# Assessing Your Needs and Justifying a LIMS

Presented by
Richard E. Danielson, PhD
Sr Sales Account Executive





Agenda

- Defining your needs
  - Purchase only what you need
- Preparing your Team
- Customizations and automations
- Risk and cost analysis
  - Tangible and intangible cost savings
- What to expect when expecting a LIMS



- Ensure ease of use
- Eliminates paper!
- Consolidate Applications
- Adds automation; enhancing efficiency and productivity
- Scheduling and sample tracking
- Streamlines reporting
- Quality System benefits
  - Interfaces with instruments single entry, QC batching
  - Tracks samples within batches
  - Resource Management of instruments, chemical inventory, employees (e.g., certs/DOCs)

#### Defining your Needs – *BEFORE* the LIMS search

- Implementing a LIMS is a complex undertaking.
   Planning is essential.
- Start with a Needs Assessment, conducted with experts
  - Define immediate needs / Pain-Points
  - Define your workflows
  - Plan to grow/scale
  - Do your research / Consult a professional
- Budget

#### **Preparing the Lab Team**

- It is vital that all those who will interfacing with the LIMS get input.
- Appoint a lead and organize interviews
  - QA Lead
  - Analysts
  - Prep Staff
  - Receiving
  - Admins reporting; invoicing; ordering; etc
- Assemble a report on needs AND wants

#### **Defining Customizations**

- List out equipment and instrumentation
- List out reports to clients and/or regulatory agencies
- What internal measures you wish to track
  - Common dashboards
  - Alerts/reminders
- Organization software integrations
  - Invoicing
  - · SCADA
  - ERPs
- Integration of sub-contract data



# Areas of Automation

improved resource utilization as a direct result of the added functionality

- Barcoding Sample Tracking /
   Traceability
- Specification limit tracking
- Instrument integration
- External database integration
- Control charts
- Embedded calculators (e.g. MDL, Solids, etc.)
- Streamlined data review and reporting
- Monthly report automation
- Standard traceability and inventory

# Sample Tracking & Traceability

- Collecting client information for generating quote
  - Pre-logging in Orders
- Sample Scheduling
  - Calendar of routine sample collection
- Generating Bar Coded Labels
- Chain of Custody generation
- Log-in Samples
- Scanning Documents
- Collecting field observations











#### **Mobile Applications**

Real time data capture, and upload testing site data as it is collected

- Eliminate manual re-entry of field measurements
- Synchronize data:
  - Electronic chain of custody
  - Collector
  - Date and time stamps
  - Results and Comments
  - Location information/GIS coordinates





- Pre-define tests and methods with client's project to associated QC requirements
- QC batches
  - Duplicates field or lab
  - Method blanks
  - Standards
- This information shared automatically with staff worklists and instrumentation
- Client specific requirements



#### Electronic Data Transfer



- Increases accuracy and throughput
- Avoids duplication
- Enhances productivity
- Achieves ROI typically within one year



.csv .xls(Excel) Text(ASCII) XML Web Services Database



#### **Chemical Inventory**

- Track supplies and vendors to assign prices and expiration dates, monitor lot number
- Automate back to the Admin information to improve purchasing decision making
- Set email alerts to reorder supplies approaching expiration date or reaching critical limits



## Asset Management

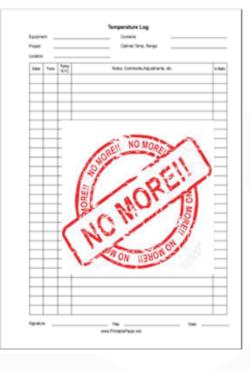
- Set up instrument calibration schedules
- Personnel Certificate renewal alerts
- Manage instrument to ensure regulatory compliance
- Internal temperature monitoring

#### Internal Environmental Monitoring

- Wireless sensors
- Refrigerator / freezers
- Incubators
- Water baths
- Ambient
- Ovens



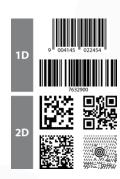






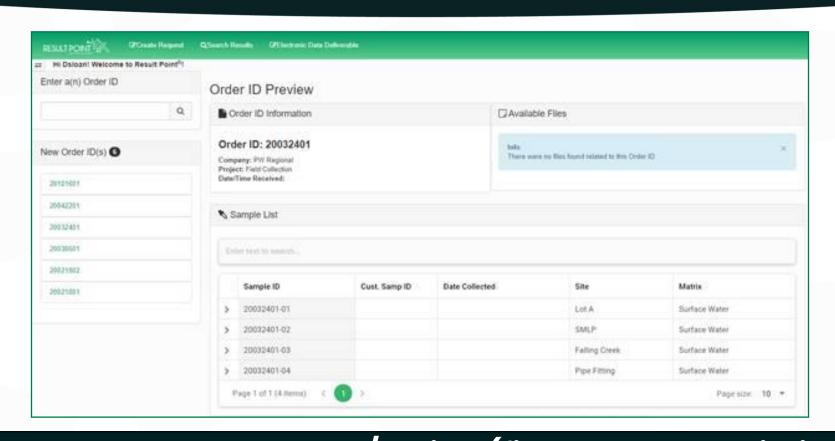
Reporting

- Scheduled Reporting
- Final Results
- Electronic data deliverables (EDD)
- Certificates of Analysis
- Chain of Custody
- Bench Sheets
- Sub-contract data
- Labels



