal Gal & Nicolas Petit, *Radical Restorative Remedies for Digital Markets*, 37 BERKELEY TECH. L.J, 617, 629 (2022).

[206] *See, e.g.*, Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 456 (1993); United States v. Grinnell, 384 U.S. 563, 570–71 (1966).

[207] *See supra* Section III.C.

which one party is authorized to act on behalf of another,[208] and it is typically based on common law.[209] Despite the fact that agency law has become largely a backwater subject outside the realm of corporate law,[210] we suggest the challenges created by the growing use of voice shoppers justify reviving it within this context. The low level of consumer involvement in purchases, which creates the choice gap, serves as the basis and justification for recognizing such a relationship.

The agency framework enables the application of various legal duties that restore consumers' control over purchases made by voice shoppers and limits misalignment between a voice shopper's choices and consumer preferences. Below we propose to shape such duties in a manner that fits the unique characteristics of the voice shopper-consumer relationship by protecting consumer interests rather than the abstract principle of informed choice and resolving problems of consumer protection as well as competition in markets.

A. Recognizing the Existence of an Agency Relationship

Is the voice shopper simply a seller with a digital twist, or does it act as the consumer's agent? This question has significant legal implications. Below we argue the latter relationship exists.

Agency is defined in the Restatement of the Law of Agency as "the fiduciary relationship that arises when one person (a 'principal') manifests assent to another person (an 'agent') that the agent shall act on the principal's behalf and subject to the principal's control, and the agent manifests assent or otherwise consents so to act."[211] In essence, the agent acts as the long arm of the principal. Once these elements of agency are fulfilled, an agency relationship exists, regardless of the existence of an agreement declaring such a relationship.[212]

The principal's assent to the delegation of control can be manifested in writing, in spoken words, or by conduct, including "by placing an agent in charge of a transaction or situation."[213]

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[208] RESTATEMENT (THIRD) OF AGENCY intro. note (AM. L. INST. 2006).

[209] *Id.* (noting that it is codified in seven states, with some statutes or regulations using agency language).

[210] Donald C. Langevoort, *Agency Law Inside the Corporation: Problems of Candor and Knowledge*, 71 U. CIN. L. REV. 1187, 1188 (2003).

[211] RESTATEMENT (THIRD) OF AGENCY § 1.01 (AM. L. INST. 2006).

[212] *Id.* § 1.02; Woodrow Barfield, *Towards a Law of Artificial Intelligence*, *in* RESEARCH HANDBOOK ON THE LAW OF ARTIFICIAL INTELLIGENCE 2, 23 (Woodrow Barfield & Ugo Pagallo eds., 2018).

[213] RESTATEMENT (THIRD) OF AGENCY § 3.03 cmt. b, § 1.03 (AM. L. INST. 2006).

Such assent can be general or vague and can be revoked at any point, given the transaction is made on the principal's behalf.[214] In the case at hand, assent by the consumer (principal) for the voice shopper (agent) to shop on his behalf is manifested in three complementary actions: registering for the service, requesting a search for a product, and ordering the product. The consumer can decide at any point to stop his use of the voice shopper, reflecting the principal's general control over the agency relationship as required by law. The assent of the voice shopper's operator (Amazon for Alexa, Google for Google Assistant, etc.) is manifested in four actions: enabling registration to the service, searching for a product, recommending a product, and buying the product on behalf of the consumer.

The agency nature of the relationship is strengthened by several factors that differentiate it from a traditional consumer-supplier relationship. First, the voice shopper does not generally sell its own products. Rather, it buys products from third parties on behalf of the consumer, acting as an intermediary. Second, more importantly, are the trust elements inherent in the relationship: the consumer need not specify a precise product, but rather, lets the voice shopper search a general category. Only one option at a time chosen by the voice shopper is suggested to the consumer (up to two). The consumer receives only basic information about the proposed product. She receives only limited information regarding the decisional parameters used by the voice shopper. She has no information on how the proposed product is priced. The aggregation of these factors demonstrates the consumer's reliance on the voice shopper's discretion. Where the voice shopper or its operator interact with consumers in other commercial spheres, the trust that arises from such interactions can further strengthen trust in the voice shopper.[215]

The fact that the consumer has alternatives to using voice shoppers does not negate the agency relationship. An agency relationship is not conditioned upon the absence of other options.[216] Similarly, the conduct of voice shopper operators in other spheres also does not necessarily negate this relationship. For example, the consumer may be aware that Google gives advertising priority in web search results to companies that pay higher commissions. Such preferences, however, relate to

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[214] *Id.* § 2.02.

[215] Indeed, as Campbell, Goldfarb, and Tucker have shown, consumers have a stronger tendency to give consent to access their data to an entity they already interact with in other spheres. James David Campbell et al., *Privacy Regulation and Market Structure*, 24 J. ECON. & MGMT. STRATEGY 47 (2015).

[216] *See* RESTATEMENT (THIRD) OF AGENCY § 1.01 (AM. L. INST. 2006).

different factual situations. Google ads are clearly marked as advertisements and are immediately followed by organic results that are assumed to be neutral rankings that offer the consumer additional options to choose from.[217] A more difficult example relates to Amazon's ownership of some of its suppliers.[218] Yet consumers need not assume Amazon gives preference to such products when responding to searches on Alexa. Furthermore, product searches on Amazon's website yield plenty of options from sellers unconnected with Amazon, as well as substantial information on each option.

