Here and now, business software tracks lab labors

Anne Ford

Might as well face it: Some people are addicted to love. And, though you may not hear Robert Palmer singing about this on an '80s radio station anytime soon, Susanne Peterson is addicted to data.

It began when Pacific Diagnostic Laboratories in Santa Barbara, Calif., where Peterson is manager of administration and laboratory operations, began using business intelligence software from Viewics in Sunnyvale,

Calif. With Viewics' software, Peterson can track and measure staff productivity in near-real time, and problem-solve when physicians have questions about the performance of lab tests. Its interface is so easy to use, and its results so rich, she says, "I don't go a day without looking at Viewics. It becomes addictive once you start."

While business intelligence tools have been around for decades, only recently have pathology-specific versions emerged. As of this writing, three companies—Viewics, Altosoft, and Sunquest—offer BI software for laboratories. So far, users seem delighted with their newfound powers to slice, dice, and deploy productivity, safety, and other types of data quickly and reliably.

One of the primary factors fueling this data-driven love affair: the ability to predict and adjust staffing levels based on the trends the software reveals. Not until she began using Viewics, for example, did Peterson realize that some physicians in her community close their offices early on certain days of the week. "Nobody running the business knew that on Wednesdays, some doctors close their offices early," she says. "So my workload drops every Wednesday evening. And on Fridays, some doctors' offices close at 12. So my question is: Well, what am I staffing Friday after 12 for?"

The software also gives her the ability to view and track productivity using many different variables—instrument, date, time, and employee, for a start. "I graph out—or rather, Viewics does for me—the workflow of every individual in this lab, what they're doing every minute," Peterson says. "So I can show the vice president where I'm productive, and how I need to move people around where I'm not. I can also see when I'm losing business and explain why my workload is dropping, or where and how I staff for time of day and time of evening."

The ability to make decisions based on that hard data, rather than on anecdotal evidence, is what makes

Zan Miller a fan of BI software for laboratories. Miller is chief data architect for Northeast Georgia Health System, Inc., Gainesville, which implemented Sunquest's Diagnostic Intelligence product last year in its general laboratory and is planning to roll out the pathology component soon. "What really hits home is the ability, in real time, to see things like turnaround time, and to drill down on specific lab technicians or people ordering the test," he says. "Traditionally, our operations manager

would walk around and ask people, 'How's your workload?' Whereas now you can bring it right up on the screen, and it's real-time versus retrospective. Our lab analyst is not off writing reports on data that is a month or three months old."

Another BI software user agrees that it's the real-time nature of the data that makes it so useful. Peter Gershkovich, MD, MHA, uses a product by Altosoft, of Media, Pa., to "among other things, immediately inform people about delayed cases and create an opportunity to address them before they forget about it," he says. "Otherwise, reporting would be done once a month, and you'd see, 'So-and-so had a problem with signing cases on time.' But what was the reason? Nobody would remember. And you'd have finger-pointing." Dr. Gershkovich is associate research scientist in pathology and associate director of pathology informatics in the Department of Pathology, Yale School of Medicine.

He enjoys, too, the ability to easily change the granularity of the data he's looking at. "Typically, when we look at turnaround time, we look at averages, and averages don't tell the whole story," he explains. "With the [Altosoft] dashboard, you can see each individual case as a dot on a

scatter plot. You can still see the average as a line. You can decide to zoom in on cases and select them, and click on the individual dots and see the history of an individual case—when it was accessioned, when the slides were produced—and figure out the cause of the delay."

Then, too, he says, "you can immediately choose a different category and see, for example, turnaround time by service versus by pathologist or by cytotech or by some other way. It's very dynamic."

Another plus in his eyes: the ability of the Altosoft product to integrate multiple sources of data. "Let's say I have some information in an Excel spreadsheet that was collected by a QA group, and I want to link it with other information retrieved from our [Cerner CoPath] LIS," he says. "I am able to link these data sources, and they will show up on the screen as if they came from the same source."

On a more technical level, he also appreciates that his Altosoft setup obviates the need to use a data warehouse. "Altosoft incrementally retrieves only data specific to the metric you're trying to create," he explains. "The system retrieves selected data every day, for example, or every hour, or every 15 minutes—and puts them into a separate database where the actual analysis is happening."

This database is designed and indexed for this rapid aggregation analysis, he says. "It cleanly separates the transactional system and reporting system. Unlike a typical data warehouse, what happens is that there's data that is seamlessly offloaded into a separate database that is dynamically and automatically configured by Altosoft software. If I change the metric, all I need to do is select rows from the production database, then hit a button, and the Altosoft software will update the structure of the database they're using."

