Optimize Your Launch Sequence Strategies

Maximize global revenue from international pharmaceutical product launches
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The High Cost of Pricing Myopia

When launching a pharmaceutical product, it’s not enough to negotiate the best reimbursable price for each local market. Overall financial performance will depend on successfully managing go-to-market strategies at the global level. That means determining the optimal price and launch sequence for all the countries in which you intend to commercialize a new product.

It’s a complex question. External market forces, governmental pricing pressures, parallel trade and global reference price modifications have not only reduced launch prices but caused in-market selling prices to erode by 3 percent to 6 percent a year. Even a slight price change in one country can mean a big hit to prices, revenues and margins around the globe.

A key influence in this trend is international reference pricing (IRP), also known as external reference pricing (ERP), a cost-control approach that is widespread outside the United States. It’s the practice of regulators using the pricing of a medicinal product in one or more countries (a reference basket) to derive a benchmark for setting or negotiating the reimbursable price of the same (or similar) product in that country. For example, a commonly used rule stipulates that when a product is launched in a given country, its price must be no higher than the average price for that country’s reference basket.

Why It Matters

“The existence of reference pricing policies ‘ups the ante,’ or increases the pressure on pharmaceutical manufacturers to avoid selling at a low price, as that low price could be used to affect pricing in other countries that use reference pricing,” according to researchers in the global pharmaceuticals practice at Charles River Associates. Haste to enter the market risks sacrificing significant revenues over the product life cycle.¹

According to an Accenture report, a 1 percent increase in price can mean a 7 percent to 15 percent increase in operating profits.² Conversely, a dip in prices can quickly cost tens of millions of dollars in lost revenue. According to one global life science organization, price erosion cost the company millions within one quarter due to negative pricing impact from European government cost-containment measures and a biannual price cut in Japan.

Traditionally, products were often launched as soon as regulatory approval was received – or larger markets were launched first. Now that pricing across international borders is based on a complex web of interdependencies, it’s no longer enough to use broad-brush rules of thumb and a local focus. The challenge for pharmaceutical companies is to negotiate the best possible launch prices across all countries and carefully time the launch to minimize the influence of reference pricing as long as possible – all while balancing global revenue targets.

Challenges

The benefits of optimizing the launch sequence strategy are self-evident, but there are challenges to the ideal.

Complexity of the question

The reference pricing matrix around the globe is daunting and ever-changing. Most countries use their own formulas, and the rules that govern IRP are quite complex. Several of the largest, most influential and most referenced countries are evolving their reimbursement and referencing rules. Even a slight price change in a referenced country can have a significant impact on prices, revenues and margins around the globe. Navigating this matrix to limit price erosion becomes a serious optimization exercise.

¹ Rankin, Peter J., Bell, Gregory K., and Wilsdon, Tim, Global Pricing Strategies for Pharmaceutical Product Launches, Pharmaceuticals practice, Charles River Associates
² Going for Growth: Balancing Price and Cost in a Recovering Global Economy, Accenture
For example, a product launch across 75 countries in 60 months represents 60 to the power of 75 - literally trillions x trillions x trillions of possible price/launch-date sequence combinations. Not all of those combinations will be viable, but you still get the idea. Finding the optimal combination is a needle-in-the-very-big-haystack calculation.

The complexity is compounded by many additional factors, such as how your products compare with the competition’s, the impact of generic substitution, approval and reimbursement nuances, company revenue goals and the likelihood of parallel trade (products purchased in a low-price country and resold in a different market).

The matrix is too complicated and fraught with exceptions for a pharmaceutical pricing team to track and estimate with basic spreadsheets and expect to drive meaningful pricing and timing decisions.

Lack of global vision and governance

Organizational capabilities for price optimization are often cobbled together and do not adequately support today’s business requirements. Few pricing teams have a corporate mandate to manage launch strategies across geographies. As a result, pricing and launch sequencing decisions are often made at the country level without awareness of the big-picture ramifications. Companies that don’t have a centralized framework for managing launch strategies tend to make reactive pricing decisions and forego tens to hundreds of millions in revenue.

Launching a product at a lower price in highly referenced countries that are connected to other countries can create irreversible global price erosion.

“Pharmaceutical companies pursuing global product launches have identified a troubling tension between minimizing the time to market and maximizing prices that determine global profits.”

Global Pricing Strategies for Pharmaceutical Product Launches, Pharmaceuticals practice, Charles River Associates

Absence of advanced analytics

Although 80 percent of the executives surveyed in the Accenture study said that pricing optimization is one of the top three strategic priorities for their companies, two-thirds of pharmaceutical companies do not have sophisticated pricing capabilities. In fact, about 70 percent of the industry is still using spreadsheets to figure out this problem. A few are using basic analytics provided by external vendors.