Another question concerns whether a voice shopper, as an algorithm, can legally be considered an agent, as opposed to merely a tool. Some scholars argue an algorithm can indeed be an agent.[219] However, this approach creates enforceability problems because it is unclear how an algorithm can bear the legal liabilities that accompany agency.[220] Likewise, an algorithm cannot express consent to agency duties.[221]

To avoid these challenges, we suggest the voice shopper's operator be recognized as the agent in these relationships.[222] Indeed, the operator is the entity which takes the actions necessary to manifest assent listed above. The operator enables registration to the service, is responsible for the process of searching for and recommending a product, and is the entity buying the product on behalf of the consumer. The fact that the operator is generally also the developer of the voice shopper makes this application even easier.

This proposal that the operator be considered responsible for its algorithm is not unprecedented. Under securities law, companies that use algorithm-driven financial services are mandated to register "robo-advisors" with the Securities Exchange Commission, just like human investment advisers.[223]

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[217] Google Complaint, *supra* note 3, ¶ 31.

[218] For example, Whole Foods is an integrated supplier in Amazon. *How to Order Groceries with Alexa*, *supra* note 72.

[219] *See, e.g.*, Scholz, *supra* note 28, at 165–66; Ian Kerr, *Ensuring the Success of Contract Formation in Agent-Mediated Electronic Commerce,* 1 ELEC. COM. RSCH. 183, 185 (2001).

[220] Barfield, *supra* note 212, at 23; David C. Vladeck, *Machines Without Principals: Liability Rules and Artificial Intelligence*, 89 WASH. L. REV. 117, 127 (2014).

[221] Anthony Bellia, *Contracting with Electronic Agents*, 50 EMORY L.J. 1047, 1060 (2001).

[222] *See also* Chopra & White, *supra* note 28, at 377–78; Barfield, *supra* note 212, at 23–24.

[223] SEC. & EXCH. COMM'N, IM GUIDANCE UPDATE 2 (2017), https://www.sec.gov/investment/im-guidance-2017-02.pdf [https://perma.cc/2JSP-UJSL]; *see also* John Lightbourne, *Algorithms & Fiduciaries: Existing and Proposed Regulatory Approaches to Artificially Intelligent Financial Planners,* 67 DUKE L.J. 651, 653 n.7 (2017).

Such robo-advisors must comply with "the substantive and fiduciary obligations of the Advisers Act."[224] In case of breach, liability is imposed on the companies who registered these robo-advisors, rather than on the algorithm itself.[225]

One argument against this approach is that machine-learning algorithms, which are employed by some voice shoppers, do not simply carry out pre-scripted instructions. Rather, they learn from inputted data and can autonomously change their decision parameters, sometimes in ways which the coder could not foresee.[226] As a result, one can argue their operation goes beyond "mere extensions of the will of an individual or company."[227] This is particularly the case when the algorithm takes an active stance, such as updating its preference algorithm or determining which firms to trade with, or even prompting the consumer to buy a product (e.g., when a voice shopper says, "You sound like you have a sore throat. Would you like me to buy lozenges?").[228]

In our view, this possibility does not negate the agent's role of voice shoppers' operators. First, when we attribute the algorithm's actions to the operator, we do not mean the operator performed the action, just that it is responsible for it. Furthermore, even if not all decisional parameters are directly programmed by a human coder, the coder can limit the algorithm's autonomy via stipulations or constraints (e.g., "Do not limit the search to firms connected to the operator"; "Always show the best offer to the consumer"; or "Compare at least ten options, at least nine of which do not include your affiliated arm"). Therefore, the entity that is responsible for operating the voice shopper would be responsible for its actions.

Treating operators of voice shoppers as agents will increase their incentives to internalize the effects of the voice shopper's actions.[229] This is important since operators are the best avoiders of harms resulting from the choice gap because currently such operators develop, design, operate, market, and distribute the voice shoppers. In contrast, consumers have only vague information on the voice shopper's business affiliations as

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[224] SEC. & EXCH. COMM'N, *supra* note 223, at 2. *See* Investment Advisers Act of 1940, 15 U.S.C. §§ 80b-1–80b-21 (2012).

[225] *See* Press Release, Sec. & Exch. Comm'n, SEC Charges Two Robo-Advisers with False Disclosures (Dec. 21, 2018), https://www.sec.gov/news/press-release/2018-300 [https://perma.cc/5AXP-KCS8].

[226] Ryan Calo, *Robotics and the Lessons of Cyberlaw*, 103 CAL. L. REV. 513, 532 (2015); Ooi, *supra* note 28, at 8–9.

[227] Scholz, *supra* note 28, at 153.

[228] Ooi, *supra* note 28, at 4–5.

[229] Scholz, *supra* note 28, at 167–68.

well as the decisional parameters it uses to choose the products offered to them and have almost no influence on either.

