

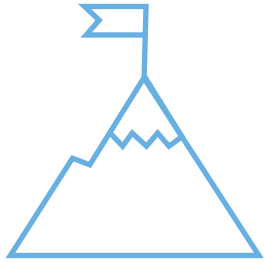


## Case study

# Enhanced Batch Quality Prediction Using Process Analytical Technology

## Client

The client is a leading US-based multinational corporation that manufactures medical devices, pharmaceuticals, and consumer packaged goods.



## Challenges

**The challenges that the client faced in maintaining batch quality included:**

- ☑ Insufficient information leading to delays in taking early corrective action for bad batches.
- ☑ Lacked ability to optimize production cycle times.
- ☑ Lacked insight on the external parameters that were impacting process and batch quality.
- ☑ Real-time process information was unavailable, affecting the timely release of batches.

## LTIMindtree Solutions

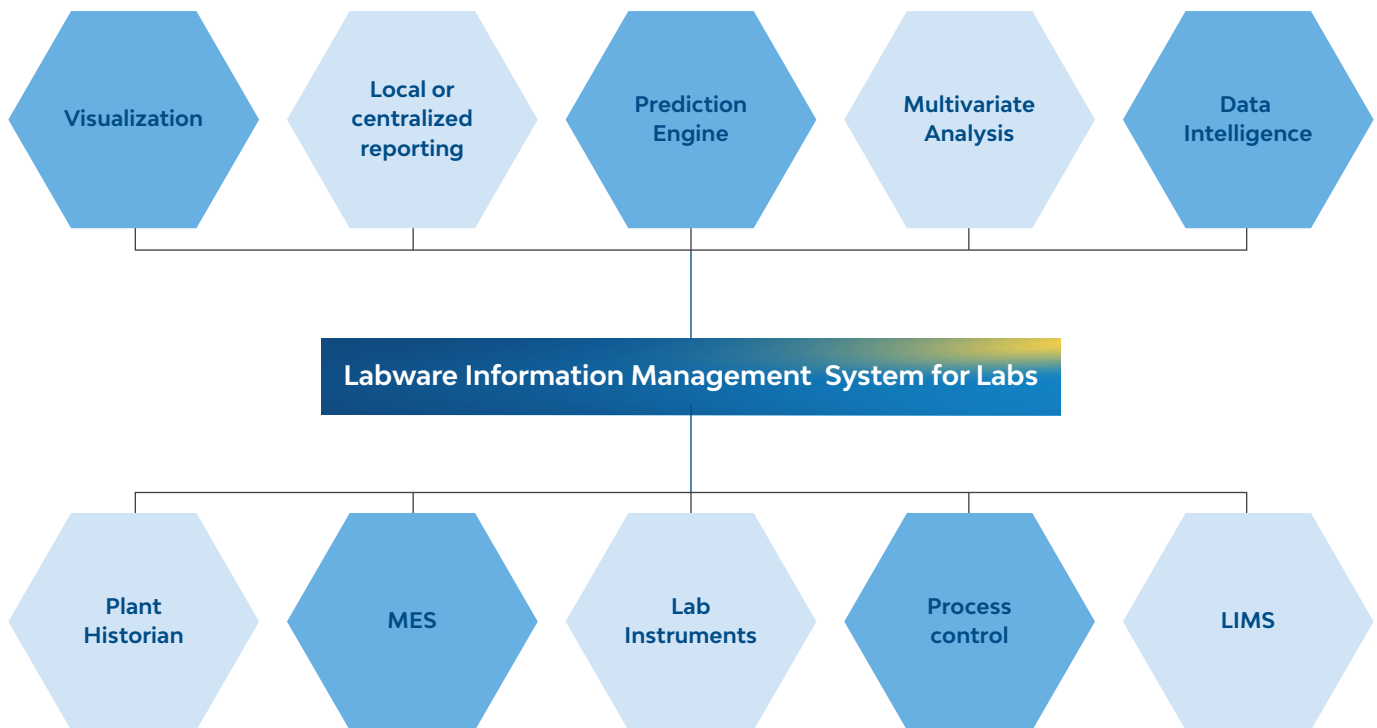
Automated reading and recording of process information using the Process Analytical Technology (PAT) framework.

