

Strategy is not a Spectator Sport: Supply Chain Planning's Role in Strategy

By Allen Jacques



EXECUTIVE SUMMARY | Supply chain planning is tactical and operational by nature but many companies overlook the role of Supply Chain in strategic decision making. In this article I discuss why the supply chain planning function is uniquely positioned to assess the impacts of strategic decisions like outsourcing vs insourcing, capital investments in manufacturing sites, and new product launches. With real life examples from my time working in the Pharmaceuticals industry, I argue that our discipline understands better than anyone the risks and opportunities associated with large scale initiatives and the implications for inventory, customer service, cash flow, and EBITDA. Further, I recommend that for organizations where Supply Chain is purely tactical and operational, efforts must be made to earn a seat at the strategic decision making table.



ALLEN JACQUES | Allen is an Industry Thought Leader at Kinaxis. Before that he served as VP of both Global Technical Operations and Biologics and External Manufacturing for Leo Pharma based in Denmark. He also served as VP of Network Supply Planning at Pfizer, and earlier in his career in a variety of roles at Wyeth and Baxter Healthcare. In addition to these roles directly in industry, Allen also served a stint at a vendor FusionOps/Aera Technology, where he was their VP of Pharma Supply Chain. He has worked across the life sciences spectrum in pharma, biotech, hospital, and consumer divisions and in the US and Europe. Allen has a scientific background, with a BS in Microbiology from the University of Maryland and doctoral studies in Biochemistry at Johns Hopkins.

During my career in supply chain I have seen planning evolve from an operational focus (0-3 months) to include tactical (4-24 months) and ultimately to (3-5 years and up to 10 depending on the industry). Supply chain planning must be at the table for strategic planning, especially for decision making that

involves long term manufacturing capacities.

I worked for a company where the manufacturing organization was almost vilified due to issues in supply that caused problems in meeting customer demand. We were approaching the biggest launch in the company's history. To support this launch, we were locking into short, medium, and long term capacities with our contract manufacturers. Due to issue after issue with supply over the previous couple of years, my manager was extremely risk averse and insisted on a strategy for this new launch that would supply double the forecasted demand for the first two years post-launch. Sales did not achieve forecast for the first two years and long term projections were reduced. As a result, we had massive excess inventory early on and were locked into a seven year commitment for capacity with one of our contract manufacturers. This big initiative was a failure, one whose impact could have been mitigated had Supply Chain been involved in decision making.

SUPPLY CHAIN KNOWS THE PRO & CONS OF DIFFERENT STRATEGIES

The supply chain organization has a responsibility in determining a company's long term capacity requirements and in modeling them around various demand scenarios so that an organization understands the pros and cons of different strategies. In the example above, the strategy my manager insisted on should have been assessed against multiple demand scenarios and evaluated by a cross-functional

team including Manufacturing, Marketing, Commercial, Finance, and Supply Chain. That team would then align on the best strategy rather than my manager making a decision in isolation. There are multiple reasons supply chain plays a critical role in this process:

Only supply chain knows how the end to end supply chain works: Critical factors in supporting a product launch from a manufacturing perspective include manufacturing designs, flows, capacities, and flexibility. That's not to mention process yields, expected process improvements and approval timing; success rates (probability of batch failures); and lead times and lead time variability.

Supply chain understands how performance drives financial results: It is Supply Chain who understands the connection between operations and financial performance. More than any other function, we are acutely aware of the impacts of decision making on short, medium, and long term revenue, as well as on inventory and cashflow. We know better than most how initiatives like optimizing the manufacturing footprint, CAPEX investments, and new product launches, for example, impact key financial metrics.

Only supply chain understands demand modeling: While demand planning can reside outside supply chain, it is typically a supply chain function, and it is us who has strong relationships with Commercial, Marketing, and R&D teams. Further, it is Supply Chain who understands what short, medium and long term demand will be for new products and New Product Introduction timelines. Supply Chain knows the Probabilities of new product success and has an excellent perspective on how a product goes from ideation to manufacturing, to planning, to delivery.

Supply chain understands inventory strategies: We know the safety stocks and inventory buffers to support a successful launch while avoiding obsolescence and understand our agility (or lack thereof) in production to adapt to changing demand post launch.

In short these are all a part of Supply Chain's day-to-day responsibilities and activities and this is the only function that routinely interacts with Manufacturing, Commercial, Finance, New Product and, in some cases, Regulatory, teams. This positions Supply Chain perfectly for a seat at the table in strategic planning.

THE PROCESS OF ESTABLISHING A STRATEGIC PLAN

The first step is to establish a long-term demand plan for currently commercialized products with the Commercial organization and Finance. Each product will have an expected life cycle, new product enhancements, and a decline (possibly due to cannibalization), and finally, discontinuation. This demand plan will form the input baseline for manufacturing capacity since there is typically a much better understanding of patterns and competition.