The application of agency law to digital assistants has previously been suggested in the context of private law.[230] For instance, some have proposed using agency law to allow the imposition of liability even without the mental state legally required by tort law.[231] Others have argued agency law could help with risk allocation in algorithmic contracts, as voice shoppers will only be responsible for any actions that exceed the authority given to them by the consumers.[232] This literature, however, mainly focuses on digital assistants in general, rather than on voice shoppers.[233] Moreover, the literature does not go beyond the allocation of responsibility for transactions into the realm of the wider duties required for the protection of consumer welfare and the functioning of markets.[234]

B. Voice Shoppers' Duties under Agency Law

To narrow choice discrepancies resulting from the choice gap, we propose the application of agency law. Below we review some of the duties this body of law imposes. We show these duties limit the voice shopper's ability to pursue interests other than those of consumers, thereby alleviating concerns that are typically addressed by consumer protection laws in traditional markets.

The use of an established framework like agency law increases legal clarity because it offers established duties, remedies, and a litigation framework. For example, when litigating claims of breach of agency, the agent bears the burden of explaining to the principal all transactions he undertook on the latter's behalf, given the agent has greater access to evidence of such dealings.[235] Such a rule encourages private enforcement against unauthorized transactions, thereby also indirectly protecting competition in the market.[236]

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[230] Ooi disagrees, arguing that agency law is ill-suited to address the consumer-voice shopper relationship. Ooi, *supra* note 28, at 11–12.

[231] Gal, *supra* note 12, at 98–101.

[232] Giancaspro, *supra* note 1, at 127–29.

[233] *See* Gal, *supra* note 12, at 98–101; Giancaspro, *supra* note 1, at 127–29; Ooi, *supra* note 28, at 11–12.

[234] *See* Gal, *supra* note 12, at 60–63; Giancaspro, *supra* note 1, at 127–29; Ooi, *supra* note 28, at 11–12.

[235] RESTATEMENT (THIRD) OF AGENCY § 8.01 cmt. b, cmt. d (AM. L. INST. 2006); *see also In re* Niles, 106 F.3d 1456, 1461–62 (9th Cir. 1997); Bohlen-Uddeholm Am. Inc. v. Ellwood Grp., Inc., 247 F.3d 79, 102 (3d Cir. 2001).

[236] *See* Timothy J. Muris, *Public Statement: The Federal Trade Commission and the Future Development of U.S. Consumer Protection Policy*, FED. TRADE COMM'N (Aug. 19, 2003), https://www.ftc.gov/news-events/news/speeches/federal-trade-commission-future-development-us-consumer-protection-policy [https://perma.cc/W8W7-CYBG] (analogizing

Importantly, agency law can be applied across the board, protecting all consumers at once.[237] In theory, individual consumers could enter into detailed agreements with providers, articulating the boundaries within which the voice shopper is allowed to act. This is clearly unrealistic because the costs for consumers of rewriting and negotiating such contracts would surely exceed the benefits of using voice shoppers. And, more importantly, dominant operators have no incentive to alter their boilerplate contracts.[238] In contrast, duties arising from agency law provide an overall solution for all consumers by setting standards based on general agency principles.

One potential problem with our proposal is that operators might require consumers to contractually agree to limit their agency duties. For example, under Alexa's existing terms of operation, users must agree "to accept responsibility for all activities that occur under [their] account or password."[239] Might operators be able to use such contractual terms to limit their agency duties or even prevent the application of agency law altogether? We argue the answer is no. First, as noted, voice shoppers employ boilerplate "take it or leave it" contracts in a situation where the consumer suffers from unequal bargaining power and asymmetric information.[240] Such contracts of adhesion are subject to special scrutiny by courts.[241] Contractual terms that fall outside the reasonable expectations of the party who did not write the contract are not enforceable.[242] We argue that any provision releasing the voice shopper from all agency duties would not meet reasonable expectations due to the sophistication of the provider,[243] as well as the characteristics of the relationship noted above.[244] In particular, such legal protection is justified by the fact that most consumers will rationally not read all the relevant contractual terms because their transactions are generally small,[245] they lack negotiation

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the parts of American consumer protection to a three-legged stool and listing the three parts that make it up: free market, regulation by public agencies, and private law).

[237] RESTATEMENT (THIRD) OF AGENCY § 8.01, cmt. b (AM. L. INST. 2006).

[238] Barnes, *supra* note 93, at 665; RESTATEMENT (SECOND) OF CONTRACTS § 211 cmt. b (AM. L. INST. 1981); Giancaspro, *supra* note 1, at 122.

[239] *Conditions of Use*, AMAZON (last updated Sept. 14, 2022), https://www.amazon.com/gp/help/customer/display.html/?nodeId=GLSBYFE9MGKKQXXM.

[240] Giancaspro, *supra* note 1, at 122; Barnes, *supra* note 93, at 665.

[241] *See* Steven v. Fid. & Cas. Co., 58 Cal. 2d 862, 882 (1962).

[242] *Id.* at 881–83; RESTATEMENT (SECOND) OF CONTRACTS § 211 cmt. e (AM. L. INST. 1981).

[243] Meredith R. Miller, *Contract Law, Party Sophistication and the New Formalism*, 75 MO. L. REV. 493, 496–97 (2010).

[244] *See supra* Section IV.A.

