Laboratory information systems

Part 1 of 12 *See* captodayonline.com/productguides *for an interactive version of guide*	American Soft Solutions Corp. Shauhab Chaudhry, MD shauhab@prolis.info 104 Bayard St., 5th Floor New Brunswick, NJ 08901 732-272-0050 www.prolis.info	Aspyra, LLC Cassie Silletti csilletti@aspyra.com 4360 Park Terrace Drive, Suite 100 Westlake Village, CA 91361 818-449-8671 www.aspyra.com/lab-solutions
Name of laboratory information system	Prolis	CyberLAB
First ever/Most recent LIS installation (based on September 2013 survey deadline) Last major product release or update for featured LIS Total No. of contracts for sites operating LIS • Hospital/Independent lab contracts in U.S. • Clinic or group practice contracts in U.S./Public health lab contracts in U.S. • Contracts for other U.S. sites/Contracts for foreign sites • No. of these contracts that went live between August 2012–August 2013 Contracts signed but LIS not yet operational (hospitals/independent labs/other sites) • Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013 Total No. of sites operating LIS/No. of sites installed that are outside U.S. Percentage of high-volume* sites installed/Low-volume** sites installed Provide list of installed client sites to potential customers	1999/August 2013 March 2013 11 0/8 1/0 0/2 (independent lab, hospital) 3 6 (3/3/0) 9 9/1 (Ghana) 30%/70% yes (partial list of those with specific features used by client)	1982/— February 2013 54 8/8 15/2 18/3 4 — 4 244/5 (Jamaica, Southeast Asia) 20%/80% yes (partial list that is subject to review with client)
No. of employees in entire company • No. of employees dedicated to LIS development, installation, and support	6 4	30 18
No. of billed tests generated annually by labs using this LIS Range in No. of user workstations in sites operating LIS	15,600–510,000 (mean, 262,800) 3–28 (average, 11)	650,000–13,350,000 (mean, 7,000,000) 9–120 (average, 67)
Central hardware or service type How central server failure is handled	IBM-compatible servers, PC with Windows manual intervention necessary to restore operation or system continues uninterrupted (user's option)	HP manual intervention necessary to restore operation or system continues uninterrupted (user's option)
Programming language(s) Operating system(s) Databases and tools System includes full transaction logging Languages (other than English) offered on system	.Net Windows SQL server, Dymo printers yes none	Cobol, C, Visual Basic, HTML5 Windows Microsoft SQL yes Chinese
Features/modules (listed as percent of live installs or based on availability) • Chemistry and hematology/Bar-coded collection labels • Microbiology/Public health microbiology • Blood bank donor/Blood bank transfusion • Surgical pathology/Cytology • Molecular pathology • Cytogenetics/Flow cytometry • HIS or EMR interface for admission/discharge/transfer (ADT) • HIS or EMR interface for order entry/Results reporting • HIS or EMR interface for packaging results into PDF format • HIS or EMR interface for packaging results into CDA1 format/CDA2 format • Ad hoc reporting/Rules-based system • Management and/or statistical reporting • Outreach and/or commercial laboratory • Compliance checking/Billing and accounts receivable • Materials management and inventory • Test partition/Remote faxing and/or printing • HIPAA-standard transaction formats • Web-based remote inquiry of reports/Web access for order entry • Specimen management and tracking • Compliance and quality assurance tools/Environmental health	 100%/90% 60%/installed not available/not available 20%/40% installed installed/20% 50% available but not installed/50% 30% 50%/not available installed/installed 50% 80% 40%/40% not available 100%/90% 100% 80%/80% 100% installed/not available	 100%/100% 80%/100% not available/not available installed/installed installed installed/installed installed installed/installed installed installed/installed 100%/100% 100% installed 70%/not available not available installed/80% available but not installed installed/40% installed 100%/not available
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for: • Microbiology data (culture and sensitivity) • Other reportable diseases (blood, lead, immunology, etc.) • Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	 yes yes yes	 yes yes yes
Other lab vendors' systems to which software has an interface Total laboratory automation systems to which LIS can interface	— interface planned for future	Telcor, Healthpac, Cerner, McKesson, Computer Programs and Systems, Wyndgate, NovoPath Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Labotix Automation, PVT LabSystems, Olympus America, Roche Diagnostics
LIS allows third-party updates of tables and rules LIS allows for image capture, display, reporting	yes (Medicare Medical Necessity, ICD-9) yes	no yes
Software provides indexed field in each test definition for LOINC code Provide LOINC dictionary for each new installation LIS supports use of SNOMED CT	yes yes no	yes yes yes
Market modules for other hospital departments (percent of installs lab only)	no	yes (90%)
No. of different types of lab instruments interfaced and operational with LIS • Use third-party middleware for instrument interfaces Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside Source code/User group that meets regularly Methods by which users can tailor LIS in their own setting	36 no (interface directly) 0 no/no —	150 no (interface directly) 0 escrow/yes (meets via Webinar, conference call) ad hoc query tools, user-defined interfaces, dictionary settings, parameterization
System available via ASP or cloud-based data center Total cost for smallest LIS installation (hardware, software, install, training) Total cost for largest LIS installation (hardware, software, install, training)	no $21,475 (annual maintenance fee, $3,866) $142,000 (annual maintenance fee, $25,260)	no $75,000 (annual maintenance fee, $4,500) $500,000 (annual maintenance fee, $30,000)
Distinguishing features (supplied by company)	• positive integration between the specimen and test orders, resulting in no false orders • single, flexible, fits-all structure; one module capable of handling chemistry, microbiology, pathology, and toxicology in specimen-centric environments • lab logistics available as standard feature	• massively scalable • integrated multi-testing and ordering site capability • specialized patient service center features

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

Tabulation does not represent an endorsement by the College of American Pathologists.   Product guide editors: Raymond D. Aller, MD, and Hal Weiner

Laboratory information systems

Part 2 of 12	BtB Software	Cerner	Clinical Information Systems
	Bob Freeman info@btbsoftware.com	Jennifer Walker jennifer.walker@cerner.com	Sales Department cissupport@aol.com
	P.O. Box 845	2800 Rockcreek Parkway	18805 Willamette Drive
	Bayside, CA 95524	Kansas City, MO 64117	West Linn, OR 97068
See captodayonline.com/productguides for an interactive version of guide	707-502-2821 www.btbsoftware.com	816-201-2854 www.cerner.com	503-699-9745
Name of laboratory information system	**BtB Software LIMS**	**Cerner Millennium PathNet**	**CISLAB**
First ever/Most recent LIS installation (based on September 2013 survey deadline)	2002/August 2010	1982/August 2013	1981/August 2013
Last major product release or update for featured LIS	August 2010	January 2012	August 2013
Total No. of contracts for sites operating LIS	3	720	46
• Hospital/Independent lab contracts in U.S.	0/0	595/15	2/35
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	0/3	1/3	1/1
• Contracts for other U.S. sites/Contracts for foreign sites	0/0	1 (pharmaceutical manufacturer)/105 (hospitals)	1 (radiology)/6 (hospitals, clinic)
• No. of these contracts that went live between August 2012–August 2013	0	85	8
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	0	72 (72/0/0)	2 (0/2/0)
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	0	70	—
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	3/0	720/105 (Australia, Canada, Egypt, Guam, Malaysia, Saudi Arabia, Singapore, U.K., United Arab Emirates)	47/6
Percentage of high-volume* sites installed/Low-volume** sites installed	33%/66%	80%/20%	98%/2%
Provide list of installed client sites to potential customers	yes (complete list with no restrictions)	yes (partial list)	no (information is confidential)
No. of employees in entire company	4	12,500	—
• No. of employees dedicated to LIS development, installation, and support	2	420	—
No. of billed tests generated annually by labs using this LIS	15,000–~25,000 (mean, 17,500)	<50,000–26,000,000	100,000–1,500,000
Range in No. of user workstations in sites operating LIS	7–20 (average, 10)	not tracked	5–143 (average, 40)
Central hardware or service type	Microsoft SQL	client hosted (IBM, HP), Cerner hosted	HP, Dell, Windows, CTL, numerous others
How central server failure is handled	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)
Programming language(s)	Visual Basic, .Net	Java, Visual Basic, C++, C#, Visual C	Delphi, Microsoft Cobol, Visual Basic, C, C++
Operating system(s)	Windows XP, 8	HP-UX, AIX, VMS	Windows, SCO Unix
Databases and tools	Microsoft SQL server	Oracle	Microsoft SQL, C-ISAM, RDBMS
System includes full transaction logging	yes	yes	no
Languages (other than English) offered on system	none	British-English, German, Spanish, French	Chinese, Spanish (both for reports only)
Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	available/available	100%/100%	99%/99%
• Microbiology/Public health microbiology	available/available	100%/15%	98%/1%
• Blood bank donor/Blood bank transfusion	available/available	75%/75%	4%/—
• Surgical pathology/Cytology	available/available	75%/75%	60%/65%
• Molecular pathology	available	15%	available but not installed
• Cytogenetics/Flow cytometry	available/available	10%/75%	available but not installed/1%
• HIS or EMR interface for admission/discharge/transfer (ADT)	available	75%	100%
• HIS or EMR interface for order entry/Results reporting	available/available	75%/75%	98%/98%
• HIS or EMR interface for packaging results into PDF format	available	installed	98%
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	available/available	not available†/not available†	98%/installed
• Ad hoc reporting/Rules-based system	available/available	100%/100%	1%/100%
• Management and/or statistical reporting	available	100%	100%
• Outreach and/or commercial laboratory	available	50%	98%
• Compliance checking/Billing and accounts receivable	available/available	installed/10%	98%/98%
• Materials management and inventory	available	installed	90%
• Test partition/Remote faxing and/or printing	available/available	installed/installed	100%/100%
• HIPAA-standard transaction formats	available	100%	100%
• Web-based remote inquiry of reports/Web access for order entry	available/available	<10%/<10%	100%/100%
• Specimen management and tracking	available	100%	98%
• Compliance and quality assurance tools/Environmental health	available/available	100%/installed	98%/installed
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for:			
• Microbiology data (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood, lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	no	yes	yes
Other lab vendors' systems to which software has an interface	McKesson, GE Healthcare	EMR lab outbound interfaces with McKesson, Siemens, Epic, Allscripts, Meditech, others	McKesson, Healthland, Sun, Meditech, others (will interface to any vendor)
Total laboratory automation systems to which LIS can interface	interface available but not yet operational anywhere	Abbott Diagnostics, Beckman Coulter, Siemens, Labotix Automation, PVT LabSystems, Olympus America, Roche Diagnostics, others	Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Labotix Automation, Olympus, others (will interface to any vendor)
LIS allows third-party updates of tables and rules	no	no	yes (LOINC, ICD codes, SNOMED)
LIS allows for image capture, display, reporting	no	yes	yes
Software provides indexed field in each test definition for LOINC code	yes	yes	yes
Provide LOINC dictionary for each new installation	yes	yes	no
LIS supports use of SNOMED CT	yes	yes	—
Market modules for other hospital departments (percent of installs lab only)	no	yes (50%)	no
No. of different types of lab instruments interfaced and operational with LIS	0	964	300+
• Use third-party middleware for instrument interfaces	yes (for all instrument interfaces)	no (interface directly)	no (interface directly)
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	75% (100% of total use BtB's PPID software)	25% (50% of total use Cerner's PPID software/50% of total use third-party PPID software)	100% (100% of total use Clinical Information Systems' PPID software)
Source code/User group that meets regularly	escrow/no	optional/yes (meets via Webinar and in person)	no/no
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings	wraparound programming, ad hoc query tools, user-defined interfaces, dictionary settings, client development toolkit	user-defined interfaces
System available via ASP or cloud-based data center	yes ($25,000 startup, $25,000 monthly+bandwidth)	yes	no
Total cost for smallest LIS installation (hardware, software, install, training)	$26,000 (annual maintenance fee, $8,500)	—	$12,500 (annual maintenance fee, $6,000)
Total cost for largest LIS installation (hardware, software, install, training)	$175,000 (annual maintenance fee, $18,500)	—	$150,000 (annual maintenance fee, $14,000)
Distinguishing features (supplied by company)	• public health structure; specimen oriented; includes environmental (water, chemistry, dairy) and rabies testing • built-in statistics and charts • optional accounts receivable interface to core package	• innovations to connect laboratories, customers, and devices, allowing organizations to expand and grow their business • more than 1,000 laboratories using Cerner Laboratory solutions; provide a best-of-breed LIS; focused on the laboratory since 1979 • innovations for personalized medicine—publishing lifetime, discrete results; optimizing workflows using protocols; more	• price, purchase, and leasing terms • customization; excellent support team • high quality; user friendly