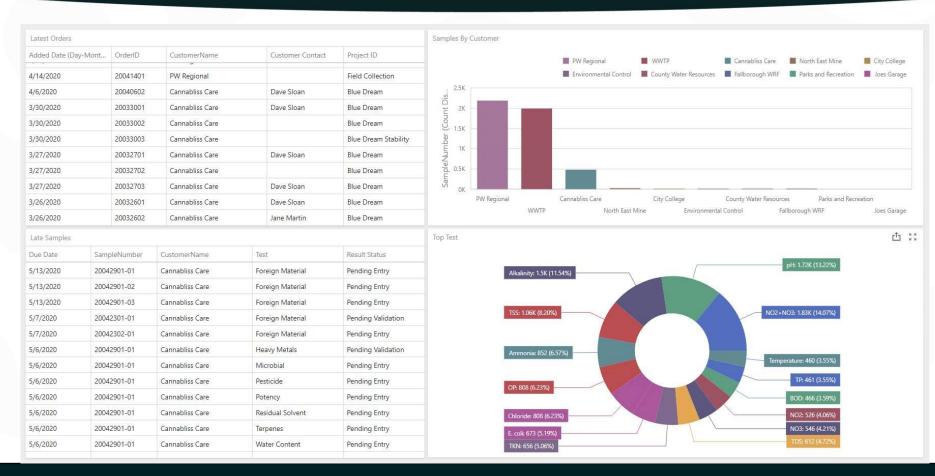
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#### **Client Portals**



Securely access laboratory data 24/7; view (final reports, preliminary reports, COAs, invoices, images, EDDs, etc.); check on sample status & updates; archive & more. The ability for customers to request analysis on incoming samples and

#### Management Benefits



- Business Key Performance Indicators
- Dashboards for business, production and improved communication

#### Financial Analysis

- Return on investment (ROI)
- Opportunity costs
  - What is given up if you *don't* acquire a LIMS
- Tax implications
- Total cost of ownership
- Protecting your investment

#### **ROI Calculator**

#### **Factors to Consider for Current Value:**

- Costs
- Tangible benefits—quantifiable, savings in resources
- Intangible benefits—improvement in quality of work & the workplace
- Unpredictable benefits

#### **Opportunity Costs**

- Opportunity Cost = Return on Most Profitable Investment
- (Choice) (Return on Investment Chosen to Pursue)
- What are you giving up by making this choice?
- What if you do nothing?

# Opportunity Costs (con't)

#### If you don't purchase a LIMS

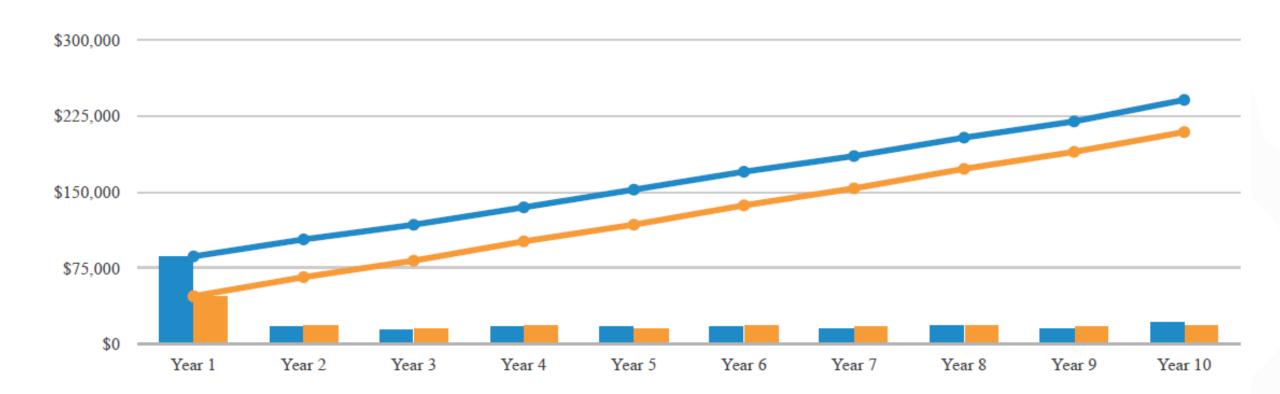
- Tasks take longer, use more FTEs
- Errors increase, expenses increase due to rework
  - Loss of client confidence
- More difficult to pass an assessment/audit
- Tracking samples and inventory control is more work
- Reporting is complex and time consuming
- You may miss out on additional work and potential revenue
- Overall negative job satisfaction

## Tax Implications

- On-prem LIMS is a capital expense
  - Software with >/= 1 year of life
- On-line, subscription software to run your business is tax deductible
  - On-line tools & applications
  - Internet services
  - Domain registration / web hosting
- Consult with a Tax Expert
   Reference: Warnes, B.; Bench Tax Co. (3.16.22)

## Calculating Total Cost of Ownership

On-Premise vs. Software as a Service



#### **Total Cost of Ownership**

- Costs to consider
  - Premise systems servers; client computers; IT support; etc.
    - One-time purchase
    - Term pricing
  - SaaS Local infrastructure internet access
    - Hosting costs
    - Monthly fees
  - On-going maintenance/licensing fees

# What to Expect When You Are Expecting a LIMS

- Your budget is not complete until you factor YOUR time factor of implementation
- Appoint a Lead to work with Vendor Project Manager
  - One-to-One communication is more effective and reduces confusion
- Vendor PM sets up schedule and funnels lab info to implementation Team
- Lab provides Static Data (e.g., tests; methods; instruments; client info; staff info; etc.)
- Lists of specific customizations; reports; integrations; etc.
- Training included in the initial implementation
  - Set aside hours for on-going training

# Thank you!

Contact Confience @ 910.673.8165 info@atlab.com