

AYAO Biorepository

Event Name: AYAO Biorepository (AYAO)
Subject Name:
Leader: Malcolm James (Malcolm)
Presenters: Adam Fischman (Adam Fischman)
Start Time: 3/2/09 10:15 am

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Prezo IT Leadership_4Feb10.ppt

Adolescent and Young Adult (AYAO) Bio-repository

BIG HEALTH
CONSORTIUM™



Adolescent and Young Adult (AYAO) Bio-repository

IT Leadership Meeting

February 4, 2010

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On the docket:



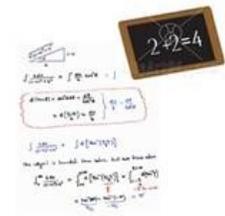
PURPOSE

- ◆ Provide an open forum for discussing the proposed scope and potential implementation approaches for an Adolescent and Young Adult Biorepository



OBJECTIVE

- ◆ Confirm accuracy of Use Cases and requirements defined to-date
- ◆ Discuss feasibility of one potential implementation approach (5AM)



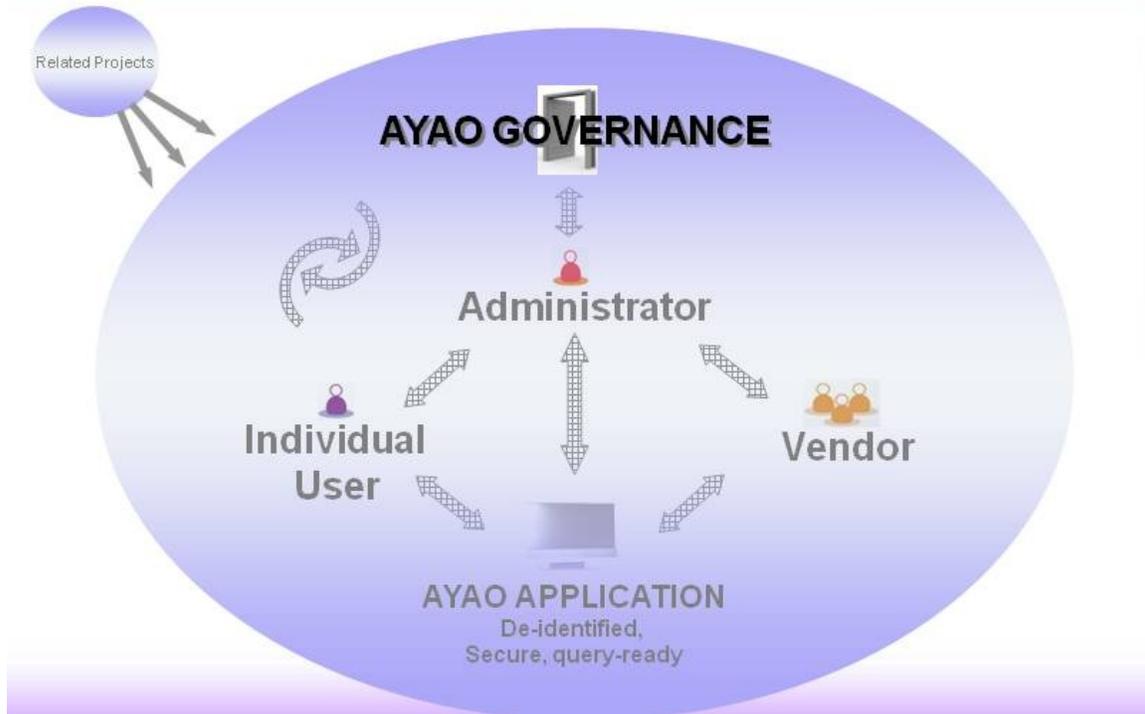
AGENDA

- ◆ Use Cases Review
- ◆ Requirements Review - highlights
- ◆ Review of the implementation approach proposed by 5AM



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Visual - the "Big Picture":



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Glossary of Actors:



Governance

As of yet undefined Committee created to:
oversee legal, management, admittance into the AYAO consortium,

Site/Vendor Administrator

Individual Chosen by Site (collection of individual users within academic, government or industry) or Vendor to:

- ◊ manage account profile for a "Site" (ie lab, department, building, entire company, etc),
- ◊ request addition and delete Individual User accounts,
- ◊ approve orders placed by Individual Users within a 'site'.

