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Rethinking Indian Pharma Distribution: Countering e-pharmacies

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Piyush Kumar has suffered from diabetics for more than 35 years. He needs to take his medicines regularly. However, during the Covid-19 lockdown, he was homebound, and so he placed his order at an e-pharmacy for the first time. The company sent him his medicines by courier in a few days at a 20%-25% discount compared to what his regular chemist used to charge him. Very convenient and much easier on the pocket! He is now placingmonthly orders. The company also offers cost-effective substitutes to the prescribed medicines with the same composition. He is deliberating whether to make the switch.

The Indian pharmaceutical sector was ripe for disruption, and the exigencies created by Covid-19 gave the e-pharmacy format the much needed push. e-pharmacies can be seen slowly encroaching into the role traditionally played by the local chemists – by offering over the counter medicines for run of the mill kind of ailments, chat bots for instantaneous first aid, review of local doctors/ assistance in finding doctors, suggestions for labs for taking tests, home delivery of medicines, explaining details about the medicines, etc. What more, they are also slowly eroding the clout currently enjoyed by local doctors, by offering services such as consultations and diagnostics, referrals to other specialist doctors, health advice and tips, recommendation of cost-effective substitutes to the current doctor-prescribed medicines with the same composition, alternative medicines such as Ayurveda, suggestions for health check-ups, etc. They are also going beyond the services typically associated with chemists/ doctors by offering services such as booking of appointments, reminders regarding pills/appointments/ check-ups, quick delivery of online reports, etc.

With increasing customer patronage, E-pharmacies such as Tata 1mg, Medlife, PharmEasy, Netmeds, etc., are now aggressively gunning for a large share of India's US$ 42 billion[1]pharmaceuticals market. Currently, there are close to 50 e-Pharmacies in India, and estimates peg the market size (2019) at $ 0.5B. The market is expected to grow at a compounded rate of 44 per cent to reach $ 4.5B by 2025.[2] The business and distribution model of these e-commerce companies offer a sharp contrast to that of the existing chemist network.

Comparison between the e-pharma model and the traditional chemist model

Unlike the direct-to-customer model of e-pharmas, the traditional pharma distribution model of pharma companies is made up of a multi- echelon network of Carry & Forwarding Agents (C&F), depots, stockists and sub-stockists. The pharmaceutical companies' representatives educate doctors about their brands, and lobby hard with them with gifts, conference grants, trips and other expensive tokens to prescribe their medicines and not that of the competition. The patient presents these prescriptions to one among close to 8.5 lakh unorganized chemists (90% of sales)[3] or hospital linked chemist counters, who then fill them. This incumbent distribution modelusually suffers from several disadvantages in comparison to the business model of the new e-pharmacies.
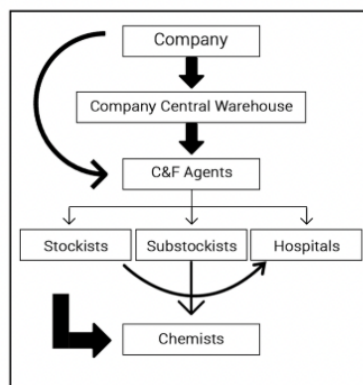

Figure 1: Current Pharma Distribution Chain in India[4]

Poor reach

The supply chain network of most pharma companies tends to be fragmented and unorganized. Since smaller towns and villages across the hinterlands of the country do not have adequate number of chemists and/ or continuous availability of medicines, it is estimated that more than three-fifths of Indians have to do without consistent access to modern medicine.[5]

Moreover, in many of the smaller Tier 2 and 3 cities, many consumers have awareness and purchasing power, but lower access to major brands. E-pharmacies are also trying to reach out to such customers. As such, this could be one of the reasons why more than 45 per cent of the new users onboarded during the Covid-19 outbreak were based out of non-metros.

Poor availability and infiltration by spurious drugs

Such a fragmented and unorganized supply chain, with sporadic or persistent unavailability of in-demand medicines at local chemists, can encourage spurious drug makers to try to sop up this demand. A report by the WHO found that about 10.5 per cent of medicines sold in low and middle-income countries, including India, are substandard and falsified. This sometimesleads to distrust of chemist outlets among customers. The new e-pharmacies are taking advantage of this customer mistrust ofthese local chemists, and are wooing customers by promising to supply genuine drugs sourced directly from manufacturers and licensed resellers.

Figure 1: e-Pharmas Taking Advantage of Customer Distrust of Traditional Chemists?