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

†supported via Cerner's EMR system

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Laboratory information systems

Part 3 of 12	Clinical Software Solutions	Clinlab	Common Cents Systems
See captodayonline.com/productguides *for an interactive version of guide*	Emily Brester info@clin1.com P.O. Box 529 Queen Creek, AZ 85142 800-570-0474 www.clin1.net	Allen Wilson allenwilson@clinlabinc.com 2411 E. Graves Ave., Suite 1 Orange City, FL 32763 386-774-0030 www.clinlabinc.com	Carl Barringer carl.barringer@apollolims.com 4701 Trousdale Drive, Suite 119 Nashville, TN 37220 800-805-9278 www.apollolims.com
Name of laboratory information system	CLIN1 Laboratory†	Clinlab LIS	ApolloLIMS†
First ever/Most recent LIS installation (based on September 2013 survey deadline)	1987/August 2012	1987/September 2013	1987/September 2013
Last major product release or update for featured LIS	July 2012	July 2013	July 2013
Total No. of contracts for sites operating LIS	60	29	43
• Hospital/Independent lab contracts in U.S.	30/15	2/7	2/22
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	10/0	9/2	1/17
• Contracts for other U.S. sites/Contracts for foreign sites	2/3	7/2 (clinic, hospital)	0/1 (public health)
• No. of these contracts that went live between August 2012–August 2013	5	2	9
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	—	1 (0/1/0)	6 (0/5/1–public health)
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	5	3	9
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	65/3 (Canada, U.K., New Zealand)	29/2 (Saudi Arabia, Nigeria)	43/1 (Republic of Trinidad and Tobago)
Percentage of high-volume* sites installed/Low-volume** sites installed	10%/90%	80%/20%	40%/60%
Provide list of installed client sites to potential customers	yes (partial list)	yes (partial list after completion of online demonstration; 3 customer references provided)	yes (partial list: dependent on type of laboratory)
No. of employees in entire company	12	5	11
• No. of employees dedicated to LIS development, installation, and support	6	5	10
No. of billed tests generated annually by labs using this LIS	10,000–2,000,000 (mean, 100,000)	5,000–2,000,000 (mean, 21,000)	10,000–3,500,000 (mean, 700,000)
Range in No. of user workstations in sites operating LIS	1–100 (average, 10)	2–100 (average, 6)	5–64 (average, 16)
Central hardware or service type	client/server	Microsoft Windows server	Microsoft server
How central server failure is handled	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)
Programming language(s)	4GL	Microsoft .Net, Delphi	Delphi, SQL
Operating system(s)	Windows	Windows XP and higher	Microsoft server
Databases and tools	SQL	Sybase SQL	InterSystems Caché, Microsoft SQL
System includes full transaction logging	yes	no	yes
Languages (other than English) offered on system	—	none	none
Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	100%/100%	100%/100%	40%/100%
• Microbiology/Public health microbiology	100%/available but not installed	10%/3%	70%/70%
• Blood bank donor/Blood bank transfusion	available but not installed/available but not installed	not available/not available	not available/not available
• Surgical pathology/Cytology	available but not installed/available but not installed	not available/not available	not available/not available
• Molecular pathology	10%	5%	not available
• Cytogenetics/Flow cytometry	10%/available but not installed	5%/5%	not available/not available
• HIS or EMR interface for admission/discharge/transfer (ADT)	100%	90%	70%
• HIS or EMR interface for order entry/Results reporting	90%/90%	90%/90%	70%/80%
• HIS or EMR interface for packaging results into PDF format	90%	90%	50%
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	installed/installed	not available/not available	50%/available but not installed
• Ad hoc reporting/Rules-based system	20%/100%	100%/100%	100%/100%
• Management and/or statistical reporting	100%	100%	100%
• Outreach and/or commercial laboratory	95%	70%	50%
• Compliance checking/Billing and accounts receivable	100%/95%	90%/not available	70%/70%
• Materials management and inventory	95%	not available	30%
• Test partition/Remote faxing and/or printing	100%/95%	100%/30%	100%/80%
• HIPAA-standard transaction formats	100%	100%	100%
• Web-based remote inquiry of reports/Web access for order entry	95%/95%	90%/90%	30%/20%
• Specimen management and tracking	100%	100%	100%
• Compliance and quality assurance tools/Environmental health	100%/installed	100%/not available	25%/30%
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for:			
• Microbiology data (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood, lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	under development	no	under development
Other lab vendors' systems to which software has an interface	Allscripts, GE Healthcare, Greenway, Healthland, NextGen, McKesson, Siemens, others	Allscripts, McKesson, Meditech, Lifepoint	Siemens, Allscripts, Meditech
Total laboratory automation systems to which LIS can interface	Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, PVT LabSystems, Olympus America, Roche Diagnostics	Beckman Coulter, Siemens, Olympus America, Roche Diagnostics	Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, PVT LabSystems, Olympus America, Roche Diagnostics
LIS allows third-party updates of tables and rules	no	no	yes (ODBC access with appropriate security)
LIS allows for image capture, display, reporting	yes	no	yes
Software provides indexed field in each test definition for LOINC code	yes	yes	yes
Provide LOINC dictionary for each new installation	no	no	yes
LIS supports use of SNOMED CT	yes	no	—
Market modules for other hospital departments (percent of installs lab only)	yes (60%)	no	no
No. of different types of lab instruments interfaced and operational with LIS	300+	200+	112
• Use third-party middleware for instrument interfaces	no (interface directly)	no (interface directly)	no (interface directly)
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	100% (100% of total use Clinical Software Solutions' PPID software)	5% (100% of total use Clinlab's PPID software)	10% (100% of total use third-party PPID software)
Source code/User group that meets regularly	no/yes (meets via Webinar and conference call)	escrow/no	escrow/yes (meets via Webinar)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, dictionary settings	ad hoc query tools, user-defined interfaces, dictionary settings, others	wraparound programming, ad hoc query tools, user-defined interfaces, dictionary settings
System available via ASP or cloud-based data center	yes	yes (price of software plus monthly access fees; terms available)	yes (implementation fee and monthly usage fees)
Total cost for smallest LIS installation (hardware, software, install, training)	$15,000 (annual maintenance fee, $3,000)	$10,000 (annual maintenance fee, $1,500)	$64,000 (annual maintenance fee, $9,720)
Total cost for largest LIS installation (hardware, software, install, training)	$250,000 (annual maintenance fee, $50,000)	$300,000 (annual maintenance fee, $60,000)	$660,000 (annual maintenance fee, $112,000)
Distinguishing features (supplied by company)	• fully integrated with company's certified inpatient EHR and certified outpatient/ambulatory EHR products without requiring interfaces • interfacing with other vendors' systems (EHR/EMR reference lab/public health) easy and cost effective • custom programming available	• highly configurable HL7 EMR engine with unlimited connection capability • complete hands-off automation of results delivery via any portal, including print, automated fax, HL7, HIE • automation of interfaces to large reference labs with low maintenance by users	• efficient database structure combined with a rules-based architecture provide a flexible LIS platform for many laboratory environments • intuitive and flexible user interface assists with rapid training and deployment; data screens and reports can be configured to provide tight integration with lab's current practices • fully integrated with all lab disciplines

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

†formerly CSSWin LIS

†formerly M/Lab Enterprise Edition by M/Management Systems and Cirrus by Common Cents Systems

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Laboratory information systems

