

# Lab software: The global scene

Edited by Carren Bersch

**A**t the AACC annual meeting last month in Chicago, we were impressed, once again, by the increasing numbers of international visitors to that venue and wondered if we could get an “insider’s view” of what American companies are doing in laboratories globally. Bob J. Rothstein, managing director of Data Innovations Europe, who works in Brussels, Belgium, was gracious enough to answer our questions, which we share to give readers a broader knowledge of what is happening in their overseas counterparts’ laboratories.

**MLO:** While there is much being made by many organizations that “global” is a relatively new way of doing business, Data Innovations (DI), according to a statement you made to MLO, has been engaged for many years in global entrepreneurship. What were you originally charged to do for the company overseas? What happened that made you realize that your performance had succeeded?

**Bob J. Rothstein:** Data Innovations is celebrating its 20th year in business in 2009; and while the company had installations outside the United States early in its history, the first foreign subsidiary, Data Innovations Europe (DIE), was opened in Brussels 10 years ago and is responsible for the Europe, Middle East, and Africa (EMEA) region. Data Innovations Asia (DIA) in Hong Kong, and Data Innovations Latin America (DILA), in Sao Paulo, followed soon thereafter.

My job with DI, like those of my colleagues Macma Suen in Hong Kong and José Colleoni in Brazil, has been to market, sell, install, support, and provide additional consulting and implementation services for our Instrument Manager (IM) middleware product — and to do it profitably. I am not sure when one can say, “It’s a success,” because there is always the next challenge. Nevertheless, the subsidiaries were all profitable within one to three years of their founding and their cumulative percentage of sales continues to grow in relation to DI’s total business.

For me personally, the job changed quite significantly in 2007, when DIE acquired 25-year old PGP, a middleware pioneer in Europe. Our Brussels office continues to develop PGP’s original product, Lab Production Manager (LPM), and our three European offices (Brussels, Paris, and Birmingham) provide sales, support, and, particularly, consulting services for both LPM and IM.

**MLO:** What are the general differences in medical laboratories in Europe compared to those in the United States? Have European labs advanced in those areas to a greater degree than their American counterparts?

**Rothstein:** Generalizations are always dangerous. A generalization about “Europe,” with more than 50 sovereign states, is even more hazardous. Since DIE’s main market is in “Western Europe,” I think we can safely say that, compared



José Colleoni of Data Innovations Latin America, Macma Suen of Data Innovations Asia, and Bob Rothstein of Data Innovations Europe, gather at AACC in Chicago. Photo by Denise DiRamio.

to the United States, Western Europe has:

- higher personnel costs. Although the average medical technologist may have a lower take-home pay, total personnel costs for Western European laboratories are higher than in the United States, due to higher European social-security costs, longer holidays, and relatively stronger European currencies vs. the U.S. dollar.
- little pricing flexibility. In most Western European countries, lab-test procedure prices, like most medical-procedure prices, are fixed by law. In addition, lab-procedure prices have been continually adjusted downward in the last 20 years. Again, 50 different countries represent 50 different fixed tariffs and methods of including additional services (e.g., phlebotomy) in the price. Nevertheless, the consensus is that the prices labs can charge in Europe are lower than in the United States.
- significantly lower levels of healthcare spending. In general, Western European countries spend 50% less per capita on healthcare than the United States.

Given these factors, medical laboratories in Western Europe have been forced to find efficiency improvements for many years. For example, certain European laboratory information systems (LIS) already had implemented rules-based auto-verification in the 1970s. In Europe, as in the United States, middleware firms have been quicker to create core functionality to address these needs. In particular, Western European labs have also looked to middleware for a high degree of customization.

DILA and DIA report, however, that for their regions some of the points mentioned above are not valid. For instance, lower salaries in those regions have hindered productivity gains using technology, in general, and middleware, in particular. Nevertheless, there are always exceptional laboratories that have been on the cutting edge.

**MLO:** Can you outline examples of laboratories with which you have worked that have used middleware to improve some aspect of their performance?