[245] Blickstein Shchory, *supra* note 15, at 11–21.

power, or they treat the voice shopper as an extension of their existing relationship with the operator. Alternatively, a contractual limitation of agency liability may be voided by claiming the provision is unconscionable and grossly unfair.[246]

In general, all agents must act in accordance with agency doctrines as described below.[247] The agent must "act[] in good faith," "disclose[] all material facts" to the principal, receive the principal's consent to any limitation, and "otherwise deal[] fairly with the principal."[248] Furthermore, the principal's consent cannot be too broad and must be tied either to a specific act or transaction or to a specific type of act or transaction.[249] These conditions are not fulfilled in the case at hand because of the limited disclosure of material facts regarding the choice of the product and its pricing.

Alternatively, operators might argue they are released from liability by the consumer's acceptance of each specific offer. This argument can be rejected outright based on the choice gap. To make an informed choice, consumers need to have reasonable information about a product's qualities and how it was chosen from among other alternatives, as well as how it was priced. Furthermore, they need to actually choose, rather than simply confirm a choice. In the absence of such information and exercise of choice, acceptance of the offer should not be construed as freeing operators from agency duties. To put it differently, in approving the algorithm's choice, users make thin rather than thick choices.

To rebut such arguments, operators might contend that the choice gap is not as substantial as described because parameters set by the voice shopper were known beforehand. This argument amounts to a blanket protection from liability. Yet as we have shown, the decisional parameters available to consumers are general, vague, and some are not available at all (e.g., how the product was priced).[250] In addition, as elaborated above, it can be assumed that most consumers will rationally not review such parameters before using the voice shopper. Hence, the mere fact that some parameters could theoretically have been known beforehand should not suffice.

Below, we review key duties of agents and the remedies that may apply once these duties are breached. Importantly, under agency law, the specific duties depend on the environment

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246 Giancaspro, *supra* note 1, at 139–40.

247 RESTATEMENT (THIRD) OF AGENCY intro. note (AM. L. INST. 2006).

248 *Id.* § 8.06.

249 *Id.*

250 *See supra* Sections I.B. and II.A.

in which the agency takes place.[251] We therefore analyze them in light of the unique circumstances in our case.

1. Fiduciary and Loyalty Duties

Under the Restatement, an agency relationship imposes certain fiduciary duties.[252] The justification for imposing such duties derives from the distinctive nature of agency relationships, in which the principal delegates to the agent power over his practical interests.[253] Ribstein suggested fiduciary duties arise only when the principal delegates open-ended power to the agent.[254] Voice shopper consumer relationships fulfill these requirements.

Breaches of fiduciary duty give rise to agent liability.[255] In such cases, the principal can terminate the relationship and recover the agent's profits.[256] Yet he may be compensated even if the agent did not profit from the breach[257] and even receive punitive damages.[258]

The general fiduciary duty requires the agent "to act loyally for the principal's benefit in all matters connected with the agency relationship."[259] The agent is thus obliged to pursue the principal's interests above his own and to act within a reasonable interpretation of the principal's manifestation.[260] The wider the discretion granted to the agent, the greater his duty is to act loyally.[261] The importance of this duty cannot be overstated because it eliminates the voice shopper's ability to purposely deviate from the consumer's preferences. In essence, this duty resembles the duty of fair trade in consumer protection law that is commonly applied to protect consumer choice.[262] However, in agency law, the fiduciary duty protects consumers' interests rather than choice,[263] thereby adapting to the delegation of purchasing power to the voice shopper.

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251 RESTATEMENT (THIRD) OF AGENCY §§ 8.01 cmt. c, 8.08 cmt. e.

252 *Id.* § 8.01 cmt. b.

253 *Id.* § 8.01 reporter's note b.

254 Larry E. Ribstein, *Fencing Fiduciary Duties*, 91 B.U. L. REV. 900, 901–02 (2011); Larry E. Ribstein, *Are Partners Fiduciaries?*, 2005 UNIV. ILL. L. REV. 209, 217 (2005).

255 RESTATEMENT (THIRD) OF AGENCY § 8.01 cmt. b.

256 *Id.* § 8.01 cmt. d.1.

257 *Id.*

258 *Id.*

259 *Id* § 8.01.

260 *Id.* § 8.01 cmt. b., cmt. c, reporter's note b.

261 *Id.* § 8.01 cmt. c., reporter's note b.

262 *See supra* Section IV.B; Blickstein Shchory & Gal, *supra* note 116, at 100–01.

263 *See* RESTATEMENT (THIRD) OF AGENCY § 8.01 cmt. c.

Let us now apply these principles to the voice shopper-consumer relationship. We start with an easy case: a voice shopper should not give weight to parameters that lead to transactions that increase the operator's profits but harm the consumer. Now consider a less straightforward case: the voice shopper does not offer the consumer the best deal available, instead choosing one that benefits the operator more. Yet the overall outcome for the consumer is better than if he had not used the voice shopper at all. Is this allowed?

Voice shopper operators might argue such transactions fall within consumer expectations: a consumer's near automatic acceptance of the voice shopper's first recommendation does not mean she thinks the deal is the best that could be found. Rather, it implies consumers believe the benefits of using the voice shopper outweigh its costs, or put differently, outweigh the benefits of the alternatives. Indeed, the fact that many consumers restrict voice shopping to small purchases, where the benefits of a more thorough search are fewer, could serve as an indirect indicator of such expectations. As a result, the argument goes, voice shoppers act within the boundaries of trust inherent in their relationship when they do not pick the best offer for the consumer, if the difference in price is sufficiently small to justify his use of the voice shopper. Such arguments should be refuted.

