



Thought Leadership

Breaking Down Data Silos in the Lab

HOW INTEGRATED DATA MANAGEMENT SYSTEMS CAN SUPPORT DIAGNOSTIC LABS

by Erica Tennenhouse, PhD

Vasu Rangadass, PhD, is the president and CEO at L7 Informatics, Inc., a leader in life sciences workflow and data management. Previously, Dr. Rangadass was the chief strategy officer at NantHealth following its acquisition of Net.Orange, the company he founded to provide an enterprise-wide platform to simplify and optimize care delivery processes in health systems. Prior to Net.Orange, Vasu was the first employee of i2 Technologies (currently Blue Yonder), which later grew to be a global company that revolutionized the supply chain market through innovative approaches based on the principles of Six-Sigma, operations research, and process optimization.

Q: What are the greatest informatics challenges that diagnostic labs face today?

A: I think the number one problem that we see is data silos. Typically, the more advanced diagnostic labs have their own home-grown system because they didn't see any viable solution in the market. As genomics medicine becomes standard of care, especially in the treatment of cancer and rare diseases, we see molecular diagnostics growing rapidly. You want fast turnaround times and accurate audit trails and full data provenance. All of that is not easy to do when you have siloed systems and paper intermixed with Excel spreadsheets.

Q: How is L7's Enterprise Science Platform solving these challenges?

A: Traditionally, people use LIMS systems to manage the wet labs and then they use bioinformatics pipelines to manage the informatics analytical pipelines. L7 was created to break down this wall and create one integrated platform. We've now expanded our scope beyond breaking down this one wall between wet lab and dry lab to breaking down walls between sample management, sample accessioning, sample inventory management, reagent inventory management, and freezer or location management. We've incorporated all of this into one integrated platform called ESP. It's kind of like an operating system for the lab with different applications, so it's a much more modern architecture to support the lab of the future where people don't have to



▲ Vasu Rangadass, PhD

buy multiple different systems. We created one platform and LIMS just happens to be one app and there's also an inventory management app and a location management app. Customers can pick and choose what apps they want, but all of the data in the lab, both scientific data and operational data, is in one place. We can support digitization, workflow automation, and all of these other functions because we are a single platform to support all the lab needs.

Q: What prevents all labs from adopting an integrated data management system?

A: I think the main bottleneck is that customers already have an existing system. But even customers with existing systems are looking to use ESP as an overlay system on top of their siloed systems to tie all of their siloed systems together. ESP can replace existing legacy systems or overlay on top of those systems and give them a big-picture view of the entire lab. We have customers that are using it in both modes.

Q: What types of diagnostic labs stand to benefit most from your platform?

A: Molecular diagnostics labs—so people doing qPCR for COVID testing or whole genome sequencing for rare diseases or RNA sequencing for cancer or exome sequencing. It's really all the molecular diagnostics that we are focused on because they are the ones that have the most complexity. But that doesn't mean that our system is only useful for molecular diagnostic companies; I think we can support any diagnostic. Our system is also fully regulatory compliant, so our customers are using this not only for molecular diagnostics and companion diagnostics but also for manufacturing quality control and manufacturing automation. We have customers both in the precision diagnostics space and also in the cell and gene therapy space using this for doing quality control and manufacturing execution.

Erica Tennenhouse, PhD, is the managing editor of Clinical Lab Manager.