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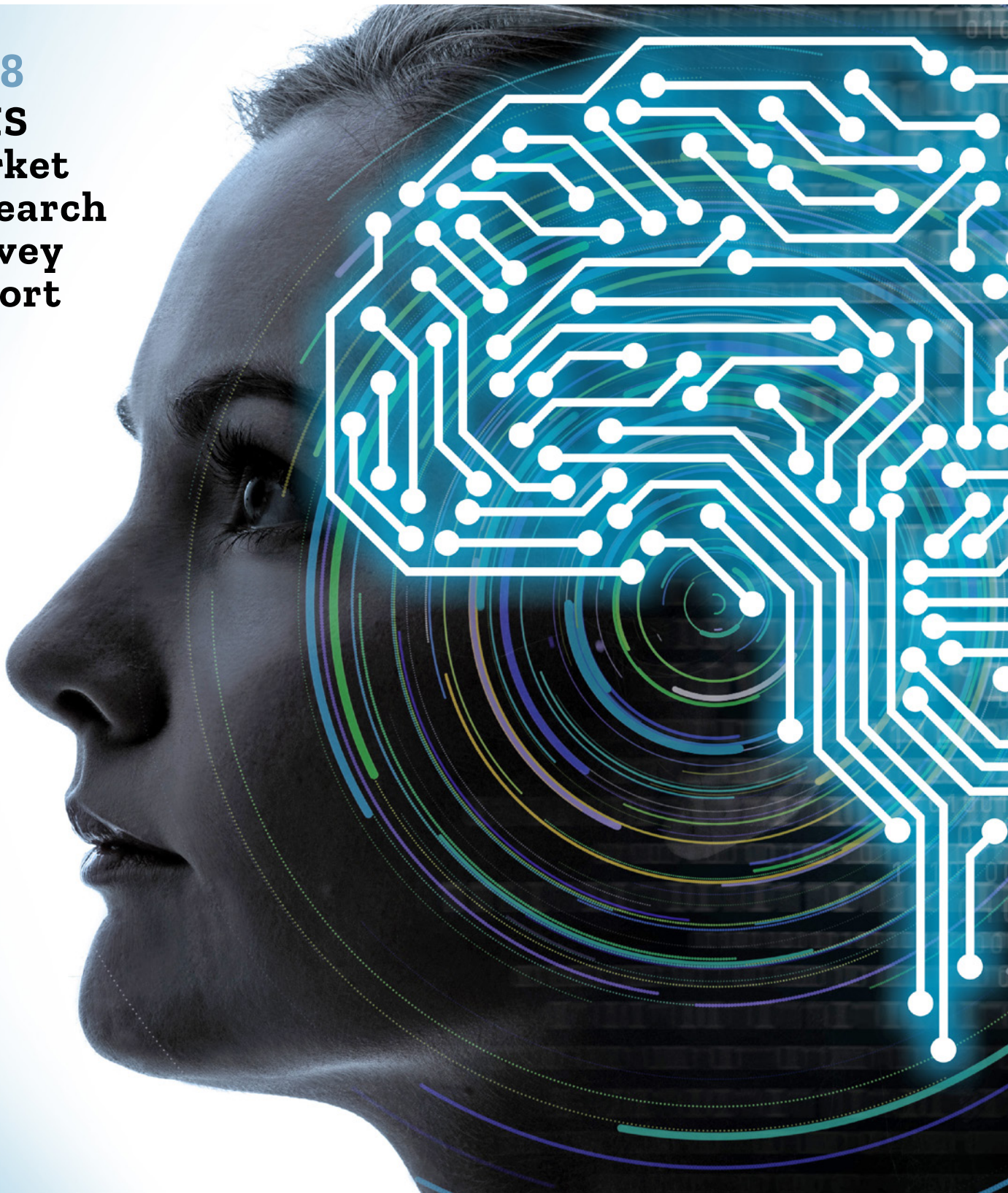
2018

LIMS Market Research Survey Report

Introduction

The digital revolution is rapidly changing the landscape for scientific laboratories. Technologies like the internet of things (IoT) and next generation sequencing (NGS) are allowing companies to generate more data than ever before, while also dramatically increasing both the variety and complexity of the data. In addition, globalization and outsourcing has resulted in the need for companies to collect and harmonize data from many different sites, all while operating in an increasingly complex regulatory environment. With all these challenges, laboratory information management systems (LIMS) have become an invaluable tool in modern scientific laboratories for effective data management and regulatory compliance.