The next step is understanding the pipeline and the timing for new product launches. This is the step that needs the most rigor and cross-functional collaboration across the organization because it will have a profound impact on a company's long term financial objectives. The horizon could be 5 to 10 years depending on the industry and the lead time to add new capacity. Over that horizon there could be dozens of new product

launches, each with its own demand expectations and impacts on existing products if they are not novel in nature. In the pharmaceutical world most of this is based on early stage clinical data with the uncertainty of regulatory approvals around the world. An overly optimistic view of pipeline success results in wasted investments in manufacturing capacity while an overly pessimistic view results in lost revenue. I have seen both and these swings can be in the hundreds of millions of dollars. The rule of thumb in Pharma is that only 15% of molecules that enter into the clinical phase get regulatory approval. I submit that there needs to be objective skepticism for all new product launches to protect organizations from investing in expensive excess capacity. That goes to the heart of a company's entire strategy.

Once there is consensus around long term demand, i.e. commercial products plus pipeline, this demand needs to be aggregated around the technologies and manufacturing capacities needed for production. This will give a long term view of capacity requirements which can be compared to existing capacity to identify gaps and when they need to be filled. Each technology has its own lead time for construction/tech transfer, validation, and commissioning. Using these lead times you then establish milestones for triggering decisions around the construction and/or out-sourcing of new capacity. These milestones need to be for every step of building new capacity, i.e. purchasing of land, construction of the shell, purchasing long lead-time equipment, hiring, training, etc. In this way, you can mitigate risk by treating your decisions as real options. You always have the option of stopping or changing course as

new information becomes available. Stopping is always a difficult decision because of sunk costs but we must balance that with an analysis that forgets past investments and focuses on the most cashflow positive decisions going forward. We must be willing to "pull the plug" regardless of how much money has already been spent.

One of the first major product launches I was involved with was a monoclonal antibody for rheumatoid arthritis. Our strategy was to outsource process development and manufacturing for launch and a short period post launch, then make a decision on internal capacity after seeing how well the product did. The product was very successful so over a billion dollars was invested in internal capacity that came online after four years. Even though there were several years where supply was not meeting demand, this strategy not only protected us from investing in unneeded capacity had the product not done well, but also allowed us to right size the capacity we did invest in based on how well the product was doing.

I do however want to make it clear that outsourcing is not without its downsides; it requires making long term capacity commitments with limited flexibility even if it turns out that the products are not needed, as was the case in my first example. On a positive note, we did not need to make the financial commitment upfront as with a new facility, rather the cost was spread over seven years.

I know of a large Pharma company who invested approximately one billion dollars in a greenfield manufacturing site eight years ago. It is now operating at just over 50% of capacity. The lesson there is that there are risks in such investments and that modeling demand pre and post launch is critical.

INSOURCING OR OUTSOURCING FOR NEW PRODUCT LAUNCHES

The insourcing/outourcing decision is a critical outcome of this process and depends on the following considerations :

- Your internal technological strengths and IP
- Your size and cashflow position
- The size of your pipeline, the larger it is the less risk there is
- Available contract manufacturing capacity
- Importance of flexibility and agility: internal manufacturing gives you much better control
- Product cost: long term internal manufacturing gives you much better control

In many cases the R&D group makes decisions in isolation for new products for manufacturing capacity. In a Pharma context, commercial manufacturing needs to be a part of these decisions to ensure the ability of manufacturing operations to scale from the small volume developmental, to BioPharma clinical phases, to commercial volumes that will meet the first 3 to 5 years of forecast. This helps avoid scale up delays due to tech transfers and implementation of new equipment.

CONCLUSION: PLANNING IS MORE THAN OPERATIONAL OR TACTICAL

I would like to end with some com-

ments around long term supply chain planning. First of all, it does not need to be at the SKU level so there is no need to build a commercial planning environment with detailed Bills of Material and master data until you are within a year or two of launch. Secondly, it does not need to be in weekly or monthly buckets. Annual buckets are fine for the long term, and quarterly for the medium term. Thirdly, the planning cycle is probably only a few times a year unless new information becomes available that warrants a refresh. All of this is important because forcing

planning at too low a level of granularity and too frequently wastes time and resources that should be spent in other areas. So, operational and tactical planning need to be granular, i.e. SKU level and weekly, but as your horizon goes further out you can take a step back and aggregate products and time buckets. In my experience I have not seen planning solutions that make this transition smoothly which is unfortunate, especially since your tactical plan is your starting point, your data baseline, and the foundation of your strategic plan.

I hope this reveals that supply chain planning is much more than operational and tactical. I have always felt that supply chain is unique in its understanding of how everything fits together operationally and financially. And, because of this, has a profound responsibility not only in optimizing current assets and resources but also in mapping out the optimal future network. If you are in a supply chain organization that is not involved in strategic planning, then you need to find a way to get involved and have a seat at the table.

—Send comments to JBF@ibf.org