Fiduciary duties mandate that the agent does not give priority to his own interests when deciding for the principal. Indeed, due to the choice gap, neutrality should become an industry standard. It is noteworthy that mandatory algorithmic neutrality has also been suggested in other contexts that raise some similar issues, including search engines.[264] This is not to say the voice shopper operator cannot be paid by suppliers if this is the business model agreed upon with the consumer. But the model should be clear, and the choice among suppliers must still be that which most benefits the consumer.

An interesting question is whether this duty can be applied to prohibit voice shoppers from engaging in exclusionary conduct towards competing suppliers that limits competition in the market. Such conduct can amount, under certain

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[264] *But see, e.g.*, ANDREA RENDA, CEPS, SEARCHING FOR HARM OR HARMING SEARCH? A LOOK AT THE EUROPEAN COMMISSION'S ANTITRUST INVESTIGATION AGAINST GOOGLE 15 (2015), https://www.ceps.eu/ceps-publications/searching-harm-or-harming-search-look-european-commissions-antitrust-investigation/ [https://perma.cc/2WSK-9K8A]; Marina Lao, *Neutral Search as a Basis for Antitrust Action?* HARV. J.L. & TECH., 2, 4 (2013); Daniel A. Crane, *Search Neutrality as an Antitrust Principle*, 19 GEO. MASON L. REV. 1199, 1205 (2012) (raising algorithmic neutrality as a suggestion in issues with search engines, but disagreeing with it as a viable solution).

circumstances, to a violation of antitrust laws.[265] Yet if it were included in the agent's fiduciary duties because it contradicts consumers' interests in market competition, the scope of the prohibition would be much wider.[266] In our view, the answer depends, inter alia, on the potential extent to which such conduct, in aggregate, harms the voice shopper's consumers. Agency law supplements this general fiduciary duty with specific loyalty duties.[267] Below we explore the application of those most relevant to our analysis.

First, the prohibition of "[m]aterial [b]enefit [a]rising [o]ut of [p]osition" requires the agent not to use the power granted to him by the principal to gain material benefits from third parties.[268] One possible application of this duty involves inducements from a third party to send commercial traffic their way even if the chosen product is not the best for the consumer. As argued above, such behavior should be captured by the voice shopper's fiduciary duty. This loyalty duty strengthens our conclusion.

Second, this duty may also be applied to limit operators' use of consumers' personal information for the former's benefit, unless concrete consent for such use was voluntarily given. For example, practices that use the voice shopper's position to violate the consumer's privacy (e.g., collecting information about the consumer while the voice shopper is idle) or that use collected data to harm consumers (e.g., by selling it to third parties), may be banned. A similar conclusion results from the application of the duty "not to use [the principal's] property . . . for the agent's own purposes,"[269] which will be discussed below.[270] Such rules also provide another tool for protecting consumers' privacy.[271]

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[265] *See* European Commission Press Release IP/19/4291, Antitrust: Commission Opens Investigation into Possible Anti-Competitive Conduct of Amazon (July 17, 2019), https://ec.europa.eu/commission/presscorner/detail/en/ip_19_4291 [https://perma.cc/NQ27-FZB5]; European Commission Press Release IP/20/2077, Antitrust: Commission Sends Statement of Objections to Amazon for the Use of Non-Public Independent Seller Data and Opens Second Investigation into Its E-Commerce Business Practices (Nov. 10, 2020) [hereinafter EU Amazon Objections], https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2077 [https://perma.cc/6UBQ-8634]; General Court of the European Union Press Release No. 197/21, The General Court Largely Dismisses Google's Action Against the Decision of The Commission Finding That Google Abused Its Dominant Position by Favouring Its Own Comparison Shopping Service Over Competing Comparison Shopping Services (Nov. 10, 2021), https://curia.europa.eu/jcms/upload/docs/application/pdf/2021-11/cp210197en.pdf [https://perma.cc/KB7C-MUVA].

[266] *See supra* notes 252–265 and accompanying text.

[267] RESTATEMENT (THIRD) OF AGENCY § 8.02 (AM. L. INST. 2006).

[268] *Id.*

[269] RESTATEMENT (THIRD) OF AGENCY § 8.05 (AM. L. INST. 2006).

[270] *See infra* notes 294–297 and accompanying text.

[271] Voice shoppers' potential harm to privacy exceeds the scope of this article.

Third, another important duty is "[the] duty not to deal with the principal as . . . an adverse party."[272] This means an agent is banned from acting as an adverse party or on behalf of adverse parties while acting on behalf of the principal.[273] An agent in such an adverse position must disclose the conflict of interest so the principal can decide how to proceed.[274]

Voice shoppers inherently deal with adverse parties—suppliers and consumers. Yet in choosing which product to offer and at what price, they should pursue only the consumer's interests. In this regard, they should be distinguished from two-sided platforms, which create value by connecting two distinct groups (rather than acting as agents for one side).[275] In accordance, even with full disclosure of potential conflicts of interest—pertaining, for example, to suppliers it owns—the voice shopper will still be required to pursue the consumer's interests above any other. This is in line with the principle that disclosure does not release the agent from the duty to pursue the principal's interests.[276] This duty goes one step further than the fiduciary and loyalty duties explored so far, as it condemns adverse dealing regardless of disclosure. We suggest it only apply when conflicts of interest are salient, such as when the preference of affiliated suppliers is clear despite their deviations from consumer preferences.