LIMS projects usually demand a substantial investment of time, money and resources, with implementations costing hundreds of thousands to millions of dollars and requiring hundreds of person days to implement. Failure of a LIMS project can be a huge waste of time and resources, and a financial disaster for the organization involved. As such, it is critical to get a LIMS implementation project right the first time in order to preserve your return on investment.

To better understand the issues surrounding LIMS deployments and serve our customers better, Astrix Technology Group conducts an annual survey to gather information about LIMS deployments from professionals in companies with R&D laboratories. This year's survey was completed by 100 R&D professionals across a wide variety of industries: Biotech/Pharma, CRO/CMO, Consumer Products, Chemicals/Energy, Diagnostics/Medical Device, Food and Beverage, and others.

Our survey confirmed that a significant majority of organizations have implemented a LIMS in their laboratories, with 79% of respondents indicating that at least one LIMS is being utilized by their company. 20% of respondents indicated that the primary system utilized in their laboratory was LabWare LIMS.

LIMS have become an invaluable tool in modern scientific laboratories for effective data management and regulatory compliance.

While our survey indicated that many organizations were receiving significant benefits from their LIMS deployment, the survey also revealed a significant lack of enthusiasm for the business value delivered by LIMS deployments across industries – nearly half of respondents reported that their LIMS had either a net neutral effect or actually decreased work efficiency in their laboratory. In addition, for companies reporting a LIMS deployment, only half of respondents indicated that their LIMS strongly promotes data integrity in their laboratory. Overall in companies reporting a LIMS deployment, only 27% of respondents indicated a high level of satisfaction with their LIMS deployment, while 18% reported that their LIMS was cumbersome to use.

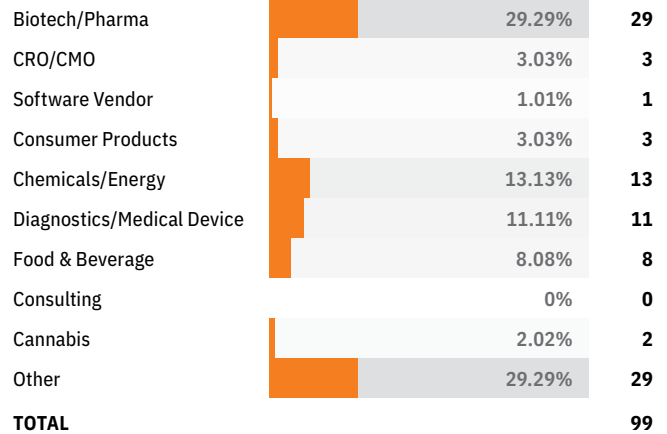Our survey also revealed a likely cause for the above-mentioned lack of enthusiasm with LIMS deployments – a significant percentage of organizations did not conduct the early stage strategic planning necessary to ensure that their LIMS implementation would generate a high level of business value for their organization. To understand these and other issues related to successful LIMS deployment, please continue reading.

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About the Survey Respondents

This report is based on a survey conducted by Astrix Technology Group from late January through early March 2019. The survey was completed by 100 R&D professionals from a wide variety of industries: Biotech/Pharma, CRO/CMO, Consumer Products, Chemicals/Energy, Diagnostics/Medical Device, Food and Beverage, and others. 37% of the respondents were Lab Managers, while 52% of companies surveyed had over 500 employees.

