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Alexandra Menosky*

On December 5, 2016, Amazon announced that it had successfully designed and launched a grocery store in Seattle, Washington, operated by autonomous technology.[1] The autonomous store is named "Amazon Go."[2] Amazon Go is currently only open to its own employees, but is scheduled to open to the public in early 2017, then expand nationwide.[3] The announcement page on Amazon's website includes a video simulating the shopping experience customers will participate in while at an Amazon Go store.[4] The video displays several customers walking into the store, placing items in their personal bags, and immediately walking out of the store.[5] While the grocery store depicted in the video resembles a standard grocery store in America, none of the customers stop at a checkout counter or pull out their wallets to pay for their groceries.[6] At first glance, the fictitious customers appear to be shop-lifting. Fortunately, Amazon is not encouraging shop-lifting, but rather creating a unique shopping experience without the need for cashiers, checkout counters or worries over shop-lifting.[7]

Amazon provides a nominal explanation to consumers as to how the technology operating the store will work. The announcement video states that store items will

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[1] Laura Stevens & Khadeeja Safdar, *Amazon Working on Several Grocery-Store Formats, Could Open More Than 2,000 Locations*, WALL ST. J. (Dec. 15, 2016, 7:57 PM), http://www.wsj.com/articles/amazon-grocery-store-concept-to-open-in-seattle-in-early-2017-1480959119.

[2] *Id.*

[3] *Id.*

[4] AMAZON GO, *Frequently Asked Questions*, AMAZON, https://www.amazon.com/b?node=16008589011 (last visited Jan. 25, 2017).

[5] *Introducing Amazon Go and the world's most advanced shopping technology*, YOUTUBE.COM (Dec. 5, 2016), https://www.youtube.com/watch?v=NrmMk1Myrxc.

[6] *Id.*

[7] *Id.*

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be tracked with the help of the Amazon Go cell phone application.[8] The shopping process begins when customers enter the store and scan their phones at terminals located near the entrance.[9] Amazon explains that the technology in the store includes "computer vision, deep learning algorithms and sensor fusion, much like you'd find in self-driving cars."[10] Computer vision acquires, processes and analyzes digital images.[11] Deep learning algorithms collect information that allows the system to grow and change when exposed to new data.[12] Sensor fusion collects data from sensors to calculate position and orientation information.[13] Amazon has named the combination of these three technologies "Just Walk Out" because the innovation allows consumers to walk out of the store without stopping to pay.[14]

Just Walk Out Technology monitors when items are picked up and returned to the shelf.[15] Selected items will be automatically entered into a digital cart located on the coordinating Amazon cell phone application.[16] If an item is placed back on the shelves, it will automatically be removed from the digital cart.[17] The in-store sensors, cameras, and computer system will correspond with the application to automatically place or remove items from the digital cart.[18] When customers are done shopping, they can simply walk out of the store, the credit card stored on their Amazon account will be charged and an itemized receipt will be sent to their Amazon Go application.[19]

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[8] *Introducing Amazon Go and the world's most advanced shopping technology*, *supra* note 5.

[9] AMAZON GO, *supra* note 4.

[10] *Id.*

[11] *See* Adrien Kaiser, *What is Computer Vision*, HAYO (Jan. 12, 2017), https://hayo.io/archives/3564.

[12] Aditya Singh, *Deep Learning Will Radically Change the Ways We Interact with Technology*, HARV. BUS. REV. (Jan. 30, 2017), https://hbr.org/2017/01/deep-learning-will-radically-change-the-ways-we-interact-with-technology.

[13] Carolyn Mathas, *Sensor Fusion: The Basics*, DIGI-KEY ELECTRONICS (Apr. 12, 2012), https://www.digikey.com/en/articles/techzone/2012/apr/sensor-fusion-the-basics.

[14] AMAZON GO, *supra* note 4.

[15] *Id.*

[16] *Id.*

[17] *Id.*

[18] *Id.*

[19] Elyse Betters, *What is Amazon Go and how does it work?*, POCKET-LINT (Dec. 5, 2016), http://www. pocket-lint.com/news/139650-what-is-amazon-go-and-how-does-it-work.

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While the announcement video and page covers the basics of how the technology will work, Amazon neglects to offer an in-depth explanation.[20] Not addressed in the video are the 208 cameras, located on shelves, ceilings, and floors throughout the store and the facial recognition technology, capturing, processing, and storing consumer faces on their database.[21] Additionally, Radio Frequency Identification (hereinafter referred to as "RFID") trackers attached to every product that monitors customers' every move and product selection, while in the store and logged onto the application, are not addressed.[22] In addition, the announcement video does not discuss the process of storing or destroying customer data that is being recorded onto their database.[23] Amazon knows the details of how this technology will operate, as evidenced by two patents filed on the technology but presents the information in a simplified way that reduces confusion and criticism from consumers.[24]

"Just Walk Out" has given rise to conversations among retail and technology experts debating if customers are willing to give up certain privacy rights for the convenience of an autonomous grocery store.[25] The Amazon Go grocery store operated by autonomous technology is beneficial to consumers because it creates a more efficient shopping experience. However, it is potentially harmful if privacy concerns regarding facial recognition, consumer tracking, and RFID identification methods are not addressed and Section 5 of the Federal Trade Commission Act is not amended.