A final loyalty duty is "to refrain from competing with the principal."[277] This means that the agent is barred from competing with the principal or assisting the principal's competitors while an agency relationship exists.[278] This requirement can be construed to prohibit operators from using consumer information to compete with the consumer. For example, where the consumer is a business, the voice shopper should not use purchase pattern data that might indicate certain of its products are best sellers, in order to supply competing products to other customers.[279]

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[272] RESTATEMENT (THIRD) OF AGENCY § 8.03 (AM. L. INST. 2006).

[273] *Id.*

[274] *Id.* § 8.03, cmt. b.

[275] *See* Budzinski et al., *supra* note 104, at 182, 190 (describing voice shoppers as two-sided platforms).

[276] RESTATEMENT (THIRD) OF AGENCY § 8.06 (AM. L. INST. 2006).

[277] *Id.* at § 8.04.

[278] *Id.*

[279] *See, e.g.*, EU Amazon Objections, *supra* note 265.

2. Performance Obligations

Agency law also imposes performance duties. At the most basic level, the agent is required to follow express or implied terms of any agreement with the principal.[280] We argue that given the unique circumstances of the voice shopper-consumer relationship, and especially the fact that the consumer is unlikely to read the terms of use, any commitments made prior to the specific transaction—including claims appearing in ads for voice shoppers—should generally be treated as express terms. This proposal creates an exception to contract law, according to which an advertisement is generally not legally binding.[281]

Another implication of the agent's duty to follow the contract's terms is that in case of ambiguity, the action should be consistent with a reasonable interpretation of the agent's authority "from the standpoint of a reasonable person in the agent's position under all the circumstances of which the agent has notice."[282] This standard can be used, for example, to allocate liability for mistakes in purchases.[283]

In addition to the general requirement to follow contractual terms, the agent is required to meet several standards of performance. Specifically, an agent is obliged to "act with the care, competence, and diligence"[284] that is "normally exercised by agents in similar circumstances."[285] The duty of care establishes a general standard of performance for the agent.[286] The duty of competence determines the skills the agent must possess to provide its agency service.[287] The duty of diligence "requires the agent to bring the agent's competence to bear on matters undertaken on behalf of the principal."[288] In setting such performance standards, account is taken of the agent's special skills and knowledge or his claim to possess them,[289] as well as the circumstances and any relevant statutes,

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[280] RESTATEMENT (THIRD) OF AGENCY § 8.07 cmt. b, reporter's note b (AM. L. INST. 2006).

[281] *See, e.g.*, Leonard v. Pepsico, Inc., 88 F. Supp. 2d 116, 122, (S.D.N.Y. 1999), *aff'd*, 210 F.3d 88 (2d Cir. 2000).

[282] RESTATEMENT (THIRD) OF AGENCY § 8.09 cmt. c.

[283] Giancaspro, *supra* note 1, at 128–30.

[284] Although some courts have labelled these duties as fiduciary, the Restatement labeled them as duties of performance—i.e., duties to pursue the principal's interest under a satisfying standard. RESTATEMENT (THIRD) OF AGENCY § 8.08.

[285] Unless contractually limited. *Id.*

[286] *Id.* § 8.08 cmt. b.

[287] *Id.* § 8.08 cmt. c.

[288] *Id.* § 8.08 cmt. d.

[289] *Id.* § 8.08.

administrative rules, or rules of a profession.[290] The principal is entitled to remedies for harms caused by breach of such duties.[291]

In applying this rule, voice shoppers should be programmed to invest their best efforts to find the best deal for the consumer within the technological means of the operator and the boundaries of a cost-effective service. Such considerations should affect both the types and amounts of data inputted into the algorithm and the decisional process employed. Furthermore, operators should periodically ensure that this standard is met.

Yet the devil is in the details. An interesting question is whether the performance standard to be met by the voice shopper should match the importance of the specific purchase, of all purchases made by the specific consumer, or of the aggregate purchases made by all consumers. The answer to this question has vast implications for the standard of competency required because most purchases are small. The answer should be partly based on consumer expectations because the agent's manifestations of competence should be binding. Additionally, weight should be given to the fact that the dominant operators in any case collect information on different products for services other than voice shopping, and consumers may take this fact into account in their decision to employ a voice shopper. In light of these considerations, we argue, voice shoppers should be obliged the aggregate value of purchases made by all expected consumers within a cost-effective framework.

Another interesting question involves the parameters voice shoppers should consider. How much weight, if any, should be given to factors like price, quality, availability, or consumers' purchase patterns? Within each parameter, how should the algorithm weigh the myriad factors that might be relevant (e.g., with regard to quality, should it be based on product specifications, user reviews/star ratings, customer complaints, past cancellations/returns, etc.)? The relevant contractual obligations are vague in this regard. In the examples that follow, we suggest that consumer law principles can help in determining the parameters required and their appropriate weights.