1 Industries represented

Survey respondents were well distributed across several different industries, with the Biotech/Pharma and Diagnostics/Medical Device industries representing over 40% of companies surveyed.

Industry	%	#
Biotech/Pharma	29.29%	29
CRO/CMO	3.03%	3
Software Vendor	1.01%	1
Consumer Products	3.03%	3
Chemicals/Energy	13.13%	13
Diagnostics/Medical Device	11.11%	11
Food & Beverage	8.08%	8
Consulting	0%	0
Cannabis	2.02%	2
Other	29.29%	29
TOTAL		**99**

2 Size of companies

Over half of the respondents were from companies with greater than 500 employees.

Size	%	#
0-500	48%	48
501-1,000	14%	14
1,001-10,000	23%	23
10,000+	15%	15
TOTAL		**100**

3 Job function of respondents

37% of survey respondents were lab managers.

Job function	%	#
IT Management	8%	8
LIMS User	11%	11
LIMS Administrator	26%	26
Lab Manager	37%	37
Other	18%	18
TOTAL		**100**

The Current State LIMS Environment

79 out of the 100 companies surveyed reported a LIMS had been deployed in their laboratories. Of these, 25% (20 of the 79) reported that poor user adoption and lack of ease in use were significant challenges they faced with their system. Our survey revealed a high level of customization in LIMS deployments. In addition, nearly 22% of companies that reported a LIMS deployment (17 of 79) indicating that their LIMS was not validated to the satisfaction of regulatory agencies. Data integrity was also an area of concern, with only 50% of companies that reported a LIMS deployment (38 of 79) indicated that their LIMS strongly promotes data integrity. Finally, our survey revealed that LIMS deployments are typically only "moderately" integrated with instruments/devices or other software systems.

4

How many organizations are using a LIMS?

79% of companies surveyed had a LIMS deployed in their laboratories.

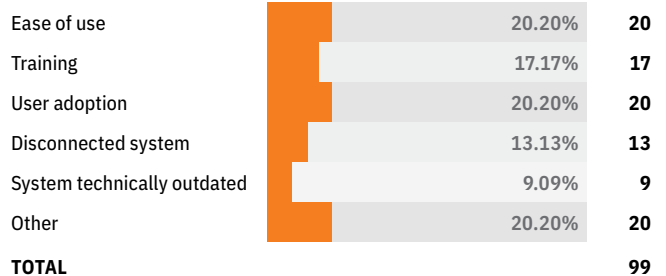|		
Yes	79%	79
No, but planning to	10%	10
No, and no plan to	11%	11
TOTAL		**100**

5

How satisfied are respondents with their LIMS?

14 respondents (nearly 18% of companies that reported a LIMS deployment) felt that their LIMS is cumbersome to use.

Very satisfied	21%	21
It's OK, gets the job done	50%	50
Not satisfied, cumbersome	14%	14
Next question	15%	15
TOTAL		**100**

6

What are the biggest challenges users face with their LIMS?

Poor user adoption and lack of ease in use were the two biggest challenges that were reported by respondents regarding their system.

Ease of use	20.20%	20
Training	17.17%	17
User adoption	20.20%	20
Disconnected system	13.13%	13
System technically outdated	9.09%	9
Other	20.20%	20
TOTAL		**99**

7

Which LIMS are most popular?

Thermo Scientific LIMS and LabWare LIMS were the most frequently deployed systems in the companies surveyed. A wide variety of other LIMS were also in use.

ATLab	0%	0
AgileBio	0%	0
AJ Blomesystem GmbH	0%	0
Ambidata	0%	0
Assaynet	0%	0
BIOVIA	5.1%	5
Benchling	1.02%	1
ChemWare Inc	0%	0
Core Informatics	3.06%	3
Dotmatics	1.02%	1
LabLite	0%	0
LABLynx	1.02%	1
LabPlus	0%	0
LABVANTAGE	5.1%	5
LabWare LIMS	20.41%	20
Modul-Bio	0%	0
Novatek	1.02%	1
PerkinElmer	6.12%	6
Promium	1.02%	1
Sapio Sciences	0%	0
STARLIMS	4.08%	4
Systat Software Inc	0%	0
Thermo Scientific	17.35%	17
Other	33.67%	33
TOTAL		**98**

8

How many users regularly access the LIMS?

