Enabling Life Science Supply Chain Optimization with an Effective Data and Analytics Strategy to Improve End-to-End Visibility

The Pharmaceutical Supply Chain is Facing Unprecedented Challenges

The life sciences industry business model is under governmental, payer and competitive pressures that are attacking R&D productivity, growth rates and operating margins. Anti-counterfeiting regulations and M&A activity add further challenges to operating a lean and effective end-to-end pharmaceutical supply chain.

Many companies have initiated supply chain optimization activities to respond to these pressures. The popular trends are:

- **Segmentation:** by product, customer and geography.
- **Collaboration:** up-stream with CMOs and down-stream with 3PLs.
- **Agility:** lead time reduction, production frequency and speed to market.

Further, the visibility of downstream inventory and visibility of data for KPI monitoring and decision support for supply chain planning and "what if" scenarios is gaining renewed prominence due to the success of global S&OP process initiatives.

Underpinning these major supply chain optimization activities is the essential capability to swiftly access accurate meaningful data for visibility throughout the end-to-end supply chain.
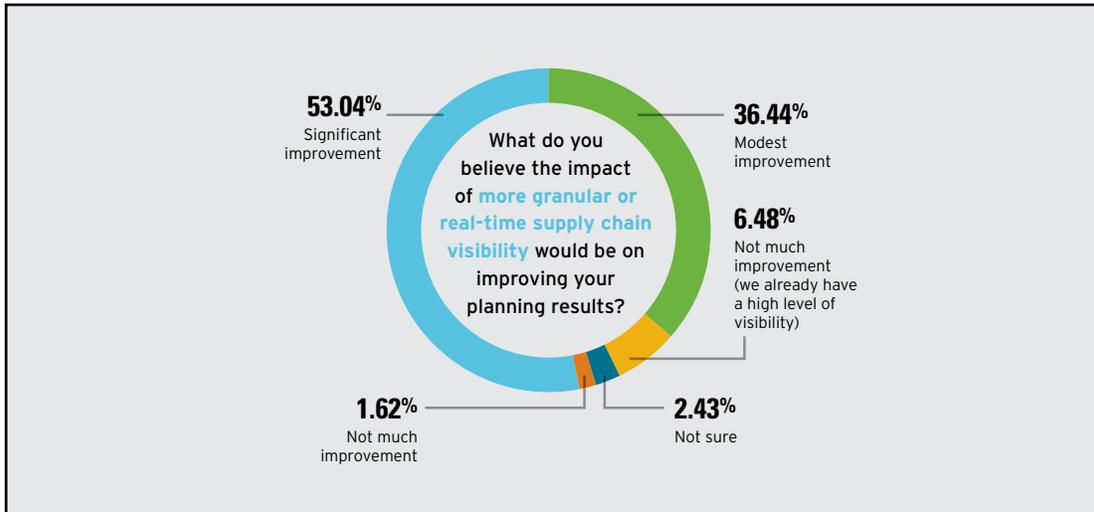
Cross-industry research (Fig. 1) has highlighted that a lack of visibility is a major challenge to improved integrated planning and this is particularly true in the complex life science value chain.

Improving Supply Chain Visibility is Proving to be Resource-Intensive and Problematic

Executives across the pharmaceutical supply chain in procurement, manufacturing, supply chain planning and customer service are voicing their concern about the lack of timely data and the excessive resource effort of creating business intelligence (BI) reports, which often involve a "hidden factory" of manual data entry.

Life sciences is lagging behind other industries in creating value from supply chain data in part due to a fragmented application landscape, created by local decision making and multiple M&A's, resulting in a lack of a common data hierarchy

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Survey on the Impact of More Granular Visibility on Planning

53.04%
Significant
improvement

What do you believe the impact of more granular or real-time supply chain visibility would be on improving your planning results?

36.44%
Modest
improvement

6.48%
Not much
improvement
(we already have
a high level of
visibility)

