MARKET MONITOR™ NOTES

Status of Middleware In The US Hospital Laboratory Market

July, 2018

a marketing information development company

MARKET MONITOR™ Notes are summary publications that focus on a particular issue or discipline within the clinical diagnostics industry. The data for this MARKET MONITOR™ Notes is taken from the 2017 Laboratory Informatics MARKET MONITOR™, published in the first quarter of 2018. This issue of MARKET MONITOR™ Notes addresses the status of use Laboratory Informatics (Middleware) within the United States hospital laboratory market. It should be noted that data from non-hospital commercial clinical laboratories is not included in this analysis. The 2017 edition of the Laboratory Informatics MARKET MONITOR™ is the fifth publication of this report, with the first edition being introduced in 2009. These reports provide an in-depth analysis of the status of laboratory informatics in the hospital market, it's growth, brand shares, the features and benefits of these systems articulated by current users, and anticipated future implementation among non-users.

What is Middleware?

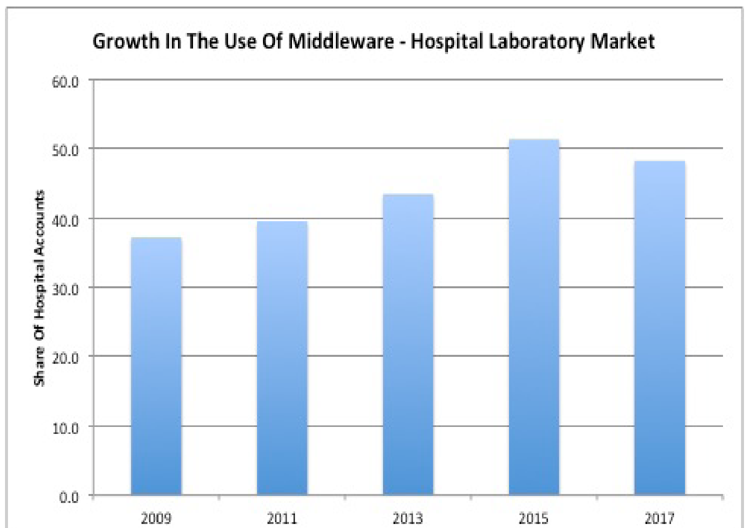
Although the perception of middleware among hospital-based laboratorians has evolved since the introduction of this study in 2009, some still don't quite understand exactly what middleware is or what it does. Some users still confuse middleware with the LIS systems used. Others view it more by the functions it provides such as, a system for autoverification; an instrument "consolidator"; and a piece of software connected to two other pieces of software. To be sure that the individuals participating in this study clearly understood the meaning of middleware and were working with the same explanation, middleware was defined as software that links laboratory instrumentation to LIS and/or HIS.

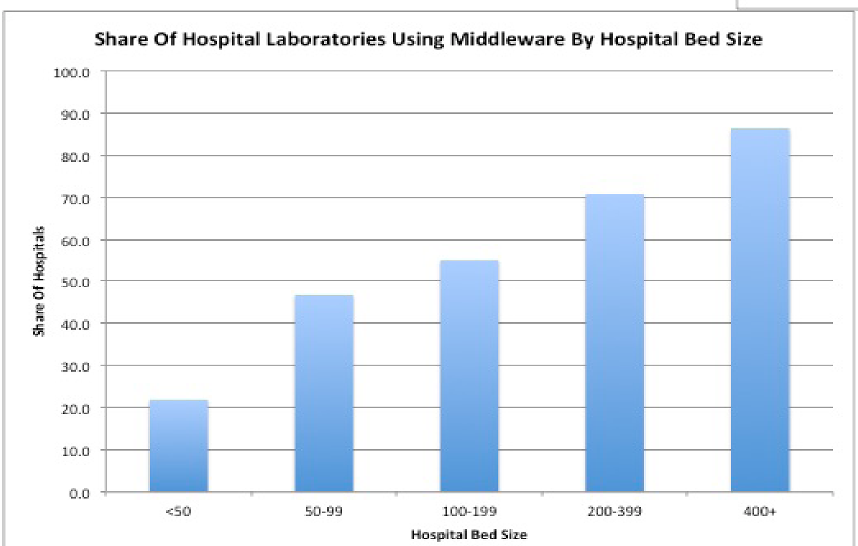
Status of Laboratory-Based Middleware

According to the results of Information Dynamics' 2017 edition of the Laboratory Informatics MARKET MONITOR™, approximately half of all hospitals in the United States use middleware within the main or core laboratory.

