Like so many other adults older than 60, I have had gastroesophageal reflux disease (GERD) for years, and I am taking a generic medication for the long-term. Refilling this medication quarterly, even at our university’s hospital-based pharmacy, is inconvenient, and I have to phone in the refill and personally appear to pick it up. There is no delivery option.

So, as suggested by an excellent and timely equity research report from Goldman Sachs, imagine a day “when you can ask Alexa to have your Lipitor [or in my case, omeprazole] refill arrive at your doorstep in under 2 hours, get recommendations for food and wellness products based on your health and the drugs you take, see a virtual doctor, and access your medical history all on your Amazon app.” This scenario is not far away, and according to this report from Goldman Sachs, a disruption like this may be imminent. I’m going to discuss aspects of this report and provide my assessment of their predictions.

As noted in that report, it is not surprising that Amazon has shown interest in the national drug delivery marketplace, because spending on prescription drugs in 2016 was in excess of $560 billion, or $445 billion after all of the manufacturer rebates have been passed back to payers. Just remember Amazon’s recent purchase of Whole Foods, and its promise to essentially deliver all products and services to your doorstep literally within hours.

This explains why the US drug supply chain marketplace is a potential Amazon target. This marketplace has grown at nearly a 5% rate over the past 5 years, and because of demographic trends that support the aging of the US population, there is what the analysts call “a robust long-term growth outlook.” Specific players in this complex pharmaceutical supply chain, including wholesalers, pharmacy benefit managers (PBMs), and pharmacies, have carved out $135 billion of gross profit, or 30% of the net drug spending (ie, 30% of $445 billion is $135 billion) for the services they provide. This is a huge margin and, therefore, a potentially very attractive target for Amazon.

Given the size and scope of this market, according to the experts, how might Amazon actually enter our complex world of wholesalers, PBMs, and other middlemen? The Goldman Sachs team believes that the first key step might be a partnership with an existing PBM.

Let me summarize aspects of the team’s thinking. Currently in our country, 5 national PBMs control more than 90% of the market, including Express Scripts, CVS, OptumRx, Humana, and Prime. With national scale, these PBMs may be the first place that Amazon would turn to, to form a partnership. Through this partnership, Amazon could expand its skill set into areas where it already has some amazing capabilities. For example, Amazon has “leveraged consumer click stream data and historical purchase data to optimize product recommendations,” the report suggests.

Simply put, Amazon could use its amazing population-based analytic capability to analyze prescription data and then make specific patient-level recommendations. And in my case, for example, using a long-term medication for GERD, Amazon could tell me, “Dr Nash, why don’t you shop at Whole Foods? Here are some healthy alternatives to foods that might not produce the same level of esophageal reflux.” This may sound futuristic, but it is quite doable.

Another aspect of the partnership model that could be attractive from Amazon’s perspective, the team at Goldman Sachs suggests, is the potential to avoid all the associated federal and state pharmacy regulations associated with operating an online pharmacy. Amazon could leverage this new relationship beyond the drug supply chain, and this could represent its first step toward a greater push into digital health, including telemedicine. Alexa could refill my omeprazole, and if I need to talk to a provider, or a nutritionist, or an exercise physiologist, these providers (or specialists) could be reached readily through a telemedicine channel controlled by Amazon.

Back to the inconvenient visit to the pharmacy to pick up my medications scenario—how could Amazon disrupt this transaction? What if Amazon could leverage its enviable distribution and logistic infrastructure to speed up a home delivery of the drug? I may be willing to forego a $4 cash-pay generic drug, and pay a $5 copay for the same drug, if it included next-day delivery, or maybe delivery within hours, if I’m an Amazon Prime subscriber. What is the value to me of such a quick turnaround? Quite frankly, I would be happy to pay the extra $1 to have generic omeprazole delivered.
to my front door as rapidly as possible.

Paradoxically, online and mail penetration of pharmacy, unlike other industries, has been declining, according to the report, representing only 12% of the total prescription volume today compared with 17% in 2010, although 70% of all prescriptions in the United States are used for the long-term and are taken every month. This reversal is in part because retail pharmacies, by accepting lower reimbursement rates, have made it cost-neutral for consumers/payors to fill Rx via mail vs. at a retail store,

but this is still a suboptimal experience, in terms of the ordering process and lack of follow-up with the patient once the prescription is delivered.

In other words, although prices have come down, it is currently not a data-rich environment that Amazon is so accustomed to. Here, I believe, is the best opportunity for Amazon to disrupt the drug delivery industry, glean amazing information about all patients (with their permission), and provide ongoing services to anyone who is using a medication for the long-term.

If Amazon does not pursue a joint venture with a PBM, one other scenario noted in the report would be to develop a large-scale retail pharmacy footprint. In other words, go into the marketplace either by purchasing a major pharmacy chain, or leverage the existing new relationship with Whole Foods. 

I can imagine doing my shopping, following a healthy diet, and picking up my omeprazole prescription in a Whole Foods store. There happens to be a beautiful new Whole Foods store within walking distance of my townhouse; however, there are some limitations.

Although Whole Foods has 446 physical US locations, which are now supplemented by the Amazon delivery infrastructure, leading pharmacy chains such as CVS and Walgreens, for example, each has more than 8000 locations nationwide. It was often touted that more than 80% of Americans live within a 3-mile radius of a CVS or a Walgreens store; for Amazon to duplicate this kind of infrastructure would be a formidable undertaking.

Alternatively, Amazon could take its 446 Whole Food stores and use them as a jumping-off point for drug distribution within a 1- to 2-hour window in certain key zip codes and test markets. I sure would be open to that, to have my omeprazole arrive from the local Whole Foods literally within hours.

It’s not likely that I will be asking Alexa to refill my omeprazole tomorrow, but given the billions of dollars available in an industry ripe for disruption… I’ll make a prediction that within 2 years we will see Amazon enter some portion of the drug distribution marketplace.

As always, I’m interested in your views and you can reach me at david.nash@jefferson.edu. Please be sure to let me know if Amazon is making a move in your market!

References