Assessing Your Needs and Justifying a LIMS

Presented by

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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**

Common LIMS Goals

- 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**

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 control

Areas of Automation

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

1D

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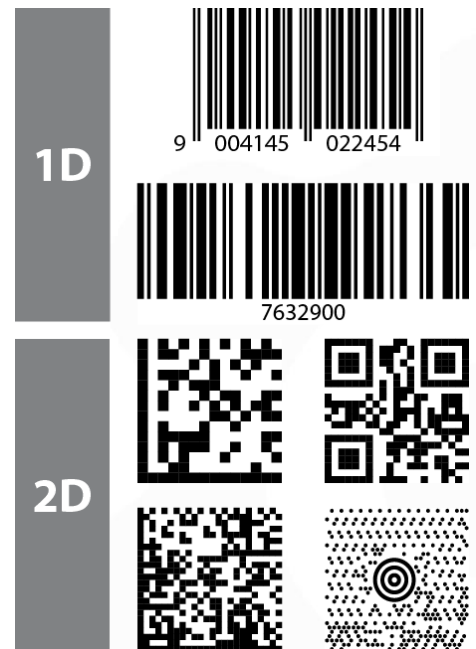
Mobile Applications

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

Before

After
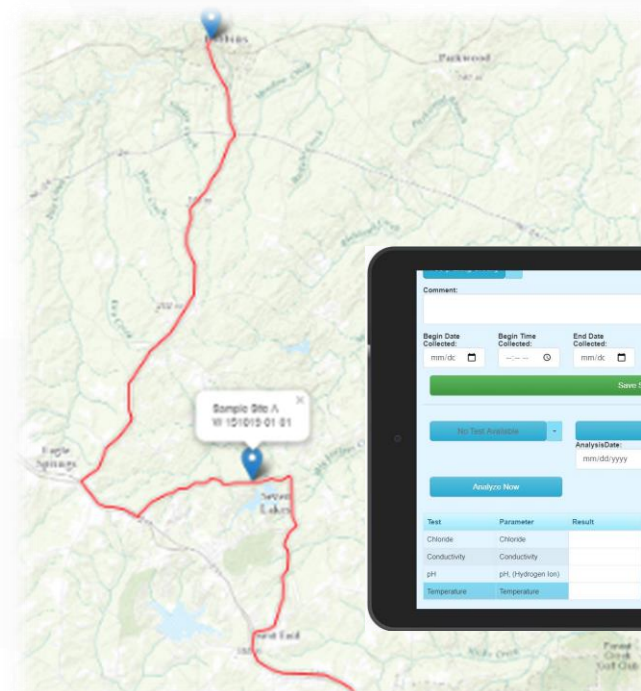
Quality Control

