Integrated Process Management Information Technology: The Next Generation in Medical Efficiency

Medical Automation Conference 2009
Premise for today’s talk

There is a need for significant overhaul of current medical information technology to better support the complex processes of healthcare delivery. Novel process management paradigms will create solutions that span the breadth and depth of healthcare continuums from high volume high throughput automation to ad hoc decisions at the bedside supported by sophisticated decision support knowledge bases.
Who we are

Best of class provider of life science process management software; we apply “rigorous simplicity” to tame the deep complexity of molecular science.

Unsurpassed power in tracking lab samples, the “Achilles heel” of every lab operation

Rapid implementation: we operate at the speed of innovation

Adapts to changing customer circumstances

Customers pass regulatory audits with high marks

UNICConnect’s process management technology has the capacity and power to serve broad areas of healthcare delivery beyond the lab
UNICConnect at a glance

We support the science and business of life science by delivering:

- disruptive process management software that extends far beyond labs: molecule > patient > health system
- empowerment to life science lab & IT professionals
- scalability in customer organizations by implementing, training, enabling clients to take control of their destiny and rise to new levels of achievement
Some thoughts on process and process management

Organizations create value as employees transform inputs of resources – the work of people, equipment, technology, product designs, brands, information and cash into products and services of greater worth. The patterns of interaction, coordination, communication, and decision making through which these transformations occur are processes.

– Clayton Christensen
If you can’t describe what you are doing as a process, you don’t know what you are doing.  

J.Edward Deming
A process

- a series of linked steps, often but not necessarily sequential, designed to ...
  - *cause* some set of outcomes to occur
  - transform inputs into outputs
  - generate useful information
  - add value

Brent C. James MD, Executive Director,
Institute for Health Care Delivery Research, Intermountain Healthcare
Process Management

Starts with knowledge of…

- Processes
- Systems (processes interacting together)
- Human psychology
- Variation
- A system for ongoing learning

Build a rational system to manage processes

What you get is quality improvement theory

Brent C. James MD, Executive Director,
Institute for Health Care Delivery Research, Intermountain Healthcare
Managing a process means….

- the right **data**
- in the right **format**
- at the right **time** *(and place)*
- in the right **hands** *(the clinicians who operate the process)*

Brent C. James MD, Executive Director, Institute for Health Care Delivery Research, Intermountain Healthcare
The goal of personalized medicine is …. To deliver

- THE RIGHT TREATMENT
- TO THE RIGHT PATIENT
- AT THE RIGHT TIME

-- Personalized Medicine Coalition

Is this possible without process management?
The idea of personalized medicine isn’t new;

“It’s far more important to know what person the disease has than what disease the person has.”
- Hippocrates

The potential to deliver it IS new.
An IT paradox and crisis:

Many technologies support the gathering, reporting, and storing of DATA. What we need is technology to support PROCESS, to help overcome

- Islands of automation
- Disjoint silo information systems
- Systems that cannot keep pace with organizational needs
- Manual workarounds
- Post-It notes and emails
IT issues that impact every aspect of healthcare

• **Canned software doesn’t fit**
  – Processes FORCED to adapt to fit the software
  – Critical functionality is compromised

• **Custom software comes with a high cost**
  – It’s expensive – often prohibitively so
  – Long development timeline results in lost productivity and opportunity
Programming: Why The Old Way Doesn’t Work

• **Vendor Determines Features**
  – Missing Features
  – Unnecessary Features

  -Or-

• **Every Installation Is Custom-programmed**
  – Cost and Delay
  – New Changes → New Projects
  – Rate of Change Is Faster Than Rate of Implementation
SOLUTION... managing complexity of processes
For example: the Genealogy of Lab Samples
The genealogy of a reagent

Descendents

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Where Process Management Solves Problems Today:

- Molecular Diagnostics
- High Throughput Screening
- Biopharmaceutical
- Forensics
- Genetic Sequencing
- Clinical Trials
- Pain points along the discovery to delivery continuum
- Ancillary processes large and small
All Kinds Of Products

- Samples
- Tubes
- Plates
- Batches
- Patients
- Workers
- Instruments
- Documents
- Customers
- Projects
- Requests
- Issues
Components of software success

• Ideal solution for most companies has five key characteristics:
  – Conforms to your operation not the reverse
  – Adaptable by the customer
  – Timely, weeks, not months or years
  – Affordable for companies of all sizes
  – Comprehensive single platform
Multiple Systems... A Confusing Web

Sample Tracking System

- Competency Training
- Document Control
- Reagent Tracking
- Notifications
- Asset Tracking
- Inventory Management
- Instrument Calib. & Maintenance
One Platform: Comprehensive Automation

Sample Tracking System
One Platform: Comprehensive Automation

Sample Tracking System

Document Control
Sample Tracking System

- Document Control
- Competency Training
- Reagent Tracking
- Notifications
- Asset Tracking
- Inventory Management
- Instrument Calib. & Maintenance
Process Management

