In recent years, pharmaceutical and biotechnology companies have come to understand that supply chains ultimately impact the delivery of healthcare, and supply chains can and should serve as value centers for their company and the end-user.

While there has always been a focus on the supply chain in relation to on-time delivery, there has traditionally been less focus on strategic inventory management and supply chain optimization. However, the importance of intelligent supply chain management has become a focus as pharma companies have been challenged with shifting regulatory compliance, emerging markets, item-level serialization, product diversification, and learning to use data to control costs and drive value.

This research study conducted in partnership with Kenco and LogiPharma surveyed pharmaceutical and biotechnology supply chain professionals at the 2015 LogiPharma US Conference. The study found the top concern these executives had heading into 2016 was supply chain visibility—which is vital in order to diagnose potential disruptions early, and make changes based on demand. Enterprise resource planning systems (ERPs) were the main tool mentioned in this push toward greater visibility.

The study also found few pharma companies struggle with on-time delivery, which shows that to add value, supply chain optimization benefits must be focused on lowering costs, improving inventory management, and increasing visibility.

To achieve these goals, especially in light of the growing supply chain challenges, many pharma companies are turning to third party experts for help. In fact, 66% of respondents indicated they currently outsource at least some part of their distribution and order fulfillment operations, and 67% outsource transportation management. Third-party providers are called on to reduce costs, create efficiencies, and aid in more rapid innovation.

Being an expert in domestic pharmaceutical warehousing and distribution, Kenco was eager to partner with LogiPharma on this valuable research. The findings affirm what Kenco has thought all along; the value of a 3PL relationship is becoming more and more invaluable to pharmaceutical and healthcare manufacturers. Kenco plans to use this research to help us engineer solutions to meet the top concerns of our customers. The first item we tackled in late 2015 was developing an innovation team with the primary focus of defining, testing, and implementing emerging technologies in today’s supply chains. We look forward to the coming year and continuing to partner with LogiPharma on similar projects.

Judy Craig
Kenco
Vice President, Sales
Executive Summary

Pharmaceutical and biotechnology supply chains have been put under great pressure over the past decade as product portfolios have expanded and diversified, lucrative new markets have sprouted up, and expectations for delivery time and agility have soared. These forces have changed how pharmaceutical companies view their supply chains. Previously, the supply chain focus was on customer service and on-time product delivery, and there was less regard for strategic inventory management and supply chain optimization. That has all changed. Product portfolios have expanded to include more specialty diagnostics and therapeutics that require stricter temperature controls. Regulatory requirements have evolved and businesses are being challenged to stay compliant in more international markets than ever before. Finally, pharmaceutical and biotechnology companies have come to understand the value beyond cost savings that supply chain optimization and enterprise resource planning can bring to their businesses, as well as to patients and caregivers. Against this backdrop, pharmaceutical supply chains have changed dramatically, reflecting the industry’s awareness that supply chains can and should serve as value centers.

Despite the potential value, pharma companies face many obstacles to truly optimized supply chains. For instance, item-level serialization serves many regulatory and business objectives, including reducing drug counterfeiting and diversion and improving supply chain visibility. However, many businesses are struggling with serialization, because it impacts so many dimensions of their business, from manufacturing and packaging to inventory tracking. Similarly, there is a huge opportunity for pharma organizations to leverage supply chain data to avoid disruptions and enhance inventory planning, but integrated data management continues to baffle some companies.

To address these challenges, pharma and biotech companies are driving innovation through the supply chain and partnering with third parties to overcome their most confounding barriers. Together with these solution providers, pharma companies are leveraging enterprise resource planning systems to harness supply chain data and improve their forecasting. They are also outsourcing certain aspects of distribution and transportation management to reduce costs and create efficiencies. And they are doing it in the name of supply chain optimization, a new strategic imperative. In addition to the business benefits that accompany an efficient and transparent supply chain, supply chain optimization also impacts the cost, safety, and accessibility of healthcare. In other words, supply chains ultimately impact healthcare delivery. Pharmaceutical organizations understand this, and it drives them to continue innovating their supply chain operations.
Key Findings

1. Pharmaceutical and biotechnology supply chains are rapidly evolving and globalizing, presenting businesses with an array of new challenges.