High inventory carrying costs

The challenge for the traditional channel is that the multi- echelon distribution network has to manage upwards of 250,000stock keeping units (SKUs), with variation of brand preferences across geographies. Maintaining availability at all points in the network is not easy, and involves significant investment in inventory for channel partners. However, the cost of lost sales is high (companies can make up to 70% margin on every unit sold). So, this necessitates high inventory (see table 1) and high inventory carrying costs for all members in the supply chain. Higher inventory than needed is also often due to forcing/ tempting partners to buy in volume either to meet targets or to avail discounts. For instance, though most of the stockists place orders at least once or twice a week, and the depots are close by, they still hold 30 days to 2 months stock.

Further, in order to ensure timely availability of their products, large companies also tend to have to procure a large number of items (Active Pharmaceutical Ingredients/Raw Materials/Packaging Materials), from multiple vendors servicing multiple manufacturing facilities. So, issues with raw material availability, long manufacturing lead times and forecasting inaccuracies too, lead to the creation of excess inventory at the company warehouse.

Table 1: Inventory Levels of Pharmaceutical Company/Plant (s) and Distribution Channel
(Source: Research at Vector Consulting Group)

| | RM | | | WIP* | FG** | | | |
	API	Excipients	PM	WIP	CWH	C&F	Stockist/ Sub-stockist	Retailer
Typical Inventory in Days of Sales	2.5 - 4 months	2 - 3 months	0.5 - 2 months	Few Days - 2 months	1- 4 months	1.5 - 2 months	1 - 2 months	15 Days - 30 Days

(Note: *WIP varies based on process involved
**FG Inventory levels vary based on what is considered fastmoving, slow moving or new introductions)

Unlike the traditional set up, most e-pharmacies ship medicines and supplements directly from a warehouse/licenced distributorto the customer. So, there is very little inventory with them.

Expensive write offs

Maintaining a huge inventory in the channel and in the company warehouse for highly regulated products such as medicines comes at a risk of obsolescence for pharmaceutical companies. They are obligated to take back any expired/ damaged inventory from the channel, and destroy it along with any inventory which would have gotten spoiled in the warehouse itself. So, companies are forced to write down or write off huge amounts of obsolete inventory (1-4% of total inventory by value value), sometimes running to several million dollars' worth a year.[6]

Since in e-pharmacies, inventory held is low, and they can also return expired inventory to companies, inventory write-offs due to expiry, damage, etc. is nil on the books of these firms.

Ramification on the competitiveness of the traditional distribution model

The only way for the pharmaceutical companies to support theviability of the high-cost traditional model, is to ensure that the drug prices are buffered with significant trade margins (margin between ex-factory price and retail price)[7] from which C&F, doctors, stockists and retailers can get their "share".[8]

Table 2: Trade Margin Typically Enjoyed by Traditional Channel Partners of Pharmaceutical Companies
(Source: Research at Vector Consulting Group)

	C&FA	Stocklist/Sub-stockist	Retailer
Trade Margin*	1%-4%	10%-30%	16%-50%

Note: *Margins are different for different Drugs. Higher margins are offered for unregulated drugs, and is usually associated with short duration schemes
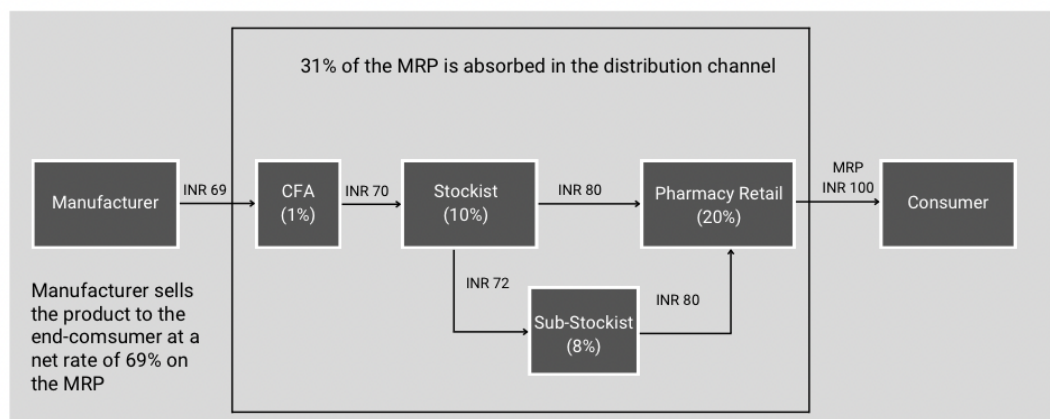