This Article will discuss the technology behind the Amazon Go autonomous grocery store, privacy concerns associated with it, and the need to amend Section 5 of the Federal Trade Commission (hereinafter referred to as "FTC") Act to protect consumers. Part I will provide background information on retailers that have used similar technology to track customers without their knowledge. Part II will discuss the two patents filed by Amazon that offer internal information about how the technology behind an Amazon Go store will function. Part III will analyze privacy

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[20] Joe Carmichael, *Amazon Previews Its Autonomous "Just Walk Out" Grocery Store*, INVERSE (Dec. 5, 2016), https://www.inverse.com/article/24730-amazon-go-grocery-shopping.

[21] *Id.*

[22] *Id.*

[23] AMAZON GO, *supra* note 4.

[24] *See* U.S. Patent No. 0019391 A1 (filed June 26, 2014); *see* U.S. Patent No. 0012396 A1 (filed Sept. 14, 2014).

[25] Alan Boyle & Todd Bishop, *Ready to be tracked at the grocery store? Amazon's mini-mart raises new questions for digital privacy*, GEEKWIRE (Dec. 7, 2016, 10:41 AM), http://www.geekwire.com/2016/ready-tracked-grocery-store-amazons-mini-mart-new-frontier-digital-privacy/.

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concerns for consumers, associated with technology inside an Amazon Go store—including facial recognition technology, RFID tags, and data collection procedures. Part IV will discuss amending Section 5 of the FTC Act to give the FTC authority to enforce consumer privacy standards and facilitate transparency, not only against online retailers, but also brick and mortar retail stores using advanced technologies.[26] Lastly, Part V will explain how Amazon Go can function and expand nationwide without sacrificing consumer privacy.

I. BACKGROUND

Video surveillance is commonly utilized by retailers in their loss-prevention programs, but integrating technology in the retail market to track commercial items and shopping patterns is a recent significant advancement.[27] There are several technologies major retailers have experimented with to track their products. Proctor & Gamble tested a way to track consumers' selection of products through the placement of RFID tags on shelves housing certain products and the products themselves.[28] In 2003, Proctor & Gamble placed these RFID tags on shelves in one Wal-Mart in Oklahoma to monitor consumers' interactions with Max Factor Lipfinity Lipstick.[29] When customers lifted the lipstick from shelves, video monitors were triggered and researchers were able to watch the consumers' interactions with the product.[30] The RFID tag then allowed Proctor & Gamble to monitor the product's movement through the store, the quantity on the shelves of said product and even the movement after the product left the store.[31]

The *Chicago-Sun Times* broke the story to consumers about the use of RFID tags in a Wal-Mart store.[32] In response, 35 consumer privacy and civil liberties organizations released a paper discussing their position that RFID technology poses a threat to individual privacy.[33] Wal-Mart initially denied any consumer testing using

[26] 15 U.S.C. § 45 (2006).

[27] Christopher S. Milligan, *Facial Recognition Technology, Video Surveillance, and Privacy*, 9 S. CAL. INTERDISC. L.J. 295 (2000).

[28] Darren Hadler, *The Wild,Wild West: A Privacy Showdown on the Radio Frequency Identification (RFID) Systems Technological Frontier*, 32 W. ST. U. L. REV. 199, 205–08 (2005) (discussing the placement of RFID tags in retail stores).

[29] Laura Hildner, *Defusing the Threat of RFID: Protecting Consumer Privacy Through Technology Specific Legislation at the State Level*, 41 HARV. C.R.-C.L. L. REV. 133 (2006).

[30] *Id.*

[31] *Id.* at 136.

[32] *Id.*

[33] *Id.* at 137.

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RFID technology.[34] Wal-Mart eventually confirmed its use of RFID technology, but downplayed the amount of information it tracked.[35]

In October of 2012, Nordstrom began tracking customers who signed onto its Wi-Fi while in its stores.[36] It was not until after critics voiced their dissatisfaction that Nordstrom posted signs in its stores explaining that it was tracking Wi-Fi usage to monitor foot traffic in its stores.[37] However, Nordstrom failed to explain that it was using Euclid Analytics' system of tracking that allowed it to see the length of time customers spent in its stores, if they were purchasing items, and the size of the items they were purchasing.[38] Euclid facilitated the placement of sensors around Nordstrom stores that monitored consumer Wi-Fi signals, sent data to the cloud, and created an online dashboard for store managers to view.[39]

Nordstrom ended its program in May of 2013 stating, "[w]e'd had [sic] Euclid in select stores since September and have said all along this was a test. We felt like we learned a lot and got great feedback from our customers. After 8 months it made sense to end the test."[40] On the other end of the spectrum a spokesperson for Nordstrom was quoted saying that the test ended in part due to customer complaints about their information being tracked and stored.[41] During the 8 month test, 50 million devices in 4,000 stores were tracked to analyze consumer data regarding how long of a time consumers spent in the store, if these consumers made a purchase, and the type of items being purchased.[42] While Wal-Mart and Nordstrom are just two examples of customers being tracked in retail stores, there are hundreds of retailers—including Top Shop, Ikea, and Walgreens—currently using or in the process of

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[34] Hildner, *supra* note 29, at 138.