Pharmaceutical companies are facing complex obstacles to supply chain optimization. Serialization is pushing organizations to improve the way they track products throughout their journey. Product portfolios are becoming broader and more diverse, while mergers and acquisitions have injected uncertainty into many supply chains. Regulations continue to tighten while organizations navigate the regulatory waters of new markets. Many businesses are looking to harness data to improve their supply chain operations, but the infrastructures needed to see those initiatives through can be complex and costly. Finally, pharmaceutical companies are tapping into emergent markets in places like Brazil, Russia, India, China, Turkey, and Mexico, straining existing supply chain processes and demanding greater reach.

2. Demand-to-supply enterprise resource planning (ERP) systems have become essential tools, helping pharma companies to form integrated, real-time views of their processes, track resources, and monitor compliance.

ERP systems provide visibility into product demand, production levels, and shipping statuses, while also enabling better inventory and distribution planning. They also touch many different departments, supporting enterprise-wide collaboration and planning.

3. Pharma companies are enlisting the expertise of third party logistics and solutions providers to innovate more rapidly.

Healthcare organizations have come to realize that supply chain optimization is not accomplished in a vacuum. Rather, it requires the knowledge and tools offered by third party logistics and solutions providers. In fact, when it comes to order fulfillment, distribution, and transportation management, at least 66% of the pharmaceutical companies surveyed indicated they are outsourcing at least part of these activities.
New Mandates for the Pharmaceutical Supply Chain

Pharmaceutical and biotechnology supply chains are evolving and globalizing rapidly, presenting these organizations with new challenges. Some of these challenges, such as regulatory compliance, are new iterations of familiar issues that organizations have been dealing with for decades. However, other challenges, such as serialization, present entirely new concerns.

The Main Challenges Facing Pharmaceutical Supply Chains

**Item-Level Serialization**
Serialization is a major theme for pharmaceutical manufacturers and distributors that are looking to make their supply chains more secure and transparent. Serialization serves many key goals, including improved product authentication, the reduction of drug counterfeiting and diversion, better supply chain visibility, and more efficient reverse logistics and recall processes. However important these benefits are, item-level serialization is a complex undertaking for pharmaceutical organizations that requires significant operational changes and investments in new technology.

**Product Diversification**
Pharmaceutical product portfolios are constantly evolving and expanding to cover new therapeutic areas. Driven on by new drug development, mergers and acquisitions, and the trend toward targeted diagnostics and therapies, these portfolios pose new challenges to pharmaceutical organizations through the sheer variety of products offered. Different products can mean different manufacturing sites, transportation requirements, and regulatory considerations, all of which make it more difficult to create an agile, efficient, and transparent supply chain. In order to account for differences in product profitability, shipping requirements, demand, therapeutic importance, and service expectations, organizations are increasingly working to more effectively segment their supply chains.

**Regulations and Compliance**
As with nearly every facet of healthcare delivery, regulations and guidelines play a critical role in global pharmaceutical and biotechnology supply chains. Regulations can cover everything from product design to temperature control and they can vary widely from product to product. In fact, the increasing complexity and variety of products has in many cases led to much stricter regulatory scrutiny. This is especially true in the cases of drug recalls. Unfortunately for many businesses, compliance concerns can often inhibit efforts to innovate the supply chain.

**Using Big Data to Control Costs & Drive Value**
Data is at the core of supply chain innovation, because it enables businesses to measure, monitor, and improve individual supply chain processes while keeping tabs on the performance of the supply chain as a whole. For one thing, better data leads to better visibility, which is how supply chain leaders can identify and eliminate cost drivers while better understanding how the business can deliver greater customer and patient value through the supply chain. Unfortunately, many businesses are still struggling to make “big data” practical through integrated data management.

**Emerging Markets**
Beginning in the early 2000s with the expiration of high-profile patents like Lipitor, Vioxx, and Zoloft and aided by the international economic slowdown of the 2010s that deeply impacted the biggest pharmaceutical markets, pharmaceutical and biotechnology companies began to increasingly look to developing international markets for growth. Pharmaceutical companies saw clear potential in countries such as Brazil, Russia, India, China, Mexico, and Turkey that combine to make up roughly 70% of the world’s population. In fact, it is anticipated that these emerging markets will account for about a third of all pharmaceutical spending by 2016. Serving these potentially massive markets demands a much more efficient global supply chain capable of handling huge volume.
Visibility is the primary concern heading into 2016

Which of the following most closely resembles your top priority for 2016?

