

Approaches to Offset Rising Fuel and Distribution Costs

Ray Goff
Director
Pfizer Vaccines R&D

Oil flows through the arteries of industry, feeds the fiber of the economy and touches every one of us at work and at home. As oil prices rise, fuel prices increase and distribution costs rise. There are many approaches to offset the effect of fuel price increases on distribution costs.

Introduction

The economic downturn of 2008 interrupted the growth of fuel prices. In 2010 the fuel prices grew slowly. The future challenge is how to deal with fuel price increases. Is there a way to offset the increasing costs? Two trends, new cold chain (temperature-sensitive) products and the overall growth in the number and size of clinical studies, explain why rising fuel prices are important to the pharmaceutical industry. At the end of 2009, three of the top ten drugs were cold chain requiring more complex packaging and greater distribution costs. By 2015, it is projected that eight of the top ten drugs will be cold chain. Additionally, clinical studies are trending towards more countries, more clinical sites and a larger subject population, increasing the number of shipments.

Crude Oil Prices

In 2008, when the price of crude oil quickly surpassed \$138 per barrel, the oil prices squeezed key areas of business and personal spending. This glimpse of high fuel prices provided an insight of what is to come and alerts us to take action now. One likely forecast made by JP Morgan for 2012 is a peak price of \$120/ barrel. The reality today is that the cost of oil production is around \$70/ barrel drilling down to 9,000 feet of water. Not surprisingly, most industry

experts agree that as demand continues to exceed available supplies, the oil price of \$100/barrel is here to stay. As oil prices increase, the prices of gasoline and jet fuel also rise.

Approaches

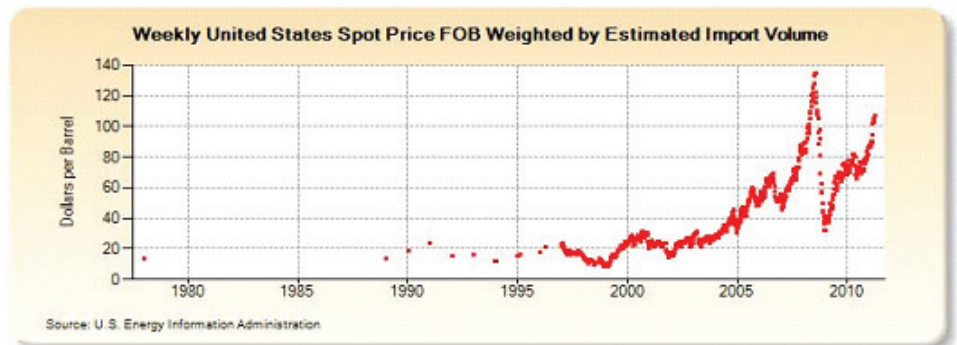
Below are proven approaches that have helped offset rising costs.

1. Re-negotiate with your courier / transportation network to gain visibility and appraise your pricing position to contain costs.

Know your growth curve and purchasing position. This will help prepare for the necessary actions to take.

2. Scale down the size of the study or reduce the geographic coverage.

The size of the study dramatically affects the logistic costs. As fuel costs increase the distribution quickly becomes a major cost factor. Even if the number of subjects in a study cannot be reduced, the geographic area covering the locations of the clinical sites could be reduced, thereby decreasing transportation distance and costs.

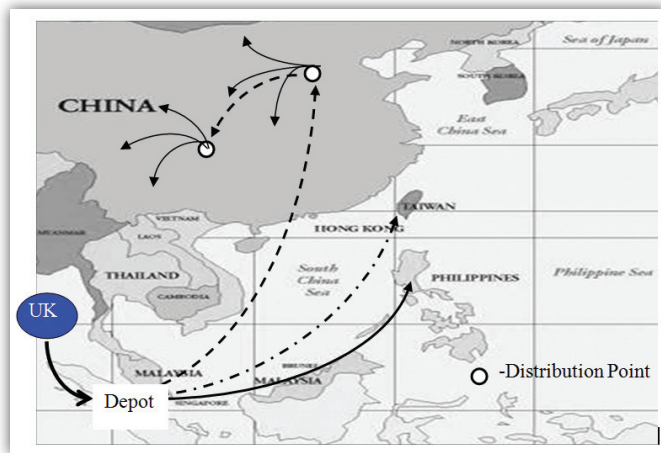


Reducing the geographic size can reap the advantages of economies of scale, increase speed to delivery and lower courier costs.