Individual User

Person under the governance of a single Administrator who is given access to the AYAO application and all its functions via a password-protected individual account.

Vendor

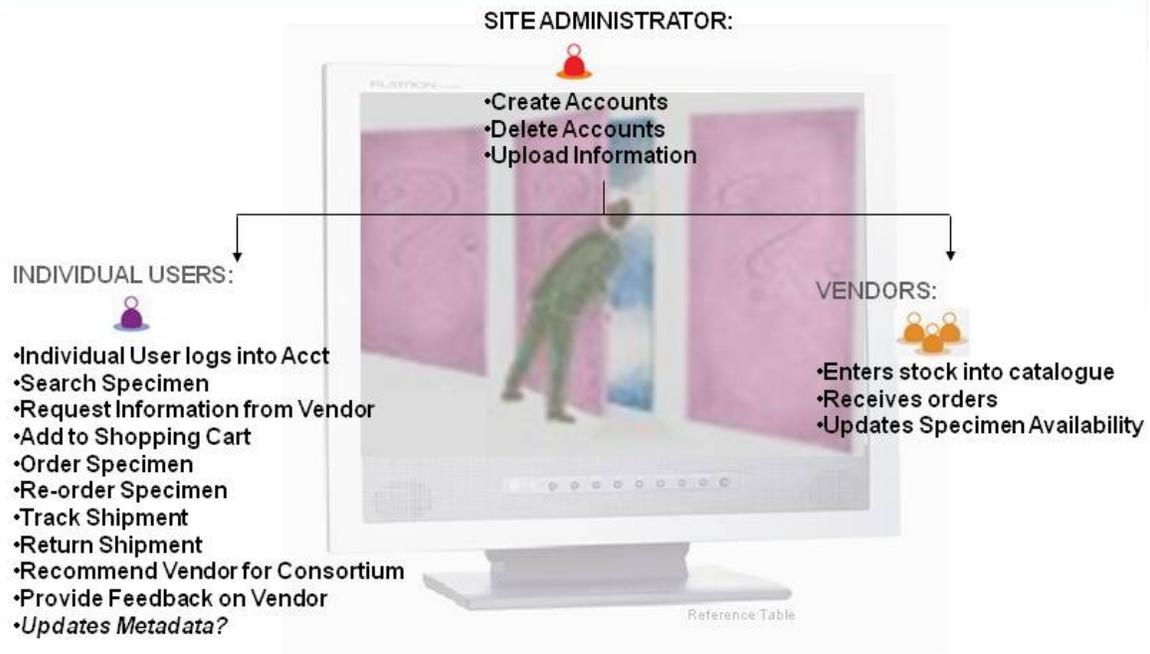
Company, hospital, etc providing tissue samples through the AYAO catalogue. Collectively called the Consortium.

→ A Vendor can also set up individual user accounts within the vendor Site.



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USE CASES considered:



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REQUIREMENTS considered:



- ◆ **System**
- ◆ **User/Administrator**
- ◆ **Vendor**
- ◆ **Governance**

Reference Excel spreadsheet

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System Highlights:



- ◆ BROWSER AGNOSTIC
- ◆ SECURE
- ◆ REAL TIME
- ◆ Modular

- ◆ Facilitates placing orders, updating inventory and maintaining a history of orders and requests per Site

- ◆ Facilitates communication between Users and Vendors and Governance

- ◆ Allows for queries based on specified criteria

- ◆ Capable of uploading data in any format for a specific specimen

- ◆ Maintains specimen and Site/User profiles

- ◆ Assigns unique ID to specimen (Global)

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User/Administrator Highlights:



