

# SUSTAINABLE LAB INDUSTRY PROCESS EXPERIENCE

## DATASHEET

The Sustainable Lab Industry Process Experience integrates people, resources, processes, and data to streamline workflows and data compliance, foster collaboration, and improve efficiency, faster product innovation, and IP capture.

### CHALLENGES IN CHEMICAL RESEARCH & DEVELOPMENT

With the pricing volatility of bulk chemicals, many companies have decided to shift to higher margin specialty chemical production and move away from the commodity business. This change in strategy requires the ability to quickly develop specialized, differentiated chemical products that add value to the raw materials they typically sell. But to succeed, a lab must speed up its pace of innovation. The BIOVIA Sustainable Lab Industry Process Experience is designed to meet the challenges of your lab – from efficient capture of experimental observations through product optimization and process scale-up.

Many organizations that use science to drive new product development see a widening productivity gap across the innovation and commercialization lifecycles that is slowing new product development, placing pressure on maintaining margins, and negatively impacting competitiveness.

Current data systems can limit productivity in a variety of ways. Paper lab notebooks can keep data buried in file cabinets and away from other people and other lab locations.

Experimental information can become inaccessible or not easily available as the experimental process progresses downstream to optimization and scale-up research.

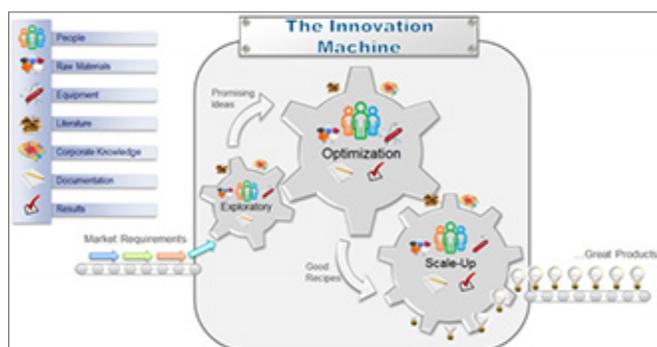
Complex IT systems can bury vital data. Disparate databases or spreadsheets can silo scientific data, making it impossible to manage. The result? Costly repeated experiments and lost information. These lab inefficiencies ultimately lead to more expensive products that may take longer to bring to market.

Transforming R&D into a sustainable innovation “machine” can help you develop new products that hold and gain market share and drive future rounds of successful new products and competitive product differentiation, with shorter introduction times. Key obstacles hindering this transformation are often the software tools and practices you already have in place..

### Key Benefits of the Sustainable Lab Industry Process Experience

Drive insights for powerful innovation with:

- A global, integrated web based solution that enables electronic laboratory workflows
- Optimal utilization of people, materials, equipment and processes that provides unparalleled efficiency and excellence in the laboratory
- Complete and accurate recording of the laboratory activities and chemicals inventory that enable compliance reporting
- Data linked with the context that generates it ensures consistent interpretations and collaboration and provides knowledge to predict future outcomes
- Data pipelining and automation based on a single foundation that integrates business and scientific processes
- Scientifically relevant and standardized applications and views embedding the necessary compliance and business alignments reduces decision risk



**Figure 1:** The combination of people, resources, research literature and testing tools used to streamline the three critical phases of experimentation -- exploratory, optimization and scale-up -- create the backbone of an organization's "Innovation Machine." The successful use of these variables throughout the experimentation phases can take thousands of disparate ideas and convert them into a manageable number of viable candidates – thereby reducing the time to innovate while developing only the best of candidates that can scale up into production.

## SOLUTIONS THAT ACCELERATE NEW CHEMICAL DEVELOPMENT

### Take Paper Out of The Lab

By replacing paper lab notebooks with an integrated electronic laboratory notebook, scientists' documents become instantly accessible with the stroke of a key. Written research, competitive insights and corporate knowledge can be accessed and shared with ease. Scientists can quickly jot down the notes of their ad hoc exploratory work, knowing that it will be available for future use. Standardized user interface and data capture ensures consistent interpretation across the organization to foster collaboration. Data can now be easily and securely shared between people, labs and locations – enabling faster knowledge gathering.

- **Save valuable time:** Replace paper lab notebooks and eliminate time-consuming manual procedures
- **Collaborate instantly:** Provide instant access to experiment records at any time, from any location
- **Protect your IP:** Digital signatures, experiment templates and workflow alerts ensure maximum IP protection
- **Reuse information:** Instant access to previous notebook entries shortens and reduces cycles
- **Work intuitively:** Easy-to-use interface enables fast learning and rapid organizational adoption

### Accelerate Product Innovation

Lab resources are too precious to be wasted with inefficient research cycles. For effective product optimization testing, a detailed centralized database showing what's previously been done ensures that scientists don't begin testing from an old starting point. Given all the different pieces to a research project – sample creation, sample characterization tests, deciding which of the hundreds of samples to use – an efficient, standardized system for managing test cycles and durations can help reduce the pain of long innovation projects. To shorten experiment cycle times, the system must enable scientists to quickly find, trust, and reuse past experiment results.

- **Experiment planning:** Move to knowledge-driven and statistically-designed experiments to minimize cost and maximize lab effectiveness
- **Experiment execution:** Track workflow, gather data produced from instrument files, spreadsheets and databases, eliminate manual piecing together of data

- **Data analysis:** Leverage powerful queries and visualization of experimental results
- **Reporting:** Take advantage of configurable report templates with integrated charting, scatter plots and interactive reporting options
- **Data mining and knowledge generation:** Build correlative and predictive models to compare data across R&D scales, receive statistical guidance on what experiments to perform next

### Save Money, Reduce Waste and Keep Your Lab Safe and Compliant

Chemicals are the raw materials required for experimentation and can be quite costly. A chemical inventory management system can help efficiently manage your lab's inventory effectively. It can identify and source the necessary chemicals that are not on site, so labs can be assured that the material they need is both readily available and in the quantity required. Labs can also ensure that the inventory of bulk, stock materials on-hand is up-to-date, of high quality and safe for use. Lastly, labs can ensure that the costs associated with regulatory risk and compliance are efficiently managed with immediate access to EH&S reports and Safety Data Sheets.

- Manage chemicals from receipt through disposal more efficiently
- Ensure accurate, real-time chemical safety and inventory data
- Integrate chemical inventory with Safety Data Sheets
- Monitor expiration dates and chemical shelf life
- Uncover opportunities for waste minimization and cost reduction
- Generate complete, accurate regulatory reports
- Identify and locate commercial sources of chemicals



## THE SUSTAINABLE LAB INDUSTRY PROCESS EXPERIENCE

The Sustainable Lab Industry Process Experience is a suite of capabilities supported by a common foundation, designed to streamline experimentation processes, thus creating process efficiencies and saving time and costs.

Capabilities	Benefits
Centralize data in digital solutions	Streamline workflows, remove barriers to innovation
Share data in a secure environment	Role-based permissions define access; IP is protected and secure
Access past experiment data	Eliminate repeat experiments; enable rapid searches to locate viable theories
Reduce number of physical experiments	Virtual screening expedites the experimental process
State of the art collaboration tools	Enables team participation
Shortened/reduced experiment cycles	Explore only the best possible ideas without committing large amounts of time and money
Streamline scale-up	Reduced scale-up time and cost

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