A&M INSIGHTS

Postponement: The Vital Supply Chain Strategy for Pharmaceutical Manufacturers

In a recent A&M article, **"Healthcare supply chain priorities to support recovery and resilience"** Postponement, or Late-Stage Customization, was identified as an important approach for pharmaceutical manufacturers. This article provides an overview to help leaders assess its potential for higher performing supply chains.

Postponement – a solution to changing market conditions

Postponement is a supply chain strategy for rapid response to changing market conditions. Lead-times are reduced, working capital is cut and waste is minimised. In contrast to traditional 'make-to-forecast' approaches, postponement is a 'make-to-order' tactic, where products are rapidly customized from stocks of almost complete products, often in close proximity to customers.

Well known businesses such as Dell use postponement to keep remarkably low inventories while maintaining short lead-times. Toyota also employs postponement strategies to make vehicles to specific customer requirements, without excess inventory or long lead-times.

There is a growing need for postponement in pharmaceutical manufacturing. COVID-19 increased the demand for patient-centric supply chains and approvals for high-value, small-patient population medicines are rising[1]. Meanwhile, manufacturers continually need to cut costs and release working capital.

However, despite being used successfully in other industries, postponement's use in pharmaceutical manufacturing has been somewhat rare due to limited awareness and complexity[2].

[1] Innovation on hold during the pandemic? FDA says no with 29 approvals in first half of 2021 | FiercePharma

[2] Postponement packaging: getting drugs to patients faster (manufacturingchemist.com)

Postponement for pharmaceutical manufacturers

Postponement models improve on-time, in-full (OTIF) performance metrics, reduce lead-times and decrease stock inventory. They are particularly suitable for high-value, low-volume medicines with short-shelf lives, such as cell and gene therapies and rare disease medicines. And yet, some pharmaceutical manufacturers have successfully applied postponement in consumer business contexts, such as supplying e-retailers.

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While postponement is a straightforward concept, it is difficult to design and apply. Typically, pharmaceutical executives want to know:

- Why postponement is relevant, and what benefits will it deliver in my business?
- Where should postponement occur? Central location or in key markets?
- Where should product manufacturing processes be decoupled for greatest flexibility?
- Should postponement be developed in house, or purchased as a service?
- How can products be simplified to support postponement strategies?
- Who are the best partners to operate the new model?
- How does existing operational performance management need to be adapted?
- Do sales and operations planning (S&OP) governance and processes need to change or do companies need to adopt other approaches like demand driven material requirements planning (DDMRP)?

To answer these questions, leaders must understand the inherent complexity in employing postponement strategies, accounting for multiple factors, including customers, products, manufacturing and product and financial flows. It's also crucial to have a firm grasp on the best ways to build responsiveness and resilience into networks, as well as the financial case for making the change. This requires cross-functional engagement[3], a structured analysis and a robust approach, set out in the chart below.

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Area	Aspect	Key areas to consider
Understand complexity	Customers	Demand, lead-time, SKUs, OTIF, order frequency, order volumes, packaging requirements
	Products	Shelf-life, cold chain, formats, labelling, pack sizes, concentrations, master data
	Manufacturing	SKU proliferation along manufacturing processes, decoupling options
	Flows	Product and financial flows, inventory, IT & planning approaches, third party involvement
Design for responsiveness and resilience	Network	Hub locations and models, bright stock locations, use of third parties, transport modes, planning, IT
	Portfolio	Opportunities to rationalise portfolios, change formats, simplify packaging
	Technologies	In-line printing of blisters, frozen chain labelling
Determine financial returns and execute	Business case	Options and business cases considering speed to market, scalability, OPEX, CAPEX
	Implement	Actionable plans considering use of partners, technical transfers, regulatory changes... implemented at pace

[3] Including Sourcing, Planning, Manufacturing, Logistics, Sales, Quality, Regulatory and Legal

Understand rationale and complexity

The rationale for postponement needs to be clear from the outset. Analysis should show how issues would be resolved through its application. For instance, companies can avoid running out of stock by simply holding more inventory; however, that approach increases working capital, heightens the risk of products expiring and leads to more waste and obsolescence.