Some cases are relatively easy. As noted above, the relative size of commission rates paid to the voice shopper by suppliers should not constitute a parameter to be considered because this is misaligned with consumers' preferences and reflects a bias in favor of such suppliers. Another example

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290 *Id.* § 8.08 cmt. b.

291 *Id.* § 8.08.

involves information that a product is hazardous or raises safety issues. Such information should be given weight because most consumers would reasonably expect voice shoppers to consider it. Moreover, performance duties may be interpreted to require the agent not to make an illegal deal on the consumer's behalf, such as the purchase of alcoholic beverages by minors. This requirement is paternalistic, as it is based on legal trade restrictions rather than on the consumer's preferences. But given the voice shopper steps into the consumer's shoes, it should not be allowed to make any deals the consumer is not allowed to make.

Now consider the following example: a consumer's request could be met by either of two suitable products. The products are similar in price, brand reputation, and quality rating based on parameters the consumer assumes will be checked and the voice shopper indeed compared. The voice shopper also has prior information that one product is superior to the other in an often overlooked parameter. We argue the voice shopper is required to take this parameter into account. Underlying our approach is the fact that the scope of the agency determines the scope of the agent's diligence duties. The nature of open ended and broad verbal orders with imprecise purchase requirements, as well as the lack of a predefined list of specific parameters to be checked by the voice shopper,[292] creates a duty to take into account additional parameters where they become relevant.

Beyond these examples, we suggest the parameters used by voice shoppers should reflect the values of the average consumer, unless specific details about the preferences of a specific consumer are known by the operator. This standard aligns the voice shopper's selection with consumer preferences, closing the choice gap.

A related question regards the algorithm's level of competence: should the voice shopper be required to operate a more sophisticated algorithm if it is possible, one which gives weight to more parameters, and thus better benefits the consumer? The answer depends on the circumstances, including the extra costs of operating such algorithms, but—more importantly—on consumers' realistic expectations based on the operator's manifestations of an ability to meet consumer preferences. All these parameters are affected by the fact that both dominant operators, Amazon and Google, operate search

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[292] *See supra* Section II.C.

algorithms in other spheres that are their core business.[293] As such, it should be considered unreasonable for these operators to employ a less sophisticated algorithm in their voice shoppers than in their other services, unless they can prove that employing a similar algorithm is either impossible or not cost efficient. For example, imagine that in their nonvoice shopper operations, Amazon's or Google's algorithms refresh their search of suppliers' webpages once an hour. This may serve as a prima facie indication this time frame is efficient, given that in other spheres these companies have less incentive to provide inaccurate results. This conclusion is strengthened by the likelihood that consumers may assume the search services provided by such firms in different spheres are interchangeable.

Another performance obligation is "duties regarding [the] principal's property."[294] The agent is required, inter alia, to exercise due care regarding the principal's property, including his private information, to not mingle it "with anyone else's[,] and to keep" any necessary records.[295] Obvious applications of this duty are that voice shoppers must exercise due care with consumers' credit information and maintain transactional records. Enabling ex post supervision of transactions increases the consumer's control to correct mistakes made by the voice shopper, which otherwise might become part of the consumer's order history and so might be repeated. Ultimately this duty improves the alignment between purchases and actual preferences.

A more complicated question is whether data related to the consumer's order history and personal characteristics fall under this duty, and should thus, not be sold to others, used by the agent for his own purposes, or mingled with data from other users, without clear consent from the consumer. We suggest differentiating between two cases. The first relates to data pertaining to the specific consumer. Such information should only be used to increase the probability the choices made by the algorithm reflect the consumer's preferences. The second relates to the aggregation of data from many consumers, which enables the voice shopper to improve its algorithm. Since such use of aggregate data can also benefit each specific consumer, we argue that it should be allowed. Yet transferring such data to a third party or using it in any context that could harm the consumer should be prohibited without the consumer's informed consent.

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[293] *See* HoR Report, *supra* note 44, at 174–246, 247–329 (providing detailed descriptions for each company).

[294] RESTATEMENT (THIRD) OF AGENCY § 8.12 (AM. L. INST. 2006)

[295] *Id.*

A related question is whether the voice shopper should be allowed to use consumer data to engage in discriminatory or dynamic pricing practices, whereby the voice shopper charges different prices to different consumers or to the same consumer at different times based on their presumed willingness to pay.[296] In our view, such conduct should be prohibited because it harms some consumers and does not benefit others. This case should be differentiated from such pricing practices when adopted by a supplier, which may potentially increase the overall quantity in the market, so more products become available to consumers who could not otherwise purchase them.[297]

3. The Duty to Provide Information

The agent is required "to use reasonable effort to provide the principal with facts that the agent knows, has reason to know, or should know," if "the facts are material to the agent's duties to the principal."[298] This duty may provide a cause of action for consumers because it subjects voice shoppers to liability for harm caused by the breach.[299]

Plainly, the voice shopper must provide clear information on such fundamentals as how to cancel a transaction or the contractual relationship. The question becomes difficult regarding the algorithm's function. Specifically, how much information about its selection process should the voice shopper be mandated to provide? The answer to this question should balance three factors: protection of the operator's trade secrets, the dynamic nature of learning algorithms, and consumer interests. Two levels of transparency are relevant. The first relates to the general choice parameters used by the algorithm. We argue that, while the algorithm itself need not be transparent to consumers, operators should be mandated to provide general information regarding the choice parameters used. This information should be clear and relatively easy for consumers to understand, potentially using examples of how a choice is made under different circumstances. For example, where a product is selected because it bears the Amazon's Choice label, it is insufficient merely to define this group in vague terms such as

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[296] EZRACHI & STUCKE, *supra* note 14, at 83–144; Blickstein Shchory, *supra* note 15, at 40–44; Shankhdhar & Dangwal, *supra* note 14.