Part 4 of 12	Comp Pro Med	CompuGroup Medical	Computer Programs and Systems (CPSI)
	Hal Petersen hpetersen@comppromed.com	Paul Taylor paul.taylor@cgm.com	Sales Department sales@cpsinet.com
	3418 Mendocino Ave.	228 Business Center Drive	6600 Wall St.
	Santa Rosa, CA 95403	Reisterstown, MD 21135	Mobile, AL 36695
See captodayonline.com/productguides *for an interactive version of guide*	800-276-4522 www.comppromed.com	410-517-0330 www.cgmus.com	800-711-2774 www.cpsinet.com
Name of laboratory information system	**Polytech**	**CGM LabDAQ**†	**CPSI System**
First ever/Most recent LIS installation (based on September 2013 survey deadline)	1981/August 2013	1991/September 2013	1986/September 2013
Last major product release or update for featured LIS	August 2013	August 2013	August 2013
Total No. of contracts for sites operating LIS	137	2,834	457
• Hospital/Independent lab contracts in U.S.	28/9	233/389	456/1
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	36/0	2,199/3	0/0
• Contracts for other U.S. sites/Contracts for foreign sites	2 (veterinary)/62 (national and regional hospital labs)	0/10 (clinics, reference labs)	0/0
• No. of these contracts that went live between August 2012–August 2013	12	119	36
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	5 (5/0/0)	14 (0/2/12–physician office, clinics)	8 (8/0/0)
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	16	133	25
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	171/73 (Canada, Eritrea, Ethiopia, Phillipines, Bhutan, Malawi)	3,284/12 (Dubai, Abu Dhabi, Africa, Virgin Islands, Afghanistan)	457/0
Percentage of high-volume* sites installed/Low-volume** sites installed	17%/83%	not tracked/not tracked	1%/99%
Provide list of installed client sites to potential customers	yes (clients that allow information disclosure)	yes (partial list tailored to match facility type)	no (information is confidential)
No. of employees in entire company	13	336	1,443
• No. of employees dedicated to LIS development, installation, and support	9	75	435
No. of billed tests generated annually by labs using this LIS	30,000–110,000 (mean, 50,000)	not tracked	150,000–800,000 (mean, 475,000)
Range in No. of user workstations in sites operating LIS	1–38 (average, 8)	1–150+ (average, 10)	6–500 (average, 100)
Central hardware or service type	any (client supported)	Intel/AMD	IBM x3650
How central server failure is handled	system continues uninterrupted	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)
Programming language(s)	C++	.Net, C#, Delphi	Visual C++
Operating system(s)	Windows 2000, XP, Vista, 7, NT	Windows 2008 R2, 7, XP	Linux
Databases and tools	Pervasive	Oracle	PostgreSQL
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on system	none	none	none
Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	100%/100%	100%/75%	100%/100%
• Microbiology/Public health microbiology	17%/available but not installed	12%/1%	100%/0
• Blood bank donor/Blood bank transfusion	not available/not available	not available/not available	0/0
• Surgical pathology/Cytology	not available/2%	3%/3%	1%/1%
• Molecular pathology	not available	5%	0
• Cytogenetics/Flow cytometry	not available/2%	not available/1%	0/0
• HIS or EMR interface for admission/discharge/transfer (ADT)	68%	75%	100%
• HIS or EMR interface for order entry/Results reporting	40%/49%	35%/70%	100%/100%
• HIS or EMR interface for packaging results into PDF format	15%	20%	100%
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	available but not installed/available but not installed	not available/not available	100%/100%
• Ad hoc reporting/Rules-based system	100%/100%	100%/100%	100%/100%
• Management and/or statistical reporting	100%	100%	100%
• Outreach and/or commercial laboratory	23%	20%	100%
• Compliance checking/Billing and accounts receivable	100%/68%	95%/not available	100%/100%
• Materials management and inventory	not available	not available	100%
• Test partition/Remote faxing and/or printing	100%/97%	20%/100%	100%/100%
• HIPAA-standard transaction formats	not available	100%	100%
• Web-based remote inquiry of reports/Web access for order entry	installed/28%	20%/15%	40%/20%
• Specimen management and tracking	not available	100%	0
• Compliance and quality assurance tools/Environmental health	100%/not available	100%/not available	100%/0
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats* for:**			
• Microbiology data (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood, lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	yes	no	yes
Other lab vendors' systems to which software has an interface	GE Healthcare, Allscripts, Siemens, eClinicalWorks, many other major systems	Cerner, Sunquest, NovoPath, Healthland, McKesson, Meditech, Siemens, Epic, others	Dawning Technologies
Total laboratory automation systems to which LIS can interface	Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Olympus America, Roche Diagnostics	Beckman Coulter, Siemens, Roche Diagnostics	planned to Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, PVT LabSystems, Labotix Automation, Olympus America, Roche
LIS allows third-party updates of tables and rules	yes	yes (CodeMap, Quest, LabCorp, regional reference labs)	yes (Micromedex)
LIS allows for image capture, display, reporting	yes	yes	yes
Software provides indexed field in each test definition for LOINC code	yes	yes	yes
Provide LOINC dictionary for each new installation	yes	no	yes
LIS supports use of SNOMED CT	no	yes	yes
Market modules for other hospital departments (percent of installs lab only)	no	no	yes (3%)
No. of different types of lab instruments interfaced and operational with LIS	245+	450+	420
• Use third-party middleware for instrument interfaces	no (interface directly)	no (interface directly)	yes (for all instrument interfaces)
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	100% (100% of total use Comp Pro Med's PPID software)	unknown	100% (80% of total use Computer Programs and Systems' PPID software/20% of total use third-party PPID software)
Source code/User group that meets regularly	escrow/no	escrow/yes (meets via Webinar and in person)	escrow/yes (meets via Webinar and in person)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings, others	ad hoc query tools, user-defined interfaces, data miner, flexible client set up, custom programming	ad hoc query tools, table maintenance
System available via ASP or cloud-based data center	no	no	yes
Total cost for smallest LIS installation (hardware, software, install, training)	$15,000 (annual maintenance fee, $1,800)	$7,000 (annual maintenance fee, $1,200)	$459,000 (annual maintenance fee, $60,600)
Total cost for largest LIS installation (hardware, software, install, training)	$145,000 (annual maintenance fee, $14,490)	$700,000 (annual maintenance fee, $90,000)	$1,500,000 (annual maintenance fee, $100,00)
Distinguishing features (supplied by company)	• customization with extensive rules-based capabilities combined with easy-to-use screens • over 32 years' worth of features and customer-requested functionality built into system • technically robust system designed to work on standard PCs with little to no IT support required; system requires very little network bandwidth	• expert integration and connectivity solutions with electronic health records, billing software, reference labs, and other third-party software • powerful user-defined rules and data queries to assist with decision support • experienced, responsive support staff, sales personnel, system integration department	• fully integrated EMR HIS/LIS; certified by the Certification Commission for Healthcare Information Technology • build libraries and data dictionaries as a standard part of installation and conversion • on-site training and support for all end users (not train the trainer)

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

†*formerly marketed by Antek HealthWare as LabDAQ*

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Laboratory information systems

Part 5 of 12	CSS (Computer Service and Support) Jim O'Neill jimjr@csslis.com 2106 New Rd., E6 Linwood, NJ 08221 609-653-6444 www.csslis.com	Diamond Computing Jim Campbell jim@diamondcomputing.net 2345 Fourth St. Tucker, GA 30084 800-486-5980 www.diamondcomputing.net	Entre Technology Group Steve Chehansky schehansky@entretechnology.com 11255 Camp Bowie West, Suite 101 Adelo, TX 76008 866-993-6873 www.genesysnsl.com
See captodayonline.com/productguides *for an interactive version of guide*			
Name of laboratory information system	**CLS2000**	**LabGEM**	**Genesys NonStopLab**
First ever/Most recent LIS installation (based on September 2013 survey deadline)	1980/June 2013	1984/August 2013	1984/April 2013
Last major product release or update for featured LIS	March 2013	June 2013	August 2013
Total No. of contracts for sites operating LIS	105	24	97
• Hospital/Independent lab contracts in U.S.	0/77	3/16	28/3
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	12/2	4/1	63/1
• Contracts for other U.S. sites/Contracts for foreign sites	13 (toxicology)/1	0/0	0/2 (hospitals)
• No. of these contracts that went live between August 2012–August 2013	5	3	2
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	2 (0/2/0)	2 (0/2/0)	1 (1/0/0)
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	7	5	2
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	103/1 (United Arab Emirates)	24/—	112/2 (Canada, Bahamas)
Percentage of high-volume* sites installed/Low-volume** sites installed	42%/58%	87%/13%	5%/95%
Provide list of installed client sites to potential customers	no (information is confidential)	—	yes (partial list if requested)
No. of employees in entire company	20	7	5
• No. of employees dedicated to LIS development, installation, and support	20	7	3
No. of billed tests generated annually by labs using this LIS	22,000–3,500,000 (mean, 775,000)	15,000–95,000,000	—
Range in No. of user workstations in sites operating LIS	2–58 (average, 20)	2–250 (average, 30)	1–10 (average, 3)
Central hardware or service type	IBM	Intel	servers and workstations: Seneca, HP
How central server failure is handled	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)
Programming language(s)	C++, Java	Visual Basic, Mumps	.Net, C++
Operating system(s)	AIX 7.1	Windows	Windows
Databases and tools	Microsoft, MySQL	—	SQL
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on system	—	—	French
Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	100%/100%	100%/100%	100%/40%
• Microbiology/Public health microbiology	86%/—	100%/100%	3%/0
• Blood bank donor/Blood bank transfusion	—	—	0/0
• Surgical pathology/Cytology	12%/3%	25%/100%	0/0
• Molecular pathology	—	—	0
• Cytogenetics/Flow cytometry	10%/—	—	0/0
• HIS or EMR interface for admission/discharge/transfer (ADT)	2%	100%	3%
• HIS or EMR interface for order entry/Results reporting	67%/81%	100%/100%	25%/33%
• HIS or EMR interface for packaging results into PDF format	70%	100%	0
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	40%/—	—	not available/not available
• Ad hoc reporting/Rules-based system	74%/100%	100%/100%	100%/not available
• Management and/or statistical reporting	100%	100%	100%
• Outreach and/or commercial laboratory	42%	100%	3%
• Compliance checking/Billing and accounts receivable	100%/82%	100%/87%	2%/0
• Materials management and inventory	—	—	0
• Test partition/Remote faxing and/or printing	25%/100%	100%/100%	100%/15%
• HIPAA-standard transaction formats	100%	100%	installed
• Web-based remote inquiry of reports/Web access for order entry	70%/41%	87%/87%	available but not installed/available but not installed
• Specimen management and tracking	100%	100%	100%
• Compliance and quality assurance tools/Environmental health	100%/—	100%/—	100%/not available
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats* for:**			
• Microbiology data (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood, lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	no	yes	no
Other lab vendors' systems to which software has an interface	Aspyra, GE Healthcare, McKesson, Allscripts, SSC Soft Computer, eClinicalWorks, Medisoft, NextGen, Orchard	Cerner, Sunquest, McKesson, eClinicalWorks, numerous others	—
Total laboratory automation systems to which LIS can interface	Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Labotix Automation, Olympus America, Roche Diagnostics, Sysmex	—	planned to Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Olympus America, Roche Diagnostics
LIS allows third-party updates of tables and rules	yes (Ingenix)	no	no
LIS allows for image capture, display, reporting	no	yes	no
Software provides indexed field in each test definition for LOINC code	yes	yes	yes
Provide LOINC dictionary for each new installation	no	—	no
LIS supports use of SNOMED CT	no	—	yes
Market modules for other hospital departments (percent of installs lab only)	no	—	no
No. of different types of lab instruments interfaced and operational with LIS	300	—	80
• Use third-party middleware for instrument interfaces	no (interface directly)	no (interface directly)	use a combination of direct interfaces and third-party interfaces
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	0	100% (100% of total use Diamond's PPID software)	—
Source code/User group that meets regularly	escrow/no	escrow/—	escrow/no
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings	wraparound programming, ad hoc query tools, user-defined interfaces, dictionary settings, others	ad hoc query tools, user-defined interfaces, dictionary settings, system preferences
System available via ASP or cloud-based data center	yes (billing and financial package starting at $.75 per patient requisition)	yes	no
Total cost for smallest LIS installation (hardware, software, install, training)	$22,500 (annual maintenance fee, $2,500)	—	$5,000 (annual maintenance fee, $1,600)
Total cost for largest LIS installation (hardware, software, install, training)	$125,000 (annual maintenance fee, $40,000)	—	$80,000 (annual maintenance fee, $7,000)
Distinguishing features (supplied by company)	• end-to-end reference lab automation, including Web-based outreach, production-oriented LIS, and full lab billing software • secure Web-based physician portal; order entry, result reporting, and statistical bases reporting; HL7 EMR interface available to most EMR vendors • pain-management report system with drug and metabolite interactions	• cost • functionality • service	• customized EHR/EMR interfaces to ensure clients' needs are met; client is not hindered by limitations of EHR/EMR interfacing capabilities • meet expectations of clients • outstanding customer support with instant remote access