In other words, the Altosoft software provides "the ability to access production data without slowing the

In this issue

Business intelligence
continued from page 3

database, without interfering with ongoing activities," Dr. Gershkovich says. "Some systems that do business intelligence require you to have some kind of a data war ehouse, or to offload data somewher e, which al - ways represents a delay. You couldn't do it in the middle of the day; you'd have to do it at night, so it would be day-old data."

No matter which company's prod- uct they've implemented, customers express universal delight in their software's ease of use. "W e needed about 30 to 45 minutes of training— which was done online—and t hen every one of us could manipulate the data, all the fields, all the indicators," says Viewics user V ince D'Mello, administrative director of laboratory medicine, Grand River Hospital and St. Mary's General Hospital, Kitch - ener, Ontario, Can- ada. "Basically, it's point, click, and drag."

One of D'Mello's favorite aspects of Viewics is the com- pany's ability to ex- tract data from the

D'Mello

laboratory's Cerner CoPath informa- tion system with minimal pr essure on the hospital's IT department. "We know that our IT department has many conflicting priorities hospital- wide," says D'Mello, who adds that the department works har d on a range of hospital needs and has sup- ported the lab through many chang- es and challenges. With Viewics do- ing the extraction from start to end, "the process and timelines were com- pressed significantly," he says. All was completed in about four weeks. "We involved our IT department from the outset of the project, which reduced strain on their resources."

Another favorable aspect: Viewics accesses and relies on test-level data that is in no way linked to patient identity. "Therefore, Canada's pri- vacy legislation is maintained with- out compromise," D'Mello says.

Miller characterizes Sunquest's product as "very intuitive."

"It allows you to click on a name in a list, or an actual bar in a graph, or a slice of pie in a pie chart, and it immediately drills down into that data," he says. "Ther e's not a lot of learning menu commands or learn - ing where to go."

That ease of use comes in especially handy when a physician questions test results and laboratorians must scramble to come up with an answer . Cecily Hintzen, quality systems ana- lyst for Pacific Diag- nostic Laboratories (a subsidiary of Cot- tage Health Sys - tem), learned that when a few physi - cians reported that they were seeing some sporadic high potassium results. **Hintzen** "So we did a historical analysis and were able to verify an incr eased fre- quency of high values," she says. "We were also able to identify when the change occurred, which in turn helped us to track down the source of the problem."

And that wasn't the only time that Viewics (drawing from the lab's Sun- quest CoPath) has helped them an - swer a physician question. Peterson once received a call from a doctor for whom the laboratory performs many lipid studies. "He said, 'Y our lipid panels are wrong, because the drugs that I've had five patients on for years are no longer working, accord- ing to you. I just don't tr ust it,'" she recalls. "Well, okay. I pulled up my cholesterols on all doctors and all patients, to see if I'd see changes in the community. I didn't. So I papered my office with lipid panels and fo- cused on different areas in the region. I didn't see any shifts. Then I took the Viewics view of only this doctor 's patients, and only those five people had a problem with elevated choles- terol. Guess what we discover ed? It was Christmas. They weren't on their diets. When I showed the physician the Viewics data, he was r eally im- pressed. If I didn't have Viewics, I might have lost the client."

W hile published ROI studies of these products haven't appeared yet, anecdotes such as those make it difficult to imagine that users of laboratory business intelli - gence software aren't seeing savings. For example, Miller says that Sun - quest's product makes it possible to make sure that physician offices that do their own testing (and order their

Business intelligence
continued from page 4

supplies from the main hospital laboratory) aren't over-ordering supplies. "We can make sure that the ordering of their supplies correlates with the number of tests they're running," he says. "We intervene if we start to see it's not correlating well. We don't want them to run out, but we also don't want them to be stockpiling stuff that may expire."

Altosoft customers can realize savings of a different sort, says CEO Scott Opitz, via the company's Health Care Vision Partner Program.

Opitz

"We've gotten our customers to agree that anything they build on top of our BI, they will share with all our other customers," he explains. "So when Yale comes up with something that's a clever way to look at this type of analysis, they can turn around and ask Geisinger [Medical Center, Danville, Pa.] if they want to take advantage of this. The ability to share the work of the best and brightest for free—that's a commitment we've made to our cus-

tomers. We will never charge anything for that."

