J. STERN & CO.

*The Value of Long-Term investing*

*Insight*

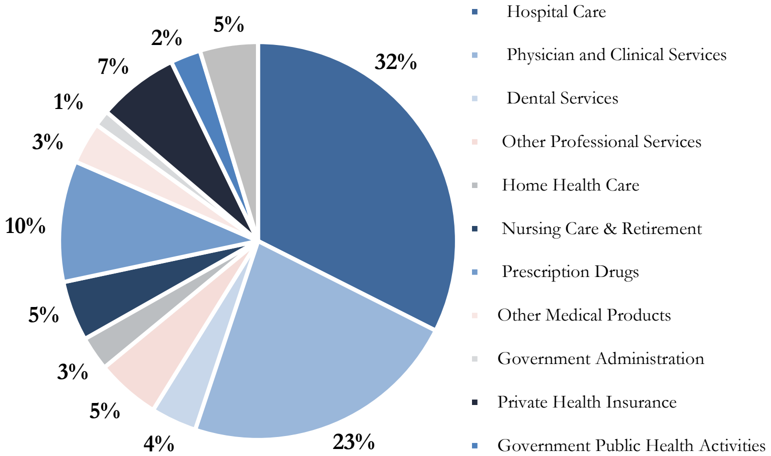
## "YOUR MARGIN IS MY OPPORTUNITY" AMAZON ENTERS HEALTHCARE

One of my favourite quotes from Amazon's founder Jeff Bezos is 'Your margin is my opportunity'. In the past decade, Amazon has ruthlessly targeted industry after industry by offering consumers a low-cost alternative, cutting the margin of existing companies and establishing itself as a formidable disrupter of the targeted industry. Today, there is no greater margin opportunity than the massively inefficient US healthcare industry. For months, the market has speculated that the next target for Amazon might be healthcare. On 28 June this year, Amazon announced it is acquiring an online pharmacy PillPack for a reported sum of $1bn marking its official entrance into the US pharmacy business.

### AMAZON OPPORTUNITIES

In 2016 the US health care industry was worth $3.3 trillion and is forecast to grow by 5.5% pa to $5.7 trillion by 2026, accounting for 19.7% of the GDP. In our Insight entitled 'Valued Based Healthcare' last year, we highlighted that the US healthcare system is at its breaking point in its current form as the cost of healthcare spirals to an unaffordably high level.

**2016 Total US Health Spending $3.3 trillion**




Source: CMS National Health projections

We see several segments of healthcare that Amazon can have impact on by lowering costs. The table below outlines the segments, margin potential and the ease of disruption.

| | Examples of Incumbent | Barrier to Entry | Profit Margin | Ease of Amazon Disruption |
|---|---|---|---|---|
| **Distribution** | | | | |
| Medical/Dental Supplies Distribution | McKesson, Henry Schein, Patterson Companies, Inc., Cardinal Health | Low | Medium | High |
| Drug Distribution | McKesson, AmerisourceBergen, Cardinal Health | Medium | Low | Medium |
| Drug Mail Order | CVS Health, UnitedHealth Group, Express Scripts | Low | Medium | High |
| Drug Retail | CVS Health, Walgreens, Walmart | Low | Medium | High |
| **Manufacturing** | | | | |
| Pharmaceutical | Merck, Roche, Novartis | High | High | Low |
| Medical Devices (Implant/Capital Equipment) | Medtronic, Siemens Healthineers, Stryker | High | High | Low |

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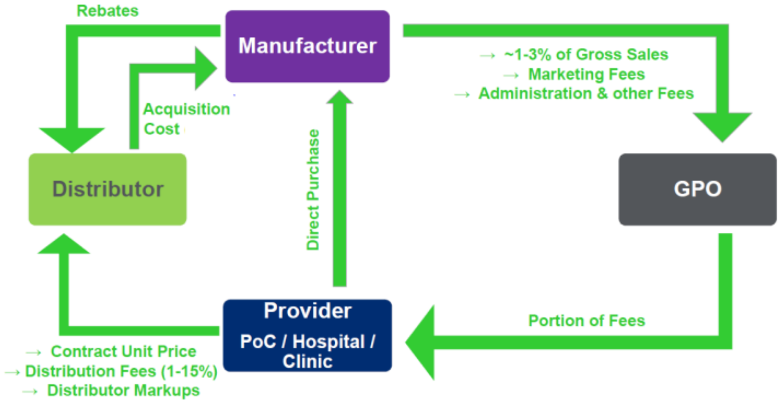
We anticipate that Amazon will initially be focussing on areas where barrier to entry is low and profit margins are reasonable. Medical supplies distribution and pharmacies (both online and retail) stand out and offer the best opportunities in the near term. We discuss each of these in detail below.