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

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Laboratory information systems

Part 6 of 12	Epic	HEX Laboratory Systems	J & S Medical Associates
	Phil Lindemann phil@epic.com	Susan Bollinger sbollinger@hexlab.com	John Bouchard sales@jsmed.com
	1979 Milky Way	1042B El Camino Real	35 Tripp St., Bldg. 1
	Verona, WI 53593	Encinitas, CA 92024	Framingham, MA 01702
See captodayonline.com/productguides *for an interactive version of guide*	608-271-9000 www.epic.com	800-729-2085 www.hexlab.com	800-229-6000 www.labtrak.com

Name of laboratory information system	Beaker	LAB/HEX	LabTrak
First ever/Most recent LIS installation (based on September 2013 survey deadline)	1980/August 2013	1981/July 2013	1988/September 2013
Last major product release or update for featured LIS	July 2012	July 2013	May 2012
Total No. of contracts for sites operating LIS	34	147	257
• Hospital/Independent lab contracts in U.S.	33/0	9/75	1/235 (physician office labs)
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	0/1	42/1	0/0
• Contracts for other U.S. sites/Contracts for foreign sites	0/0	9 (veterinary/research)/11 (independent)	21 (veterinary, research, other)/0
• No. of these contracts that went live between August 2012–August 2013	17	2	55
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	18 (18/0/0)	2 (1/1/0)	8 (0/8/0)
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	14	4	60
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	209/0	164/11 (Mideast)	257/0
Percentage of high-volume* sites installed/Low-volume** sites installed	30%/70%	55%/45%	0/100%
Provide list of installed client sites to potential customers	yes (complete list with no restrictions)	no (information is confidential but will provide references on request)	no (information is confidential)

No. of employees in entire company	6,500	14	10
• No. of employees dedicated to LIS development, installation, and support	140	14	5

No. of billed tests generated annually by labs using this LIS	—	250,000–18,000,000+ (mean, 3,500,000)	6,000–250,000 (mean 200,000)
Range in No. of user workstations in sites operating LIS	—	3–64 (average, 24)	1–6 (average, 1)

Central hardware or service type	HP 9000, HP Integrity, Sun Sparc, IBM p5 Series	Intel RAID 5	PC
How central server failure is handled	system continues uninterrupted	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation

Programming language(s)	Visual Basic, Caché, C#, ASP .Net, Javascript	Thoroughbred	Visual Basic
Operating system(s)	Unix, Windows	Linux	Microsoft Windows XP, 7, 8
Databases and tools	Chronicles Extended Relational Database Management System	Thoroughbred Idol IV	Microsoft Access
System includes full transaction logging	yes	yes	no
Languages (other than English) offered on system	—	Spanish	none

Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	100%/100%	100%/100%	98%/90%
• Microbiology/Public health microbiology	100%/100%	100%/5%	not available/not available
• Blood bank donor/Blood bank transfusion	not available/not available	not available/not available	not available/not available
• Surgical pathology/Cytology	50%/50%	50%/100%	not available/not available
• Molecular pathology	15%	5%	not available
• Cytogenetics/Flow cytometry	15%/20%	5%/1%	not available/not available
• HIS or EMR interface for admission/discharge/transfer (ADT)	100%	50%	installed
• HIS or EMR interface for order entry/Results reporting	100%/100%	75%/75%	installed/installed
• HIS or EMR interface for packaging results into PDF format	available but not installed	50%	installed
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	not available/not available	75%/50%	installed/installed
• Ad hoc reporting/Rules-based system	100%/100%	100%/100%	not available/not available
• Management and/or statistical reporting	100%	100%	installed
• Outreach and/or commercial laboratory	50%	75%	not available
• Compliance checking/Billing and accounts receivable	100%/95%	100%/75%	not available/not available
• Materials management and inventory	not available	2%	not available
• Test partition/Remote faxing and/or printing	100%/100%	100%/100%	installed/installed
• HIPAA-standard transaction formats	100%	100%	installed
• Web-based remote inquiry of reports/Web access for order entry	100%/15%	90%/90%	not available/not available
• Specimen management and tracking	100%	100%	not available
• Compliance and quality assurance tools/Environmental health	100%/5%	100%/available but not installed	not available/not available

LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for:			
• Microbiology data (culture and sensitivity)	yes	yes	no
• Other reportable diseases (blood, lead, immunology, etc.)	yes	yes	no
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	no	yes	no

Other lab vendors' systems to which software has an interface	Cerner, SCC Soft Computer, Sunquest, Meditech, Mediware, Wyndgate Technologies	Cerner, McKesson, Siemens, Experior, WebMD, NextGen, Practice Partners, Millbrook, GE Healthcare, Allscripts, Medical Manager, 4medica, others	—
Total laboratory automation systems to which LIS can interface	Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Olympus America, Roche Diagnostics	Abbott Diagnostics, Beckman Coulter, Siemens, Roche Diagnostics	none

LIS allows third-party updates of tables and rules	yes (LOINC, SNOMED)	yes (CodeMap, Medicare, others)	no
LIS allows for image capture, display, reporting	yes	—	no

Software provides indexed field in each test definition for LOINC code	yes	yes	no
Provide LOINC dictionary for each new installation	no	no	no
LIS supports use of SNOMED CT	yes	yes	no

Market modules for other hospital departments (percent of installs lab only)	yes (3%)	no	no

No. of different types of lab instruments interfaced and operational with LIS	330	300+	—
• Use third-party middleware for instrument interfaces	yes (for all instrument interfaces)	no (interface directly)	no (interface directly)
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	60% (100% of total use Epic's PPID software)	—	—
Source code/User group that meets regularly	yes/yes (meets via Webinar, conference call, and in person)	escrow/no	no/no
Methods by which users can tailor LIS in their own setting	wraparound programming, ad hoc query tools, user-defined interfaces, dictionary settings, Web services	wraparound programming, ad hoc query tools, user-defined interfaces, dictionary settings, flags	—

System available via ASP or cloud-based data center	no	optional ($5,000 start-up cost plus software and support; monthly fee starting at $500)	no
Total cost for smallest LIS installation (hardware, software, install, training)	—	$19,000 (annual maintenance fee, $3,600)	$3,500 (annual maintenance fee, $595)
Total cost for largest LIS installation (hardware, software, install, training)	—	$125,000 (annual maintenance fee, $15,000)	$26,000 (annual maintenance fee, $3,900)

Distinguishing features (supplied by company)	• seamless native data transfer from LIS to EMR without need for interfaces or translations • integrated PPID specimen collection, end-to-end specimen tracking, and quality control modules • customer-driven development philosophy; customers guide design and direction of product and help prioritize where to take the system	• extreme flexibility; easy to learn and use; stable, reliable, and expandable; can't outgrow • quick installation and implementation; 24/7 fast support and service with live people; on-site hardware support; upgrades at no charge • billing and cash management system integrated with LAB/HEX or interfaced to institution's LIS; HIPAA compliant with ANSI 5010; electronic billing and remittance, medical necessity, other tools	• designed by a medical technologist specifically for the physician office laboratory; simple to use • training can be accomplished in one to two hours • complete, easy, affordable solution for the physician office laboratory

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

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Laboratory information systems

