Empowering a New Era of Innovation

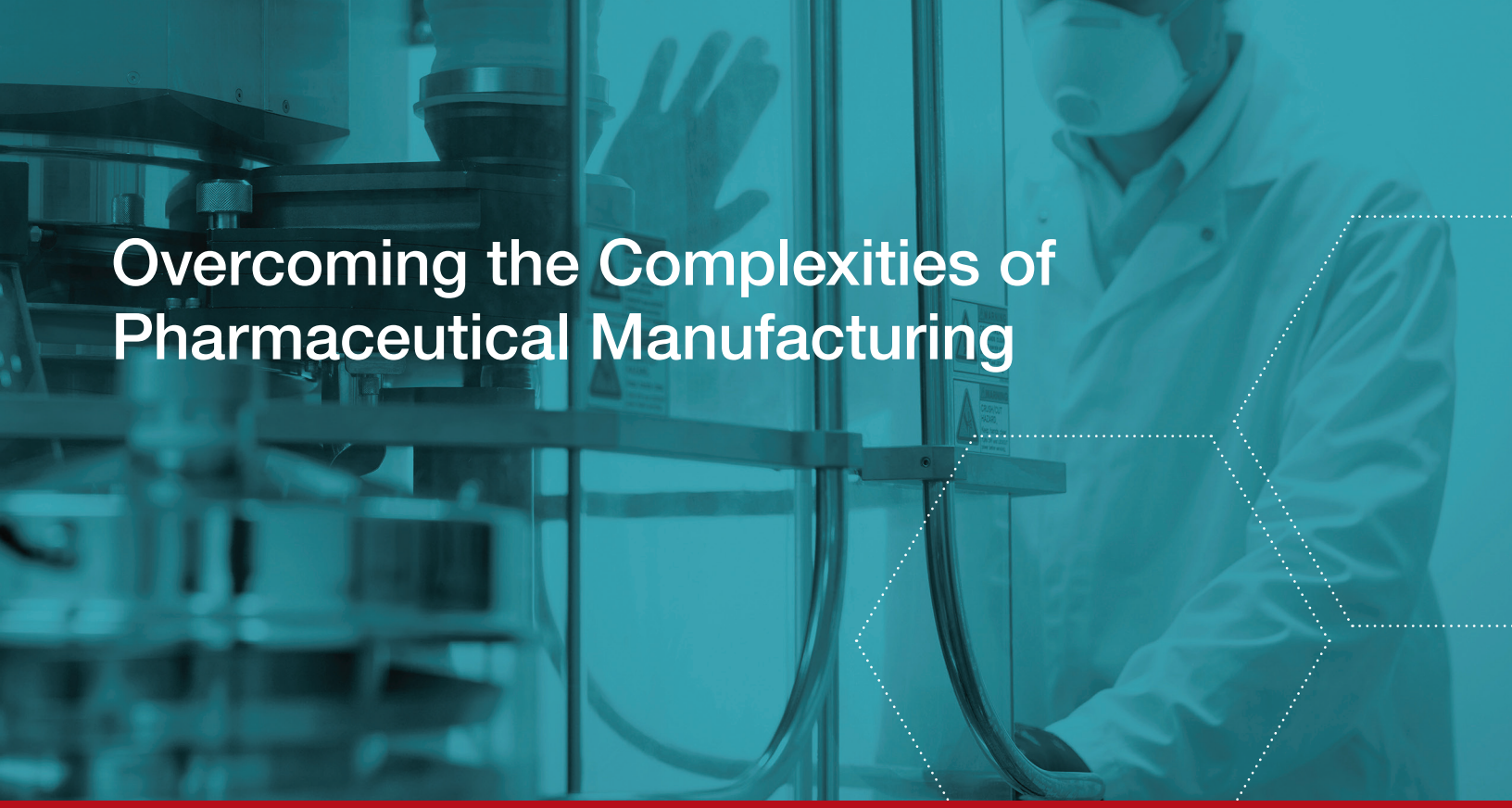
Product Lifecycle Management Technology for Pharmaceutical Manufacturers

About Neo PLM

Pioneers in Process Manufacturing Technology

Neo PLM was founded in 2011 by a team of pharmaceutical industry veterans with a legacy of technological advancement in process manufacturing. Neo's management team has collaborated on innovative software solutions for pharmaceutical companies and contract manufacturing organizations for more than 30 years.

Over a decade ago, Neo team members developed the first integrated process PLM solution as a custom application for one of the world's largest pharmaceutical companies. Today, Neo provides PLM solutions for leading pharmaceutical manufacturers at sites around the globe.



Overcoming the Complexities of Pharmaceutical Manufacturing

Drug manufacturing has never been more competitive or complex. Between global supply chains, outsourced and multi-facility production, and tightening regulatory requirements, success increasingly depends on communication and interdependence. Compounding the challenge, standard approaches to managing pharmaceutical product knowledge and manufacturing have barely evolved in decades—remaining document-based and disjointed.

Neo PLM was founded with a single focus: to finally bring modern Product Lifecycle Management (PLM) capabilities to pharmaceutical companies and other process manufacturers.