3. Work on distribution efficiency and effectiveness.

This means not only doing things right and improving performance but also doing the right things and delivering value.

- The traditional supply chain approach focuses on increasing the number of medicines per shipment to clinical sites and reducing the total number of shipments. Ideally, every shipping container would be filled to capacity. The downside of this option is the extra storage needed by the destination clinical site. The dilemma is that destination sites often do not want excess clinical supplies on hand, yet they want enough to cover the varying schedules of their subjects.
- A valuable approach, when possible, is to deliver supplies and retrieve returns on the backhaul route. This looping route allows full vehicle utilization for the transportation costs. Most transportation costs include the destination trip out and the return trip with an empty vehicle.
- Consolidate lab samples within a country before shipping to the laboratory. This addresses the out-bound sample shipments from the clinical sites to a central in-country location. The in-country samples are consolidated and packed into a larger shipping container to be transported as a single container to the servicing laboratory. The single container is easily tracked and will cost significantly less than many smaller containers.



4. Consolidate supplies and move closer to the sites.

Consolidation of supplies addresses in-bound shipment(s) of large quantities to an in-country/ in-region location called a depot. A depot provides a variety of clinical activities that consolidate the bulk of supplies in the host country /region where the study is performed. Common functions of the depot include: labeling and packing of drugs, warehousing, and distributing clinical supplies to distribution points or clinical sites. The depot is excellent for staging, especially when the supply chain moves from one global region to another. The depot and the clinical study also operate more effectively co-located in the same time zones with knowledge of local services and healthcare practices.

A variation to a depot is a distribution point where label and packed clinical supplies are staged and shipped as ordered. The Pacific Rim diagram below shows an example of manufacturing in UK, transporting

large quantities of clinical supplies to a Singapore depot and staging for future distribution orders to down-stream distribution point(s).

At the distribution point supplies are staged in-country and shipped out in smaller quantities on-demand to other distribution point(s) and/or clinical site(s). The distribution point aids importation to the country, reduces the traffic grid and enhances control.

5. Outsource Clinical Services/ Distribution

Bottom-line, without significant change, clinical distribution costs will continue to increase for at least the next five years. For a single pharmaceutical company the clinical supply and distribution only partially utilizes assets. By outsourcing clinical services this leverages savings to the pharmaceutical company. The outsourced contractor can profit and fully utilize their capacity by supporting a large number of studies. The outsourced clinical services capture combined volume and fully utilize resources to support studies from many client pharmaceutical companies in a country/region. This is especially evident in the depot services area. By itself, the single pharmaceutical company can only service their unique clinical trial(s) often under-utilizing resources.

6. Extend delivery time; use slower transportation.

These steps usually lower the cost for non-cold chain clinical shipments. However, more caution should be taken for cold chain. The longer delivery time usually requires a heavier, larger package and transportation costs may exceed the alternative faster express delivery services.

Using a longer duration (5 day) shipping container, this approach allows distribution (especially contract activities) to balance their workload over the week. Currently the work covers a 2-3 day period with extra staff and peak work time to insure shipments arrive before Friday afternoon. This avoids the product remaining in the shipping lane over the weekend and exceeding the capability of the current shipping container. The new 120 hour shipping container would allow shipment to depart from the distribution point any weekday versus the current schedule of 2-3 days per week, reducing labor and express shipping charges.

7. Use alternative transportation mode(s).

The alternatives modes include: marine transport, railways, or creative use of non-petroleum fuels such as natural gas and bio-fuels. In the last few years, marine shipment of temperature-sensitive (2°C to 8°C) pharmaceuticals has been successfully conducted. Many questions remain about reliability of these systems. However, this may be a viable option depending on the delivery time requirements and product characteristics. The general concern is around the service reliability and consistency of quality operations.