1.62%
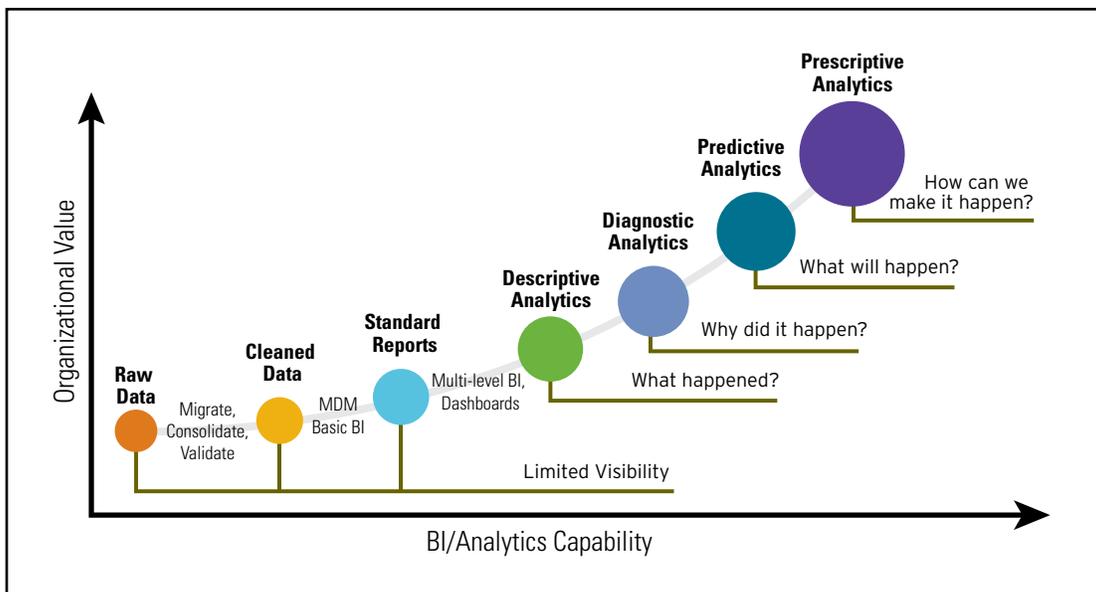Not much
improvement

2.43%
Not sure

Supply Chain Planning Benchmark Study, 2014
Figure 1

and a credible Master Data Management strategy. This complication of infrastructure, the competing pressures for time and money and the fact that the journey appears difficult create an organizational inertia that is difficult to overcome. The leading pharmaceutical companies have recognized the need for contemporary analytics solutions (Fig. 2) for the plethora of data in the supply chain as a response to resolving their end-to-end supply chain planning problems.

If data were the only barrier to change, creating visibility would be a simple business change process. The additional common emerging complications to achieving supply chain visibility include compliance, processes, organization and enabling technology.

- Standard KPIs are measured differently by different entities and lack of governance for new global BI reports leads to a lack of trust in the data.

Data Maturity Curve

Organizational Value

Prescriptive Analytics
How can we make it happen?

Predictive Analytics
What will happen?

Diagnostic Analytics
Why did it happen?

Descriptive Analytics
What happened?

Standard Reports
Multi-level BI, Dashboards

Cleaned Data
MDM
Basic BI

Raw Data
Migrate, Consolidate, Validate

Limited Visibility

BI/Analytics Capability

Data Maturity Curve (Cognizant Business Consulting)
Figure 2

- Manual data entry is costly and error prone.
- BI is not available in time for key planning meetings.
- Conflicting and dispersed teams developing BI reports causes duplication and confusion.
- BI tools are time consuming to use and offer poor visual reporting.

Implementing supply chain visibility is a business transformation necessary for efficient and optimized supply chain BI support services.

Implementing End-to-End Supply Chain Visibility to Enable Supply Chain Optimization

We recommend three steps to improve supply chain performance through enhanced visibility:

1. **"Migrate, consolidate and validate" to create a solid platform** at the foot of the data management maturity curve (Fig. 2) and implement Master Data Management to make source data usable.

   This first step can be a huge and expensive undertaking, particularly when a multi-year ERP platform roll out and associated Master Data Management are the basis for addressing the data hierarchy issues. However, cloud-based supply chain analytics technologies (Step 3) are a rapid and low-cost solution that can be implemented in parallel to accelerate achieving data visibility.

2. **Assess maturity of existing and desired BI operating model for implementation roadmap.**

   Creating supply chain visibility requires more than technology and data. The maturity of the current situation is assessed using a Business Intelligence Competency Centre (BICC) Framework (Fig. 3) consisting of all the enabling factors for a BI shared service. The strategic consulting approach covers the phases of discovery, evaluation, future state design and roadmap and recommendations.

3. **Identify, evaluate and implement a cloud-based supply chain analytics platform as a key element of the implementation roadmap.**

   Leading organizations are now using cloud-based technology in conjunction with traditional enterprise applications to yield value and gain greater insights into the performance of their supply chains. The access to mobile dashboards across multiple devices enables real time collaboration with customers and partners for stakeholders throughout the supply chain to have a positive impact on business performance. The flexibility of a cloud resource means your data engine can match your rate of growth, potentially absorbing the challenge of "big data." This analyzing of unstructured data, together with the increasing regulation within life sciences, provides further data management questions that a flexible analytics offering can help answer.