The acceptance and utilization of laboratory-based middleware has grown steadily within the past eight years. Initially used primarily only within larger-sized hospitals, implementation of middleware has filtered to the majority of hospitals having at least 100 beds or more. However, the primary reason current users gave for implementing the use of middleware in their labs was that it was included in the instrument acquisition, and not necessarily a decision made separately from the instrument procurement.

The graph to the right illustrates that the market for laboratory-based middleware has realized consistent growth over the past eight years.





Segmenting the Use of Middleware

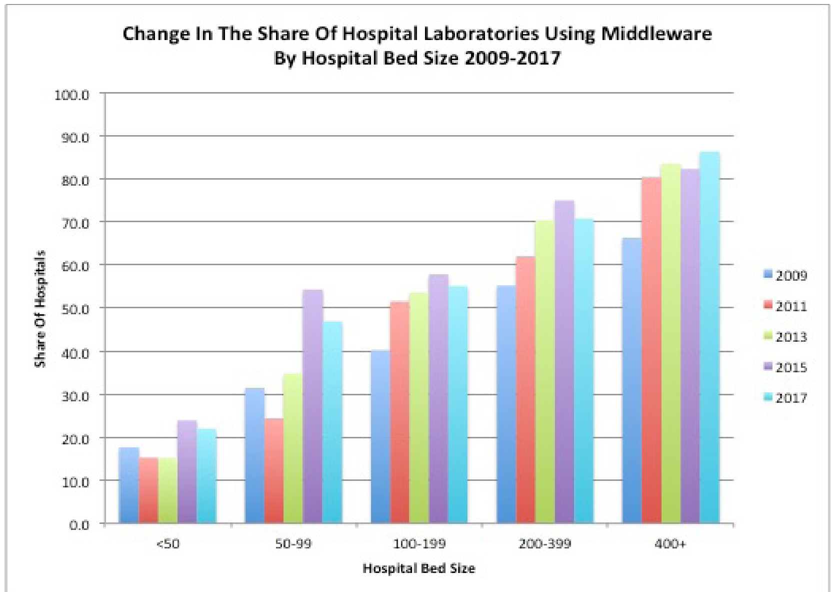
Segmenting markets puts members of a group into categories based on similar characteristics that are of strategic relevance.

Bed size segmentation is important as it allows an accurate projection of information to determine market size and brand shares. Bed size also provides a low cost means of targeting marketing efforts, as information regarding individual hospital bed sizes is readily available through the American Hospital Association and other statistical references.

When examining the status of use of middleware in the laboratory by hospital bed size, it can be seen that in 2017, the primary existing market for middleware systems is within the largest hospital bed size segments.

The greatest share of users of laboratory-based middleware continues to be within hospitals having 400 beds or more. The vast majority of hospitals in this segment use some type of middleware. Although the share of hospitals using middleware has dropped slightly in most segments over the past two years, the majority of all hospitals except those with less than 100 beds use at least some type of this software. Those hospitals falling into the under 50 bed category continue to be very limited users of middleware, with the share of users rising only slightly since 2009.

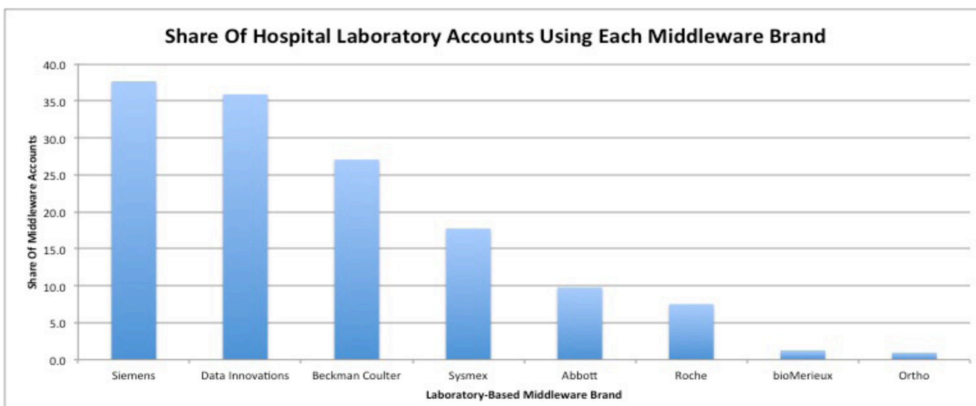
The chart to the right illustrates the share of hospitals using middleware by bed size over the past eight years.

