



# CLICK HERE TO SELF-REFRACT



In 1995, Amazon.com was launched as an online book retailer. Founder Jeff Bezos settled on book sales for a variety of reasons, including the ubiquitous demand for books worldwide, their relatively low cost, and the availability of a very large number of titles.<sup>1</sup> By the mid-90s, companies such as Dell had already demonstrated that the online sale

of computers and other electronics was a viable business model.<sup>2</sup> As Amazon expanded to products such as DVDs, CDs, and software, retailers of other items such as clothing, shoes, and cosmetics presumably comforted themselves that there were many categories of consumer goods people would probably never buy online. What these retailers could not envision was that technology would completely change the online shopping experience.

Today, with only a few clicks of their mouse or finger, most consumers can instantly search and display nearly any item imaginable and have it arrive on their doorstep in a couple of days. If they are unsure whether a product is just right for them, they can usually access Youtube videos posted by prior purchasers that helpfully review the exact item in excruciating, if not obsessive, detail. Should an item fail to satisfy the buyer, it can be returned to the seller with free shipping. Amazon pioneered many of these features, and the company is currently on track to account for 50% of all US online sales by 2021.<sup>3</sup> With its Amazon Prime Now service, the company has shortened the supply chain timeline even further by offering the 1- to 2-hour delivery of thousands of items in most major cities. The acquisition of Whole Foods Market is Amazon's latest area of expansion. A clue to what the company plans might come from the Amazon Go pilot store in Seattle, where cashiers have been replaced with sensors that detect what customers select and automatically bill their accounts as they depart the store.<sup>4</sup>

It is no surprise that online retailers of glasses such as Warby Parker and Luxottica's Glasses.com have disrupted the optical industry by providing a low-cost, convenient alternative to optical shops. Some online retailers allow consumers to try on glasses virtually, whereas others simply

ship multiple pairs for comparison. In 2015, 22.5% of all US prescription glasses sales occurred online, and online contact lens sales were even more robust at 30% of all US sales.<sup>5</sup>

Now, companies such as Opternative and Simple Contacts hope to disrupt the refraction process with innovative technology offering completely online vision testing. Opternative provides new glasses and contact lens prescriptions online, whereas Simple Contacts offers an online test that allows users to refill an existing contact lens prescription. Critics have wondered about the accuracy of self-administered home glasses tests and have expressed concern that dangerous eye conditions may go undetected without an examination. Although each company stresses that its services are not a substitute for a complete eye exam, the need for an updated glasses or contact lens prescription is what triggers many eye exams.

A home-administered glasses test will never equal the accuracy of a careful refraction, but the reality is that many individuals will opt for a convenient online alternative that is "close enough" for their needs. As more and more of the population shifts to the online delivery of goods, it is only a matter of time before more and more services follow the same trend. With fewer refractions bringing in eye exams, eye care providers will have to figure out how to ensure that treatable conditions are promptly identified and treated. ■

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1. Amazon.com, Inc. History. FundingUniverse. <http://bit.ly/1i1JGOq>. Accessed August 22, 2017.
2. Koehn N. *Brand New: How Entrepreneurs Earned Consumers' Trust From Wedgwood to Dell*. Boston: Harvard Business Press; 2001:287.
3. Wahba P. Amazon will make up 50% of all U.S. e-commerce by 2021. *Forbes*. <http://fortune.com/2017/04/10/amazon-retail>. Published April 10, 2017. Accessed August 22, 2017.
4. Silver C. Amazon announces no-line retail shopping experience with Amazon Go. *Forbes*. <http://bit.ly/2vceTUb>. Published December 5, 2016. Accessed August 22, 2017.
5. The Vision Council. VisionWatch Internet Influence Report November 2015. <http://bit.ly/2vzbQDj>. Accessed August 22, 2017.