There are many reasons for this situation. Many leading companies are confronting expired patents and less profitable product extensions. Mergers, acquisition and divestitures occur with great frequency. Patient needs are changing and new therapies, devices and products are coming on the market. Costs and inventory levels are up; so are regulatory controls. Competition has increased, as has the pressure to expand into emerging markets.

There’s something else, as well: On the pharma side of the house, it’s not the same old, small-molecule kind of chemically based industry anymore. Patient therapies have grown increasingly complex, involving a convergence between products and services and between different players within the healthcare value chain. Patient-centric therapies and personalized medicine are on the rise. T-cell cancer treatment, for example, involves treating patients with genetically modified versions of their own immune cells.

New technologies are enabling rapid advancements in medical devices, as well. Consider the recent development of a small injection device to deliver insulin for the treatment of diabetes. As innovations in this area proceed, one could well imagine an enhancement built on the Internet of Things—whereby a patient’s blood sugar level is constantly monitored, that information is sent to an application in the cloud, which then automatically sets the device to deliver just the right amount of insulin at the next injection.

Add it all up and it means that the traditional supply chain model must evolve. A dynamic, sense-and-respond market and patient-centric supply chain is now needed as a core prioritized strategic capability.

Rather than focusing on the traditional product “push” of supply, life sciences companies must focus on the “pull” of the needs and wants of patients and healthcare providers. The traditional linear model of a supply chain in life sciences companies today must transform to enable a “value network”—a set of chains that is patient-centric, dynamic and responsive to market demands.

The traditional life sciences supply chain can't keep up with the emerging challenges and opportunities of the industry.
In contrast to a traditional life sciences supply chain, how does a patient-centric value network operate?

A patient-centric model senses demand, and also shapes demand, across the healthcare ecosystem at a granular level—translating the analyses of patient and treatment data into insights, patterns and signals that indicate what supply-side products and services are needed, when and where. In its extreme, this could even mean a highly specialized treatment for "a patient of one," as we see in cancer treatments. This kind of network requires new levels of integration between the supply chain organization and commercial and financial processes.

Consider the case of Merck, former manufacturer of the Claritin allergy medication. Using Big Data capabilities, Merck was able to analyze specialized weather forecasts to predict when allergens were likely to be especially prevalent. It then shared this weather intelligence with Wal-Mart to correlate it to customer behavior by US ZIP code. The analysis was augmented by social media comments about allergies within patient communities. The result was better availability of Claritin at stores near those ZIP codes just when allergy sufferers needed it most. It also led to a significant decrease in inventory and working capital costs.

In today's environment, personalized medicine is increasingly becoming a critical service that supply chains must be able to provide. To create a patient-centric value network, end-to-end fulfillment strategies and processes must be designed to ensure that products and services are delivered in a timely, safe and compliant manner into different markets.

Industry leaders have adopted "patient-back supply chain design" as the mental model. Meeting patient outcomes needs a high level of service, agility, and flexibility, but must still solve for cost effectiveness, margin retention and growth, and business profitability.

Appropriate network designs and inventory management strategies, flow path analyses, forecasting methods and analytics, replenishment processes, Big Data and predictive analytics, and transportation services are all important techniques that must be used to design the end-to-end value network to achieve overall fulfillment strategies that ensure improved patient outcomes and business profitability. In addition, regulatory pressures on product safety and integrity are increasing, and the need for brand protection means that serialization capabilities need to be designed into the supply chain effectively.

The pressure is on companies to demonstrate and execute a comprehensive system to track and trace the global movement of prescription drugs through the supply chain.

In Accenture’s experience, companies that are mastering supply chain best practices use their operations as a competitive weapon in this emerging world. Supply chain mastery is a significant advantage given the fast-evolving mergers and acquisitions happening in the industry. Supply chain masters can sense the changing needs of their customers and patients and adapt their supply strategies accordingly. These digital pioneers know how to leverage the right information in building a digital value network across the end-to-end healthcare ecosystem to capitalize on market dynamics and opportunities.

Most life sciences companies are unable to deliver on a patient-centric supply chain because they operate in a siloed, functionally compartmentalized approach (e.g. R&D versus operations and clinical trials) has led to inflexible and inefficient global operations, processes, facilities and infrastructures.