Figure 3: A Sample Cost Structure for a Product with MRP of Rs.100[9]

Even medicines that are demarcated as essential medicines[10], and are under government price cap, enjoy 16% and 8% margins for retailers and stockists respectively (for comparison: major biscuit brands offer ~10% to retailers, 3%-5% to distributors/stockists). Unregulated drugs offer significantly higher trade margins[11] and companies are free to hike prices by up to 10% annually[12]. This situation has made CCI, the market watchdog, report that the major factor leading to high drug prices in India is the unreasonably high trade margins.[13]

An e-pharmacy operating in this market without as much costs,but the same margin, is obviously at a huge advantage, and can offer significant discounts (15%-25% discounts are a norm currently) and sustain these discounts for a long time. As far as customers are concerned, if the same drug can be purchased at a cheaper price, and it is delivered reliably within their tolerance time for waiting, this can stimulate them to patronize these e-pharmacies. This is especially likely for people with lifestyle diseases and/or continuous dependence on drugs for whom the discounts could offer significant savings.

At this rate, it is expected that online sales may represent 10%-12% of all medicine sales in India just in the next five years! If pharmaceutical companies do not react to the threat (as yet small), they will see a steady decline of sales, and eventual marginalization of their traditional distribution channel. To double the trouble, there is a move by the Department of Pharmaceuticals, Ministry of Chemicals and Fertilisers to cap trade margins for all medicines (including ones outside price control) at 30%.[14] If this comes to fruition, the cushion that allowsmany companies to sustain this inefficient model will become very thin. With any fall in sales (as is very likely with the growth of e-formats), the traditional channel will become unviable.

As the traditional channels die out and e-pharmacies become the major channel for distribution, power equations will shift in their favour. They will insist on being serviced directly by the pharmaceutical companies instead of the stockists (which is currently the dominant practice). Selling to a few large e-pharmacies as opposed to numerous stockists will bring pharma companies under significant and continuous pricing pressure. Therefore, it is in the best interest for the companies to take steps to protect themselves against this threat.

What is a way out?

For a way out, we have to first understand the core problem because of which the supply chain and the current network of pharmaceutical companies is so inefficient, and find a way to overcome these and thereby have the ability to reduce margins to competitive levels that allow companies to pass on the gain to the customers to secure their continued patronage.

A closer examination will indicate that all these problems accrue from the current forecast (inherently inaccurate) and push based model of manufacturing and inventory movement. In addition to being forced to carry a large amount of stock of many SKUs in the channel to protect against lack of availability and sales loss, this model also leads to long manufacturing lead times and high inventory creation at the pharma manufacturing units.

However, if pharmaceutical companies move away from aforecasting and 'push-based' operations to 'pull' mode of inventory creation and distribution, they can cut lead time of manufacturing, reduce costs, improve availability, build huge efficiencies, and significantly increase sales.

This involves the following changes at the manufacturing plants:
- Shift away from monthly planning to daily perpetual planning
- Abandon forecast based raw material ordering, and adopt a combination of pull replenishment with dynamic stockadjustment for raw material procurement

For more information about how to implement dynamic 'pull' principles in procurement and manufacturing practices to address the challenges in pharma manufacturing, please visit https://bit.ly/Vector_AcceleratedPharmaManufacturing

At the same time, in the distribution system, companies will have to implement:
- *A pull replenishment system from the Central Warehouse to depots:* Adopting such a system means that once inventory is created at the manufacturing plants, it will be maintained at a central warehouse (companies currently operating without one will have to add one) rather than pushed downstream based on forecasts for various geographies.
- *Small lot supplies to stockists instead of last week monthly push:* The entire supply chain will now have to respond to daily consumption signals from the market. When an SKU is consumed at stockists, a trigger for replenishment goes to the C&F, and from the C&F to the CWH as soon as each of these nodes dispatch products to their downstream node.
- In order to ensure that these pull signals are not derailed, it is important to forgo the current practice of forcing/ tempting partners to buy in volume either to meet targets or to avail discounts, especially at month ends. Insteadsupplies should be in frequent and in small lots based only on consumption. Not pursuing volume sales opportunities will also enable the company to maintain harmonious channel partnerships, by protecting price hygiene in the market.