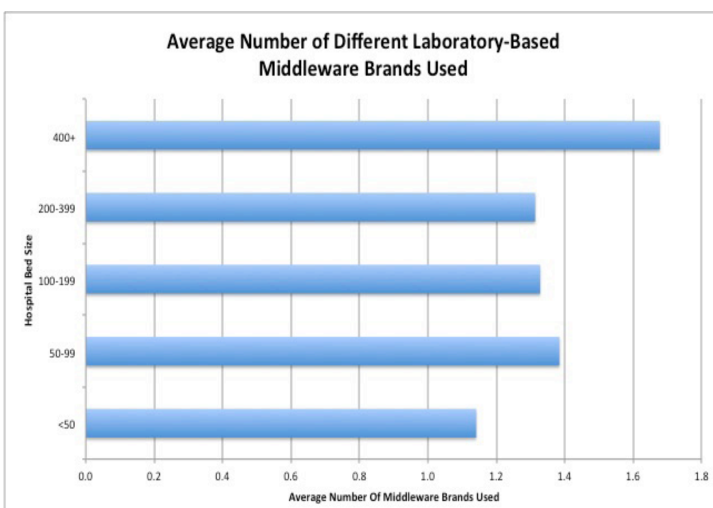


Brand Shares of Laboratory-Based Middleware

Which manufacturers have made the most substantial inroads in laboratory-based middleware? Siemens and Data Innovations lead the market for laboratory-based middleware solutions, each with approximately one-third of accounts using these brands. The only other brand with more than one-quarter of the market is Beckman Coulter, as is illustrated in the first chart below.

Two out of five of the accounts use more than one brand of middleware. Whether for different laboratory disciplines or different analyzers, many of the accounts using middleware have multiple systems. As can be seen in the second chart below, the largest hospitals use nearly two different brands of middleware in the core laboratory.

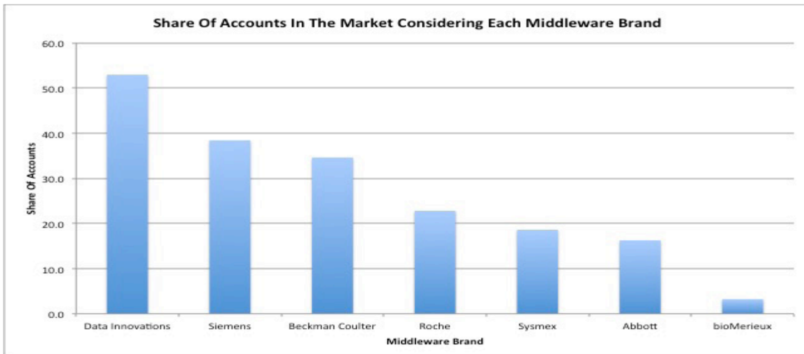


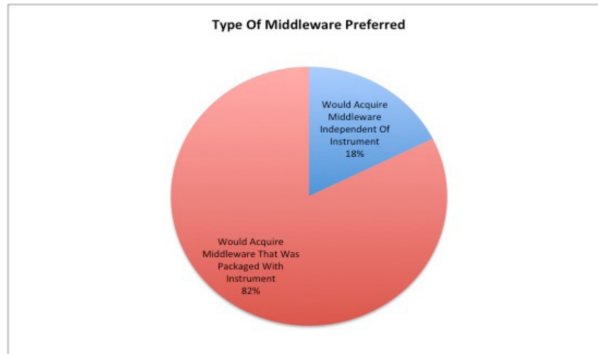


Laboratory-Based Middleware Acquisition Plans

More than four out of every five laboratorians expressing interest in acquiring middleware in the future would prefer to have middleware packaged with the instrument at the time of purchase. Nearly half of current users will not purchase any chemistry/immunochemistry or hematology instruments in the future without middleware. Even though the overwhelming majority of those in the market for middleware preferred this software to be packaged with the instrument at the time of instrument purchase, over half of those in the market prefer middleware provided by Data Innovations. Perhaps in some cases, respondents are associating the Data Innovations product with the instrument brands for which it is supplied, so that could play a part in some of the future acquisition considerations. Also, as mentioned above, the average account is considering at least two different brands of middleware.