[35] *Id.*

[36] Stephanie Clifford & Quentin Hardy, *Attention, Shoppers: Store is Tracking Your Cell*, N.Y. TIMES (July 14, 2013), http://www.nytimes.com/2013/07/15/business/attention-shopper-stores-are-tracking-your-cell.html.

[37] Jessica Gallinaro, *Meet Your New Big Brother: Weighing the Privacy Implications of Physical Retail Stores Using Tracking Technology*, 22 GEO. MASON L. REV. 473, 491 n.165 (2015).

[38] Peter Cohan, *How Nordstrom Uses Wifi to Spy on Shoppers*, FORBES (May 9, 2013, 8:23 AM), http://www.forbes.com/sites/petercohan/2013/05/09/how-nordstrom-and-home-depot-use-wifi-to-spy-on-shoppers/#1479fb353bf9 (explaining that Euclid Analytics is a California-based company that collects data over company Wi-Fi and compiles the data for companies to use to create marketing and advertising campaigns).

[39] *Id.*

[40] *Id.*

[41] *Id.*

[42] Clifford & Hardy, *supra* note 36.

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implementing technological processes to track customers in their stores.[43] The list of retail stores implementing tracking technology will increase in length, as evidenced by Amazon Go implementing tracking technology in their new autonomous grocery stores.

II. PATENTED TECHNOLOGY

As demonstrated by corporations such as Wal-Mart and Nordstrom, the tracking of consumers and inventory is not always transparent. In the Amazon Go store, the concept of being able to pick up goods and immediately walk out of the store seems like an efficient way to shop, but there are many technological parts working behind the scenes to make such an experience possible. Amazon explains that the Just Walk Out technology is "similar to self-driving cars," without specifying for consumers how this technology works or what information is being tracked and stored while in their stores.[44] Amazon comprehends precisely how this technology will operate, as evidenced by the two detailed patents it has been granted.[45] These two patents filed in 2013 and 2014, offer the outside world insight as to the specifications of how Just Walk Out will work.[46]

The first patent, "[t]ransitioning items from a materials handling facility" (Publication Number US20150012396 A1) is a unique system designed by Amazon that is abstractly described as a "system for tracking and identifying the removal of items from inventory locations and the transition of items from a materials handling facility."[47] This unique Amazon patent includes the technology of 208 cameras that track consumers and inventory and capture images and transitions.[48] This patent also states that, "[m]icrophones may record sounds made by the user and the computing resource(s) may process those sounds to determine a location of the user."[49] The images attached to the patent display a customer being filmed from every angle by

[43] *See* Tripps Ready, *13 Retail Companies Using Data to Revolutionize Online & Offline Shopping Experiences*, UMBEL (May 18, 2015), https://www.umbel.com/blog/retail/13-retail-companies-already-using-data-revolutionize-shopping-experiences/.

[44] AMAZON GO, *supra* note 4.

[45] *See generally* U.S. Patent No. 0019391 A1 (filed June 26, 2014); *see generally* U.S. Patent No. 0012396 A1 (filed Sept. 14, 2014).

[46] Carmichael, *supra* note 20.

[47] U.S. Patent No. 0012396 A1 (filed Sept. 14, 2014).

[48] Boyle & Bishop, *supra* note 25.

[49] Nate Garun, *Amazon Go stores could watch, listen, and remember your every move*, THE VERGE (Dec. 6, 2016, 2:34 PM), http://www.theverge.com/2016/12/6/13856158/how-amazon-go-stores-work-patent.

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cameras and the information being stored in the system memory.[50] Unlike the systems used in the Wal-Mart and Nordstrom situations, which tracked product movement and consumer shopping habits, this system uses hundreds of cameras from every angle to capture customer images during the entirety of time they spend in the store.[51]

The sister patent "[d]etecting item interaction and movement" (Publication Number US20150019391 A1) is abstractly described as "a system for tracking removal or placement of items at inventory locations with a materials handling facility."[52] In some instances, a user may remove an item from an inventory location and the inventory management system will detect that removal and update a user item list associated with the user to include an item identifier representative of the removed item.[53] Likewise, if the user places an item at an inventory location, the inventory management system may detect that placement and update the user item list to remove an item identifier representative of the placed item.[54] This patent explains that the technology tracks items that users select and items that users replace to the shelves. Both patents raise privacy concerns regarding the use of sensors, cameras, and microphones that track consumers' movements throughout the store, as well as the storage of customers' images, movements, and purchase information.[55] Together these patents combine aspects of already discussed retail tracking technology to create one system that monitors and tracks every aspect of the retail experience.[56]

III. PRIVACY CONCERNS

While the Amazon Go video utilizes buzz words such as "computer vision," "deep learning algorithms," and "sensor fusion," there are in actuality three main technologies set forth in Amazon's two patents that are being used to operate the system in its autonomous grocery store.[57] These three technologies should be transparent to consumers, as they raise significant privacy concerns to consumers'

[50] *Id.*

[51] *Id.*

[52] U.S. Patent No. 0019391 A1 (filed June 26, 2014).