Created digital replicas of the manufacturing process using data from spectral instruments and a range of Operational Technology (OT) systems.

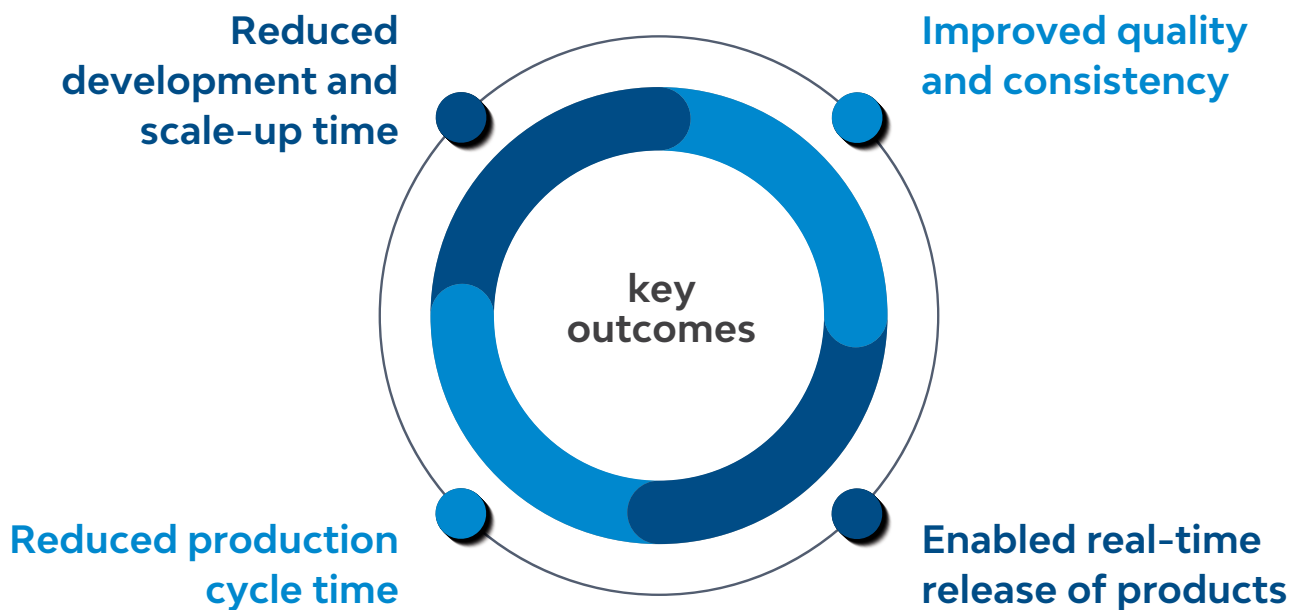
Introduced a data-model based real-time Multivariate Analysis (MVA) procedure to drive predictable outcomes for newer batches.

Equipped process engineers to execute preliminary Root Cause Analysis (RCA) for non-performing batches.

Enabled execution of focused RCAs along with necessary corrective action that helped manufacture good batches.



The key outcomes of the solution included:



# Benefits

**70% enhancement** in the operational capacity.

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**100% compliance** to Good Automated Manufacturing Practices (GAMP).

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**Strategically enabled** Right First Time (RFT) processes.

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**Enabled continuous manufacturing** with seamless transfers from laboratory to plant and facilitating global tracking and monitoring.

**LTIMindtree** is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximize growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by 81,000+ talented and entrepreneurial professionals across more than 30 countries, LTIMindtree — a Larsen & Toubro Group company — combines the industry-acclaimed strengths of erstwhile Larsen and Toubro Infotech and Mindtree in solving the most complex business challenges and delivering transformation at scale. For more information, please visit [www.ltimindtree.com](http://www.ltimindtree.com).