- Your NEXT PROCESS CHALLENGE
- Document Control
- Competency Training
- Notifications
- Asset Tracking
- Reagent Tracking
- Sample Tracking
- Instruments
- Inventory Management
- Notifications
- Inventory Management
Software Platform Continuum

Generic

Specific
Software Platform Continuum

Generic

Specific

- Sample Storage
- Inventory
- Documents
- Notifications
- Instruments
- Sample Tracking
- Competency
- Reagents
- Assets
- Clinical Trials
- Customer Issues
Software Platform Continuum

Generic

Specific

Sample Storage
Inventory
Documents
Notifications
Instruments
Sample Tracking
Competency
Reagents
Assets
Clinical Trials
Customer Issues
Software Platform Continuum

**Generic**

**Specific**

- Sample Storage Inventory Documents Notifications Instruments Sample Tracking Competency Reagents Assets Clinical Trials Customer Issues
Language To Define Any Process

Products

Steps

Content

Workflow

Intermediate Steps:  
• Always Custom
• Always Changing

Properties and Acceptable Values

Resources and Qualifications
UNIContact LC
11075 South State Street, Bldg. 3
Sandy, UT 84070
801- 428 -1700
www.uniconnect.com
Everything that follows are filler slides. We need more technical examples and we need to think about how not to be too self promoting.
Why UNIFlow is so different

• It wasn’t developed in labs
• Unique “processware” originated from genealogy and genetics research
• Simplicity ensures that even the most complex requirements are covered
• Grows with customer needs rather than lagging behind
The unique advantages of UNIFlow

• Removes the tracking obstacles that often impede innovation
• Limits the constraints of uncertainty
• Grows at the speed of innovation – without missing a beat
• Empowers teams and clears the way to success
  – it’s another arrow in the quiver
## Make Stock For Reagent Supplements

### Media Supplement Barcode: BC-88766

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**Submit**

**Logout**  **Reset**
“We change assays monthly – UNIFlow enables me to do this by myself in a couple of days. With other systems, this would take at least 3-6 months. In other words, we couldn’t do this without UNIFlow”

Clinton Maddox, Biochemist
Southern Research Institute
Project Details

Project Type: Bug
System: UNIFlow

Detailed Description of Project: Events not written to events table but written to containerHistoryTable

Priority Level: High
Estimated Due Date: 6/1/2009

IS Team ONLY

By-pass Evaluation: [ ]
Assign Project To: 

[ ] Submit

Logout  |  Reset
**AIS Progression Assay Test Result Form**

**Patient Information**
- **Patient Name:** Jane Sample
- **Specimen Barcode:** SCO-5001-01826A
- **Gender:** Female
- **Date of Birth:** 05-Mar-1997
- **Physician:** Dr. Clinical Trial
- **Physician’s Address:** 2749 E. Parleys Way Suite 200 Salt Lake City UT 84106
- **Collection Date:** 09-Dec-2008
- **Receive Date:** 12-Dec-2008
- **Report Date:** 06-Jan-2009 10:03 AM

**AIS DNA**

ScoliScore AIS Prognostic Assay is performed on DNA extracted from the patient. A multiplex PCR reaction and Taqman detection are used to determine the genotype for a panel of 53 single nucleotide polymorphisms (SNPs). The ScoliScore AIS Progression Score ranges from 1 to 200, is calculated using marker weighting factors and a simple accumulation algorithm.

**AIS Result**

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**SCOLISCORE AIS PROGRESSION SCORE = 54**

**AIS Interpretation**

This score indicates this patient is at intermediate risk for progression to a severe curve by or before skeletal maturity. ScoliScore results should be interpreted with all other diagnostic information for the AIS patient. Interpretation of ScoliScore results for patients outside the intended use population may not be applicable.

**NPV: 99%**

(Positive Predictive Value)

Laboratory Director: Kenneth Ward, MD

This Laboratory Developed Test was developed and its performance characteristics determined by Axial Biotech Laboratories. The laboratory is regulated under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) as qualified to perform high-complexity clinical testing and has established and verified the test's accuracy. This test has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. These results are exclusive to an ordering physician's diagnosis.

CLIA Number: 4601277619

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Business Model

- SaaS subscriptions
- Perpetual Licenses & Maintenance Contracts
- Service Contracts
- Support by UNIConnect and authorized integrators
- Train Customers to Become Independent
- Grow from lab to enterprise
- National to global presence
- BIO Business Solutions parameters to be negotiated
- BIO member benefits immediate and will evolve
## Common problems, simple solutions

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
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<td>Growing needs</td>
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<td>Training downtime</td>
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<td>Extensive customization</td>
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“I found the UNIFlow system running at Axial to be one of the best Molecular Dx-SPECIFIC systems I have ever seen.”

Dr. Dan Farkas
CLIA Molecular Pathology Lab Accreditation Inspector
Sequenom Center for Molecular Medicine