[53] *Id.* at fig. 7.

[54] *Id.* at 57.

[55] Garun, *supra* note 49.

[56] AMAZON GO, *supra* note 4.

[57] *Id.*

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personal information.[58] These technologies include: facial recognition technology, Radio Frequency Identification tags/readers, and data collection. The use of these technologies in the Amazon Go store share similar privacy concerns consumers expressed in response to learning of the Nordstrom tracking, including monitoring consumers' movements in the store, tracking their shopping habits and storing personal information.

A. Facial Recognition Technology

Facial recognition technology is one of the main technologies that Amazon Go stores utilize, which "deconstructs a person's facial image . . . and produces a related set of facial characteristics that the computer uses to recognize an authorized user's face."[59] This technology can go so far as recognizing hair color and skin tone.[60] When used with video cameras, facial recognition technology matches an image with a name and then the name with personal data.[61] It can also be used to scan a person's facial features to monitor and control access to a certain system.[62]

Both Amazon patents specifically state that facial recognition software can be used in their stores to recognize customers.[63] Patent US20150012396 A1 describes that "[u]pon detecting a user entering and/or passing through a transition area . . . various techniques may be used to identify a user. For example, a camera may capture an image of the user that is processed using facial recognition to identify the user."[64] Simply stated, Amazon's system will capture images of all customers who enter its stores.[65] Amazon will have knowledge of the characteristics and attributes of each consumer who shop in its store, including their hair color and skin tone.[66] This information can be used to target specific demographic groups with advertising and gear products in its stores to these groups, leaving out products that less represented groups purchase and enjoy.

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[58] *See* Garun, *supra* note 49.

[59] Michael Yang & Francis J. Gorman, *What's Yours is Mine, Protection and Security in a Digital World*, 36 MD. B.J. 24, 26 (2003).

[60] *Id.* at 27.

[61] Milligan, *supra* note 27, at 296.

[62] *Id.* at 304.

[63] *See generally* U.S. Patent No. 0019391 A1 (filed June 26, 2014); *see generally* U.S. Patent No. 0012396 A1 (filed Sept. 14, 2014).

[64] U.S. Patent No. 0012396 A1, at [90] (filed Sept. 14, 2014).

[65] *Id.*

[66] U.S. Patent No. 0012396 A1, at [90] (filed Sept. 14, 2014) (concluding that Amazon will have access to this type of information).

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The FTC released a staff report in 2012 recommending practices for companies that use facial recognition technology.[67] The report explained that facial recognition technology systems should be designed with consumer privacy in mind.[68] The FTC was concerned about several privacy issues, including the fact that collected data may be susceptible to security breaches and hacking.[69] It stated that companies

> should obtain consent before using consumers' images or any biometric data in a different way than they represented when they collected the data and companies should not use facial recognition to identify anonymous images of a consumer to someone who could not otherwise identify him or her, without obtaining the consumer's affirmative consent first.70

This report offers guidelines that the FTC suggests businesses should follow, but unfortunately not all businesses comply.[71] This is even more reason for federal legislation to be amended to turn the FTC's suggestion into mandatory law. Having legislation in place is especially important before Amazon Go launches, so that Amazon is required to obtain consent before capturing and using customer images.

B. RFID Tags and Readers

As evidenced by Wal-Mart's legal issues concerning the tracking of consumers through RFID tags on lipstick products, RFID tags involved in the retail market can and have raised privacy concerns for consumers in regards to their personal information and shopping data being collected and stored. RFID tags have the capability to identify objects, collect data, and transmit information.[72] When a RFID tag encounters a "reader" within a few feet, the information on the tag is extracted and processed.[73] According to an internet-based survey conducted in 2001 by the Auto-ID Center at MIT, the leading global research network of academic laboratories in the field of Internet of Things, 78% of the 317 consumer participants are

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[67] *FTC Recommends Best Practices for Companies that Use Facial Recognition Technologies*, F.T.C. (Oct. 22, 2012), https://www.ftc.gov/news-events/press-releases/2012/10/ftc-recommends-best-practices-companies-use-facial-recognition [hereinafter F.T.C. I].

[68] *Id.*

[69] *Id.*

[70] *Id.*

[71] *Id.*

[72] Serena G. Stein, *Where Will Consumers Find Privacy Protection from RFIDS? A Case for Federal Legislation*, 2007 DUKE L. & TECH. REV. 3, 3 (2007).