- ◆ Administrator Accounts- 1 active per site
- ◆ Individual User Accounts- 1 active per person

- ◆ Administrator - responsible for site account profile, and creation/deletion of Individual User accounts within Site
- ◆ Administrator - only person permitted to approve orders

- ◆ User/Administrator - Able to log on, search for specimens, order specimens, retrieve information, view metadata

- ◆ User/Administrator - Communicate with Vendors and AYAO Governance through accounts

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Vendor Highlights:



- ◆ Can establish both Vendor and Admin/User accounts
- ◆ Must follow criteria annotation for uploading specimens
- ◆ Has full ability and responsibility to update specimen metadata and/or quantities made available through catalogue
- ◆ Must provide shipping information (ETA, handler, protocols)
- ◆ Must maintain traceability from specimens in catalogue with those in stocks ([software support via caTISSUE?](#))

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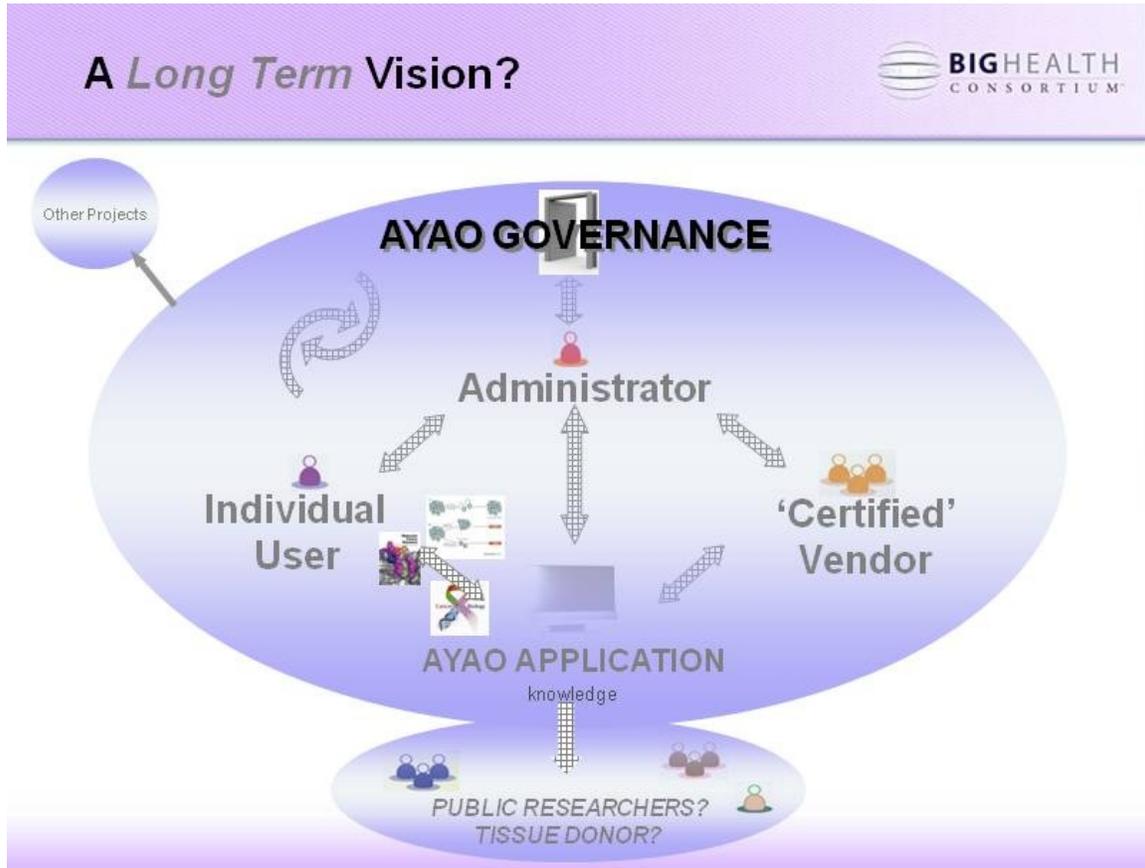
Governance Highlights:



IF, THEN...