- **33%** Supply chain visibility
- **22%** Product launch and speed to market
- **19%** Approach to serialization
- **12%** Integrating disparate systems
- **7%** IT as a business enabler
- **5%** In-transit and storage security
- **2%** Personalized medicine

The modern healthcare supply chain is fraught with complexities brought on by highly diversified product offerings, the development of new global markets, and changing product lifecycles. Even the recent rush of mergers and acquisitions is complicating visibility by constantly changing ownership of product manufacturing and transportation cycles. In order to effectively match evolving demand and supply models, healthcare organizations need agile supply chains that enable better inventory planning and faster responses to supply disruptions. That agility is only possible with a more transparent supply chain, which allows planners to diagnose potential disruptions early and make changes based on demand.

Nearly half of the companies surveyed have on time delivery rates of 98% or better

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Despite the myriad complexities and challenges facing supply chain leaders, few have struggled to consistently deliver their products on time. While this is good news for pharma organizations, it also belies an important paradigm shift: in order for supply chains to truly add value, they must move beyond simply delivering product on time, instead finding new ways to trim costs, improve inventory management, and generate better product- and process-level visibility.
Better Business Management Through Enterprise Resource Planning Systems

Given the complexity of the modern pharmaceutical supply chain and the need to integrate that data with other important business activities, enterprise resource planning systems (ERPs) have become essential to pharmaceutical manufacturers and distributors. Through ERPs, businesses can form an integrated, real-time view of their processes, track resources, and monitor compliance. This is especially critical for supply chain; an effective ERP can provide instant visibility into product demand, production levels, and shipping statuses. Not only do ERPs provide visibility into the current status of these supply chain activities, but they also empower leaders to adapt to those circumstances and more accurately plan their production and distribution.

While the benefits of ERP systems include cost management, balancing supply with demand, and greater operational efficiency, ERP implementation can be a major undertaking. The scope of these systems often entails significant changes to work processes, requiring the buy-in and active participation of many different departments. Still, the benefits far outweigh the costs for pharma companies, 79% of which are currently using demand-based ERP systems. Unsurprisingly, 73% of those companies actively using demand-based ERPs believe those systems are directly responsible for business benefits, which can include cost reduction, easier warehouse and transportation management, and more accurate inventory planning.

Although ERP systems were once reserved for large businesses with complex supply chains serving many products, smaller enterprises are increasingly implementing ERP systems to achieve the same efficiencies and planning capabilities their larger counterparts have developed. As a result, of the 21% of respondents not currently using an ERP system, more than half are actively working to implement one.

Four out of five respondents use a demand-to-supply ERP system

- **79%** Yes
- **21%** No
Demand-to-supply ERP Systems

If you are using a demand-to-supply ERP system, do you feel that system is beneficial to your business?

- 73% Yes
- 27% No

If not, which of the following best describes your plan for that system?

- 58% We are currently working with our supplier to improve
- 37% We have not yet made a decision on how to move forward
- 5% We are currently looking for a new system to use

Research Findings

Nearly two-thirds of respondents who use a demand-to-supply ERP system believe that system is creating value for their businesses. For those organizations that do not currently have demand-to-supply ERP systems, 58% are working with their suppliers to improve that capability, while an additional 5% are looking to build out that capability through new solutions providers. This underlines the importance of demand-to-supply planning systems, as 63% of non-users see value in building that system.

Supporting Supply Chain Innovation with New Solutions

As they face down so many complex challenges to their supply chains, pharmaceutical companies are increasingly turning to third party logistics and solutions providers. Seventy-eight percent of the supply chain leaders surveyed see vendor solutions and services as important in 2016, with 7% of that group viewing those solutions as critical.

The three areas where pharmaceutical companies anticipate needing the most help in 2016 are temperature controlled transportation, supply chain optimization (through improved visibility and data collection, for instance), and serialization. It should come as no surprise that these more cutting edge initiatives top pharma companies’ priorities lists, outweighing ongoing challenges like security and risk mitigation and packaging.
Furthermore, in 2016, pharma organizations will continue to enlist the help of third party logistics providers to manage distribution and order fulfillment, as well as transportation. In fact, 66% of respondents indicated that they currently outsource at least some part of their distribution and order fulfillment operations, and that number jumps to 67% for transportation management. With a sizeable majority of businesses reporting that these partnerships have been successful, our research indicates that those trends will remain strong.