[73] *Id.*

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"extremely or very concerned" about the use of RFID technology.[74] This level of concern is due to "fear of customer profiling and care about keeping their identities private from businesses."[75] The word "Big Brother" was used 15 different times by participants to describe the RFID technology.[76] Overall, the study expressed the concern consumers had once they were aware of this tracking technology.[77]

As stated in both Amazon's patents, RFID tags and readers will be used to keep track of when products are chosen from shelves or put back.[78] Amazon Patent US20150012396 A1 describes that "the RFID tag may include an adhesive on a portion of the exterior of an RFID tag surface to enable attachment of the tag to an item, such as an inventory item."[79] Products selected by consumers will then be tracked when a "RFID tag [is] detected by a RFID reader."[80] RFID tags can be scanned through solid objects, which makes it possible for Amazon Go to detect items placed in grocery bags or purses.[81]

In 2005, the FTC published an extensive consumer report addressing concerns about RFID technology and the best practices for using the technology.[82] The FTC conducted a customer survey in which it discovered customers were most concerned about privacy, specifically their information being shared with third parties, when it came to RFID technology.[83] The customers involved in the survey expressed concern over RFID technology tracking their purchases and movements because of the increase in marketing and government surveillance.[84] Other participants claimed that this technology heightened privacy concerns because of the increased amount of information it provides about every tagged item.[85]

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[74] Phyllis L. Kim, *Auto-ID Center Communications*, AUTO-ID CENTER (Nov. 14, 2001), http://cryptome.org/rfid/pk-fh.pdf.

[75] *Id.*

[76] *Id.*

[77] *Id.*

[78] Stein, *supra* note 72, at 2.

[79] U.S. Patent No. 0012396 A1, at [42] (filed Sept. 14, 2014).

[80] *Id.*

[81] Stein, *supra* note 72, at 8.

[82] F.T.C., RADIO FREQUENCY IDENTIFICATION: APPLICATIONS AND IMPLICATIONS FOR CONSUMERS (2005) [hereinafter F.T.C. II].

[83] *Id.* at 9.

[84] *Id.*

[85] *Id.* at 10.

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Based on the consumer survey, the FTC was able to determine the best practices for using RFID technology and advise accordingly.[86] The FTC concluded that "businesses deploying RFID should take steps to protect consumer privacy."[87] The FTC also concluded that businesses should look to the EPCglobal's Guidelines on EPC for Consumer Products.[88] EPCglobal is an organization worldwide standardization of electronic technology and their guidelines were developed with input from privacy experts.[89] The EPC's guidelines can be followed to make sure consumers are put on notice, have a choice in whether to discard the RFID tags after purchase, and are educated on the technology.[90] The FTC also suggests that information security measures should be taken to protect the information gathered from RFID tags.[91] The report was created to suggest ways for businesses to respect consumer privacy and adapt practices that coincide with consumer concerns.[92] Instead of making suggestions, it would be beneficial if Amazon Go could follow existing federal legislation to implement security measures.

C. Data Collection

When companies engage in large collections of consumer data in their stores or online, they are participating in an activity called "data mining." Data mining is defined as an examination and analysis of mass quantities of data to discover beneficial patterns.[93] This data helps corporations target consumers with coupons and advertisements and tailor products to select groups of consumers.[94] These companies usually contract third parties to analyze the data collected for them and advise them on marketing strategies.[95] In most instances customers have not consented to their data being shared with other parties, raising privacy concerns

[86] *Id.* at 12.

[87] *Id.* at 13.

[88] *See generally* Juan Ignacio Aguirre, *EPCglobal: A Universal Standard*, MIT (Feb. 2007), http://web.mit.edu/smadnick/www/wp/2007-01.pdf (defining who EPCglobal is and what their standards are).

[89] *Id.*

[90] F.T.C. II, *supra* note 82, at 13.

[91] *Id.* at 12.

[92] *Id.*

[93] Morgan Hochheiser, *The Truth Behind Data Collection and Analysis*, 32 J. MARSHALL J. INFO. TECH. & PRIVACY L. 32, 34 (2015).

[94] *Id.* at 33.

[95] *Id.* at 35.

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about the usage of their personal data.[96] For example, Target specifically collected data on pregnant women that shopped in its stores, gave it to a third party to analyze, and began offering these women personalized coupons.[97] One teenage girl's father was notified of her pregnancy when the coupons arrived at their home.[98] The story gained national attention and raised major privacy concerns among consumers about the quantity of personal data Target was collecting.[99]

Amazon is able to collect data from consumers' experiences in its store using a technological system involving hundreds of cameras, microphones, and RFID tags.[100] It can use this mass amount of data for market research, advertising, and product placement, among other uses.[101] Customers will begin to recognize products they have picked up, but then failed to purchase, appear in advertisements when using their Amazon account.[102] This situation is similar to the shopping experience consumers partake in when using Amazon's website to purchase items.[103] After browsing or purchasing, Amazon's recommendation software suggests similar items for users to also purchase.[104] This experience will also take place in an Amazon Go store, where Amazon will be able to make tailored recommendations based on products consumers have already purchased.[105] Additionally, with the mass amount of specific consumer data that Amazon will be able to gather in its stores, it will have information to use and sell to corporations about the type of people buying their products, at what time of day, and at what locations.[106]

The FTC has addressed the issue of companies conducting mass data storage or data mining customer's information.[107] It proposed a concept called "simplified choice" where corporations would offer the choice of data collection when a

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[96] *Id.* at 41.