36 respondents reported over 50 users regularly accessing their LIMS.

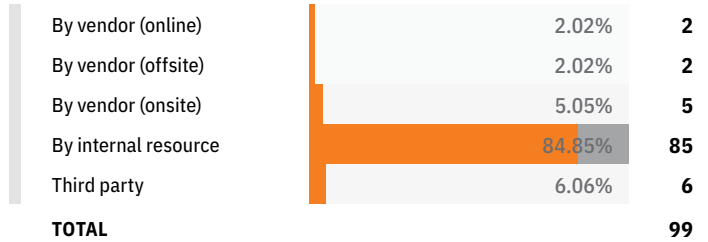|		
1-10	25.25%	25
11-25	20.20%	20
26-50	18.18%	18
50+	36.36%	36
TOTAL		**99**

9

Do companies have IT departments that support LIMS?

81% of companies surveyed had some level of IT support for their laboratory informatics systems.

Yes	50%	50
Yes, but limited	31%	31
No	15%	15
Don't know	4%	4
TOTAL		**100**

10 How are new users trained?

Consistent with the results from the previous question, nearly 85% of companies surveyed train new users using their internal resources.
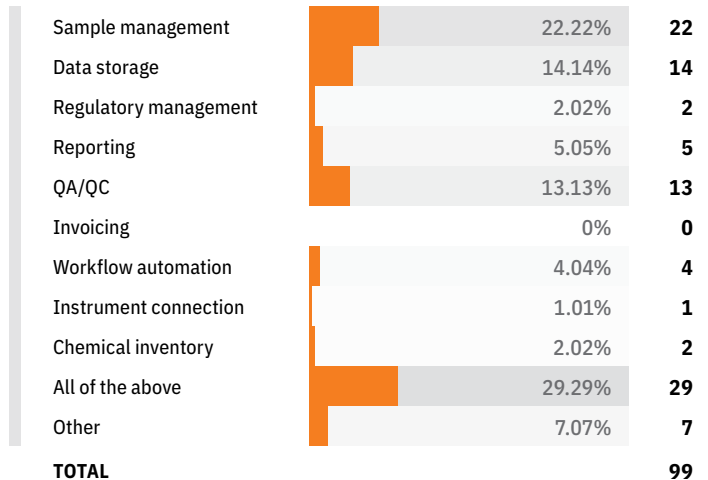
By vendor (online)	2.02%	2
By vendor (offsite)	2.02%	2
By vendor (onsite)	5.05%	5
By internal resource	84.85%	85
Third party	6.06%	6
TOTAL		**99**

11 How are LIMS being implemented?

39 companies revealed that their LIMS were implemented by internal resources. LIMS are being implemented by either vendor services or an external informatics consultant around 50% of the time.

Internal IT resources	39.39%	39
External consultant	11.11%	11
Vendor services	29.29%	29
Don't know	20.20%	20
TOTAL		**99**

12 What is the primary purpose of the LIMS?

Over a third of companies that reported a LIMS deployment (29 out of 79) use their LIMS for a wide-range of functions.

Sample management	22.22%	22
Data storage	14.14%	14
Regulatory management	2.02%	2
Reporting	5.05%	5
QA/QC	13.13%	13
Invoicing	0%	0
Workflow automation	4.04%	4
Instrument connection	1.01%	1
Chemical inventory	2.02%	2
All of the above	29.29%	29
Other	7.07%	7
TOTAL		**99**

13 How do current LIMS deployments affect laboratory work efficiency?

68% of companies that indicated a LIMS deployment reported that their LIMS increases efficiency in the lab.