Spreadsheets are obsolete for such a complex issue, and basic analytics can be overwhelmed by the computational intensity of juggling hundreds or even thousands of variables – an almost unimaginable number of possible permutations to achieve optimization.

Slow time to results

Global pricing teams are tasked to run many analyses to simulate different market pricing situations. One client reported that each scenario required 12 hours of computer time to run, only to restart the next day with new assumptions. This iterative process slows the pace of decision making, limits the number of scenarios that can be considered, consumes valuable resources and leads to organizational bottlenecks.

What Is Needed

Some life sciences companies have taken steps to formalize the process, but most still need to gain the ability to:

• Quickly simulate new product launches to see the effect of different pricing and sequence strategies.
• Optimize the launch price and country launch sequence, including launch date as a variable.
• Monitor in-market prices while considering the impact of mandated price changes and market events.
• Centralize business structure and processes around global pricing.

The right data management, analytical and reporting platform would enable pharmaceutical companies to:

• Access all relevant pricing data so the global pricing group has the necessary and complete inputs for optimization analysis.
• Perform trade-off analysis to compare various launch sequences and in-market scenarios to estimate corresponding revenue – identifying the scenario that maximizes revenues during the critical launch period.
• Maximize global revenue by generating highly accurate forecasts of country sales and continually adapting models to regional demand to make the best inventory, marketing and sales decisions.
• Easily share information with decision makers, giving leaders critical insights into the revenue implications of global markets and complete visibility into pricing and revenue changes as they occur.

Launch revenue optimization is one of the most complex areas of analytics to solve, but the returns for the business are significant.

How SAS® Can Help

SAS offers a launch revenue optimization solution that can be hosted on your servers or as a cloud-based offering through SAS Solutions OnDemand remote-managed software and services.

This solution was initially developed by the SAS Operations Research Center of Excellence for a top-three pharmaceutical company and later enhanced with a custom user interface and visual analytics reports – all available through SAS Solutions OnDemand.

Using SAS® for launch revenue optimization, you can proactively simulate and optimize launch timing and pricing decisions based on their predicted effect on reimbursement, volume and global revenue.

The SAS engine runs in two modes:

• In simulation mode, the earliest launch date for each country is fixed, and the SAS engine determines country and global revenue according to IRP rules, price cuts and other events.
• In optimization mode, the earliest launch dates are variable as well, and the engine determines which launch dates/sequence and prices will maximize global revenue. Because of the influence of reference baskets, it may make sense to delay a launch date in a given country for best overall results.

SAS software and services enable pharmaceutical companies to:

• Easily integrate data from each country affiliate and external data sources – such as SAP data, price data, market size, predicted sales volume, currency exchange rates and other data from spreadsheets and third parties – across computing platforms, data formats and locations.
• Quickly run multiple scenarios to assess the impact of pricing decisions, reference pricing and mandates on profitability - by country and globally - using what-if modeling, in-market revenue simulations, optimization modeling and more.
• Make decisions that maximize revenue for the entire company rather than individual markets by empowering decision makers with data visualization, prebuilt dashboards and reporting capabilities in their preferred formats.
What Makes SAS® Different

A suite of advanced analytics

There are other solutions that offer launch sequencing capabilities, but SAS is recognized for the most advanced analytical approach available for optimization. No other solution delivers the complete range of analytical capabilities necessary to optimize launch prices and sequence, analyze and apply insights from market dynamics, and predict future demand.

Most other offerings for launch sequencing use simple analytical techniques such as Monte Carlo simulation, an approach that only samples the solution space for optimality and returns the solution with the highest result. Like its namesake, it represents a gamble as to whether you have determined anything near the truly optimized answer. SAS is unique in using mixed integer linear programming (MILP) based on branch-and-cut solvers to arrive at the optimized result. This methodology is recognized mathematically as the most structured approach to determining true optimality.

Highly structured, centralized approach

The SAS solution establishes a centralized process across pricing departments in an organization, with access permissions defined by user roles. All activity generates a full audit trail of:

- Workflow/ownership/routing of scenarios and other items in the system.
- The results and inputs that went into different scenarios.

Faster processing

Our two-step approach for determining the optimal launch sequence, based on mixed integer linear programming techniques, is unique in the industry. Since simulation and optimization models run fast on a high-performance computing platform, you can explore more what-if scenarios.

Intuitive user experience

The beauty of the SAS solution is that you don’t have to be a PhD statistician to tap into its analytics horsepower. Our quantitative experts have done the heavy work. Your pricing teams run optimizations through an intuitive user interface – complete with user audit trails – and get answers back through visual dashboards and reports.

Less-technical users can quickly visualize information, better understand the launch sequence process, and trust the decisions that the optimization engine has developed. The solution also provides a reference network diagram to visualize all the reference connections that exist between countries.

What is optimization?

