

Analytical costs, scale-up delays, and optimization potential in upstream bioprocessing

Is your upstream process costing more than you think?

In upstream bioprocessing, two cost drivers are often underestimated: the time required to transfer processes from the laboratory to production and the cost of analytical methods used for high-value products. This questionnaire helps you evaluate your optimization potential in just five minutes.

Checklist	Yes	No
Do you know the typical time required to move from laboratory development to full production-scale validation?	☐	☐
When transferring a process across scales or sites, do you need to substantially redevelop or recalibrate analytical models?	☐	☐
Do your routine culture control measurements (glucose, lactate, viable cell density, protein titer) require sampling and offline testing?	☐	☐
For high-value products such as monoclonal antibodies and enzymes, do the costs of offline analyses and sample consumption represent a significant portion of your analytical cost per batch?	☐	☐
Have you experienced a delayed harvest or batch loss because a critical process change was detected too late for corrective action?	☐	☐
Is management placing pressure on your organization to shorten time-to-market for new processes and accelerate the transfer from R&D into manufacturing?	☐	☐
Do you have visibility into the true cost of a failed or delayed scale-up cycle, including resource allocation, delivery delays, and the costs of additional validation batches?	☐	☐
Is your feeding strategy (glucose, glutamine, and other nutrient additions) driven by real-time process data?	☐	☐
If you could significantly increase culture titers in your production bioreactors, do you know what annual value that would represent for your site?	☐	☐
Have you ever compared the cost of your current analytical monitoring program (sampling, laboratory testing, operator time) with the potential value created through real-time monitoring?	☐	☐

How to interpret your score

8–10 Yes answers – Your organization already has good visibility into these cost drivers. Let's discuss how inline Raman spectroscopy can deliver measurable value or your most critical processes.

5–7 Yes answers – There are optimization opportunities within your operation. A 30-minute discussion could help identify which opportunity offers the fastest and most accessible return.

0–4 Yes answers – These cost drivers are likely underestimated at your site. This is exactly the type of situation where a Raman feasibility assessment can provide significant value without requiring confidential process information.

Discuss these improvement opportunities with an Endress+Hauser application engineer.

Contact us today

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People for Process Automation