[297] *See generally* FED. TRADE COMM'N, BIG DATA: A TOOL FOR INCLUSION OR EXCLUSION? UNDERSTANDING THE ISSUES 5–12 (2016) (noting that, for example, big data may help individuals obtain credit who formerly would be unable to through traditional methods).

[298] RESTATEMENT (THIRD) OF AGENCY § 8.11 (AM. L. INST. 2006).

[299] *Id.* § 8.11 cmt. b.

those quoted earlier.[300] Rather, the consumer should be provided with information on what grounds the Amazon's Choice label is awarded, what types of products are excluded from it, whether suppliers owned by Amazon are given preference, and so on. Such information should be provided prior to the start of the contractual relationship and must be easily accessed at any time.

The second level relates to the choice of each specific product. As elaborated above, a wide disclosure and notification approach clashes with the benefits inherent in voice shopper services.[301] However, we suggest the consumer should be able to request such information. Such information can relate to a recommended product's feature which the consumer is interested in and might be relatively easily obtained from websites (e.g., "Alexa, does this [item] have a Leaping Bunny tag?")[302] or might relate to the search process. By requiring voice shoppers to provide such information upon request, some control and choice can be restored to consumers. While full transparency of the algorithm and its myriad considerations is impossible, this does not preclude making available basic criteria, such as the types of products scanned, whether certain suppliers were given preference, and the key factors considered.[303] We also suggest taking advantage of the operator's stronger incentive to provide more neutral search results in other spheres in which it operates. Specifically, the registration options should allow consumers to request a notification when the choice made by the algorithm differs significantly from the top results likely to be offered in the provider's main search services. This is also in line with the fact that under agency law the principal may manifest a desire to receive "more information . . . than is customary in [such a] . . . relationship."[304] It also aligns with the rule that the agent's duty to provide information rises in line with the agent's discretion.[305] Importantly, the duty to provide information is not negated by the fact that the principal could acquire the information on his own.[306]

Operators might point to the fact that under agency law, the principal is allowed to "manifest a lack of interest in receiving" information, thereby assuming the risk from any

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[300] *See supra* Section II.A.

[301] *See supra* Section IV.A.

[302] The "Leaping Bunny" certification, awarded by animal protection NGOs, indicates animal cruelty-free products. *About Leaping Bunny*, LEAPING BUNNY PROGRAM, https://www.leapingbunny.org/about/about-leaping-bunny [https://perma.cc/F5AT-UQTV].

[303] PASQUALE, *supra* note 62, at 8, 16, 61, 193, 217.

[304] RESTATEMENT (THIRD) OF AGENCY § 8.11 cmt. c (AM. L. INST. 2006).

[305] *Id.*

[306] *Id.* § 8.11 cmt. d.

associated actions.[307] Accordingly, operators might argue that when consumers choose not to access available external information, the operator cannot be in breach for not providing it. We argue operators cannot hide behind the availability of information given that under the unique circumstances of their operation it is rational for consumers not to demand or read it.

CONCLUSION

Voice shoppers are fast becoming the new gateways to shopping. As such, ensuring they meet consumer protection norms is essential. This need is strengthened by what this article defined as the choice gap, created when the voice shopper chooses the product to be offered to the consumer, with limited, if any, consumer involvement. The choice gap can lead to a misalignment between consumer preferences and the products actually sold to them, which harms consumers as well as the proper functioning of markets.

The consequences of the choice gap are not efficiently addressed by consumer protection or antitrust laws. Instead, we argue the choice gap creates the basis for recognizing an agency relationship between the consumer and the voice shopper operator. This enables the application to the operator of agency duties, including fiduciary, performance, and information obligations. Such duties are sufficiently flexible for adaptation to this special relationship, which is defined not only by its contractual terms, but also by its market circumstances. They can therefore apply when consumers rationally do not delve into the details of choices made by the algorithm; in face of the lack of options for better voice shoppers; and in light of the expectations created by consumers' relationships with the operators in other spheres. By applying agency law, such duties can be imposed immediately, thereby limiting the need to legislate specific duties for voice shoppers.

The use of agency law restores consumers' control over the transaction by not only overcoming the consequences of the choice gap, but also the limited effectiveness of information disclosure in the relationship at hand. In so doing, the application of agency law indirectly helps resolve issues that relate to, but cannot be easily addressed by, antitrust, consumer protection, and privacy laws.

Our findings and suggestions have relevance well beyond voice shoppers for technologies which are the future of

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[307] *Id.* § 8.11 cmt. b.

commerce. When using voice shoppers, consumers are once removed from making the choice, yet need to approve the purchase. But we already see instances where the consumer is twice removed from the purchase decision, such as autonomous cars which determine where to buy gas without any human involvement. The framework we suggest in this article can apply to these cases as well, as the justification for recognizing an agency relationship in such situations is even greater.