- 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

Inputs:
.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**

Fridges   Freezers   Incubators

Reporting

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

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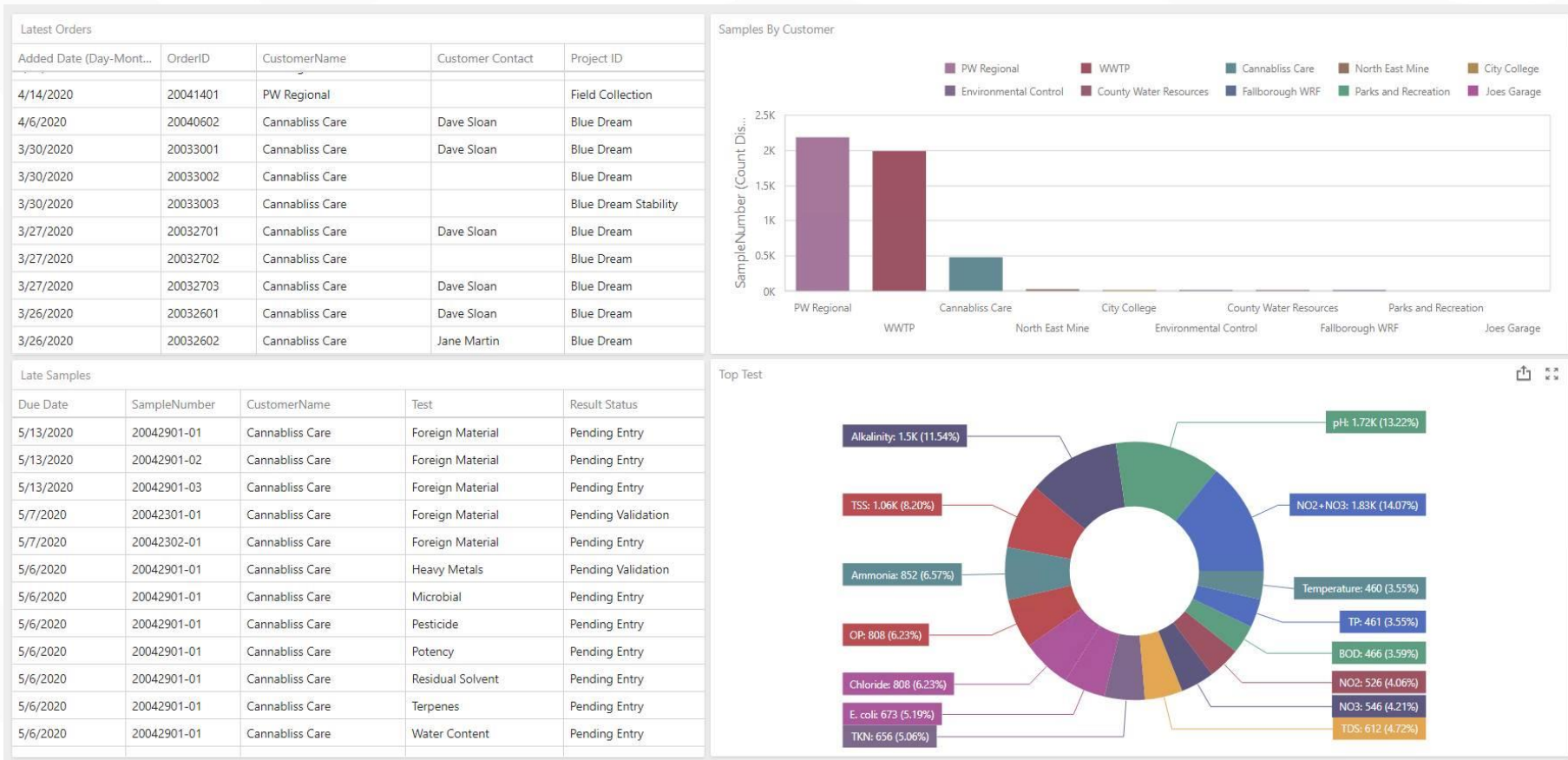
- Business Key Performance Indicators
- Dashboards for business, production and improved communication

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
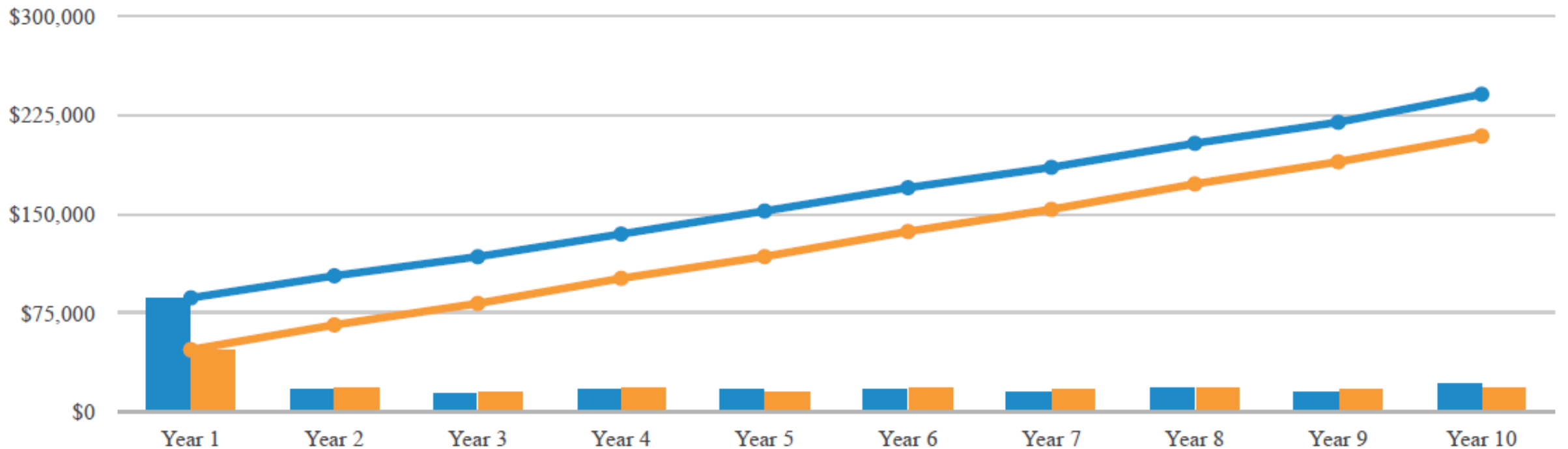
Total Cost of Ownership

- 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!

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