Increases efficiency	54%	54
Decreases efficiency	6%	6
Neutral effect	40%	40
TOTAL		**100**

14 How are LIMS installed?

The most frequent installation architecture was thin client/server, followed by web-based.

Web	23%	23
Cloud	17%	17
Thin client/server	28%	28
Think client/server	18%	18
Other	14%	14
TOTAL		**100**

15 How customized are the LIMS deployments?

Most LIMS installations are moderately or highly customized. Only 4 companies surveyed had no customization whatsoever in their LIMS deployment.

Highly customized	27%	27
Moderately customized	41%	41
Minimal customization	17%	17
No customization	4%	4
Don't know	11%	11
TOTAL		**100**

16 How well are instruments and devices integrated with the LIMS?

A significant number of companies reported no LIMS integration with instruments and devices in their laboratory. Over 60% of companies that reported a LIMS deployment (49 out of 79) reported a "moderate" level of integration.

Very well integrated	17%	17
Moderately integrated	49%	49
Not integrated	27%	27
Don't know	7%	7
TOTAL		**100**

17

How well are LIMS integrated with other software applications?

Only 10 companies surveyed reported that their LIMS was well integrated with other software applications.

Very well integrated	10%	10
Moderately integrated	46%	46
Not integrated	34%	34
Don't know	10%	10
TOTAL		**100**

18

How well has data integrity been addressed in current LIMS deployments?

Nearly 50% of companies that reported a LIMS deployment (38 out of 79) indicated that their LIMS strongly promotes data integrity.
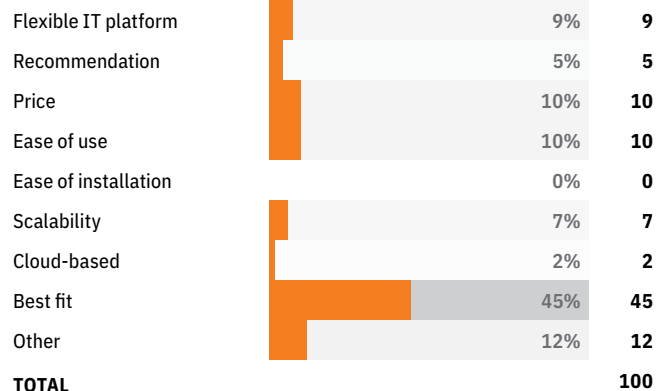
Strongly promotes	38%	38
Moderately promotes	23%	23
Minimally promotes	17%	17
Don't know	14%	14
N/A	8%	8
TOTAL		**100**

19

Have LIMS been validated to the satisfaction of regulatory agencies?

Nearly 22% of companies that reported a LIMS deployment (17 of 79) indicated that their LIMS was not validated to the satisfaction of regulatory agencies.

Yes	42%	42
No	17%	17
Don't know	23%	23
Not applicable	18%	18
TOTAL		**100**

20

Most important factors influencing purchase of current LIMS

57% of companies that reported a LIMS deployment (45 out of 79) said that the most important factor in choosing their LIMS was whether it was the "best fit for functional and technical requirements."

Flexible IT platform	9%	9
Recommendation	5%	5
Price	10%	10
Ease of use	10%	10
Ease of installation	0%	0
Scalability	7%	7
Cloud-based	2%	2
Best fit	45%	45
Other	12%	12
TOTAL		**100**

Early Stage Strategic Planning

Our inquiry revealed a significant deficiency in early stage strategic planning for LIMS deployments in the companies surveyed.

21 **Did the LIMS implementation team conduct Business Process Analysis (BPA) to develop optimized future-state laboratory workflows prior to selecting the LIMS?**

Only 50% of companies that reported a LIMS deployment (39 out of 79) indicated that they conducted BPA prior to selecting their LIMS.

Yes	39%	39
No	25%	25
Don't know	36%	36
TOTAL		**100**

22 **Did the implementation team develop functional and technical requirements prior to selecting the current LIMS?**

71% of organizations that reported a LIMS deployment indicated that they developed functional and technical requirements prior to selecting their system.