The charts below illustrate the share of accounts considering each middleware brand for future acquisition, and the types of middleware preferred.





Issues That Need To Be Addressed For Future Middleware Adopters

Incorporating the optimal set of features and functions into middleware will work to insure implementation of these products among potential adopters.

Features are tools that help to accomplish functions. There are six features that the majority of middleware users consider to be absolutely essential, meaning that without these features, the system would not be considered for acquisition.
The features that must be included in a middleware package in order to appeal to the majority of users are:

- Ability to customize middleware for specific lab needs
- Ease of rules writing
- Ability to perform autoverification
- Standardized rules for multiple disciplines
- Proactive instrument support
- Data export capabilities

Manufacturers would be wise to incorporate and promote as many of these features as possible in their middleware systems in order to appeal to the widest range of potential customers.

In contrast to features, functions are actual goals that can be accomplished using middleware. Functions can be accomplished using the features listed above. The functions of middleware that are considered to be very important to the majority of users are:

- Autoverification
- Instrument Flags
- Delta Checks
- Quality Control
- Remote diagnostic support
- Ability to view any instrument's screen

Additionally, there are some negative perceptions about middleware that need to be neutralized before optimum market penetration can occur. Even though nearly all users of middleware are somewhat satisfied with their products, most users consistently rate the training aspect of service and support lower than their overall satisfaction with the product. The majority of users indicated they are not fully aware of the capabilities and functions offered by their middleware product, and nearly four out of five feel that manufacturers need to develop better training for laboratorians regarding middleware functions and capabilities.

The integration of middleware within hospital laboratories has increased since 2009, although has leveled off somewhat over the past two years. The adoption of middleware is also slowly making an entrance in the small and mid-sized hospital market. A feature/benefit package that addresses the issues of most importance to laboratorians could help in the decision to adopt middleware. Developing better training and support programs for middleware using accounts will work to keep current customers satisfied so they will continue using and acquiring these solutions.

INFORMATION DYNAMICS AT A GLANCE

information dynamics

a marketing information development company

Information Dynamics is a marketing information development company serving manufacturers within the healthcare device and diagnostic markets. Information Dynamics has been the major source of tracking data for the clinical diagnostics industry for more than three decades regarding behaviors and attitudes of clinical laboratorians.

MARKET MONITOR™ Reports prepared by Information Dynamics include in-depth knowledge of all areas of the US clinical laboratory marketplace. Reports include custom analysis of data provided free of charge by our expert staff. Customer service and data support from Information Dynamics is timely, accurate and second to none.

Types of Surveys Fielded

Traditional Surveys:

For over 30 years, Information Dynamics has been mailing out paper surveys to our panel of over 1,400 laboratorians from hospitals and commercial clinical laboratories nationwide. This steady cross-sample of labs has allowed us to consistently judge not only the size of the market and individual performance, but trending changes over time.

Paper surveys allow respondents to take time to look up precise data regarding analyte perfomance and volume.

Dynamic E-surveys

Allowing for a more efficient way to gather data from labs, Information Dynamics fields online surveys that not only allow for changes and survey restructuring from year to year, but also save participants time filling out the surveys by preloading choices and skipping past items that are not applicable to each participant with built in skip patterns. Surveys are constructed and coded by our experienced staff, fielded through a top websurvey software, and results are downloaded and analyzed in our traditional method using Excel software.

Types of Data Collected

Report Contents

Market Size Including:

Market Size
Demand
Growth Rates
Segment Contribution

Competitive Performance Including:

Client Base
Volume Share
Revenue Share

Segmentation Including:

Hospitals and Commercial Laboratories

Report Subjects

Annual:

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Location and Contact

Information Dynamics is located in West Chester, Pennsylvania and has been for over 30 years. You can contact us via telephone and email or learn more about us from our website listed below.

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