## AMAZON IN MEDICAL SUPPLIES DISTRIBUTION

### What is the existing structure?

The US medical supply distribution market was worth $45 billion in 2015 and its structure is complex and intertwined with multiple players, each taking a share of the profit pie. It is ripe for disruption.

Hospitals typically purchase 70-80% of their supplies through Group Purchasing Organisations (GPOs) which act like a co-operative with multiple hospital members to achieve the scale. Some large hospital chains like HCA even have their own GPOs. GPOs negotiate contracts and secure better pricing from manufacturers leveraging their enlarged purchasing power. Members of GPOs are required to buy their supplies from the GPO contracts and pay the negotiated prices.




Source: Adapted from Citi Research

The GPO does not distribute medical supplies directly but chooses their preferred distributors like Cardinal Health, ABC, etc to fulfil the contracts. The hospitals pay the distribution fees and distributor mark-ups.

The elephant in the room in this structure is the conflict of interest. GPOs are paid by manufacturers and the payment is based on percentage of revenues they secure in the contract. The higher the contract prices, the higher the fees for GPOs. In addition, manufacturers also pay the GPOs marketing, administration and other fees.

Distribution of medical supplies are regulated by state agencies and only a half of states regulate this activity.

### What is Amazon up to?

Amazon ventured into the healthcare in August 2016 following the hire of Chris Holt, a former executive at Cardinal Health (healthcare distributor), Vizient (GPO) and UPS, to head its global healthcare division. It is already present in the distribution of medical supplies to the US hospitals through Amazon Business. Perhaps more telling is that in September this year, Amazon hosted its first IDN (Integrated Delivery Network) Insights conference at its headquarters in Seattle. It is a biannual conference normally attended by executives from the healthcare supply chain. Chris Holt presented 'Amazon Business Story' and repeated Amazon's ambition to grow in healthcare as a technology provider and a Marketplace for sellers and buyers. He emphasised that Amazon has no specific strategy or timeline for healthcare and is in the experimental stage, in his own word 'put things out there, try them out, learn and iterate them quickly'.

Amazon has already obtained wholesale distribution licenses in several states and has distribution facilities. Through these licenses, Amazon distribute medical supplies via its web-based Amazon Business platform, a familiar format to the existing hospital purchasing system where orders are also fulfilled online. A recent survey of 102 US hospital executives conducted by Morgan Stanley showed that 65% of respondents have purchased items from Amazon. Today, purchases through Amazon represent 4% of the total hospital spend and are expected to grow rapidly. The overriding reason for purchases from Amazon is price. Greater discounts versus the GPOs negotiated price will encourage further adoption.

On a recent visit to my periodontist, I asked him about his thoughts on using Amazon Marketplace and distribution for all his dental supplies. 'Absolutely not' he replied. He explained, 'the real problem is there are too many fake products on the market'. 'What if Amazon negotiates with and sources directly from manufacturers and guarantees the authenticity of products, which are priced at say 20% discount? Would you consider a switch from your current distributor to Amazon?' I asked. 'Sure!' he replied.

**Where are the margins for Amazon?**

We see both Amazon Business Marketplace and medical supplies distribution as representing a sizable opportunity. Although Amazon indicates that their priority is in the Marketplace at the present, we see disruptions occurring at the GPOs and distributors level in the medium to long term. As the Marketplace encourages competition, improves transparency and ultimately offers better prices, given Amazon's scale and purchasing power, the role of GPO could become redundant. Amazon would capture both GPO and distributor margins.

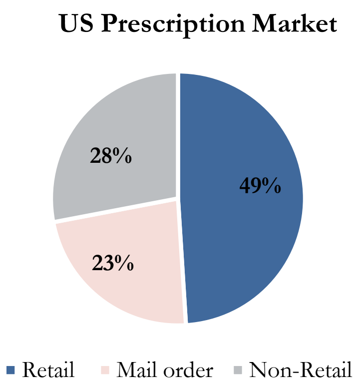
Today, most purchases from Amazon are non-physician preference and commodity items like gloves, gowns, etc., representing low hanging fruit. Amazon is only present in distribution, not in manufacturing, but could at some point enter the private label manufacturing of commoditised medical supplies, capturing more margins in the supply chain.