Part 7 of 12

See captodayonline.com/productguides *for an interactive version of guide*

	LabSoft **Sales** sales@labsoftweb.com **9104 Shenandoah Run** **Wesley Chapel, FL 33544** **800-767-3279 www.labsoftweb.com**	**LabWare** **Dave Nixon** nixon@labware.com **3 Mill Road, Suite 102** **Wilmington, DE 19806** **302-658-8444 www.labware.com**	**LigoLab Information Systems** **Suren Avunjian** suren@ligolab.com **500 N. Central Ave., Suite 930** **Glendale, CA 91203** **800-544-6522/818-230-1307 www.ligolab.com**
Name of laboratory information system	**LabNet**	**LabWare LIMS**	**LigoLab AP/LIS 4.0**
First ever/Most recent LIS installation (based on September 2013 survey deadline)	1992/2013	1999/June 2013	2006/August 2013
Last major product release or update for featured LIS	2009	August 2009	June 2013
Total No. of contracts for sites operating LIS	300+	115	23
• Hospital/Independent lab contracts in U.S.	61/47	3/4	0/23
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	181/3	0/7	0/0
• Contracts for other U.S. sites/Contracts for foreign sites	3 (research)/0	15 (biobank, veterinary, clinical research-government, pharma/biotech)/86 (hospital, reference labs, public health, biobanks, university, others)	0/0
• No. of these contracts that went live between August 2012–August 2013	—	10	0
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	—	9 (0/5/4–veterinary, biobank, research)	6
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	—	7	0
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	300+/1 (Trinidad)	202/160 (U.K., India, Portugal, Columbia, Singapore, China, Switzerland, South Africa, Kenya, others)	27/0
Percentage of high-volume* sites installed/Low-volume** sites installed	30%/70%	23%/77%	70%/30%
Provide list of installed client sites to potential customers	yes (a complete list but prospective client must sign a nondisclosure agreement)	yes (a partial list that excludes customers that do not give permission to be included)	yes (a complete list but prospective client must sign a nondisclosure agreement)
No. of employees in entire company	7	292	23
• No. of employees dedicated to LIS development, installation, and support	5	45	19
No. of billed tests generated annually by labs using this LIS	1,000–100,000 (mean, 10,000)	10,000–8,000,000 (mean, 600,000)	5,000–1,000,000 (mean, 300,000)
Range in No. of user workstations in sites operating LIS	1–77 (average, 3)	3–500 (average, 35)	15–300 (average, 50)
Central hardware or service type	Dell	database server: Sun, Unix, Linux, Windows, others; application server: Windows 2003, 2008	—
How central server failure is handled	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	system continues uninterrupted	—
Programming language(s)	Delphi	Smalltalk	Java, C++
Operating system(s)	Windows	Windows	Windows, Linux, Macintosh, iOS, Android
Databases and tools	SQL	Oracle, SQL server, PostgreSQL, IBM DB2	Microsoft SQL, Oracle
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on system	none	German, Spanish, Swedish, Chinese, Norwegian, Japanese, Portuguese, Italian, Russian	—
Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	100%/100%	60%/95%	installed/installed
• Microbiology/Public health microbiology	20%/2%	28%/23%	installed/installed
• Blood bank donor/Blood bank transfusion	not available/not available	2%/2%	not available/not available
• Surgical pathology/Cytology	2%/not available	16%/9%	installed/installed
• Molecular pathology	not available	56%	installed
• Cytogenetics/Flow cytometry	not available/not available	11%/15%	installed/installed
• HIS or EMR interface for admission/discharge/transfer (ADT)	90%	4%	installed
• HIS or EMR interface for order entry/Results reporting	90%/90%	9%/8%	installed/installed
• HIS or EMR interface for packaging results into PDF format	5%	4%	installed
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	not available/not available	available but not installed/available but not installed	installed/installed
• Ad hoc reporting/Rules-based system	30%/50%	95%/100%	installed/installed
• Management and/or statistical reporting	100%	100%	installed
• Outreach and/or commercial laboratory	25%	7%	installed
• Compliance checking/Billing and accounts receivable	70%/100%	6%/35%	installed/available third quarter 2014
• Materials management and inventory	not available	80%	available first quarter 2014
• Test partition/Remote faxing and/or printing	100%/50%	65%/35%	installed/installed
• HIPAA-standard transaction formats	not available	available but not installed	installed
• Web-based remote inquiry of reports/Web access for order entry	30%/30%	11%/9%	installed/installed
• Specimen management and tracking	60%	95%	installed
• Compliance and quality assurance tools/Environmental health	100%/not available	85%/9%	installed/not available
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats* for:**			
• Microbiology data (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood, lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	yes	yes	yes
Other lab vendors' systems to which software has an interface	GE Healthcare, Epic, Allscripts, Cerner, Meditech, Siemens, SCC Soft Computer, others	Meditech, Cerner, Instem, self developed, others	Allscripts, Schuyler House, Clinical Information Systems, Psyche Systems, Cortex, others
Total laboratory automation systems to which LIS can interface	Beckman Coulter, Siemens, Olympus America	Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Olympus, Roche	Siemens
LIS allows third-party updates of tables and rules	no	yes (Bio-Rad, LOINC, SNOMED; any static table can be updated via interface or file import)	no
LIS allows for image capture, display, reporting	no	yes	yes
Software provides indexed field in each test definition for LOINC code	no	yes	yes
Provide LOINC dictionary for each new installation	no	no	yes
LIS supports use of SNOMED CT	—	yes	yes
Market modules for other hospital departments (percent of installs lab only)	no	no	no
No. of different types of lab instruments interfaced and operational with LIS	200+	325+	200+
• Use third-party middleware for instrument interfaces	no (interface directly)	use a combination of direct interfaces and third-party interfaces (LabWare and Data Innovations)	no (interface directly)
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	—	2% (100% of total use third-party PPID software)	—
Source code/User group that meets regularly	—/no	optional/yes (meets via Webinar and in person)	escrow/yes (meets via Webinar)
Methods by which users can tailor LIS in their own setting	—	ad hoc query tools, user-defined interfaces, dictionary settings, rules engine, workflow configuration tools	ad hoc query tools, user-defined interfaces, dictionary settings, rule engine and workflow actions, others
System available via ASP or cloud-based data center	no	no	yes (no up-front licensing fee; per case pricing based on case type)
Total cost for smallest LIS installation (hardware, software, install, training)	$10,000 (annual maintenance fee, $1,000)	$100,000 (annual maintenance fee, $8,000)	—
Total cost for largest LIS installation (hardware, software, install, training)	$150,000 (annual maintenance fee, $22,000)	$5,000,000 (annual maintenance fee, $400,000)	—
Distinguishing features (supplied by company)	• intuitive; easy to learn and use • flexible and user definable • reliable; quality; value	• standard user license includes fully integrated tools for genetics, histopathology, microbiology, specimen storage tracking and logistics; more • powerful workflow-management tools • customer empowerment—flexibility to quickly address new business and technology requirements	• includes all the modules and interfaces a modern anatomic or clinical pathology laboratory requires • no up-front capital investment; pay per case • upgrade program—new features deployed to current customers on a quarterly basis at no additional cost

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

Tabulation does not represent an endorsement by the College of American Pathologists.

Laboratory information systems

Part 8 of 12	McKesson	Medcom Information Systems	Medical Information Technology
	Joseph R. Stabile joseph.stabile@mckesson.com	David Baird dbaird@emirj.com	Paul Berthiaume pberthiaume@meditech.com
	5995 Windward Parkway	2117 Stonington Ave.	Meditech Circle
	Alpharetta, GA 30005	Hoffman Estates, IL 60169	Westwood, MA 02090
See captodayonline.com/productguides *for an interactive version of guide*	404-338-4363 www.mckesson.com/laboratory	847-885-1553 www.emirj.com	781-821-3000 www.meditech.com

Name of laboratory information system	Horizon Lab	Medcom Lab Manager	Laboratory Information System–6.0
First ever/Most recent LIS installation (based on September 2013 survey deadline)	1972/August 2013	1991/September 2013	1970/July 2013
Last major product release or update for featured LIS	May 2013	2010	October 2012
Total No. of contracts for sites operating LIS	116	370	—
• Hospital/Independent lab contracts in U.S.	109/2	20/137	439[†]/0
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	2/0	85/2	not tracked/0
• Contracts for other U.S. sites/Contracts for foreign sites	0/3 (hospitals)	125/1 (Canadian Health)	not tracked/26[†]
• No. of these contracts that went live between August 2012–August 2013	3	8	157[†]
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	3 (3/0/0)	2 (0/2/0)	— (360[†]/not tracked/not tracked)
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	1	8	31 licenses
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	291/3 (Canada, Saudi Arabia)	—	734/135 (Bahamas, Canada, Ireland, Puerto Rico, U.K., U.S. Virgin Islands)
Percentage of high-volume* sites installed/Low-volume** sites installed	85%/15%	—	27%/73%
Provide list of installed client sites to potential customers	yes (partial list based on specimen volume, HIS/EHR environment, incumbent LIS, more)	yes (partial list)	—

No. of employees in entire company	52,000 (McKesson Technology Solutions, 9,000)	15	3,843
• No. of employees dedicated to LIS development, installation, and support	80	5	not tracked

No. of billed tests generated annually by labs using this LIS	not tracked	—	not tracked
Range in No. of user workstations in sites operating LIS	10–400 (average, 35)	1–15 (average, 2.5)	not tracked

Central hardware or service type	HP, IBM, Dell	white box	Dell, IBM, EMC, HP, BridgeHead Software, Stratus Technologies, others
How central server failure is handled	system continues uninterrupted	manual intervention necessary to restore operation	manual intervention necessary to restore operation or system continues uninterrupted (user's option)

Programming language(s)	Object Pascal, C, C#, Java, Perlt	C++	Meditech self-developed programming language
Operating system(s)	Windows, Red Hat Enterprise Linux	Windows	servers: Windows 2003, 2008 SE; clients: Windows 2000 Professional, XP, XP Tablet, Vista, 7
Databases and tools	Oracle	—	Meditech Database Management System
System includes full transaction logging	yes	yes	no
Languages (other than English) offered on system	none	none	Spanish in development

Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	installed/installed	90%/70%	100%/100%
• Microbiology/Public health microbiology	installed/installed	10%/2%	100%/installed
• Blood bank donor/Blood bank transfusion	not available/through Horizon Blood Bank	not available/not available	installed/installed
• Surgical pathology/Cytology	through NovoPath AP/through NovoPath AP	not available/not available	installed/installed
• Molecular pathology	through NovoPath AP	not available	not available
• Cytogenetics/Flow cytometry	through NovoPath AP/through NovoPath AP	not available/not available	not available/not available
• HIS or EMR interface for admission/discharge/transfer (ADT)	installed	50%	installed
• HIS or EMR interface for order entry/Results reporting	installed/installed	50%/50%	installed/installed
• HIS or EMR interface for packaging results into PDF format	not available	not available	installed
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	not available/not available	30%/not available	not available/not available
• Ad hoc reporting/Rules-based system	installed/installed	30%/not available	100%/100%
• Management and/or statistical reporting	installed	20%	100%
• Outreach and/or commercial laboratory	through Horizon Outreach for Lab	not available	installed
• Compliance checking/Billing and accounts receivable	installed/through Horizon Lab Financials	15%/not available	installed/installed
• Materials management and inventory	not available	not available	installed
• Test partition/Remote faxing and/or printing	installed/installed	not available/25%	100%/100%
• HIPAA-standard transaction formats	installed	not available	100%
• Web-based remote inquiry of reports/Web access for order entry	through Horizon Outreach for Lab (for both features)	not available/25%	installed/installed
• Specimen management and tracking	installed	1%	100%
• Compliance and quality assurance tools/Environmental health	installed/installed	100%/not available	installed/installed

LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for:			
• Microbiology data (culture and sensitivity)	yes	no	yes
• Other reportable diseases (blood, lead, immunology, etc.)	yes	no	yes
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	no	no	yes

Other lab vendors' systems to which software has an interface	Sunquest, Cerner, Meditech, others	—	Cerner, Siemens, McKesson, others
Total laboratory automation systems to which LIS can interface	interfaces available (all via Data Innovations)	none	Beckman Coulter, Siemens, Roche Diagnostics, Bayer

LIS allows third-party updates of tables and rules	yes (AMA, CMS, Regenstrief Institute, others)	no	yes (InfoX, SNOMED)
LIS allows for image capture, display, reporting	no	no	yes

Software provides indexed field in each test definition for LOINC code	yes	no	yes
Provide LOINC dictionary for each new installation	yes	no	no
LIS supports use of SNOMED CT	yes	yes	yes

Market modules for other hospital departments (percent of installs lab only)	yes (50%)	no	yes

No. of different types of lab instruments interfaced and operational with LIS	500+	—	1,000+
• Use third-party middleware for instrument interfaces	yes (for all instrument interfaces)	no (interface directly)	no (interface directly)
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	40% (100% of total use McKesson's PPID software)	100% (100% of total use Medcom's PPID software)	not tracked
Source code/User group that meets regularly	escrow/yes (meets via Webinar, in person, and conference call)	no/no	escrow/yes (meets via Webinar and in person)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, dictionary settings	user-defined report writer	ad hoc query tools, user-defined interfaces, dictionary settings, customer-defined screens, desktop preferences, rules-based logic

