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Reducing Supply Chain Complexity to Orchestrate Patient OTIF Starts with Demand-Driven Segmentation!

Key Takeaways

- Demand-driven practices should be built into segmentation analyses to improve supply chain and business performance.
- With proper segmentation analyses, pharma companies can meet patient demand on time, in full (OTIF) and avoid the need to carry excess inventory.
- Developing these types of segmentation analyses in healthcare is challenging because insight analytics are in their infancy—but it can be done.

By Roddy Martin | May 15, 2020

Have you ever wondered why?

In an industry traditionally known for having more than a year of buffer inventory to ensure patient supply at all costs, they still experience stock outs in one segment, such as a hospital or retail pharmacy, while there are excesses of the same product in another branch of the same retail pharmacy chain at the same time!

Yet, in lower-margin consumer goods beauty and healthcare companies, product color assortments are different in same stores across the same city because demand-driven segmentation analyses are embedded in planning and promotion management. Based on those buyer and demand analyses, they plan schedules to send the right product to the right place at the right time to meet specific buyer demand or promotion plans. Because the plan started with a segmented understanding of the buyer and the defined factors that drive buyer decisions, the product is made and then shipped to the right store and will be available for the customer when wanted!

Similarly, in faster-moving, frequently-changing consumer electronics and consumer goods channels where huge demand changes can occur with a simple product change, demand-driven segmentation is embedded in supply chain design and new product planning in order for manufacturers to be competitive and survive.

These are examples where demand-driven behaviors, that can have a huge implication on customer OTIF, can be built into a segmentation analyses and improve supply chain and even business performance.

Building this same capability in complex healthcare demand and supply networks is difficult because patient models and insight analytics are still in their infancy, and privacy issues make segmentation models hard to build. However, this is changing as augmented analytics with artificial intelligence capabilities become more sophisticated and emerge as viable opportunities to embed continuous demand-driven segmentation into planning and demand responsiveness models.

Failing to codify a representative, outside-in segmented understanding of demand drivers impacts the very capabilities needed for agile healthcare performance.

The combination of poor demand forecast accuracy with a lack of understanding and structure to categorize demand-driving behaviors in healthcare, leads to

mismatches between demand and supply. For example, product availability shortages; ineffective product launches; wasted and expired inventory; and poor responsiveness to patients' needs, especially when supply chain disruptions such as COVID-19 occur. To avoid this, a segmentation model is needed at the heart of agile patient-centric supply chain design, planning, and execution.

Without insights from patient-driven segmentation, agile and cost-effective healthcare is difficult because:

- The supply chain network is product-push driven and not patient-needs pulled.
- Demand needs are "generally" met by prioritized product supply pushes and by stocking safety inventory.
- A baseline understanding of demand-driving behaviors is missing as a bias in planning processes and supply processes will often have to deal with unexpected demand.
- Demand planning is not matched to specific supply chain capabilities (replenish or flexible) or to buyer behaviors or scenarios that drive demand.

Agile supply chains need baseline segmentation capabilities

Agile healthcare is focused on orchestrating OTIF fulfillment at the patient, even when planned and unplanned disruptions impact the supply chain. Agile patient-centric performance is more likely to be successful when an outside-in, codified understanding of the patient and demand scenarios like a new product launch are used in planning. These include understanding how prescribing decisions are made, how the supply chain must perform to meet patients' and product needs (e.g., cold chain) OTIF, and how planning is translated back into the supply network of manufacturers and contract manufacturers.

Another example of the value of demand-driven segmentation is evident in the COVID-19 testing scenario in the United States. The COVID-19 testing scenario is currently evolving to become the "USA's Go Back to Work Manhattan Project."

Initial data indicates that the spread and execution of testing capabilities is woefully inadequate and uncoordinated because it is not segmented based on test kit availability, prioritized demand needs, and demographic test patterns across high-risk population groups.