[97] *Id.* at 32.

[98] *Id.*

[99] Hochheiser, *supra* note 93, at 32.

[100] *See generally* U.S. Patent No. 0019391 A1 (filed June 26, 2014).

[101] Garun, *supra* note 49.

[102] *See generally* JP Mangalindan, *Amazon's recommendation secret*, FORTUNE (July 30, 2012), http://fortune.com/2012/07/30/amazons-recommendation-secret/.

[103] *Id.*

[104] *About Recommendations*, AMAZON, https://www.amazon.com/gp/help/customer/display.html/ref=hp_left_v4_sib?ie=UTF8&nodeId=201930010 (last visited Mar. 15, 2017).

[105] *Id.*

[106] *Id.*

[107] Hochheiser, *supra* note 93, at 34.

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consumer makes a decision to use a certain store, product or service.[108] Simplified choice is designed to increase transparency with customers and inform them that their information is being collected, stored and analyzed.[109] The FTC has urged corporations to adopt the simplified choice method and has also spoken out against companies selling data to third party consumers.[110] Overall, the FTC is attempting to guide companies in the right direction regarding collecting consumer data, but there is no federal legislation that specifically requires companies to comply.[111] If Amazon Go adopted simplified choices, it could present consumers with all information and allow them to choose if they want to consent to data collection.

IV. AMENDING SECTION 5 OF THE FEDERAL TRADE COMMISSION ACT

There are several federal consumer protection legislations in place—such as the Fair Credit Reporting Act, Truth in Lending Act, and Federal Trade Commission Act (hereinafter referred to as "FTC Act")—which offer protection for consumers from unfair and fraudulent business practices.[112] Unfortunately, there is no language included in this collection of legislature that explicitly regulates consumer privacy concerns regarding businesses using advanced technologies in their physical stores to gather consumers' personal information.[113] Due to this, the FTC has to broadly interpret the existing FTC Act, which serves to prevent fraudulent, deception, and unfair business practices.[114] Specifically, the FTC relies on Section 5 of the FTC Act to regulate these consumer privacy concerns regarding their personal information.[115]

Section 5 of the FTC Act, 15 U.S. Code § 45, is titled "[u]nfair methods of competition unlawful; prevention by Commission."[116] While the text of Section 5 does not expressly address consumer privacy, the FTC broadly interprets and applies Section 5 to cases involving "information privacy, data security, online advertising,

[108] *Id.* at 36.

[109] *Id.*

[110] Hochheiser, *supra* note 93, at 36.

[111] *Id.* at 57.

[112] R.J. Acosta, Jillian G. Brady & Spencer Weber Wally, *Consumer Protection in the United States: An Overview*, LOY. U. (Jan. 12, 2011), http://www.luc.edu/media/lucedu/law/centers/antitrust/pdfs/publications/workingpapers/USConsumerProtectionFormatted.pdf.

[113] *Id.* at 3.

[114] *Id.*

[115] *Id.*

[116] 15 U.S.C. § 45 (2006).

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behavioral tracking, and other data intensive, commercial activities."[117] The FTC states on its website that "companies must disclose their privacy practices adequately, and that in certain circumstances, this may require particularly timely, clear and prominent notice, especially for novel, unexpected or sensitive uses."[118] The FTC also states on its website that without first obtaining a consumer's consent, Section 5 "prohibit[s] a company from using previously collected personal data in ways that are materially different than what it initially disclosed to the data subject."[119] In many cases where consumer privacy violations involve technology, the FTC has "charged defendants with violating Section 5 of the FTC Act, which bars unfair and deceptive acts and practices in or affecting commerce."[120] It is an added challenge for the FTC to work around outdated language in Section 5 that does not even include the words "privacy" or "technology" and apply this language to new consumer privacy issues involving technology.[121]

By broadly interpreting Section 5 of this Act, the FTC works to protect consumers from advancing technologies and promote corporate transparency.[122] Businesses continue to use more advance technology each year that are not mentioned in the Act, therefore Section 5 of the FTC Act must be amended to give the FTC power to enforce laws against businesses without the need for broad interpretation.[123] Broad interpretation leaves room for businesses to argue they are following the specific language of Section 5, not an interpretation. Amending Section 5 will allow the FTC to enforce consumer privacy regulations against brick and mortar retail stores that are using these new technologic systems,[124] which include facial recognition software, RFID tags, and readers and data collection.[125]

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[117] Alan Charles Raul, Tasha Manoranjan & Vivek Mohan, *The Privacy, Data Protection and Cybersecurity Law Review: United States* 268 (Alan Charles Rau ed., 1st ed. 2014), http://www.sidley.com/~/media/files/publications/2014/11/the-privacy-data-protection-and-cybersecurity-la__/files/united-states/fileattachment/united-states.pdf.