All this isn't to say that business intelligence software users think these products have reached a state of perfection. Dr. Gershkovich, for example, would like to see Altosoft add an ability to incorporate data annotations into data analysis. "Sometimes individual records require annotations in order to add further granularity and improve understanding of the underlying processes," he says. "That is something I'm hoping to see in the future. They do have ability to add annotation already, but I do not believe it is pos-

sible to use these annotations as variables in metrics just yet."

For example, it would be convenient, he says, to annotate a record while looking at it—mark a delayed case as "awaiting material from external location" or "erroneously assigned"—and thus add a new category that can be used in filtering out data and correcting actual TAT because the case is an outlier and shouldn't be used in calculations. "It's my opinion that the ability to combine these two activities, analysis and annotation, is very desirable," Dr. Gershkovich says.

Hintzen has a basic request: to have certain reports automatically created in Viewics and e-mailed to specified recipients at designated times. "They do have a Web site that allows you to upload data and have reports available there, but we have not utilized that, and I think that's an IT decision," she says. "The end result is that there are a lot of reports that I have to run, export, and e-mail myself on a weekly, monthly, or quarterly basis."

How much can a laboratory expect to shell out for BI software? That depends on the size of the lab; whether it performs AP, CP, or both; the number of users; and whether it prefers to pay for a perpetual license or purchase a subscription, Opitz says. In Altosoft's case, "with a subscription model, even for a large lab, you can be looking at something that's under $5,000 a month," he says, whereas a perpetual license might cost $15,000 to $50,000, depending on the size of the lab.

He recommends that prospective customers grill vendors about exactly how much programming knowledge, if any, is required to use a product to its fullest. Some vendors "will make the claims of 'Oh, you don't have to be a developer,'" he says. "Well, in the simple demo, that might be true, but as soon as you try to build something to any sophistication, such as the incorporation of data from multiple systems, you quickly have to do custom programming."

Ajay Kapare, global marketing manager for Sunquest Information Systems, says otherwise. "I would not agree that you need to be a programmer to use any BI tool," he says. "We have done in-house testing on this tool [Sunquest's Diagnostic Intelligence], and we are confident anyone can use it. The whole idea behind it is ease of use. It's an intuitive product."
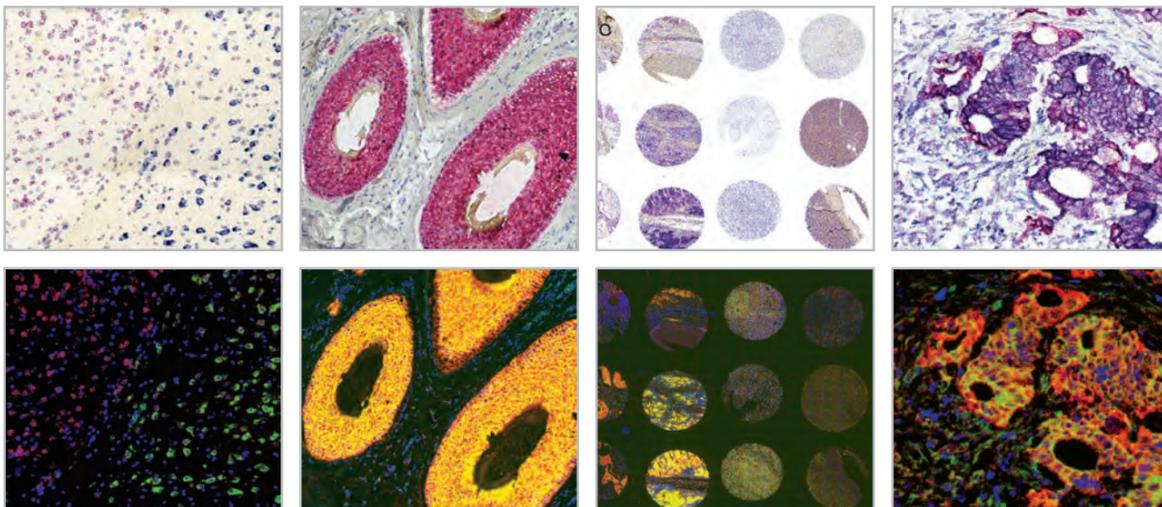
Regardless of which vendor a customer ultimately chooses, of course, it pays to have shopped wisely. As Opitz says: "No vendor ever stands up and says, 'I have the most difficult-to-use, least reliable, feature-weak product.'" ☐

Anne Ford is a writer in Evanston, Ill.