78% of respondents will need some level of third party support in 2016

Temperature control, supply chain optimization, and serialization are the areas in which organizations will have the greatest need of third party solutions and services

Which third party solutions or services will you be exploring in 2016?

- Temperature control: 46%
- Supply chain optimization: 42%
- Serialization: 37%
- Security and risk management: 29%
- Visibility software/upgrades: 27%
- 3PLs: 17%
- Business modeling and innovation: 15%
- Packaging: 10%
Outsourcing distribution and order fulfillment

Do you outsource your distribution and order fulfillment?

- 27% Yes, all of it
- 39% Yes, partially
- 34% No

If yes, how successful has that outsourcing been?

- 7% Not Successful
- 11% Very Successful
- 53% Very Successful
- 29% Not Successful

Outsourcing transportation management

Do you outsource your transportation management?

- 25% Yes, all of it
- 42% Yes, partially
- 33% No

If yes, how successful has it been?

- 7% Not Successful
- 19% Very Successful
- 41% Very Successful
- 33% Not Successful

66% of respondents outsource at least some part of their distribution and order fulfillment, underscoring the important role that third party logistics providers play in the pharma supply chain. Of those businesses that work with third party solutions providers on distribution and fulfillment, most are seeing success with those partnerships.

Similar to the trend noted in distribution and order fulfillment, 67% of respondents are working with third party solutions providers to manage transportation. 74% see these partnerships as successful.
Key Recommendations

1. Supply chain optimization, serialization, and specialty supply chain requirements like temperature control are some of the top issues pharmaceutical companies will be grappling with in 2016.

Many businesses are still working to improve the way they capture, analyze, and act upon the massive amounts of supply chain data they are collecting. Serialization poses a unique challenge, because it touches so many facets of the supply chain. Pharma companies also need to build out new manufacturing and transportation processes for specialty products that require stricter control and raise new regulatory demands.

2. As pharma companies look to improve their supply chain operations, partnerships with third party logistics and solutions providers will be key.

Given the myriad of challenges businesses face to make their supply chains more transparent, cost-efficient, and agile, third party solutions providers have become key partners. Pharma businesses understand the value these partnerships hold, which is why so many are outsourcing activities like order fulfillment, and even more are looking to utilize vendor services in 2016.

Appendices

Appendix A: Methodology

For this report, Worldwide Business Research conducted in-person and online surveys of 42 pharmaceutical and biotechnology supply chain professionals representing a variety of categories (see Appendix B for more information). Survey participants included decision-makers and executives with responsibility for their firms’ supply chain strategies. In-person surveys and interviews were conducted on-site at the 2015 LogiPharma US Conference. Responses were collected in September of 2015.

Appendix B: Related Research

“Creating Actionable Visibility to Drive Supply Chain Transformation”, WBR Digital, November 2014
Appendix C: Demographic Information

What is your current role?

- 57% Supply chain operations
- 12% Supplier relationship management
- 7% Security
- 7% Information technology
- 5% Serialization
- 5% Sourcing
- 5% Other
- 2% Temperature control shipping

What product category best describes your company?

- 27% Large molecule
- 22% Consumer
- 20% Small molecule/biologic
- 19% Generic
- 12% Other
A special thank you to our research partner, Kenco, whose vision and expertise helped make this report possible.

Kenco provides integrated logistics solutions that include distribution and fulfillment, comprehensive transportation management, material handling services, real estate management, and information technology—all engineered for Operational Excellence. Woman-owned and financially strong, Kenco has built lasting customer relationships for more than 60 years. Kenco is the largest woman-owned 3PL in the United States and our Women's Business Enterprise National Council (WBENC) certification gives us a unique market niche by helping to fulfill our clients' diversity goals.

Kenco has partnered with companies in the health and personal care industry for decades, offering a customized approach designed for healthcare, pharmaceuticals, nutrition products, and personal care goods. We understand the regulations required, whether your supply chain demands temperature-controlled warehousing or transportation, reverse logistics for recalls, hazardous material management, or scalability for urgent consumer needs.

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