Jefferies Conference 5/30/2014
Company Overview

Key Technology for Life Science Research

• Established 2000 – First Echo® Liquid Handler Shipments 2003
  – Invented touchless liquid handling using focused sound energy
  – Digital acoustic dispensing

• Customers
  – All 20 of top 20 pharmaceutical companies
  – Large and mid-size pharma, biotech, molecular diagnostics, genome centers
  – Academic & research institutes
  – Contract research organizations

• Applications
  – Drug Discovery
  – Genomics
  – Proteomics
  – Precision medicine
  – Molecular diagnostics

• Patents
  – 53 Issued US patents / multiple global patents
Hundreds of customers, worldwide
Labcyte Awards

Top 3 Life Science Firms in US
National Finalist

Ernst & Young Entrepreneur Of The Year®
2013 Award Winner

TiE 50 WINNER
2014

RED HERRING GLOBAL 100 WINNER
2013

Frost & Sullivan
2012 Best Practices Award
Global Network Access Control Technology Innovation Award

Top 100 Global Companies 2013

R&D 100
2007

SLAS
2006 PolyPops award
Traditional Liquid Handling

Multiple Problems

• Chaotic Output
  – Inaccurate, Imprecise
  – Variable Volumes

• Clogging

• Sample Sticks to Pipette

• Plastics Contamination
  – Chemicals from manufacturing interfere with biology

• Cross-Contamination
  – Spraying
  – Carry-over

• Automation challenges
  – Hundreds of calibrations
  – Different pipettes for different fluids
  – Unable to miniaturize

• Difficult to ‘cherry-pick’ single samples
Echo Liquid Handler in Action

Labcyte Video
“In summary, the introduction of the Echo acoustic reformatter has represented a major milestone in pharmaceutical screening applications. It has revolutionized the compound management process. This represents a major scientific breakthrough in the liquid-handling field and provides a "zero-carryover" capability….”

Grant et al. “Achieving Accurate Compound Concentration in Cell-Based Screening: Validation of Acoustic Droplet Ejection Technology” (AstraZeneca)

Revolutionizing Liquid Handling

Superior technology

“In our experience, the only area where a revolutionary approach has proved superior to incremental evolution has been low-volume acoustic dispensing. We believe that conventional syringe-base dispensing has reached the end of its evolutionary line, and acoustic dispensing is superior to competing techniques such as pin-tools or piezoelectric technology.”

Houston et. al. Department of Applied Biotechnology, Research and Development, Bristol-Myers Squibb Company

Drug Discovery Today Volume 13, Number ½ January 2008
…[With] the Labcyte acoustic dispenser, however, there was a significant increase in the quality of the data delivered to projects. The first unit installed replaced four Tecan Genesis liquid handling systems…It is estimated that the annual cost saving in moving to acoustic dispensing was in the region of £160,000…

Wingfield, J. “Modular automation for screening a cost/benefit analysis” (AstraZeneca)

Drug Discovery World  Summer 2009
Revolutionary Performance
Echo compared to traditional systems

References:
• Comley J, Nanolitre Dispensing, Drug Discovery World, Summer 2004, 43-54
• Aerni HR, Cornett DS, Caprioli RM. Automated acoustic matrix deposition for MALDI sample preparation. Analytical Chemistry. 2006, 78 (3): 827-834
• Labcyte Inc. (for Portrait 630)
Labcyte Technology

Move Liquids with Sound

• No physical contact
  – Low energy transfer
  – Perfect sample integrity
  – Consistent drop size (2.5 or 25 nL)
  – 200-500 droplets/second

• Touchless - eliminate nozzles and tips from transfer process
  – Improve reliability and precision
  – Eliminate washing and pipette tips
  – Eliminate potential for cross contamination

• Transfer into inverted surface
  – Surface tension, electrostatics hold liquid in place
  – Compatible with microplates, microarrays, MALDI chips
Dynamic Fluid Analysis™

On-the-fly adjustment to fluid properties

• Handles a wide range of fluids, including:
  – Cell lysates
  – Various reagents and concentrations
  – Glycerol storage solution
  – DNA, RNA

• No operator intervention

• Miniaturizes processes that were previously not feasible – lower cost, higher throughput, more accurate data
Recent Developments Enable New Applications

Bio-bank samples
Medicinal Chemistry
- Compounds
- Plasma, Serum, Whole Blood Cells
- DNA, Antibodies
- Enzymes, Oligos
- Reagents, Kits, siRNA