Going forward in the new normal digital healthcare network operating model, patient-driven demand segmentation must be:

- Built as a specific business capability enabled with augmented analytics.
- Implemented as a continuous outside-in, demand-driven business performance analysis process.
- Integral to supply chain strategy and supply chain network design.
- The basis of the Integrated Business Planning process, the planning model, and inventory management processes.

With a digital network platform that has embedded augmented analytics and a data mesh to create a digital twin of physical product movement , for example in Healthcare, continuous segmentation modelling and analyses of demand data will provide an insight-based planning structure to drive trade-off decisions incorporating demand behaviors, patient usage data, and supply chain characteristics; all key to improving demand forecast accuracy and achieving patient OTIF.

To better understand these concepts, consider two questions in a healthcare supply chain design to illustrate the different type of supply chains needed for two products in different scenarios using a segmentation model analysis based on demand-driven behaviors.

1. Is demand and usage of the product predictable and does the relationship with the dispenser provide visibility data so that the supply chain can be configured as a lean automated replenishment operation? For example, demand for annual influenza or insulin products is predictable.

2. Is demand for the product still unpredictable because of newness and information-sharing relationships with dispensers that are not well developed? In this case, only limited visibility and information is shared. Again, consider the example of COVID-19 test kits. This segment requires a flexible and agile supply chain that can be quickly reconfigured and adapted to meet specific and changing testing segment needs. This would allow specific types of testing kits to be placed where they are most needed and then changed if necessary.

Segmented analyses point out that these are two different supply chains with different behaviors driving prioritized supply chain capabilities (lean versus agile). Based on segmented analyses, they need to be planned and executed differently; but because demand-driven segmentation criteria was used, the match between product, demand, and availability is improved and patient OTIF more likely!

These are just two of the many archetypal behavior criteria found in Dr. John Gattorna' s book, "Dynamic Supply Chain Alignment," which includes pivotal research into segmentation models and is based on the author's work with leading global manufacturers over the years. In a specific quote from John Gattorna for this article, he says:

"You can't reduce complexity by simply blindly re-engineering internal processes. That leads nowhere. Instead, take your cue from studying customer expectations, which cut specific conventional institutional segments. This will reduce the number of segments to 4-5 instead of 10-15, while accounting for up to 80 percent of your target market. Using these behavioral segments as your frame-of-reference, reverse engineer back inside your organization, outside-in, with precision, thereby reducing complexity, and improving your ability to meet a range of customer expectations, cost-effectively. Customer satisfaction will inexorably improve, and so will top-line revenue."*—Dr. John Gattorna, supply chain thought leader and author.*

Note that demand-driven segmentation is different than traditional inside-out sales

segmentation, which is a marketing and sales exercise aimed at maximizing customer service and profitability by having different customer service rules associated with different channels and products based on business value.

Dave Aquino, an experienced Chief Supply Chain Officer, COO, and CIO in consumer goods and personal protective equipment, summed up the importance of outside-in segmentation.

“When you understand the demand-driven characteristics of your different products, customers, and forecast accuracy,” he said, “you can now plan to truly place the right products at the right place and the right time, increase availability for the patient, reduce supply chain complexity, and save lives.”

Conclusion: Build segmentation capabilities and OTIF will improve!

As a reaction to gaps uncovered during the COVID-19 pandemic, expect leaders to build continuous demand-driven segmentation modelling and analysis into their healthcare partner network planning and healthcare operating processes. The goal will be to create more patient responsiveness in healthcare supply chains of the future without relying on expensive and often limited shelf life inventory buffers to guarantee patient OTIF fulfillment.

With accurate demand-driven insights and defined responsiveness to patients, performance can be analytically planned for and executed without building additional capacity and resources into the supply model to guarantee availability. The agile healthcare goal is to minimize the impact of unplanned disruptions and surprises by continuously understanding what is driving demand and then matching supply with demand.

Remember: The “7 Habits” adage is true—begin with the end in mind. Plan to meet the patients’ needs OTIF by starting the plan with an understanding and characterization of the patient’s actual needs first; then build to meet those needs cost-effectively and accurately!

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