Accenture supply chain research and experience bear out these challenges. Thirty-one percent of our survey respondents noted that a limited ability to translate data into business insights was a major obstacle to implementing an effective supply chain strategy. Another 19 percent cited the lack of a coherent, "one source of truth" for data as a major constraint to end-to-end capabilities. Almost every finding pointed back to the same challenge: poor visibility to the information necessary to make critical, end-to-end supply chain decisions.

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Keys to successful implementation

Life sciences companies looking to implement a patient-centric value network should focus on several key factors and activities:

- **Look for and translate the insights that improve patient outcomes**

Effectively designing and deploying a patient-centric value network begins with an analysis of the insights and data required to understand the demand characteristics of each product and segment. Supply chain leaders invest wisely in the collection of critical data, and integration with partners, suppliers and customers to share plans and information that allows everyone across the end-to-end system to collaborate and plan more effectively. Proactive, end-to-end visibility to order information, market demand fluctuations, critical events and shortages (for example, products), product launches, service levels, and specific market regulations is critical to meeting the needs of patients and customers. Leaders are also building the analytics capabilities to discover insights through the application of digital solutions that capture and assimilate this information in real time—strengthening analytics and data management capabilities, or partnering with digital solution providers who offer proven solutions.

Today, companies are building the capabilities to discover important insights and patterns across structured and unstructured data from multiple sources. This is fundamental to the life sciences supply chain of the future.

Generating these insights also requires establishing more flexible operating models and making smart decisions on how to partner and who to partner with. Make/buy strategies and specific market needs (e.g., emerging markets, use and capabilities of contract manufacturers) must be continuously evaluated (as market dynamics, demand and situations change) to determine the optimum split of internal production and outsourced/contracted manufacturing. The important capability is to manage product availability and execute sufficiency planning to ensure appropriate leverage of network capacity and product availability for healthcare and individual patient needs.

- **Establish supply strategies to ensure predictable, compliant and secure supply when and where the patients need it**

Supply strategies must be evaluated in the context of demand and market trends to ensure that the right capabilities are built in the product supply network that ensure reliable and compliant supply of materials from the manufacturing and operations process. Then, based on demand needs, suppliers and partners should be sourced and managed based on evaluations of specialized capabilities, cost and risk.

Risk management and market strategies should include an appropriate level of redundancy and supplier interchangeability based on capabilities required. This is not always possible based on specialized processes and equipment but is nevertheless integral to risk management strategies. Inbound and outbound transportation and materials management processes should then be architected to ensure materials and products are in the right place at the right time and can be tracked for product safety and compliance.

For example, a major pharmaceutical firm leveraged a service provider’s offering, and loaded multiple tiers of suppliers in its global network into the provider’s collaborative application. Using the application to monitor tier supply network operations, this life science brand owner was able to see in near-real time exception events at two Tier 2 suppliers. The company notified the affected Tier 1 suppliers, who weren’t yet aware of the disruptions, to initiate risk mitigations and help accelerate time to recovery.3

These are challenging tasks to accomplish given the traditional supply chain mental models found in many companies. Such capabilities require close integration with partners, sharing of data and information (e.g., plans), and establishing firm operating procedures and controls so that exception events are clearly understood and can generate immediate action across the supply chain.
Put in place a cloud-based control tower to enable end-to-end visibility and analytics across the value network and ensure that products and services are efficiently delivered to the patient.

In the patient-centric model, supply chain execution needs to be orchestrated and managed to optimize business value and improve patient outcomes across the end-to-end network. This is complicated by the fact that many processes and data (often as a result of acquisitions and divestitures) are distributed across company boundaries and different IT systems and even in some cases either centralized for scale or situated in centers of expertise or local markets. To compete, companies must start moving away from their traditional IT system and data silo integration and architecture approach to a cross-enterprise, process-oriented digitized value network.