Companion Diagnostic Development

Combinatorial Chemistry
- ADME-Tox
- Reporter Assays
- Replacement of Reporter Assays with RT-qPCR
- High Content Screening
- Stem Cells/Primary Cells

Pharmacology

Sample/Tissue Collection

Sample/Tissue Preparation
- One step DNA extraction
- Tissue prep for Mass Spec Pathology, Pooling

Molecular Biology
- Genotyping
- Gene Expression
- Single Cell Analysis
- Sanger Sequencing
- Next Gen Sequencing
- Sample Prep
- Oligo selection

Protein Technology
- Protein-Protein Interactions
- Assays and Arrays
- Protein Crystallography Co-Crystallization
- Biomarker Discovery
- Biomarker Validation

Cell Biology

Screening
- HTS, Combination Screens, IC50 Direct Dilution, DOE, Biochemical Screens,
- Enzyme titration, Phenotypic Screening

Microtiter plates
- Plastic Microscope slides
- Microfluidic devices
Health Care Macro Environment

Needs

• **Precision Medicine**
  – Match treatments with individual patients

• **Better Diagnostics and Monitoring**

• **System Integration**
  – Sample collection, conservation and preparation
  – Better assay development and assay assembly
  – Multiple analytical instruments
  – Higher throughput, lower costs

• **Ability to use same sample for multiple, varied analysis**
  – DNA, RNA, proteins

• **Lower costs**

• **Improved data quality**
Liquid handling is critical to life sciences and healthcare

Lower cost, more reliable information drives healthcare innovation

- Complete drop by drop control of liquids achieved for the first time
  - Major cost reduction and time savings
  - Huge step forward in data quality
  - Enables creation of entirely new work flows
  - Is becoming the backbone for life science advancement

- Lowest cost per data point

- Better analysis of cells, DNA, proteins for a complete picture from the same sample

Labcyte
The Labcyte System
The Labcyte System

Four Complementary Product Lines

Echo® Liquid Handler

Consumables

Automation

Software & Applications
Benchtop automation for the Echo liquid handler

• **Targeted, modular solutions**
  – Range of device, accessory, and configuration options
  – Designed to scale from assay development to screening
  – Configurations and options factory-tested in target applications

• **Turnkey workflows for a range of applications**
  – One-Step RT-qPCR screening
  – Walk-away HTRF screening workstation
  – High throughput protein crystallography
  – Early ADME CYP450 Inhibition Profiling

• **Easy to use**
  – Can design complex protocols very easily
Guided Protocol Creation

- **Echo Plate Reformat**
  - Graphically design complex plate maps
  - Reformat samples into varying assay plate layouts

- **Echo Cherry Pick**
  - Hit picking from multiple source plates with the highest throughput
  - Optionally, add control compounds to all your plates

- **Echo Dose-Response**
  - Wizard-based concentration-response curve generation
  - Facilitates mapping of Echo system transfer for direct dilution

- **Echo Array Maker**
  - Transfer a wide range of samples into any format in user-defined order
  - Transfer to slides, crystallography plates, or chips

- **Echo Plate Audit**
  - Analyze sample properties to validate and monitor sample integrity (fluid volume, composition, etc)
  - Create custom rules to qualify samples for downstream processes
Labcyte Consumables

• 384-Well Microplates
  – Polypropylene and Cyclic Olefin Copolymer (COC)

• 1536-Well Microplates
  – COC

• Common features:
  – Designed for consistent performance on the Echo liquid handler
  – Specifications for level, flat microplates; automation-friendly
  – Different working volume ranges for different transfer volumes and applications
  – Barcoded, sterile options

• MicroClime® Environmental Lid
  – Polypropylene/COC
  – Maintains uniform hydration in microplates
Market / Application Spotlight
Market Background

$1 B+ Liquid Handling Market

- Tecan leading, primarily with Freedom EVO and strong adoption in clinical labs
- Eppendorf leads the manual liquid handling market, with strong European presence in low end automated liquid handling
- 8000 automated liquid handlers estimated shipped in 2012
  - Install base of ~70,000
- 1,000,000 manual pipettes shipped in 2012
- Millions of pipette tips sold
Broad Application Capabilities

**Genomics**
- Gene Expression
- Genotyping
- RNAi
- Sequencing Prep

**Proteomics**
- Biochemical assays
- Protein expression assays
- Protein crystallography
- Protein Arrays

**Cell Assays**
- High content screening
- Cell health
- Cell signaling
- Bacteriology/Virology

**Drug Disc**
- Compound management
- HTS
- Secondary screening
- Combination screening
- ADME Toxicology
• Discovering new drug-candidates
  – Example: Multiple Pharma, biotech, contract research organizations