On the other hand, we see the barrier to entry to manufacturing complex capital equipment and highly innovative implants is significant because these activities typically are tied to a service contract or require skilled sales representatives to work with surgeons in the operating rooms. These segments would present significant challenges due to required technical and capital investments and are unlikely to be disrupted by Amazon in the near term.

## AMAZON IN PHARMACY

### What is the size of the market?

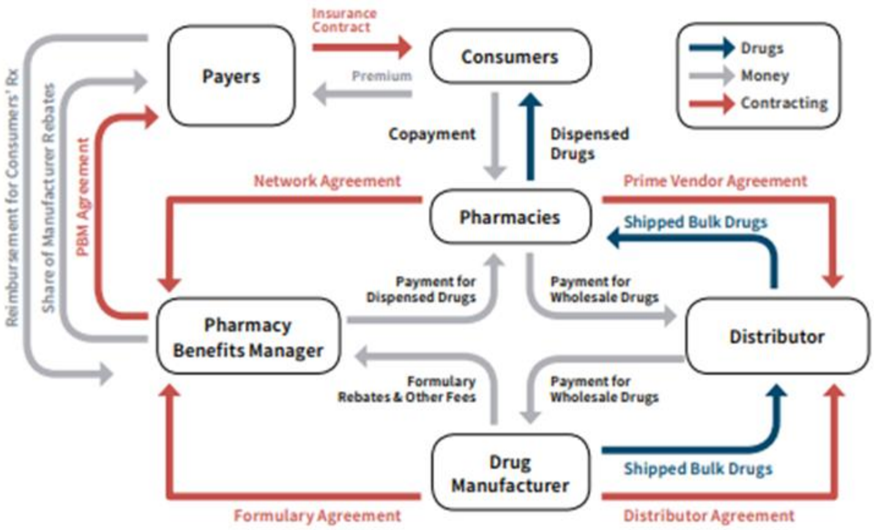
The US retail prescription drug market is a much bigger prize for Amazon than the medical supplies market. It was valued at $329bn in 2016 and is estimated to grow at 6-7% CAGR between 2017-2026. Already, mail order pharmacies represent 23%



in 2016, with retail pharmacies (49%) still the largest part of the market.

**What is the existing structure?**

Take a look at the schematic diagram showing the drug supply chain. It is mind boggling. It has multiple players each taking a share of the profit pie. Like medical supplies distribution, it is also ripe for disruption.




Source: The US department of Health & Human Services

Pharmaceutical Benefits Managers (PBMs) play a pivotal role in negotiating drug prices with drug manufacturers and in deciding formularies eligible for reimbursement. They receive rebates from drug manufacturers and charge a fee to health insurers (payors) for their services. In addition, they operate centralised mail order pharmacies. PBMs have the power to decide which drugs are covered by insurance plans and which are not. They also decide which pharmacies are included in their network of insurance coverage. In mail order pharmacy, PBMs typically limit the coverage exclusively to their own pharmacy business.

Lack of transparency at PBMs has also been blamed for contributing to the high drug prices. Indeed, the U.S. Department of Health & Human Services in its recent Blueprint has proposed the abolition of the PBM rebate system for government plans like Medicare.

**What is Amazon up to?**

The purchase of PillPack online pharmacy marked its first step in the shakeup of the pharmacy supply chain by Amazon.

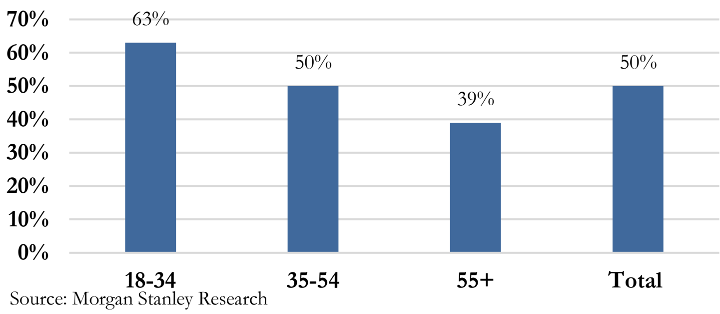
PillPack was founded in early 2013 and manages customer prescriptions drugs by packaging and delivering them to customers. It has licenses in 50 states and presence in 49 of them. Customers receive pre-sorted individual dosage drug packs that include instructions and dosage timing. The pack offers convenience and is particularly helpful in drug adherence to seniors and to those with multiple illnesses. The company monitors the customer's account and co-ordinates with physicians for refills and changes of prescriptions. It handles insurance claims and is covered by most insurers. The portal also provides a dashboard where customers can check their account balance and offers Vitamins and OTC drugs alongside prescription drugs.