The advantages of this model are:

a) Reduced Inventory in the channel: The fact that, in this model of inventory management, inventory is kept at an aggregate level (see figure 4), the point experiencing the least variability of demand, and shorter lead times due to daily consumption triggers, will allow the company to serve different geographies with agility, whilst keeping the lowest possible overall stock in the system.
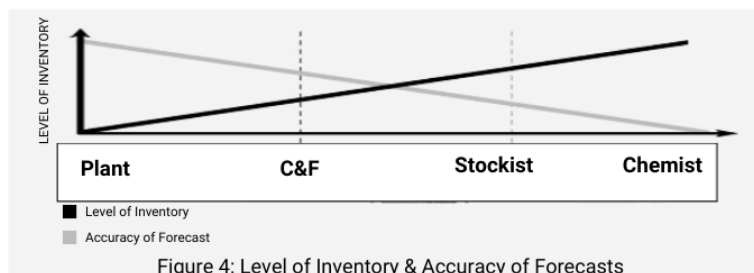

Figure 4: Level of Inventory & Accuracy of Forecasts

Parameter	Current Value (Inventory - 45 Days); (Credit - 30 Days)	Inventory Reduction (Inventory - 21 Days); (Credit - 30 Days)
Sales (per month)	1,50,00,000	1,50,00,000
Gross Margin (@10% Including Incentives)	15,00,000	15,00,000
Operating Expense (p.m.) @7.0%	10,50,000	10,50,000
Net Profit (per month)	4,50,000	4,50,000
Earnings (per annum)	54,00,000	54,00,000
Inventory	2,25,00,000	1,05,00,000
Market Credit	1,50,00,000	1,50,00,000
Total Investment	3,75,00,000	2,55,00,000
Return on Investment (on net Capital Invested)	14.40%	21%

Table 3: Illustration of the Impact of Inventory Reduction on ROI of a Stockist

Moreover, lower nodes such as stockists and chemists in the supply chain, which experience the greatest variability in demand, can still manage high availability with lower inventory. Further, since higher sales and better availability are at considerably lower levels of inventory (and higher inventory rotation), stockists and chemists will be able to improve their current ROI.

This can be seen illustrated in Table 3. With replenishment in frequent and small lots, inventory would come down. And if inventory is reduced, even if all other parameters,including sales, are held the same, this can lead to a jump in ROI. The released capital will help the company and stockists focus on higher market coverage.

b) Better market coverage: An aggressive approach of reaching out to all potential chemists (big and smallchemists even in the hinterlands) to offer frequent and reliable deliveries is a necessary condition for the company to be able to sustain the "pull" mode of operations, and bring down inventory levels in the channel further. This step will help break the month end skew in sales (often > 60%) and prevent the counterproductive build-up of inventory to compensate for this inefficiency of the system. Further, instead of basing individual KRAs and reviews of the sales team on primary sales, if these performance trackers can be refocussed on market coverage metrics such as increase in the growth of the company's retailer/chemist base, range, and sales at each retailer, this will enable faster enrolment of retailers and placement of the relevant range at maximum retail points. As a consequence, sales will grow exponentially. What is interesting is that even a very conservative increase in sales (10%) through better coverage at reduced inventory levels can give huge gain in both earnings and ROI for channel partners (see Table 4).

Parameter	Current Value (Inventory - 45 Days); (Credit - 30 Days)	Inventory Reduction (10%) Inventory (- 21 days) credit (- 30 days)
Sales (per month)	1,50,00,000	1,65,00,000
Gross Margin (@10% Including Incentives)	15,00,000	16,50,000
Operating Expense (p.m.)	10,50,000	10,50,000
Net Profit (per month)	4,50,000	6,00,000
Earnings (per annum)	54,00,000	72,00,000
Inventory	2,25,00,000	1,15,50,000
Market Credit	1,50,00,000	1,65,00,000
Total Investment	3,75,00,000	2,80,50,000
Return on Investment (on net Capital Invested)	14.40%	26%

Table 4: Illustration of the Impact of Inventory Reduction and Sales Jump on Earnings and ROI of a Stockist

c) Increased availability of range: In such a "pull" system, stockists can operate with just 7 to 10 days inventory (generally, the maximum distance between a stockist and the nearest depot of a pharma company is no more than 3-4 days). This will help further release capital locked in the inventory of some of the SKUs, which can be used to add many more SKUs to the range, and further fuel market coverage.

d) Increased secondary sales: In pull systems, sales at all nodes are a true reflection of consumption at a lower node - sales from the company to stockists will be a reflection of the sales of stockists to retailers, and sales at stockists will be a reflection of market consumption from retail/ chemist points. Thus, the company can get visibility of what is sold to each retailer by stockists (IT systems already exist that can provide this level of detail, though they rarely share this info). This will allow managers of pharma companies to further fine tune secondary sales enablers and actions.

