

WHY BUSINESS ANALYTICS?

Implementing business analytics at your laboratory

By Hal Weiner and Dennis Winsten

With reduced reimbursement, laboratories are under increased pressure to optimize business practices, improve utilization and cut costs. Business analytics (BA) is a set of computer-based tools that transform raw data in your laboratory information system (LIS) into meaningful and useful information for better laboratory management. It provides organized, well-structured and understandable views of laboratory operational, clinical and financial data.

The goal of business analytics is to allow for the easy interpretation of large volumes of data, as well as enable laboratory leaders make quicker and better management decisions. BA can greatly assist management to better understand their laboratory operations and make well-founded, prudent decisions to meet laboratory objectives.

What is Business Analytics?

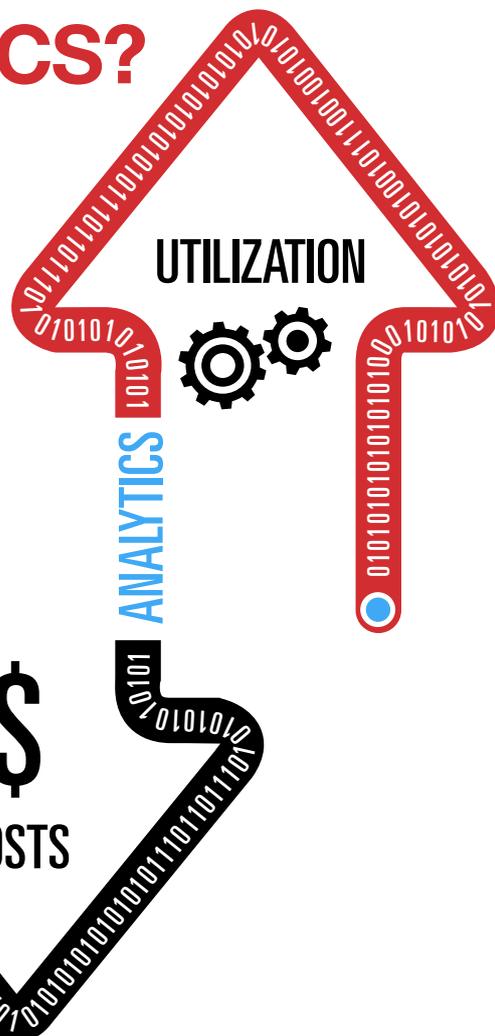
Business analytics can consist of clinical analytics (e.g., quality, key performance indicator variations, outcomes management), operational analytics (e.g., capacity planning, test utilization) and financial analytics (e.g., service line analysis, revenue and profit sources, test cost analysis).

BA systems may contain one or more capabilities:

- Extraction and reformatting of laboratory data
- Multidimensional aggregation and allocation
- Normalization of disparate common data
- Real-time reporting with analytical alerts
- Statistical inference and probabilistic simulation
- Key performance indicators monitoring
- Management dashboards

How has BA helped laboratories? Some case examples:

- Improved turnaround times from the emergency department, so that critical Stats no longer need to be ordered, while reducing order entry errors by 22 percent.
- Counseled medical doctors who ordered inappropriate cardiac panels and genetic cancer panels about best practice protocols,



saving \$120,000 per year.¹

- Reduced supply orders by 18 percent by evaluating MDs who ordered supplies, but not tests.
- To analyze ALT testing, a lab was able to look at 317,000 lab patient results. By refining the reference ranges, the lab reduced the number found “abnormal” from 10 percent to 8.2 percent. That’s almost 6,000 patients they reported as abnormal who were normal under a more sophisticated reference range.²
- Improved customer service satisfaction by monitoring key indicators by client.

Business Analytics systems can be obtained from BA specialist companies or, in many cases, from a BA module associated with your LIS or enterprise-wide system (EWS) vendor. There are many important factors to consider before selecting a business analytics ➤

Online

► To read more, search for “Analytics” on the *ADVANCE for Laboratory* website. Check it out at www.advanceweb.com/laboratory.

system for your laboratory. Some of these include:

- various database considerations
- update frequency
- security
- scope of BA
- response time for report generation

Business analytics projects differ from traditional systems projects in several ways, including being data-centric rather than process-centric. Implementation of a BA system requires consideration of levels of management commitment, existing need for BA, availability of lab data, budget limitations and staff availability—among others.

Implementation

Do you need a BA system? Are you manually creating reports using Excel? Is it time-consuming and takes weeks instead of seconds? Do you have difficulty pulling and joining data from multiple data sources? Do you have the inability to access and utilize the data collected to see insights to help identify root causes of performance issues? Do you have a need for visualization of data in real-time? You might consider BA.

Before embarking upon a BA implementation, there are several important considerations. These are:

- The level of commitment and sponsorship of the project from Executive and laboratory management.

- The priority of the laboratory’s need for creating a BA implementation.
- The amount and quality of laboratory data available and the ease of access to the data required (how many data sources, data size, complexity and location).
- Budget sufficiency to license, subscribe, install and support a BA system.
- Staff availability to implement and support BA operations and support provided by BA vendor.

There are several approaches to implementing a BA project within an organization. These include:

- **Phased Approach:** BA systems are launched within your institution, department by department, until the entire organization has access. This may extend to client access as well.
- **Immediate Implementation:** Your organization is in dire need of BA and wants to implement an effective business analytics solution immediately.
- **Executive Dashboards:** The BA project is limited to those at the C-level to offer a real-time and big-picture look at how the organization is performing.
- **OEM, Embedding:** BA is added to a current software choice, such as an LIS, within your organization to expand functionality.
- **Clients Only:** Only end users are provided with BA tools to perform self-service reporting and provide your laboratory the

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opportunity to illustrate Key Performance Indicators and individual successes to clients

Mindsets, Resources and Toolsets

When starting the planning and implementation of a BA project, three areas need to be considered:³

The first is mindset. A BA project requires leadership teams committed to using data and analytics to take action based on insights. Enterprise governance processes are needed to set priorities and focus attention on the processes needed to develop high quality data. Value design processes need to be established to define the expected benefits for each analytics program and establish roles and responsibilities of the leadership, managers and staff in delivering these benefits.

The second is appropriate resources. For laboratory systems, pathologists and medical technologists will be needed to provide the understanding of the workflow they expect to optimize through analytics. IT staff will need a full range of technical skills to design and deploy advanced analytics. However, the best solution for the laboratory is self-service analytics tools. And most important, change leaders need to be trained to reach out to the physicians, nurses and patient communities to create a shared vision of how data-driven decisions can improve outcomes and reduce costs.

The third is appropriate toolsets. These include user friendly development tools, guided data exploration, data dictionaries, metadata catalogues and medical vocabulary cross reference tables. In addition, security tools and performance management tools can assist in managing the BA system. In today's complex, challenging and competitive laboratory environment, Business Analytics can be a significant benefit to laboratory management. BA modules can be obtained from BA specialist companies or from your LIS, EWS or EMR vendor. Keep in mind the importance of careful evaluation of the characteristics of any BA system before its selection; serious consideration must be given to both the pitfalls of implementation and the best practices for BA project management. ■

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