- Compliance

Pharmaceuticals must comply with regulations and guidelines. Most temperature controlled products have an added layer of controls beyond the supply chain that is referred to as a cold chain. The cold chain requires more robust (usually heavier) packaging, and demonstrated performance over the known extremes of the transportation lanes to protect the quality of the drug. Regulatory agencies not only require packaging to be qualified, they also require proof that each shipment of drug is maintained within temperature controls. This means the control of costs must be accomplished without any negative effect on the quality or efficacy of the drug.

8. Implement lighter and smaller shipping containers with improved payload and performance.

New technology materials are delivering superior performance packaging and significant savings. For pharmaceuticals these packages must be “qualified” before they can be used with drugs. Although

qualification often takes time (6-9 months), it has significant value. These improved containers address the key factors influenced by fuel prices.

- A recent implementation utilizing new technology materials showed that external size of the shipping container could be reduced and the weight per payload decreased to cut the cost of freight by a quarter (25%).
- A green approach is to have containers that can be re-used at least 6 times which would reduce the container portion of distribution costs by a third to half. This approach addresses the environment, reduces the impact from fuel price increases and supports all the compliance requirements for the drug and the cold chain.
- A new 120 hour shipping container now allows shipments to depart from the distribution point 5 days per week versus the former 2-3 days per week, reducing labor and express shipping charges.

Ray Goff is Director, Pfizer Vaccines R&D. Ray led the Vaccines global clinical supply chain, cold chain and distribution organization spanning across several continents for nearly a decade. He also successfully led clinical supplies & distribution for the largest vaccine study ever conducted. He has a PMP, CPM and holds several Executive Certificates from MIT Sloan School of Management. He has technical and management experience with several major pharmaceutical companies; working in both commercial and R&D areas. Ray holds patents, has published numerous articles and has held leadership positions in professional and trade associations.

As the world's leading provider of cold chain visibility solutions, Sensitech Inc. enables global leaders in the food, pharmaceutical, and industrial markets to track and monitor assets across the supply chain in order to protect the integrity of temperature-sensitive products. Sensitech is an ISO 9001:2008 company based in Beverly, Mass., with offices in Amsterdam, Calgary, Hong Kong, Melbourne, Mumbai, Redmond and Santiago, and additional service and distribution locations around the world. Sensitech is a wholly owned subsidiary of Farmington, Conn.-based Carrier Corp., the world's leader in high technology heating, air-conditioning and refrigeration solutions with operations in 172 countries. Carrier Corp. is a unit of United Technologies Corp. (NYSE:UTX), a Hartford, Conn.-based provider of a broad range of high technology products and support services to the aerospace and building systems industries worldwide. For additional information, please call +1-978-927-7033 or visit www.sensitech.com. © 2011. Sensitech Inc. All Rights Reserved. Unless otherwise indicated, all trademarks and service marks are the property of Sensitech Inc.

Table 1: Eight Approaches to Offset Rising Fuel and Distribution Costs
1. Re-negotiate with your courier /transport network to gain pricing visibility.
2. Scale down the size of the study or reduce the geographic coverage.
3. Work on distribution efficiency and effectiveness.
4. Outsource Clinical Services/ Distribution
5. Consolidate supplies and move closer to sites.
6. Extend delivery time; use slower transportation.
7. Use alternative transportation mode(s).
8. Implement lighter shipping containers with better payload performance.
CRG, January 2011

The Challenge

The trend is toward more studies per investigational medicinal product (IMP) with more subjects per study. This requires more clinical sites and a greater range of geography (more countries). The growing study loads are imposing larger clinical distribution systems supported by several different transportation networks. The transportation networks have operating expenses that are directly dependent upon the price of fuel. This growth trend in the size of studies and in the numbers of cold chain drugs, together with the increasing price of fuel, are demanding more innovation and sophistication on the part of pharmaceutical companies in order to slow the rising cost of bringing a new drug to market.

These approaches are intended to provide options/ tools to reduce costs and enhance value without affecting quality or compliance.



This article was printed in the May/June 2011 issue of *Pharmaceutical Outsourcing*, Volume 12, Issue 3. Copyright rests with the publisher. For more information about *Pharmaceutical Outsourcing* and to read similar articles, visit www.pharmoutsourcing.com and subscribe for free.