At the core of the supply chain enablement strategy is an enterprise architecture of traditional and cloud-based applications and processes that provides the foundation for integrated end-to-end visibility, analytics and execution processes. This enterprise architecture, the digital value network, includes the existing IT infrastructure and data, applications, and an integrated cloud-based communication and analytics platform. In the industry this is most often referred to as a supply chain control tower network—or termed a visibility and analytics network in some cases because of the aversion to the term “control tower.”

This network enables collaborative demand and supply planning, order fulfillment, inventory management, and logistics planning across the extended ecosystem of systems partners and processes to be managed. The cloud-based platform enables the integration of suppliers, contract manufacturers, a company’s own manufacturing sites, logistics partners, distributors, and customer-facing entities.

Today, most companies and solution providers see supply chain control towers as primarily a technology-enabled visibility play. In contrast, Accenture views control towers as overarching supply chain visibility and analytics networks with a broader mandate for end-to-end supply chain transformation that enables patient-centric capabilities and optimize business value.

Thinking differently

Building a patient-centric value network requires thinking about a set of factors and enablers that differ from those in traditional supply chain planning and execution:

- Connecting market insights and patient outcomes back to commercial and financial processes.
- Connecting commercial and financial processes through integrated business planning, into the supply planning network including contract manufacturers, suppliers and contrast research.
- Planning for digitization and for the Internet of Things, where many devices, processes and assets can be connected into the digital value network for analytics purposes.
- Upgrading skills, talent and organization structure based on the state of process maturity of the evolving, end-to-end supply chain.
- Managing the significant organizational changes involved to ensure take-up of new processes and new ways of working.
Conclusion: Pivoting to the Patient

What currently prevents most life sciences companies from delivering on a patient-centric supply chain?

Usually the answer is: A lack of end-to-end operational excellence capabilities beyond the traditional focus on quality and compliance. This situation has led to inflexible and inefficient global operations without the visibility that supports collaboration and synchronization of processes, facilities and infrastructures. In addition, inadequate transparency and trust across the healthcare ecosystem hinders collaboration and alignment because information sharing and objective analyses are constrained and lack the win-win context that is established collaboratively. Finally, the absence of information integration, accurate information across different systems, and cross-functional process visibility inside and outside businesses and supply chains make it difficult to be responsively patient-centric across the end-to-end healthcare system.

What does "excellence" look like when it comes to building and managing a patient-centric, digital value network?

Here we can learn lessons from other industries such as consumer electronics and consumer goods, which deal continuously with market volatility. Excellence means a company with one business operating model, accurately translating market trends, patient needs, and consumer needs through integrated business planning into product supply priorities.

Making this happen will not be easy. The traditional supply chain must be transformed into a digitized value network with analytics at the core. Companies must reorient their traditional supply chain mentality and operating models to the patient. Rather than focusing on pushing supply, the focus must be on how patients' needs and wants are being translated to pull new kinds of products, devices and treatments.
About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with more than 323,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world’s most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US$30.0 billion for the fiscal year ended Aug. 31, 2014. Its home page is www.accenture.com.

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Accenture Strategy operates at the intersection of business and technology. We bring together our capabilities in business, technology, operations and function strategy to help our clients envision and execute industry-specific strategies that support enterprise wide transformation. Our focus on issues related to digital disruption, competitiveness, global operating models, talent and leadership help drive both efficiencies and growth. For more information, follow @AccentureStrat or visit www.accenture.com/strategy.

About Accenture Life Sciences

Accenture’s Life Sciences group is dedicated to helping companies rethink, reshape or restructure their businesses to deliver better patient outcomes and drive shareholder returns. We provide end-to-end business services as well as individual strategy, digital, technology and operations projects around the globe in all strategic and functional areas—with a strong focus on R&D, Sales & Marketing and the Supply Chain.

We have decades of experiences working hand-in-hand with the world’s most successful companies to improve their performance across the entire Life Sciences value chain. Accenture’s Life Sciences group connects more than 10,000 skilled professionals in over 50 countries who are personally committed to helping our clients achieve their business objectives and deliver better health outcomes for people around the world.

References


2 Accenture research, June and July 2014 The Accenture 2015 Supply Chain Control Tower Study is based on a cross-industry survey of more than 500 C-level operations and supply chain executives at companies with revenues greater than $500 million across the Americas, Europe, and Asia-Pacific.


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