**Decision variables**

Decision variables, the available actions or choices, such as launch date, price bounds, expected sales volume and target countries.

**Objective**

An objective that is the measurable goal of the optimization exercise, such as meeting revenue targets, minimizing parallel trade or maximizing market adoption.

**Constraints**

Constraints, requirements or rules that limit how the objective can be pursued, such as reference baskets, IRP pricing rules by country, and “soft” considerations such as a desire to mainline launch of a beneficial therapy in an area of great need.

Within this framework, an optimization engine will maximize the performance metric in the objective by assigning values to the decision variables that satisfy the constraints.
Figure 1. Centrally manage all country reference pricing rules.

Figure 2. Easily update pricing rules and reference baskets, with a full audit history of changes.

Figure 3. Run multiple simulation and optimization scenarios in minutes to discover global revenue yields. Test what-if scenarios such as the impact of a reduced price reimbursement or modeling the impact of not launching in a country.
Figure 4. Compare simulated and optimized data at a country level to identify the changes in launch price and reference events. Identify countries that gain through optimization.

Figure 5. Discover the launch sequence waterfall for in-country pricing and revenue.
Figure 6. Identify event details at country level that drive pricing decisions at launch and through reference events.

Figure 7. Drill down into country reference baskets to examine the halo of further connections.

Figure 8. View launch intelligence in an executive reporting dashboard.
What Happens When Companies Use SAS®

In production and in multiple proof-of-value projects with major pharmaceutical companies, the SAS launch revenue optimization solution delivered four primary benefits:

**Higher revenue during the critical launch phase**
Rigorous optimization can identify a launch sequence strategy that may offer new insights that would not have been identified by conventional wisdom. In an optimized approach, there will be some sacrificial lambs – countries where revenue will be lower than if its launch strategy had been defined in isolation – balanced by countries where revenues will be significantly higher. Optimization finds the strategy that will deliver the best overall results at the global level.

**Less global price erosion**
When you have successfully engineered initial average price at a higher point, the gains of that higher price point continue through the seven to 10 years of patent exclusivity. Even with in-market dips, this higher start point could mean hundreds of millions of dollars in incremental revenue. In one case study, the SAS-optimized approach engineered an average global price post-launch that was 4 percent higher than the existing benchmark.

**Reduced propensity and impact of parallel trade**
This is a serious consideration, particularly within the free export market of the European Union countries. If your product launches at $70 in Country A and $100 in other EU countries, it is very easy for wholesalers to source the product in Country A and ship to those other countries to exploit that price difference.

SAS helped reduce this risk for a top-three pharmaceutical company by including yet another factor in the optimization exercise – compressing price bands (reducing variance between lowest and highest prices among countries). For countries that represent a risk of exporting to higher-priced countries, using the lower price bound functionality of the optimization engine will prevent the price from dropping to a level where it becomes attractive to exporters.

**Unique insights into referencing**
With the breadth and depth of SAS Analytics – and the ability to run more scenarios – you can gain a better understanding of market dynamics and unique insights into referencing. SAS untangles the complex mesh of reference relationships – which countries are included in each country’s reference basket and how a price change in one country affects the prices at countries to which they are connected.

*SAS® Launch Revenue Optimization in Action*

In preparation for a new product launch, a global pharmaceutical company was searching for a way to optimize launch prices to increase corporate revenue, while considering all market share drivers in addition to government pricing and interdependency rules.

The company’s in-house, custom-built analytics solution could only run one scenario each night to test different launch assumptions. While the global pricing team had some measure of confidence in the output, the lag in productivity was not meeting executive expectations.

SAS optimization capabilities enabled the company to model optimal launch price and sequence across 75 countries and 60 months in less than five minutes – delivering new insight into in-market price changes and impacts across the globe. In addition, the pricing group now has a secure, centralized pricing communications repository for country pricing and forecasting data, reference rules and third-party data.

The result? An optimized launch for a new product projected a 2.8 percent lift in global revenue over 60 months.
Closing Thoughts

Do you know which price and country launch sequencing strategies will deliver the best results overall?

What is the impact of an unfavorable reimbursement decision across the globe?

What will happen if a critical country launch is delayed?

What steps should be taken when a country launches out of sequence or at a price below your floor?

Given the complexity and change of the international reference pricing environment, these are not questions that can be answered by spreadsheets – or answered with efficiency and high accuracy by homegrown analytics. Having the right answers is critical to success in a changing and more demanding global marketplace.

With a purpose-built solution, pharmaceutical companies can get up and running quickly – making powerful analytics accessible to a broad range of users and delivering rapid results to decision makers and executives. For one global life sciences company, using SAS for a globally coordinated launch meant more than $100 million of additional revenue. That’s the difference between “good enough” and optimized.

Find Out More

Find out more about SAS life sciences analytics software: sas.com/en_us/industry/life-sciences.html