System available via ASP or cloud-based data center	yes	no	no
Total cost for smallest LIS installation (hardware, software, install, training)	—	$9,000 (annual maintenance fee, $1,100)	—
Total cost for largest LIS installation (hardware, software, install, training)	—	$70,000 (annual maintenance fee, $3,100)	—

| Distinguishing features (supplied by company) | • current release ONC-ATCB certified as a module EHR for meaningful use stage 2, 2014 edition compliant
• outstanding support organization
• substantially decreased total cost of ownership with availability of Linux platform | • known as an interface company; includes EMR, practice management, hospital systems, and reference labs
• ease of use
• lab technologist receptiveness | •tightly integrated with company's clinical, administrative, and financial applications
• flexibility to serve a wide range of organizations, from small community labs to multi-site university labs and large integrated delivery networks
• instantly and automatically generates clinical alerts, pushing them out to notify providers of critical laboratory results |

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

[†]organizations live, not contracts

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Laboratory information systems

Part 9 of 12	Medical Information Technology Paul Berthiaume pberthiaume@meditech.com Meditech Circle Westwood, MA 02090 781-821-3000 www.meditech.com	Medical Information Technology Paul Berthiaume pberthiaume@meditech.com Meditech Circle Westwood, MA 02090 781-821-3000 www.meditech.com	Orchard Software Kerry Foster kfoster@orchardsoft.com 701 Congressional Blvd., Suite 360 Carmel, IN 46032 800-856-1948 www.orchardsoft.com
See captodayonline.com/productguides *for an interactive version of guide*			
Name of laboratory information system	Laboratory Information System—client/server	Laboratory Information System—Magic	Orchard Harvest LIS
First ever/Most recent LIS installation (based on September 2013 survey deadline) Last major product release or update for featured LIS Total No. of contracts for sites operating LIS • Hospital/Independent lab contracts in U.S. • Clinic or group practice contracts in U.S./Public health lab contracts in U.S. • Contracts for other U.S. sites/Contracts for foreign sites	1970/July 2013 January 2013 — 903[†]/0 not tracked/1[†] not tracked/97[†]	1970/July 2013 December 2012 — 1,109[†]/2[†] not tracked/0 not tracked/153[†]	1993/August 2013 March 2012 1,361 264/191 793/19 94 (universities, student health centers, research, veterinarian labs)/0
• No. of these contracts that went live between August 2012–August 2013 Contracts signed but LIS not yet operational (hospitals/independent labs/other sites) • Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013 Total No. of sites operating LIS/No. of sites installed that are outside U.S. Percentage of high-volume* sites installed/Low-volume** sites installed Provide list of installed client sites to potential customers	19[†] — (210[†]/not tracked/not tracked) 8 licenses 2,258/712 (Bahamas, Canada, Ireland, Puerto Rico, U.K., U.S. Virgin Islands) 21%/79% —	16[†] — (93[†]/not tracked/not tracked) 4 licenses 2,745/367 (Bahamas, Canada, Ireland, Puerto Rico, U.K., U.S. Virgin Islands) 32%/68% —	137 64 (14/16/34—clinics, POLs, student health labs) 115 1,403/0 40%/60% yes (partial list)
No. of employees in entire company • No. of employees dedicated to LIS development, installation, and support	3,843 not tracked	3,843 not tracked	211 159
No. of billed tests generated annually by labs using this LIS Range in No. of user workstations in sites operating LIS	not tracked not tracked	not tracked not tracked	5,000–4,000,000 (mean, 500,000) 1–500 (average, 30)
Central hardware or service type How central server failure is handled	Dell, IBM, EMC, HP, BridgeHead Software, Stratus Technologies, others manual intervention necessary to restore operation or system continues uninterrupted (user's option)	Dell, IBM, EMC, HP, BridgeHead Software, Stratus Technologies, others manual intervention necessary to restore operation or system continues uninterrupted (user's option)	HP Business Class manual intervention necessary to restore operation or system continues uninterrupted (user's option)
Programming language(s) Operating system(s) Databases and tools System includes full transaction logging Languages (other than English) offered on system	Meditech self-developed programming language servers: Windows 2003, 2008 SE; clients: Windows 2000 Professional, XP, XP Tablet, Vista, 7 Meditech Database Management System no Spanish in development	Meditech self-developed programming language Windows 2003 platform, Windows Server 2008 Standard Edition Meditech Database Management System no Spanish in development	4D, C++, Java, HTML Windows XP Professional, Vista, Server 2003 Standard Edition, 7 4D, SQL yes none
Features/modules (listed as percent of live installs or based on availability) • Chemistry and hematology/Bar-coded collection labels • Microbiology/Public health microbiology • Blood bank donor/Blood bank transfusion • Surgical pathology/Cytology • Molecular pathology • Cytogenetics/Flow cytometry • HIS or EMR interface for admission/discharge/transfer (ADT) • HIS or EMR interface for order entry/Results reporting • HIS or EMR interface for packaging results into PDF format • HIS or EMR interface for packaging results into CDA1 format/CDA2 format • Ad hoc reporting/Rules-based system • Management and/or statistical reporting • Outreach and/or commercial laboratory • Compliance checking/Billing and accounts receivable • Materials management and inventory • Test partition/Remote faxing and/or printing • HIPAA-standard transaction formats • Web-based remote inquiry of reports/Web access for order entry • Specimen management and tracking • Compliance and quality assurance tools/Environmental health	 100%/100% 100%/installed installed/installed installed/installed not available not available/not available installed installed/installed installed not available/not available 100%/100% 100% installed installed/installed installed 100%/100% 100% installed/installed 100% installed/installed	 100%/100% 100%/installed installed/installed installed/installed not available not available/not available installed installed/installed installed not available/not available 100%/100% 100% installed installed/installed installed 100%/100% 100% installed/installed 100% installed/installed	 100%/100% 25%/1% not available/not available 10%/10% 5% 2%/5% 90% 60%/65% 15% not available/not available 100%/100% 100% 35% 100%/not available installed 35%/100% 100% 65%/60% installed 100%/installed
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for: • Microbiology data (culture and sensitivity) • Other reportable diseases (blood, lead, immunology, etc.) • Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	 yes yes yes	 yes yes yes	 yes yes yes
Other lab vendors' systems to which software has an interface Total laboratory automation systems to which LIS can interface	Cerner, Siemens, McKesson, others Beckman Coulter, Siemens, Roche Diagnostics, Bayer	Cerner, Siemens, McKesson, others Beckman Coulter, Siemens, Roche Diagnostics, Bayer	Allscripts, Healthland, CPSI, NextGen, Medisoft, Aprima, HealthQuest, Keane, NetSolutions, others Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Olympus America, Roche Diagnostics
LIS allows third-party updates of tables and rules LIS allows for image capture, display, reporting	yes (InfoX, SNOMED) yes	yes (InfoX, SNOMED) yes	no yes
Software provides indexed field in each test definition for LOINC code Provide LOINC dictionary for each new installation LIS supports use of SNOMED CT	yes no yes	yes no —	yes no yes
Market modules for other hospital departments (percent of installs lab only)	yes	yes	no
No. of different types of lab instruments interfaced and operational with LIS • Use third-party middleware for instrument interfaces Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside Source code/User group that meets regularly Methods by which users can tailor LIS in their own setting	1,000+ no (interface directly) not tracked escrow/yes (meets via Webinar and in person) ad hoc query tools, user-defined interfaces, dictionary settings, customer-defined screens, desktop preferences, rules-based logic	1,000+ no (interface directly) not tracked escrow/yes (meets via Webinar and in person) ad hoc query tools, user-defined interfaces, dictionary settings, customer-defined screens, desktop preferences, rules-based logic	400+ no (interface directly) 1% (100% of total use third-party PPID software) escrow/yes (meets via Webinar and in person) ad hoc query tools, dictionary settings, custom programming
System available via ASP or cloud-based data center Total cost for smallest LIS installation (hardware, software, install, training) Total cost for largest LIS installation (hardware, software, install, training)	no — —	no — —	no $32,000 (annual maintenance fee, $4,000) $1,400,000 (annual maintenance fee, $168,000)
Distinguishing features (supplied by company)	•tightly integrated with company's clinical, administrative, and financial applications • lab managers have access to a variety of management reports to aid them in decisionmaking • instantly and automatically generates clinical alerts, pushing them out to notify providers of critical laboratory results	•tightly integrated with company's clinical, administrative, and financial applications • flexibility to serve a wide range of organizations, from small community labs to multi-site university labs and large integrated delivery networks • instantly and automatically generates clinical alerts, pushing them out to notify providers of critical laboratory results	• expert interfacing and integration capabilities with instruments, EMR systems, other host systems, departments, reference labs • robust rules-based decision support logic and data-mining technology for data analytics • industry leader in product development, training, service, and support

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

[†]organizations live, not contracts

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Laboratory information systems