Yes	56%	56
No	19%	19
Don't know	25%	25
TOTAL		**100**

Future Purchase Plans

23 **Are companies planning to purchase a new LIMS?**

Our survey revealed that at least 41% of the companies surveyed had no plans to purchase a new LIMS at this time.

Starting the review process	8%	8
Plan to purchase in 6 months	6%	6
Plan to purchase in 1 year	7%	7
Plan to purchase in 1+ year	14%	14
No plans to purchase	41%	41
Don't know	24%	24
TOTAL		**100**
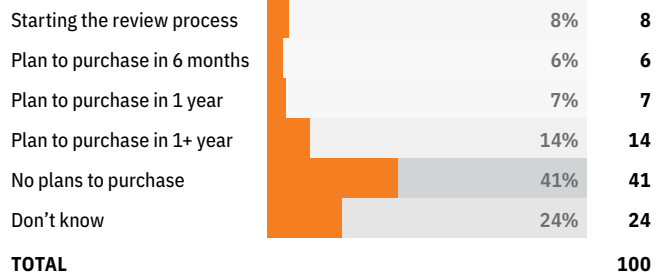
Conclusion

Our 2018 LIMS Market Research Survey showed that a majority of companies across many different industries have implemented LIMS to help manage their laboratory workflows. From the responses to our survey, we can conclude that many companies are experiencing significant benefits from their LIMS investments, such as improved data integrity and work efficiency in their laboratory.

Our survey also revealed that 18% of companies that have implemented a LIMS are dissatisfied with their system, however, with 63% reporting that their system is just "OK". The most common complaints are a lack of ease in use and poor user adoption as a result. Our survey also identified a number of areas where LIMS deployments are falling short in their potential. Of the companies that reported a LIMS deployment,

- **22% reported that their LIMS was not validated to the satisfaction of regulatory agencies**
- **Nearly 8% reported that their LIMS actually decreased work efficiency in their lab, with a high number of respondents also indicating that their LIMS had a net neutral effect on work efficiency.**
- **50% reported that their LIMS only minimally or moderately improved data integrity in their lab.**
- **43% indicated that their LIMS was not integrated with other software systems**
- **34% indicated that their LIMS was not integrated with laboratory instruments and devices.**

Our survey also revealed a high level of customization in LIMS deployments across all industries. While customization is often necessary, it is wise to minimize customization as much as possible, as it can dramatically increase the cost and effort required for future system maintenance, validation and upgrades. Given that a LIMS project can cost a company hundreds of thousands to millions of dollars, it is important to ensure the ROI by following a proven methodology that aligns functional needs in the lab with strategic needs across the enterprise and works to minimize any necessary customization.

Our survey showed that a significant number of companies are not investing in the business process analysis that will align functional and strategic needs to ensure maximum business value from their deployed system. Oftentimes, companies get excited about the benefits of implementing LIMS and tend to want to dive in without a fully developed plan. In our experience, however, the first step in any laboratory informatics project should always be a thorough workflow and business analysis in order to ensure the deployed LIMS achieves its full potential to transform your laboratory environment.