Business Intelligence Competency Centre Framework
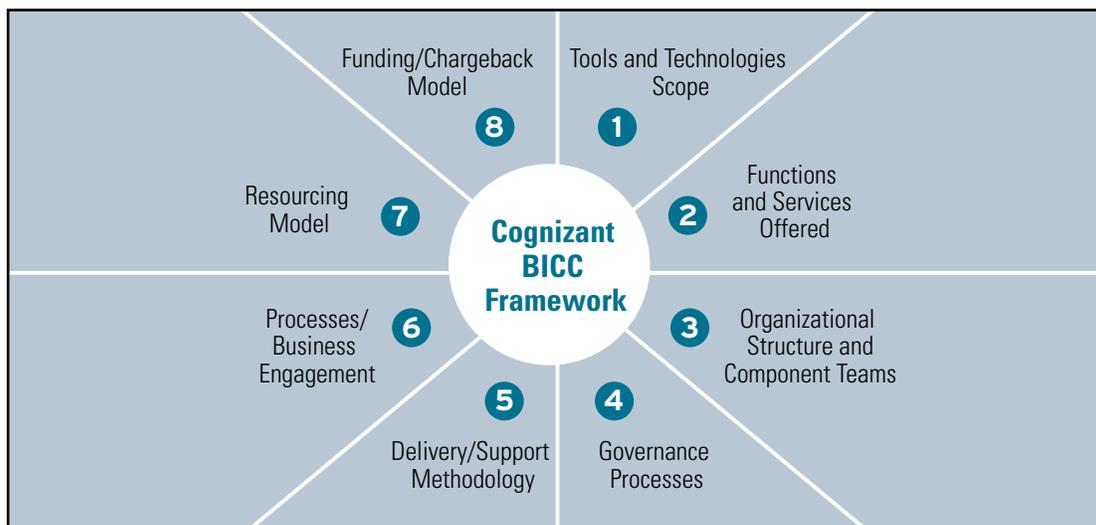
Framework for Assessing Maturity of BI Operating Model (Cognizant EIM practice)
Figure 2

Security of supply and the onset of serialization is an area where advanced analytics can add value, aiding decision support and visible compliance reporting. The ease of integration with source systems and rapid deployment are common reasons companies have chosen to adopt cloud-based solutions as the cost of major ERP investments becomes prohibitive. The trend in life sciences is toward flexible, low cost, accessible data platforms in the cloud.

In Conclusion

Pharmaceutical companies implementing supply chain optimization programs in response to industry challenges must also be prepared to improve end-to-end supply chain visibility. This is the only way planners are able to effectively and efficiently measure KPIs, minimize inventory, conduct root cause analysis and make real-time decisions to reduce lost sales. However, the journey to fully enhanced visibility of the supply chain is no small task and requires expert support.

The Cognizant Value Proposition

Capability to provide the full supply chain visibility life cycle, from assessment and implementation to operation, offering an end-to-end managed service for efficient and cost effective delivery of benefits.

Experience to develop and run Business Intelligence Competency Centre's (BICC) using BI and analytics specialists, with an in-depth knowledge of life sciences and supply chain, for a robust framework of service excellence and delivery of KPI metrics from source to dashboard.

Enterprise data management to enrich raw data into mobile information. Executing master data strategy, governance and stewardship as well as providing a single view of entities with consistent structure and definitions.

Offering deep supply chain consulting capability by experienced practitioners, optimizing the balance between world-class customer service and cost-based reduction with the ability to align strategic goals of both IT and business stakeholders, minimizing redundant parallel efforts.

- Capability and experience in delivering all three of the recommended steps for rapid and cost effective implementation of supply chain visibility.
- Experienced life science and supply chain practitioners.
- MDM to Analytics, an all-inclusive data management service
- Vendor agnostic approach for the right Supply Chain Analytics technology solution with an extensive range of alliance partners and trained resources.

About Cognizant

Cognizant (NASDAQ: CTSH) is a leading provider of information technology, consulting, and business process outsourcing services, dedicated to helping the world's leading companies build stronger businesses. Headquartered in Teaneck, New Jersey (U.S.), Cognizant combines a passion for client satisfaction, technology innovation, deep industry and business process expertise, and a global, collaborative workforce that embodies the future of work. With over 100 development and delivery centers worldwide and approximately 218,000 employees as of June 30, 2015, Cognizant is a member of the NASDAQ-100, the S&P 500, the Forbes Global 2000, and the Fortune 500 and is ranked among the top performing and fastest growing companies in the world. Visit us online at www.cognizant.com or follow us on Twitter: Cognizant.

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