Part 10 of 12	Pathagility	Psyche Systems	Quality Software Systems
	Mark McCuin mark@pathagility.com	Lisa-Jean Clifford lj@psychesystems.com	Jeff Caspari jcaspari@labhealth.com
	10810 Executive Center Drive, Suite 100	25 Birch St., Building B	252 Old Nyack Turnpike
	Little Rock, AR 72211	Milford, MA 01757	Spring Valley, NY 10977
See captodayonline.com/productguides *for an interactive version of guide*	888-222-2792 www.pathagility.com	508-473-1500 www.psychesystems.com	845-352-4313 ext. 14 www.labhealth.com
Name of laboratory information system	**WorkPath**	**WindoPath Clinical**	**LabHealth**
First ever/Most recent LIS installation (based on September 2013 survey deadline)	2008/September 2013	1976/August 2013	1984/2013
Last major product release or update for featured LIS	September 2013	2013	2013
Total No. of contracts for sites operating LIS	10	31	39
• Hospital/Independent lab contracts in U.S.	0/8	24/5	1/32
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	2/0	0/2	6/0
• Contracts for other U.S. sites/Contracts for foreign sites	0/0	0/0	0/0
• No. of these contracts that went live between August 2012–August 2013	5	2	5
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	2 (0/2/0)	6 (6/0/0)	—
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	6	6	5
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	15/0	25/0	39/0
Percentage of high-volume* sites installed/Low-volume** sites installed	25%/75%	30%/70%	70%/30%
Provide list of installed client sites to potential customers	yes (partial list)	no (information is confidential)	—
No. of employees in entire company	—	44	7
• No. of employees dedicated to LIS development, installation, and support	—	35	6
No. of billed tests generated annually by labs using this LIS	—	—	50,000–5,000,000 (mean, 250,000)
Range in No. of user workstations in sites operating LIS	2–40 (average, 13)	1–120 (average, 20)	4–95
Central hardware or service type	**Amazon Web Services**	HP, Pentium compatible	Dell
How central server failure is handled	system continues uninterrupted	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)
Programming language(s)	Python, Java	Visual Basic .Net	Visual Basic .Net
Operating system(s)	agnostic–Linux, Windows, Macintosh, BSD, Solaris, others	Windows	Windows
Databases and tools	agnostic–MySQL, PostgreSQL, SQLite, Oracle	Microsoft SQL server, Hyperion Interactive Reporting, RightFax	SQL
System includes full transaction logging	yes	yes	—
Languages (other than English) offered on system	—	—	—
Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	available but not installed/75%	100%/100%	100%/90%
• Microbiology/Public health microbiology	available but not installed/available but not installed	80%/2%	50%/25%
• Blood bank donor/Blood bank transfusion	available but not installed/—	not available/25%	not available/not available
• Surgical pathology/Cytology	30%/25%	15%/installed	available but not installed/20%
• Molecular pathology	75%	installed	not available
• Cytogenetics/Flow cytometry	75%/20%	installed/installed	not available/not available
• HIS or EMR interface for admission/discharge/transfer (ADT)	50%	90%	30%
• HIS or EMR interface for order entry/Results reporting	50%/80%	80%/80%	30%/30%
• HIS or EMR interface for packaging results into PDF format	75%	80%	available but not installed
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	available but not installed/available but not installed	25%/not available	not available/not available
• Ad hoc reporting/Rules-based system	100%/—	100%/100%	100%/100%
• Management and/or statistical reporting	100%	100%	100%
• Outreach and/or commercial laboratory	80%	60%	100%
• Compliance checking/Billing and accounts receivable	80%/not available	80%/not available	100%/100%
• Materials management and inventory	not available	installed	100%
• Test partition/Remote faxing and/or printing	100%/100%	100%/100%	100%/100%
• HIPAA-standard transaction formats	100%	100%	100%
• Web-based remote inquiry of reports/Web access for order entry	100%/25%	45%/80%	100%/100%
• Specimen management and tracking	25%	installed	100%
• Compliance and quality assurance tools/Environmental health	100%/available but not installed	installed/not available	80%/not available
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats* for:**			
• Microbiology data (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood, lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	yes	yes	no
Other lab vendors' systems to which software has an interface	Life Technologies, Illumina, Sunquest, custom developed systems, others	Siemens, Orchard, Epic, SCC Soft Computer, McKesson, Meditech, Allscripts, CPSI, QuadraMed, Keane, Seacoast, Cerner, others	Cerner, Allscripts, others
Total laboratory automation systems to which LIS can interface	interface planned for future	Abbott Diagnostics, Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Olympus America, Roche Diagnostics, others	available but not yet operational to Siemens, Abbott Diagnostics, Beckman Coulter, Ortho Clinical Diagnostics, Olympus America, Roche Diagnostics
LIS allows third-party updates of tables and rules	no	yes (CodeMap, CAP)	no
LIS allows for image capture, display, reporting	yes	no	yes
Software provides indexed field in each test definition for LOINC code	no	yes	yes
Provide LOINC dictionary for each new installation	no	yes	yes
LIS supports use of SNOMED CT	no	yes	yes
Market modules for other hospital departments (percent of installs lab only)	no	no	no
No. of different types of lab instruments interfaced and operational with LIS	5	400+	98
• Use third-party middleware for instrument interfaces	no (interface directly)	use a combination of direct interfaces and third-party interfaces	no (interface directly)
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	0	10% (100% of total use third-party PPID software)	25% (50% of total use Quality Software Systems' PPID system/50% use third-party PPID system)
Source code/User group that meets regularly	no/no	escrow/yes (meets via Webinar, conference call, and in person)	yes/no
Methods by which users can tailor LIS in their own setting	case type administration tools	ad hoc query tools, dictionary settings, others	wraparound programming, ad hoc query tools, dictionary settings
System available via ASP or cloud-based data center	yes (initialization fee and monthly/annual subscription fee)	yes (based on concurrent user licenses)	—
Total cost for smallest LIS installation (hardware, software, install, training)	—	$24,000 (annual maintenance fee, $500)	$20,000 (annual maintenance fee, $6,000)
Total cost for largest LIS installation (hardware, software, install, training)	—	$1,500,000 (annual maintenance fee, $118,000)	$95,000 (annual maintenance fee, $30,000)
Distinguishing features (supplied by company)	• Software-as-a-Service (SaaS)—portability; fast implementations; and low total cost of ownership • custom case types reporting—specialized case types allow labs to offer a comprehensive test menu and generate presentable, marketable custom reports • full menu of integrated connectivity and distribution options	• fully cloud-based hosted deployment option for Web outreach, EMR integration, LIS, more • unique, advanced mapping tools for deployment of EMR/PMS order and result interfaces • surgical pathology, cytopathology, molecular pathology, clinical pathology, and microbiology in a single system †formerly LabWeb	• LIS completely rewritten in 2011 using the most up-to-date browser-based technology • ability of company to create custom programming quickly and inexpensively • consulting services to help client labs generate new income

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.

Note: a dash in lieu of an answer means company did not answer question or question is not applicable

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Laboratory information systems

Part 11 of 12	SCC Soft Computer Ellie Vahman ellie@softcomputer.com 5400 Tech Data Drive Clearwater, FL 33760 727-789-0100 www.softcomputer.com	Schuyler House jlc@schuylerhouse.com Janet Chennault 27821 Fremont Court, Suite 8 Valencia, CA 91355 800-706-0266 www.schuylab.com	Siemens Medical Solutions USA Theresa McGillvray-Dodd theresa.mcgillvray-dodd@siemens.com 51 Valley Stream Parkway, Malvern, PA 19355-1406 425-487-0179 www.usa.siemens.com/medical
See captodayonline.com/productguides *for an interactive version of guide*			
Name of laboratory information system	**SoftLab**	**SchuyLab**	**Novius Lab**
First ever/Most recent LIS installation (based on September 2013 survey deadline)	1985/August 2013	1994/September 2013	1983/June 2013
Last major product release or update for featured LIS	August 2013	September 2013	May 2012
Total No. of contracts for sites operating LIS	349	891	52
• Hospital/Independent lab contracts in U.S.	281/23	128/269	49/1
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	9/3	415/0	0/1
• Contracts for other U.S. sites/Contracts for foreign sites	0/33 (university based, hospitals, regional health authorities)	45 (veterinary, vendor, schools)/34 (hospitals, physician office labs, reference labs)	0/1
• No. of these contracts that went live between August 2012–August 2013	9	64	—
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	17 (14/3/0)	3 (0/3/0)	4 (4/0/0)
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	11	67	4
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	894/102 (Canada, Brazil, Jamaica, Switzerland)	891/106 (Guam, Caribbean, Canada, Africa, Pacific Rim, South East Asia)	105/1 (Canada)
Percentage of high-volume* sites installed/Low-volume** sites installed	60%/40%	30%/70%	45%/55%
Provide list of installed client sites to potential customers	yes (partial list based on environment type and modules of interest)	yes (partial list with client permission only)	no (information is confidential)
No. of employees in entire company	1,800	27	400,000+
• No. of employees dedicated to LIS development, installation, and support	1,620	20	proprietary
No. of billed tests generated annually by labs using this LIS	50,000–30,000,000 (mean, 1,000,000)	5,000–7,000,000 (mean, 10,000)	80,000–3,000,000 (mean, 650,000)
Range in No. of user workstations in sites operating LIS	10–4,000+ (average, 80)	1–75 (average, 3)	6–75 (average, 20)
Central hardware or service type	IBM System p (AIX/Unix)	any PC (Dell recommended)	IBM xSeries, HP Proliant, Dell
How central server failure is handled	system continues uninterrupted	manual intervention necessary to restore operation	manual intervention necessary to restore operation
Programming language(s)	C, C++, Java, .Net	C	C++
Operating system(s)	AIX (Unix), Windows	Windows XP, Vista, 7, 8	Linux
Databases and tools	Oracle, OAS, Tomcat, WebLogic, JBoss, ServiceMix	Pervasive, Btrieve	Sybase
System includes full transaction logging	yes	no	yes
Languages (other than English) offered on system	French, ABN forms available in Spanish	ABN forms available in Spanish, other languages	none
Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	100%/100%	100%/55%	100%/100%
• Microbiology/Public health microbiology	90%/6%	70%/1% (via WHONET)	98%/5%
• Blood bank donor/Blood bank transfusion	7%/61%	not available/not available	installed/installed
• Surgical pathology/Cytology	48%/48%	10%/15%	installed/installed
• Molecular pathology	10%	not available	installed
• Cytogenetics/Flow cytometry	5%/20%	not available/1%	installed/installed
• HIS or EMR interface for admission/discharge/transfer (ADT)	99%	50%	95%
• HIS or EMR interface for order entry/Results reporting	90%/90%	50%/50%	95%/95%
• HIS or EMR interface for packaging results into PDF format	15%	50%	not available
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	not available/not available	not available/not available	installed/installed
• Ad hoc reporting/Rules-based system	100%/100%	100%/installed	100%/100%
• Management and/or statistical reporting	100%	100%	100%
• Outreach and/or commercial laboratory	100%	30%	installed
• Compliance checking/Billing and accounts receivable	30%/30%	50%/30%	installed/installed
• Materials management and inventory	installed	not available	installed
• Test partition/Remote faxing and/or printing	100%/100%	not available/40%	100%/98%
• HIPAA-standard transaction formats	100%	100%	installed
• Web-based remote inquiry of reports/Web access for order entry	15%/15%	30%/40%	installed/installed
• Specimen management and tracking	100%	not available	installed
• Compliance and quality assurance tools/Environmental health	100%/not available	not available/not available	installed/installed
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats* for:**			
• Microbiology data (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood, lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	yes	no	yes
Other lab vendors' systems to which software has an interface	4medica, Keane, Sunquest, McKesson, NextGen, Seacoast, Xifin, Meditech, Allscripts, many others	Allscripts, Healthland, eClinicalWorks, GE Healthcare, McKesson, NextGen, Siemens, many others	McKesson, Epic, Allscripts
Total laboratory automation systems to which LIS can interface	Abbott Diagnostics, Beckman Coulter, Siemens, Ortho, Labotix Automation, PVT LabSystems, Olympus America, Roche Diagnostics, others	Roche Diagnostics, Bayer	Beckman Coulter, Siemens, Roche Diagnostics, Tecan
LIS allows third-party updates of tables and rules	yes (Allscripts, Epic, IntraNexus, QuadraMed, Quadax, ICD 9/10 codes, LOINC, Microscan, others)	yes (CodeMap, others)	no
LIS allows for image capture, display, reporting	yes	yes	no
Software provides indexed field in each test definition for LOINC code	yes	yes	yes
Provide LOINC dictionary for each new installation	yes	no	no
LIS supports use of SNOMED CT	yes	no	yes
Market modules for other hospital departments (percent of installs lab only)	yes (99%)	yes (90%)	yes (10%)
No. of different types of lab instruments interfaced and operational with LIS	500+	310	300
• Use third-party middleware for instrument interfaces	no (interface directly)	no (interface directly)	use a combination of direct interfaces and third-party interfaces
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	26% (92% of total use SCC Soft Computers' PPID system/8% use third-party PPID system)	0 (PPID interface capability available)	20% (90% of total use Siemens' PPID system/10% use third-party PPID system)
Source code/User group that meets regularly	escrow/yes (meets in person)	escrow/yes (meets in person)	no/yes (meets via Webinar, in person, conference call)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, dictionary settings, highly configurable RBS rules engine	user-defined interfaces	ad hoc query tools, user-defined interfaces, dictionary settings
System available via ASP or cloud-based data center	yes	no	no
Total cost for smallest LIS installation (hardware, software, install, training)	—	free (annual maintenance fee optional)	—
Total cost for largest LIS installation (hardware, software, install, training)	—	$160,000 (annual maintenance fee, $8,000)	—
Distinguishing features (supplied by company)	• Genetics Information Systems Suite is an innovative, next-generation, workflow-based, integrated LIS with dedicated discipline-specific modules for molecular, cytogenetics, HLA/immunogenetics, more • single-database, single-platform, integrated LIS capable of accommodating the most sophisticated laboratories • core lab multi-site and specimen-tracking module	• free SchuyBase LIS, a streamlined version of SchuyLab, with modules that can be upgraded so SchuyBase can grow with lab • new medication module for SchuyLab LIS enables LIS to automatically correlate medication prescribed with results of lab tests and produce a text comment • easy-to-use, comprehensive LIS	• turnaround time alerts; paperless operations with robust online searches; rules-based automation and knowledge; critical call management; document links • six-month implementation cycle times • proven performance and reliability; ranked No. 1 in KLAS LIS ranking for 2008, 2009, 2010, 2011, 2012