As the market coverage increases to reach the huge unserved corners of the country (as mentioned earlier in this article, three-fifths of Indians have to do without consistent access to medicines from any brand), sales will continuously increasewith gains from capital released from inventory, and increased sales fuelling further investment in reach and range additions. And once this distribution network has been established, the company will be able to leverage this highway to introduce new products to further continue to increase sales.

Since this exponential growth in sales can occur with comparatively negligible increase in investments by the company, it will allow the company to reap rich rewards inprofits. For instance, in the example below (see Table 5), if we assume that all other parameters that affect profits as unchanged, a very conservative increase in sales of 10% led to 40% increase in profits for the company. This will give companies an option of taking e-commerce companies head on, by passing some of these gains to customers to ensure their continued patronage.

Parameter	Current	With 10% Increase in Sales	Comment
Sales (Rs. in crores)	5000	5500	-
Variable Costs (VC) (Rs. in crores)	3000	3300	VC assumed as 60% of Sales
Gross Contribution (GC) (Rs. in crores)	2000	2200	GC = Sales - VC
Fixed Costs or Operating Expenses (FC) (Rs. in crores)	1500	1500	Negligible Increase in FC
Profit (GC-FC) (Rs. in crores)	500	700	40% Jump in Profits!

Table 5: Illustration of the Impact of an Increase in Sales by 10% on Profits of the Company

Final step: Going Hyperlocal to neutralize the threat e-pharmacies

With a more streamlined and agile flow of material and higher market coverage, and more competitive prices, the traditional pharma channel can grow from strength to strength in the country. However, even with such a large and continuously growing physical reach that can match any e-pharmacy, pharma companies will still not be able to replicate at chemist stores, the range availability of e-pharmacies. An average offline pharmacy is limited to 6,000 - 8,000 SKUs, in contrast to an online pharmacy which can supply 50,000+ SKUs, thanks to the fact that e-pharmacies are virtual entities, and enjoy access to unlimited shelf space.[15] Moreover, there is a need to cater to a growing segment of the populace who may prefer to buy online.
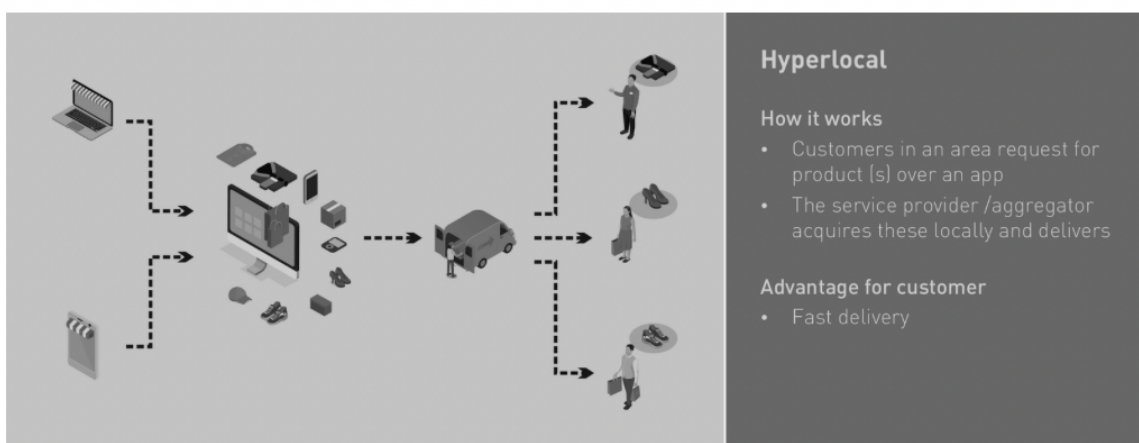

Figure 5: Using Hyperlocal E-Commerce Platforms to Offer Better Range

For this, pharma companies will have to collaborate with hyperlocal e-commerce platforms once market converge and reliable availability in an area is ensured. With such a partnership with a hyperlocal platform, customers will have the ability to shop from the inventory available in the immediate locality and place orders over an app. The capability built to have very high availability in its many stocking points (warehouses and stockists) across the country by adopting a pull-based distribution model, can now be leveraged to offer same day/ few hours delivery with unmatched reliability – a service that would serve as a significant competitive advantage.

*R Kannan is the Founder & M.D of Novacare group of companies, which is involved in the distribution of medicines, medical devices, and surgical consumables. The firm operates as CFA, Super stockists and Stockists, and represents over 150 Pharmaceutical companies.

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