[118] *Id.* at 273.

[119] *Id.*

[120] F.T.C., *Protecting Consumer Privacy: Enforcing Privacy Promises*, https://www.ftc.gov/news-events/media-resources/protecting-consumer-privacy/enforcing-privacy-promises (last visited Jan. 25, 2017) [hereinafter F.T.C. IV].

[121] *See generally* 15 U.S.C. § 45 (2006).

[122] F.T.C., https://www.ftc.gov (last visited Jan. 24, 2017) [hereinafter F.T.C. III].

[123] *Id.*

[124] Acosta et al., *supra* note 112, at 3.

[125] ShopSmart, *How and Why Retail Stores Are Spying on You*, CONSUMER REPORTS (Mar. 2013), http://www.consumerreports.org/cro/2013/03/how-stores-spy-on-you/index.htm.

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The FTC is working with outdated legislation to regulate practices involving new technologies in retail stores.[126]

The FTC has brought action under Section 5 against Sears in 2009 for failing to disclose the scope of personal information collected from consumers who downloaded its research software.[127] Customers believed that only their internet history would be tracked for discounts if the software was downloaded.[128] Sears ended up collecting additional online information that included "the contents of shopping carts, online bank statements, drug prescription records, video rental records, library borrowing histories, and the sender, recipient, subject, and size for web-based e-mails."[129] Sears agreed to settle with the FTC and to destroy all personal information it had collected.[130]

A Sears' representative stated that in the future if it "advertises or disseminates any tracking software in the future, it will clearly and prominently disclose the types of data the software will monitor, record, or transmit."[131] Sears fulfilled this agreement by disclosing on a separate screen from the privacy policy and license agreement: (1) all of the types of data that the Tracking software would monitor, record, or transmit, (2) how the data would be used, and (3) whether the data would be used by a third party.[132] It was beneficial to consumers that the FTC stepped in to make sure personal information outside the scope of its tracking policy was destroyed and that the company became more transparent.[133]

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[126] *See* Alan Charles Raul, *The Privacy, Data Protection and Cyber Security Law Review* (2014), http://www.sidley.com/~/media/files/publications/2014/11/the-privacy-data-protection-and-cybersecurity-la__/files/united-states/fileattachment/united-states.pdf (explaining that the FTC broadly interprets and applies Section 5 to cases involving newer technologies); *see generally* 15 U.S.C. § 45 (2006) (displaying that existing law does not discuss technology at any length); *see generally* F.T.C. III, *supra* note 122 (discussing the role of the FTC in regards to consumer privacy).

[127] Sears Holdings Management Corp., FTC Matter 082 3099 (2009).

[128] Press Release, FTC, Sears Settles FTC Charges Regarding Tracking Software (June 4, 2009), https://www.ftc.gov/news-events/press-releases/2009/06/sears-settles-ftc-charges-regarding-tracking-software.

[129] *Id.*

[130] Melissa Krasnow & Peter Skrief, *The Federal Trade Commission's Sears Holdings Enforcement Action—Developments in Online Behavioral Advertising, Privacy and Social Media*, DORSEY (2009), https://quirkyemploymentquestions.com/privacy-rights/consumer-privacy-issues/.

[131] ABA Antitrust, *FTC Tells Sears That Consumer Disclosures Must be More Conspicuous*, ABA (June 30, 2009), https://thesecuretimes.wordpress.com/2009/06/30/ftc-tells-sears-that-consumer-disclosures-must-be-more-conspicuous/.

[132] *Id.*

[133] *Id.*

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While the FTC currently enforces Section 5 against businesses involving use of the Internet, Amazon Go creates a new need to protect consumers from the brick and mortar in-store and in-person data collection by high tech information systems.[134] That is why Section 5 needs to be amended to include specific language regarding consumer tracking using technology in physical stores. In the Sears software situation, consumers had all personal information on its computer tracked without consent by signing up to use Sears' software.[135] This is comparable to the Amazon Go store, where just by walking into the store, consumers will have their every move tracked, picture taken and stored, and personal information and shopping patterns stored in the Amazon Go system without consenting.[136] Where the FTC was able to restrict Sears' online data collection under Section 5, the language of Section 5 needs to be amended so it can provide restrictions for the Amazon Go physical store.[137]

Aside from broadly interpreting Section 5, the FTC has to rely on alternative tools in the legal system to stop businesses from using technology to infringe on consumers' privacy.[138] If the FTC, with the help of a Consumer Reporting Agency, gathers evidence that a business has violated its standards, it can issue a complaint and follow the necessary steps for the case to be heard in front of an Administrative Law Judge (hereinafter referred to as "ALJ").[139] If the ALJ deems there is a violation, then a cease and desist order is declared. A cease and desist order is a legally enforceable order directing an entity to stop engaging in a particular activity.[140] These cease and desist orders are the "primary tool" the FTC uses to stop "anti-consumer practices."[141] If violated, the FTC can seek civil penalties through the court system.[142] This process that the FTC has to engage in to enforce its consumer standards is lengthy but necessary to protect consumers.[143] It would be more efficient if Section 5 of the FTC Act was amended, so the FTC did not have to go through this

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[134] *Id.*

[135] Krasnow & Skrief, *supra* note 130, at 4.