Postponement can address these potential challenges, but leaders must first focus on understanding the requirements of their customers. What are their expected lead-times, service levels and order frequency? That will determine how the network is set up. For instance, can customers be supplied from a central global postponement hub, or are regional or country configurations needed?

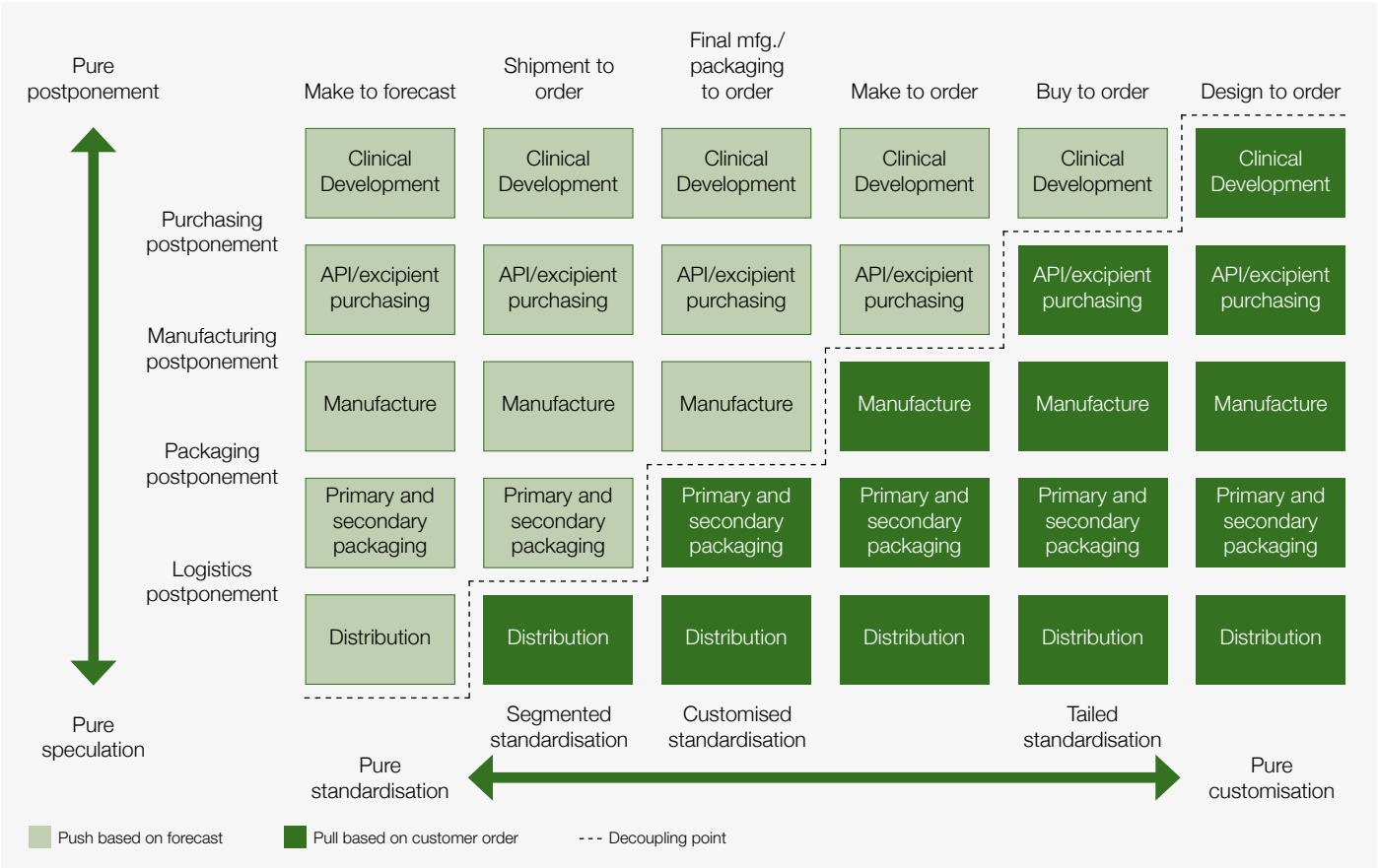
Secondly, product characteristics such as shelf-life, temperature requirements, formats and pack sizes need to be analysed and commonalities identified. Groupings of similar products can help to optimise utilisation of assets within a postponement setup.