*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day
***HL7 2.5.1, LOINC, SNOMED, etc.
Note: a dash in lieu of an answer means company did not answer question or question is not applicable

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Laboratory information systems

Part 12 of 12	STARLIMS	Sunquest Information Systems	Technidata America
	Jeffrey Flemming jeffrey.flemming@starlims.com	Auna Emery auna.emery@sunquestinfo.com	Yves Charron yves.charron@technidata-web.com
	4000 Hollywood Blvd., Suite 333 South	250 S. Williams Blvd.	5795 Avenue de Gaspé, Office 223
	Hollywood, FL 33021	Tucson, AZ 85711	Montreal, QC, Canada H2S2X3
See captodayonline.com/productguides *for an interactive version of guide*	954-964-8663 www.starlims.com	520-570-2000 www.sunquestinfo.com	514-270-7770 www.technidata-web.com

Name of laboratory information system	STARLIMS Clinical	Sunquest Laboratory	TD-Synergy Suite
First ever/Most recent LIS installation (based on September 2013 survey deadline)	2001/August 2013	1979/July 2012	1972/April 2013
Last major product release or update for featured LIS	June 2013	March 2012	April 2013
Total No. of contracts for sites operating LIS	137	500+	700+
• Hospital/Independent lab contracts in U.S.	3/34	—	7/1
• Clinic or group practice contracts in U.S./Public health lab contracts in U.S.	0/26	—	0/1
• Contracts for other U.S. sites/Contracts for foreign sites	24 (plasma testing, biobank, biomarker research, others)/50 (hospitals, reference labs, biobanks, others)	— (veterinary labs, research labs)/34 (hospitals, research labs)	2 (clinical research labs)/700+ (hospital labs, public health labs, independent labs)
• No. of these contracts that went live between August 2012–August 2013	14	15	1
Contracts signed but LIS not yet operational (hospitals/independent labs/other sites)	11 (1/4/6-blood services, public health, others)	47	0
• Total No. of contracts (live and not live) signed between Aug. 2012–Aug. 2013	25	36	0
Total No. of sites operating LIS/No. of sites installed that are outside U.S.	137/50 (U.K., Germany, Romania, China, Singapore, Russia, Jamaica, Malaysia, India, Japan, others)	1,000+/60+ (Canada, U.K., Western Europe, Middle East)	800+/800+ (Canada, France, U.K., Netherlands)
Percentage of high-volume* sites installed/Low-volume** sites installed	50%/50%	65%/35%	97%/3%
Provide list of installed client sites to potential customers	yes (partial list with client preapproval)	yes (partial list)	yes (partial list of reference sites)

No. of employees in entire company	400	600+	277
• No. of employees dedicated to LIS development, installation, and support	145	600+	277

No. of billed tests generated annually by labs using this LIS	5,000–100,000,000	<500,000–20,000,000 (mean, 10,000,000)	40,000–20,000,000 (mean, 1,000,000)
Range in No. of user workstations in sites operating LIS	3–1,750	4–500 (average, 300)	2–1,100 (average, 40)

Central hardware or service type	hardware independent—Sun, Unix, Linux (database server only), Windows (application server), IBM, HP; 32 or 64 bit	HP, IBM	hardware independent—Sun, IBM, HP, others
How central server failure is handled	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)	manual intervention necessary to restore operation or system continues uninterrupted (user's option)

Programming language(s)	C#, .Net	Caché, Caché Script, Standard C/C++, Visual Basic, Visual C++, Active X, others	C++, C, C#, Java
Operating system(s)	Windows 2000 and higher	AIX, HP-UX, OpenVMS, Linux, Windows XP	Solaris, AIX, HP-UX, Linux, Windows server, 7
Databases and tools	SQL server 2005, 2008, Oracle 10G, 11G	InterSystems Caché	Microsoft SQL server, Oracle
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on system	French, Spanish, Chinese, Czech, Polish, Russian, Dutch, Korean, Japanese, Italian, Hebrew, others	—	French, Spanish, Dutch, Italian, others

Features/modules (listed as percent of live installs or based on availability)			
• Chemistry and hematology/Bar-coded collection labels	75%/95%	100%/100%	99%/100%
• Microbiology/Public health microbiology	20%/60%	100%/installed	85%/40%
• Blood bank donor/Blood bank transfusion	0/0	installed/80%	not available/20%
• Surgical pathology/Cytology	2%/5%	70%/50%	40%/35%
• Molecular pathology	35%	installed	5%
• Cytogenetics/Flow cytometry	25%/10%	installed/installed	5%/5%
• HIS or EMR interface for admission/discharge/transfer (ADT)	15%	99%	90%
• HIS or EMR interface for order entry/Results reporting	10%/10%	99%/99%	25%/85%
• HIS or EMR interface for packaging results into PDF format	available but not installed	installed	20%
• HIS or EMR interface for packaging results into CDA1 format/CDA2 format	available but not installed/available but not installed	not available/not available	installed/available but not installed
• Ad hoc reporting/Rules-based system	100%/100%	90%/100%	100%/100%
• Management and/or statistical reporting	100%	100%	100%
• Outreach and/or commercial laboratory	20%	75%	55%
• Compliance checking/Billing and accounts receivable	15%/40%	30%/10%	10%/55%
• Materials management and inventory	85%	installed	3%
• Test partition/Remote faxing and/or printing	90%/20%	100%/90%	100%/100%
• HIPAA-standard transaction formats	20%	100%	100%
• Web-based remote inquiry of reports/Web access for order entry	90%/40%	installed/installed	40%/35%
• Specimen management and tracking	100%	100%	25%
• Compliance and quality assurance tools/Environmental health	90%/20%	100%/installed	100%/available but not installed

LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using formats*** for:			
• Microbiology data (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood, lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis or registry data (using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 edition)	yes	yes	yes

Other lab vendors' systems to which software has an interface	Orchard, NetSuite, Haemonetics, Mak-System, others	Cerner, McKesson, Siemens, Epic, GE Healthcare, others	Cerner, McKesson, Allscripts, SCC Soft Computer, Meditech, Sunquest, Siemens, others
Total laboratory automation systems to which LIS can interface	Abbott, Beckman Coulter, Siemens, Ortho, Labotix Automation, PVT LabSystems, Olympus, Roche	Abbott, Beckman Coulter, Siemens, Ortho, Labotix Automation, PVT LabSystems, Olympus, Roche	Abbott, Beckman Coulter, Siemens, Ortho, Labotix Automation, Olympus, Roche

LIS allows third-party updates of tables and rules	yes	yes (3M, CAP)	yes (SNOMED, 3M, CLSI)
LIS allows for image capture, display, reporting	yes	yes	yes

Software provides indexed field in each test definition for LOINC code	yes	yes	yes
Provide LOINC dictionary for each new installation	no	yes	no
LIS supports use of SNOMED CT	yes	yes	yes

Market modules for other hospital departments (percent of installs lab only)	no	yes (95%)	no

No. of different types of lab instruments interfaced and operational with LIS	—	1,300	500+
• Use third-party middleware for instrument interfaces	use a combination of direct interfaces and third-party interfaces	use a combination of direct interfaces and third-party interfaces	no (interface directly)
Percentage of LIS clients that use positive patient ID systems to identify patients and blood specimens at bedside	0 (interoperability tools available for third-party system interfacing)	60% (50% of total use Sunquest's PPID system/50% use third-party PPID system)	4% (75% of total use Technidata's PPID system/25% use third-party PPID system)
Source code/User group that meets regularly	escrow/yes (meets via Webinar and in person)	escrow/yes (meets via Webinar, in person, and conference call)	escrow/yes (meets via Webinar and in person)
Methods by which users can tailor LIS in their own setting	wraparound programming, ad hoc query tools, user-defined interfaces, dictionary settings, others	ad hoc query tools, user-defined interfaces, dictionary settings, rules, logic, dashboards	wraparound programming, ad hoc query tools, user-defined interfaces, dictionary settings

System available via ASP or cloud-based data center	yes (SaaS includes subscription licenses and maintenance/support; flexible pricing options)	no	no
Total cost for smallest LIS installation (hardware, software, install, training)	$75,000 (annual maintenance fee, $8,000)	—	$100,000 (annual maintenance fee, $20,000)
Total cost for largest LIS installation (hardware, software, install, training)	$4,500,000 (annual maintenance fee, $300,000)	—	$5,000,000 (annual maintenance fee, $780,000)

Distinguishing features (supplied by company)			
	• powerful customer-configurable workflow tools	• automates and drives workflow of clinical lab	• robust rules-based system that is easy to use
*generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day	• advanced analytics and user-intuitive dashboard provides personalized "at-a-glance" view of key performance metrics and pending tasks via a modern Web-browser interface	• streamlines end-user functions to decrease specimen handling time and improve productivity and TAT	• presents status-driven information in real-time and can drill down for relevant information
**generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day		• first LIS-focused vendor to be modularly certified for meaningful use stage 1; offer modules to meet several core and menu requirements of stage 2	• modular, scalable architecture
***HL7 2.5.1, LOINC, SNOMED, etc.	• technology supports next-generation capabilities		
Note: a dash in lieu of an answer means company did not answer question or question is not applicable			

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