[136] AMAZON GO, *supra* note 4.

[137] Krasnow & Skrief, *supra* note 130, at 4.

[138] Acosta et al., *supra* note 112, at 4.

[139] *Id.*

[140] West, Annotation, *Validity, construction, and application of § 5(l) of Federal Trade Commission Act (15 U.S.C.A. § 45(l)), providing for imposition of civil penalty for violation of FTC cease and desist order*, 24 A.L.R. Fed. 539 (1975).

[141] *Id.* at 1c.

[142] *Id.*

[143] Acosta et al., *supra* note 112, at 4.

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long process every time it suspected a standard was violated and businesses would be aware of the federal law governing its activity.[144]

Individual states are capable of enacting state legislation to protect themselves against consumer privacy invasions.[145] Unfortunately, national chains, such as Amazon Go, performs business through interstate commerce; therefore federal legislation would best protect consumers.[146] Because corporations will continue implementing the latest technology in their physical stores, amending Section 5 of the FTC should include specific language that regulates consumer privacy with regards to new technologies, limits on RFID tags, limits on data collection and clear consumer consent requirements.[147] It would also be beneficial for Section 5 to include instances where use of technology violates consumers' privacy.[148] Lastly, amending Section 5 should include anticipatory language for future technology involved in business so the FTC has the power to combat new privacy concerns to consumers' personal information as they arise.[149] It is understood that federal legislation geared towards combatting privacy concerns associated with newly-utilized technology has a purpose to "enhance consumers' ability to recognize privacy invasions and prevent undesirable ones from recurring."[150] Therefore, it is critical for Section 5 to be amended to protect consumers.

V. CONCLUSION

Amazon is prepared to move forward with this store facilitated by autonomous technology.[151] According to the *Wall Street Journal*, it is estimated that after the Seattle store, Amazon plans to expand to 2,000 Amazon Go stores nationwide.[152] Amazon is undoubtedly at the forefront of autonomous shopping experiences and other corporations will be looking to it for guidance to navigate this new

[144] *Id.*

[145] Laura Hildner, *Defusing the Threat of RFID: Protecting Consumer Privacy Through Technology Specific Legislation at the State Level*, 41 HARV. C.R.-C.L. L. REV. 133 (2006).

[146] Stevens & Safdar, *supra* note 1.

[147] *See generally* West, *supra* note 140.

[148] *Id.*

[149] *Id.*

[150] Dee Pridgen, Annotation, *Consumer Privacy in the Digital Marketplace: Federal Initiatives*, 33 WYO. L. 14, 15 (Oct. 2010).

[151] Boyle & Bishop, *supra* note 25.

[152] *Id.*

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marketplace.[153] If Amazon addresses privacy concerns early on and keeps consumers aware that they are being tracked when they enter the store and allow them to consent, then it will provide an efficient service while respecting consumer privacy, in an ever evolving technological marketplace.[154]

Amazon has access to the previously discussed FTC reports to utilize for guidance, evidencing the fact that these reports are publicly attainable, until federal legislation is amended to regulate this new marketplace. As more specifically mentioned, the FTC has written reports on dealing with privacy concerns about RFID tags, facial recognition technology, and data collection.[155] The Amazon Go store involves a combination of these three technologies, so these reports are helpful when navigating new technologies and respecting consumer privacy.[156] Consumers essentially waive their right to privacy when they walk into an Amazon Go store, due to the mass collection and storage of their personal data.[157] With greater transparency as guided by the FTC reports, consumers can choose to shop elsewhere or waive certain privacy rights for convenience.[158]

While the FTC can and has brought claims under Section 5 of FTC Act, there is a new need for federal legislation to be more specifically targeted toward online stores and physical stores that abuse the technology to track consumers.[159] Companies need legislative guidelines on what information they can collect from consumers, what they can do with this information and how transparent they must be with consumers. The FTC's reports are helpful to protect privacy, if companies actually follow them.[160] There is a great need to amend Section 5 of the FTC to deal with consumer privacy in this new autonomous retail world.[161] Just Walk Out technology should not give Amazon the opportunity to walk all over consumers' privacy.

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[153] *See* Stevens & Safdar, *supra* note 1.

[154] *See id.*

[155] *See generally Protecting Consumer Privacy*, F.T.C., https://www.ftc.gov/news-events/media-resources/protecting-consumer-privacy (last visited Mar. 15, 2017) [hereinafter F.T.C. V].

[156] Boyle & Bishop, *supra* note 25.

[157] *Id.*

[158] Boyle & Bishop, *supra* note 25.

[159] 15 U.S.C. § 45 (2006).

[160] *See generally* F.T.C. V, *supra* note 155.

[161] *Id.*

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