**Rothstein:** Just for EMEA, I can point to a number of interesting cases:

- An LPM system in an HMO lab in Israel is currently the largest system DI has installed (six tracks, 193 workstations, 134 instruments).
- A hospital lab in the Netherlands that was manually validating every single one of its 900 samples per day acquired a chemistry automation system from a DI partner. Today, that lab autovalidates 99% of its 1,000 CC/IA samples and, since its personnel are no longer “glued to PCs,” they use IM’s Notifier function to trigger a light pole, alerting them to a sample that needs their attention.
- Several groups of private labs in France, each comprising five or more labs, use LPM’s extensive configurable algorithmic capabilities to split requests and results in a myriad of ways among the instruments on the individual sites. In addition, each of the labs in the groups has its own LIS system, from multiple LIS vendors. In these scenarios, each lab acts like a reference lab for the others.
- A clinical-trials firm with its LIMS and IM systems in the Netherlands — but with some instruments located in China and Singapore — is controlled directly through the Internet without any local middleware. The same firm acquired a lab in the United States that has to allow its existing clinical trials to complete on the LIMS system (from another manufacturer) on which they were initiated.
- At a hospital in the Netherlands specializing in organ transplants, LPM was customized to automate the layout of plates of tissue DNA samples for donor-compatibility testing. Operations that required manual exchange of identification data between instruments and manual tracking of specimens through the different steps are now done automatically.
- A hospital group using a single IM system to handle labs in 21 different locations. This group currently has a total of 93 instruments in the 21 different labs, some of which are actually located in fitness centers.

**MLO: DI has overseas offices in Belgium, Brazil, China, France, and the United Kingdom ... and it has installed more than 6,500 middleware systems in 58 countries. Can you give examples of the varied uses of the DI middleware systems in some of those countries?**

**Rothstein:** DIE, DILA, and DIA have installations in all the major countries in their respective areas. Some of the more “exotic” places where we have installations include Mayotte, Dominican Republic, Jamaica, La Reunion, Curacao, Rwanda, Bosnia, Malaysia, Lithuania, Thailand, and Malta. Here are some of the more unexpected or original uses with which we have been involved:

- an Excel spreadsheet being used as the LIS, working bidirectionally with a single instrument;
- an LIS in New York communicating over the Internet to our middleware connected to local instrumentation in Dublin;
- because of budgetary restrictions, both IM and LPM being used without any LIS whatsoever, providing all request entry and result printing, in addition to “classic” middleware functionality; and
- labs serving the underprivileged favelas of Sao Paulo using the same advanced middleware as the more affluent private labs serving the middle and upper classes.

The challenges the overseas subsidiaries face and the different operating modes of the laboratories we encounter inspire DI to enhance its products and services. Some significant examples of

changes due to our global reach have been:

- the creation of a basic connectivity version of IM called IM-Connect, aimed at the multiple smaller LIS manufacturers in individual countries. These firms do all the results management in their LIS and use IMConnect to be able to immediately connect to any instrument on the market, thereby allowing them to concentrate on their core competencies without having to worry about the next new instrument to come out;
- the introduction of multilanguage capability on a single system, with the language tied to the user’s logon parameters;
- the creation of a managed-service contract to supply expertise for the acquisition, deployment, and parametrization of middleware products. DILA created this service at the request of the largest Latin American laboratory group, that finds it extremely cost-effective compared to recruiting, hiring, and training its own personnel to support these activities;
- creating drivers for instruments, LIS, QC applications, and robotics systems that either are local to a region or, for various reasons — particularly regulatory — are introduced outside the United States before they are introduced in the United States; and
- significant input into the continuous improvement of IM’s rules engine and user workspace.

**MLO: What challenges do DI representatives overseas face? What does — and what has — DI as a company faced in the many years it has been developing its global business? What are the “Top 3” suggestions you would give a newly minted DI employee?**

**Rothstein:** First of all, each of our regions is very heterogeneous: different countries, languages, currencies, healthcare systems, and salary levels. This is often very difficult for U.S.-based companies to manage. We have weekly status meetings with our headquarters and quarterly meetings in person on a revolving basis in our different offices. These frequent and open communications among all regions allow us to move successfully forward as one worldwide company with a single global vision, while retaining each region’s organizational structures.

Different languages throughout the regions also present a challenge. Each DI-subsidary employee speaks a minimum of two languages, and often three or more, enabling us to provide services in the language of most end-users. The regional spread of the offices allows us to more easily provide our 24-hour support across all time zones, as well as be able to efficiently go on-site for installations.

Most importantly, our partners and direct customers can count on us to work with them to propose the appropriate products and services so that an end-user in Kuala Lumpur, Malaysia; or Santiago, Chile; or Vilnius, Lithuania, all have the same satisfaction with their middleware as an end-user in Boston.

In our (DIE, DILA, DIA) collective opinion, the “Top 3” suggestions for a new DI employee would be to have:

- the ability to communicate effectively in more than just English;
- an interest in and appreciation of the diversity of laboratory work flows around the world; and
- a profound ability to listen, in order to help customers and contribute to the improvement of our products. □

**Note:** If you are a company with a global outreach, alert the editor of *MLO* at [cbersch@nelsonpub.com](mailto:cbersch@nelsonpub.com) for a possible interview in the “International Corner” in *LABline*.