• Precision Medicine: Drug-resistance / sensitivity testing
  – Example: Institute of Molecular Medicine, Finland

• Processing molecular diagnostics
  – Example: CardioDx

• New, faster method for identifying and validating new diagnostics
  – Example: Stanford / Labcyte Breast Cancer, Ovarian Cancer markers with NCI

• Multiple uses in Genomics (single cell, synthetic biology, rt-qPCR, etc)
  – Example: Joint Genome Institute

• Protein studies
  – Example: Brookhaven National Laboratories, Genentech, Pfizer

• Standards setting
  – National Measurement Institute Australia
Recent News

Press Releases

• **Labcyte Commends Early Success of Collaborator, The Institute for Molecular Medicine Finland, for Personalized Leukemia Treatment Method**

  SUNNYVALE, California and HELSINKI, Finland – December 17, 2013 - Just eight months after announcing a collaboration between Labcyte Inc. and the Institute for Molecular Medicine Finland (FIMM), the partnership has already led to a groundbreaking method for personalized treatment of patients with adult acute myeloid leukemia (AML).

• **National Cancer Institute Awards Labcyte $1 Million for Novel High-Throughput Cancer Biomarker Detection**

  SUNNYVALE, California – November 20, 2013 — Labcyte Inc., the acoustic dispensing company, has been awarded $1 million to create an innovative process to detect cancer-related proteins in samples, with initial work in breast cancer detection.

• **Labcyte Announces Collaboration with AstraZeneca to Develop Acoustic Sample Handling for Mass Spectrometry to Advance Drug Discovery**

  SUNNYVALE, Calif. – September 25, 2013 – Labcyte Inc. today announced a collaboration with AstraZeneca to use acoustic dispensing combined with mass spectrometry to greatly advance drug discovery applications.
Individualized Systems Medicine (ISM) strategy to tailor treatments for patients with chemorefractory acute myeloid leukemia

Tea Pemovska, Mika Kontro, Bhagwan Yadav, et al.
Institute of Molecular Medicine, Finland

http://cancerdiscovery.aacrjournals.org/content/suppl/2013/09/18/2159-8290.CD-13-0350.DC1.html
Personalized Medicine

All Enabled by using Echo / Access System

• Identified potential new pathway for targeting AML treatment

• Conducted one or more combination screening of drugs using patient cells

• Had an impact on all patients treated

• Identified 3 drugs that may be considered for re-purposing for AML purposes

Only an Echo system can achieve this performance
-- direct dilution
-- good CV’s and drop by drop control
-- generate accurate combination dose response curves
Publication Spotlight

Microbial Single Cell Genomics

**Box 1 | Volume reduction**

Reducing the reaction volumes lowers the risk of reagent-based contamination, as the ratio of single-cell DNA to contaminating DNA is increased. Reduced 2-μl MDA reactions can be performed with the Echo 550 Omnis2 (Labcyte) liquid transfer system in a high-throughput manner, as shown here. This tipless instrument allows acoustic dispensing of minute volumes and rapid setup of low-volume MDA reactions, while limiting the opportunity for introduction of DNA contamination and reducing tip waste. Reducing the reaction volumes also decreases the costs of MDA reagents. At the DOE Joint Genome Institute, we apply the REPLI-g Single Cell reagents (Qiagen, cat. no. 150345) for our low-volume MDA reactions performed using the Echo, as they do not require additional UV decontamination, thus simplifying the workflow.

- Joint Genome Institute publication in Nature Protocols highlighting the Echo
- Single cells sorted into the wells of a 384 plate
  - Echo adds MDA reagents to lyse cells and amplify DNA
  - The Echo reduces reaction volumes shown to improved data quality, and reduce cost
- Many groups globally doing similar work, this publication should accelerate adoption
Finance Update
Bookings (millions)

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<tr>
<th>FY 2013</th>
<th>FY 2014</th>
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<td>$26.2</td>
<td>$38.0</td>
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FY13 Review

Bookings: Trended Recurring - $’s and % of Total

- FY2009: $1.7 M, 21%
- FY2010: $1.6 M, 27%
- FY2011: $2.9 M, 29%
- FY2012: $3.3 M, 31%
- FY2013: $2.7 M, 32%
- FY2014 P: $3.9 M, 32%

Legend:
- Consumables
- Service
Total Opportunities Trend

Pipeline Trend

SF Report = Marketing/ Labcyte Sales Pipeline by Quarter, Criteria = "Open" As of 3/13/2014; YTDFY13ClosedWonQ3.xls(Total pipeline worksheet).