**Where are the margins for Amazon?**

**Expanding PillPack market share and save own healthcare cost:** Early this year, Amazon, JP Morgan and Berkshire Hathaway announced that they are forming a healthcare company (NewCo). The three companies, together with close to one million employees, have something in common. They all have employer self-insured health plans and they all want to reduce the cost of healthcare.

Under the self-insured health plan, employers take the insurance risk, design their own benefits, and appoint and pay a fee to healthcare providers like PBMs to administer their plan. It is possible that PBMs (like Express Script, CVS) may kick PillPack out of their coverage network following the acquisition by Amazon as it would present a much greater threat to PBM's own mail order business. One way to ensures that PillPack retains its position in the PBM's coverage network is through NewCo, which could insist that PBMs like Express Script, CVS include PillPack online pharmacy in their network. Once NewCo members are on board, Amazon could increase the number of customers by finding other self-insured employers.

**Amazon Prime Penetration by Age Group**




Source: Morgan Stanley Research

Employers getting together to form a healthcare coalition that increases its purchasing power through economy of scale is not new. In 2016, Health Transformation Alliance (HTA) was formed with more than forty members and has five million employees in the network. Organisations like HTA could be an ally for NewCo to gain scale with PBMs.

The enlarged memberships give Amazon more buying power and gain savings for its own health plan as well as helping PillPack pharmacy to expand its foot prints.

**Expansion of Prime offer to seniors via online pharmacy:** Amazon's move into pharmacies is synergistic with its existing online retail structure. Seventy percent of all prescriptions are repeat medication and are therefore particularly suitable for either mail order or online pharmacy, but there is a disconnect. The average age of prescription drug users is 54 and they account for a significant portion of the repeat prescriptions. On the other hand, the average age of an Amazon user is 37 years old. A survey conducted by Morgan Stanley showed that Amazon's Prime penetration amongst those aged 55 and over is at its lowest and well below the average. Online pharmacy can help Amazon's penetration into the older population and expand its Prime offer to the previously underserved senior market.

With a better user interface and improved operating efficiency through the centralised online portal, Amazon can reduce the pharmacy cost of the existing structure by eliminating a sizable number of 70,000 bricks & mortar retail pharmacies just like it has done to high street retailers.

We believe Amazon is likely to use an established healthcare distributor like ABC or Cardinal initially and deploy a low margin (even a loss-making) strategy to lower drug prices and co-pays for consumers and to gain market share. Over time, Amazon could establish relationships directly with drug manufacturers to produce private label medicines, enter the drug distribution and even the PBM business to capture the entire value chain although this will require a significant capital investment.

**Amazon in bricks & mortar pharmacies?** Whilst online/mail order pharmacies are best suited for chronic conditions with repeat medication, thirty percent of retail prescriptions are for acute conditions that require immediate medicines, and hence there is still a need for brick & mortar pharmacies.

Amazon has already made inroads into bricks & mortar retail through the acquisition of Whole Foods Market, which has 470 stores today. It reportedly plans to open 3,000 cashier-less Go stores by 2021 in major cities after experimenting with the concept in Seattle. Amazon could leverage its increasing presence in bricks & mortar stores and expand into in-store pharmacy in major metropolitan areas over the medium term if it wished to go down this route. Consumers could 'click and collect' (order online and collect in store) or see a pharmacist at the store while shopping for groceries. The capital investment to replicate bricks & mortar pharmacies, however, will be considerable.

**Alexa as a healthcare concierge:** "Alexa, refill my Viagra". In the long term, we see Amazon's opportunity beyond the current healthcare structure. Using the virtual assistant Alexa developed by Amazon, consumers can order medicines and get them delivered to their door within a few hours through their Prime membership but can also access and eventually leverage their medical history, see a virtual doctor, self-diagnose an illness or obtain recommendations for food and nutrition products, which are then fulfilled through the Amazon platform. In other words, Alexa could lock in a consumer's healthcare needs within Amazon's ecosystem. The margin opportunities could therefore be virtually limitless.

Nobody really knows where Amazon will ultimately end up in healthcare. But one thing is certain, Amazon will continue to evolve and re-evolve and be a major disruptive force in healthcare. As long as the market is willing to give Amazon the capital to experiment and to invest and governments/regulators do not put a brake on Amazon's ambition, someone else's margin will eventually be Amazon's opportunity.

We will continue to follow Amazon's progress in healthcare across our investment team and look forward to updating you in the coming years.

*Zhixin Shu*
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