And finally, leaders should map out manufacturing steps to understand where SKUs proliferate. For example, products might be the same until the blistering stage in packaging, after which many country specific SKUS are generated as blisters are printed and packaging occurs.

A key strategy in dealing with these complexities is to develop a 'decoupling point' where the process is disconnected and a controlled stock of partially finished products is established. From this point, products are rapidly customized to customers' orders.

Leaders should map out the product, informational and financial flows to understand the issues and how the many stakeholders along the supply chain are involved. Additionally, the change from a make-to-forecast to a make-to-order process means management must understand how its existing planning system operates.

The chart below summarises these considerations and can be used as a starting point to think through network design. For instance, a network 'decoupled' at an early manufacturing stage, would look quite different to one with a single postponement hub for secondary packaging.



Design for responsiveness and resilience

To design a postponement supply chain network, organisations should be guided by important factors, such as OTIF, lead-time, working capital, CAPEX or OPEX. Scenarios can be developed and assessed to determine locations of hubs and bright stocks (unlabelled finished products) locations.

The right level of automation for postponement hubs also needs to be determined. What portion of the network should be manual, semi-automatic or fully automatic? In addition, any investments required to build out the network should be included in the business case for the project.

Organizations have several options for tapping into third-party expertise and the efficiencies they can provide. Contract Manufacturing Organisations (CMOs) and logistics service providers (LSPs) offer specialist capabilities to help companies gain a deeper understanding of appropriate modes of transportation, cost per product, lead-time and any working capital implications.

In parallel to defining the big picture, leaders must pay close attention to such considerations as master data and how the organization's enterprise resource management (ERP) and information technology (IT) services would need to be changed to capture the various categories of distribution in the new network. Different order points may be needed to differentiate between finished products and bright stock, for instance.

To increase flexibility, it is important to simplify packaging, including standardising text, symbols and languages. These changes require significant regulatory input, particularly around new material numbers and re-registrations. All these issues need to be facilitated through any project.

As new lines are set up, some will need to be decoupled, or require moving production equipment from one location to another. At each step, the necessary quality approvals will need to be obtained.

One of the key changes in setting up the new postponement network is how best to print product-specific information on to blank blisters or labels at a late production stage. Here, the latest technologies such as inline printing can be employed to ensure the right information about the batch and its manufacturing date is applied. CAPEX versus OPEX using a third party needs to be considered in the business case. In other words, should the organization invest directly in the technology needed to print labels and prepare them for final delivery or should it pay a third-party outsourcer to do the work?

Whichever route companies decide on, master and transaction data must be 100 per cent accurate and supported by robust master data processes and IT systems.

Determine financial returns and execute

Companies can benefit by evaluating two to three network options in terms of OPEX and CAPEX, as well as key criteria such as speed to market, scalability and ease of implementation.

Once a suitable option is agreed upon, leaders can develop an implementation plan that takes into consideration the use of third parties, technology testing and purchasing, technical transfers, data improvement, and regulatory changes, among other factors. They should also allocate dedicated project resources to implement the changes, including use of project management organization (PMO) and tracking tools to measure progress and ensure milestones are achieved as intended.

Conclusions

More responsive and resilient supply chains are needed in pharmaceutical manufacturing, and postponement is an effective way to accomplish this. We hope this overview will inspire you to consider implementing this supply chain method to achieve the next level of performance within your organization.

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