Companies that invest in comprehensive Business Process Analysis in the initial phases of their LIMS implementation typically experience shorter implementation times and significant cost savings – both during the implementation and over the lifetime of the system. This level of comprehensive strategic planning in the beginning of the project also leads to dramatically enhanced business value from the LIMS deployment. If your organization does not possess personnel with the skills necessary to develop optimized future state workflows and requirements prior to selecting their LIMS, it is wise to seek out the services of an experienced external consultant to help ensure the LIMS implementation fulfills its promise and maximizes ROI for your organization.
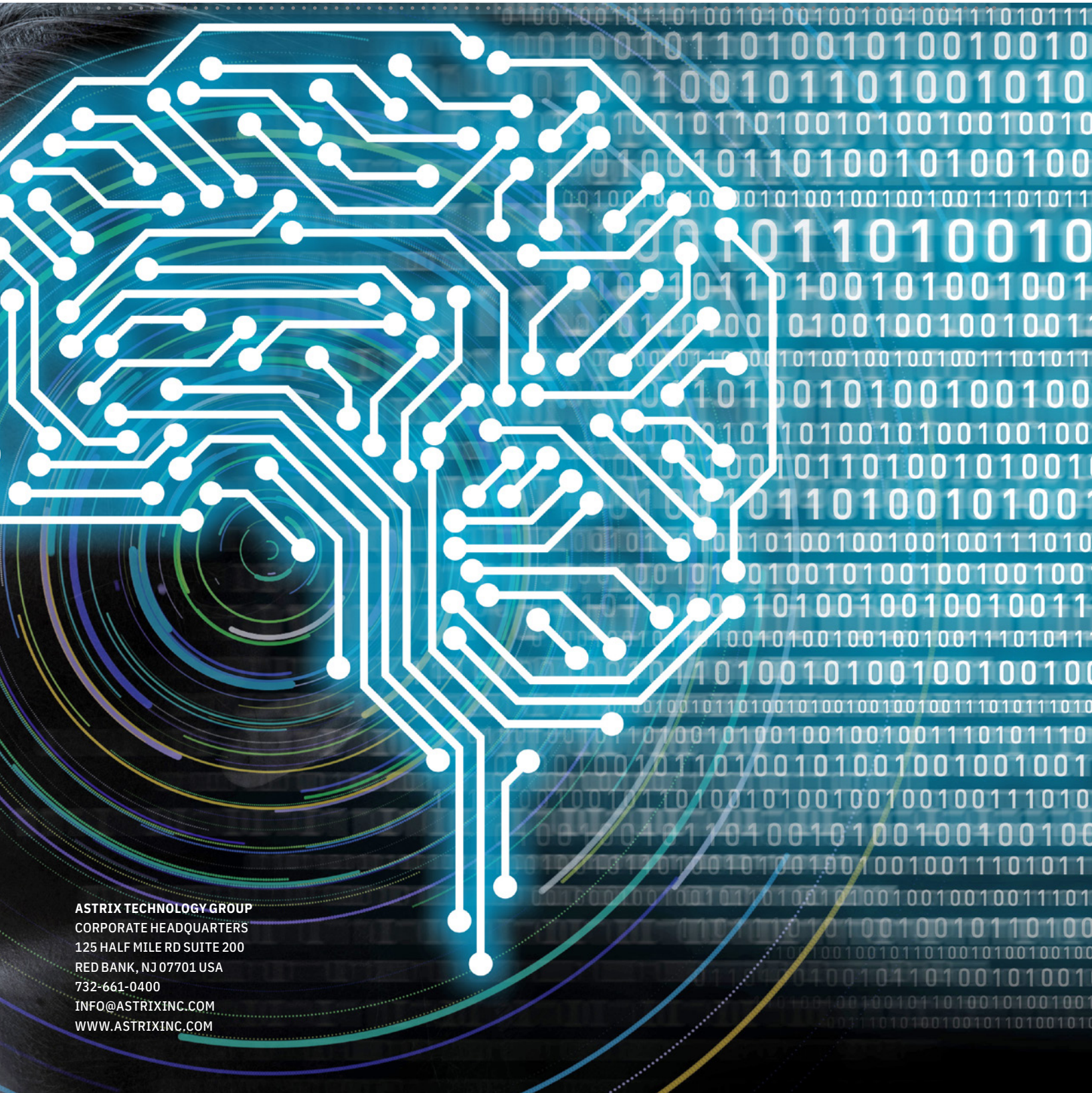
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Whether focused on strategies for Laboratories, IT or Staffing, Astrix has the people, skills and experience to effectively shape client value. Leveraging our deep industry experience, we offer highly objective points of view on Enterprise Informatics, Laboratory Operations, Healthcare IT and Scientific Staffing with an emphasis on business and technology. Visit astrixinc.com for more information.