Neo is ushering in a new era for pharmaceutical companies and CMOs, whether you manufacture small molecule APIs, large molecule biologics or drug products. Our PLM suite is the first digital process design-based solution to managing information, productivity and quality throughout the product lifecycle. This represents a fundamental paradigm shift—from document-centric approaches that silo critical business data in spreadsheets and other standalone programs to a digitized solution that:

- **Centralizes product and process knowledge** – uniting all stakeholders from late-stage research through manufacturing around a "single version of the truth"
- **Integrates systems and automates processes like never before** – eliminating resource-intensive and error-prone manual tasks
- **Streamlines and accelerates technology transfers** – improving accuracy and increasing productivity
- **Enables Continuous Process Verification (CPV) and process-driven compliance** – vastly simplifying batch analysis to enhance quality assurance and drive process optimization

Ultimately, the Neo suite not only helps you improve efficiency and product quality, but empowers knowledge-driven innovation across all core business functions.

NEO PLM PRODUCT SUITE

Modular Solution Centered on Process Design

Decades ago, Computer-Aided Design (CAD) sparked a revolution in the world of discrete products. By enabling manufacturers to create a comprehensive digital definition of the product, CAD formed the core of discrete PLM, dramatically improving quality and accelerating innovation. Yet there has never been an application analogous to CAD for the process industries—until now.

That application is Neo Design, the groundbreaking technology at the heart of our PLM suite. It is both the industry's most advanced process design tool and the module that powers the other three: Neo Product Browser, Neo Planning and Neo Analysis. Together, these four modules form the first solution to unify the pharmaceutical product lifecycle around a robust digital definition of the end-to-end manufacturing process.

NEO DESIGN

Highly structured digital framework that centralizes all process knowledge, providing the foundation for connecting every aspect of the product lifecycle.

During late-stage research, your scientists use this module to complete a digital engineering design for each step in the manufacturing process. Comprehensive modeling based on site-specific equipment parameters yields faster, more accurate, right-first-time designs.

The process design then provides a highly structured framework for maintaining all product and process knowledge in a contextualized way. This digitizes and centralizes information that is typically compartmentalized within different documents and departments, providing a "single version of the truth" for all stakeholders. Neo Design also generates shop-floor instructions and a range of other outputs that import directly into your existing systems. This unprecedented integration allows your scientists and engineers to focus on truly rewarding work rather than extracting, cleaning and transforming data and creating documents.

NEO PRODUCT BROWSER

Planning environment for a single product, providing a high-level view of your end-to-end manufacturing process.

Once all the steps in the process are designed, the Product Browser module brings them together in one place. Easily evaluate multiple manufacturing scenarios for a product, comparing the impact of using different plants and equipment trains. A single screen delivers visibility into all design parameters, including costs and cycle times, to quickly inform decisions and help you maximize production efficiency. Together, the Design and Product Browser modules provide a powerful platform for streamlining technology transfers—both internally and between pharmaceutical companies and CMOs.

NEO PLANNING

Enterprise-wide planning tool for manufacturing multiple products across your network of facilities.

After using the Product Browser to develop product manufacturing scenarios, import them into Neo Planning to see how they fit together within your overall operation. The key to this module is a sophisticated scheduling algorithm the Neo team has been honing for over a decade. The algorithm is uniquely tailored for the planner in a multi-product, multi-plant environment to quickly assess and select the optimal production route based on a particular set of requirements. The module instantly identifies potential shop-floor conflicts and synergies, and then recommends manufacturing options to help you maximize cost efficiency and capacity utilization.

NEO ANALYSIS

Completely digitizes batch record reviews, automatically comparing execution data against the process design.

Neo Analysis offers you the ultimate in Continuous Process Verification (CPV) capabilities. The module enables near-real-time batch review by all plant personnel, while eliminating manual tasks usually associated with data extraction, cleansing and transformation.

At the core is an integration layer that continuously collects production data from your Data Historian, Laboratory Information Management System (LIMS) and Enterprise Resource Planning (ERP) system. The application automatically correlates the data to the process design to determine whether any constraints were violated. That includes a unique ability to detect processing gaps and unexpected departures from the processing sequence. Advanced analytics on contextualized historical data inform business decisions to help you mitigate risk, improve product quality, maximize productivity and—ultimately—increase revenue.

Welcome to the Future of Pharmaceutical Manufacturing

The pharmaceutical industry is famously innovative when it comes to product development. Now you can apply that same spirit of ongoing advancement to the way you manage process knowledge and manufacturing across the product lifecycle.

Neo is shifting the pharmaceutical manufacturing paradigm from document-centric to design-centric, and from fragmented to fully unified. Antiquated processes are being replaced with new integrations and automations. In diverse manufacturing environments worldwide, the industry's first digital design-based PLM solution is helping leading pharmaceutical companies improve quality and efficiency while empowering a new era of innovation.

Neo integrates systems and processes across the product lifecycle to:

- Facilitate Quality by Design (QbD)
- Enable Continuous Process Verification (CPV)
- Accelerate process validation
- Reduce compliance costs
- Improve visibility and traceability
- Maximize productivity and capacity utilization
- Digitize internal and external technology transfers
- Minimize time to market
- Free scientists and engineers to focus on innovation

Evolve your approach to managing the pharmaceutical product lifecycle.

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