- ◆ Will vet/approve Vendors and Site Administrators
- ◆ Must validate/approve all signed Terms and Conditions, Formalized Data Sharing Agreements, Rules and Regulations
- ◆ Ability to create and delete Vendor and Site Administrator accounts
- ◆ All correspondence to the Governance committee is maintained within the Governance Account

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Feedback, please:



#	Title	Primary Actor
1	Create Site Administrator Acct	Site Administrator
2	Search Specimen	Individual User
3	Request Information from Vendor	Individual User
4	Add to Shopping Cart	Individual User
5	Order Specimen	Individual User
6	ReOrder Specimen	Individual User
7	Track Shipment	Individual User
8	Return Shipment	Individual User
9	Provide Feedback on Vendor	Individual User
10	Recommend Vendor for Consortium	Individual User
11	Create Individual User Acct	Site Administrator
12	Individual User logs into Acct	Individual User
13	Vendor Administrator Creates account	Vendor Administrator
14	Vendor enters stock into application catalogue	Vendor Administrator
15	Vendor receives order through AVAO application	Vendor Administrator
16	Vendor receives return through AVAO application	Vendor Administrator
17	Individual User Updates Metadata	Individual User
18	Site Administrator Updates Metadata	Site Administrator
19	Delete Individual User Acct	Site Administrator
21	Vendor Updates Specimen Availability	Vendor Administrator
22	Any Researcher Views Specimen Metadata	Any User

◆ Are all potential Use Cases, functionalities, requirements considered?

◆ Are too many functionalities being considered? Are the requirements too specific, not allowing for creativity and flexibility in architecture?

◆ Concerns or questions?



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Next Steps:



Near Term:

- ◆ Feedback
- ◆ Incorporate changes



Long term:

- ◆ Develop Project Approach
- ◆ Architecture
 - ◆ (define gaps & reuse)

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Adolescent and Young Adult Oncology Biorepository



Adolescent and Young Adult Oncology Biorepository

BIG HEALTH: IT Leadership Meeting

February 4, 2010



Agenda



Agenda

- **Introductions: How we got here (5 min)**
- **Our understanding of the project (5 min)**
- **How the Biospecimen Locator matches up to the problem space (10 min)**
- **Our suggested technical approach (5 min – Scott Miller/Product Architect)**
- **Our suggested implementation approach (10 min – Todd Parnell/CTO)**

5AM in 5 Seconds



5AM in 5 Seconds

■ Background

- + Founded 2003 (Phoenix)
- + Profitable, Organic growth year over year
- + caBIG[®] Service Provider
- + Mission: make the web the place where life science professionals work, collaborate, and succeed.
- + BIG Heath member

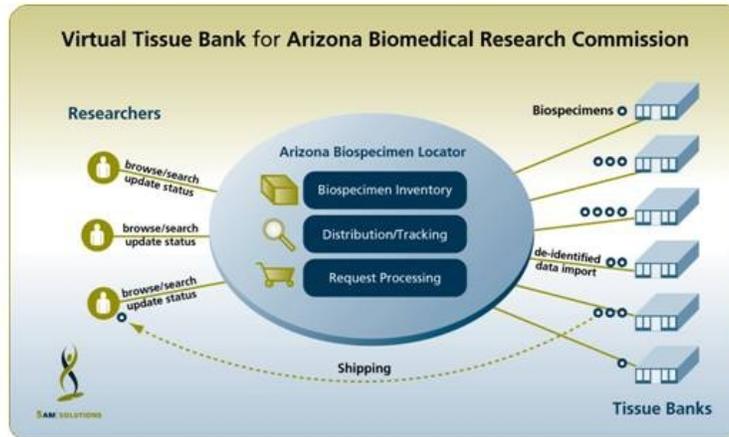
■ Differentiators

- + Domain Expertise
- + Exclusive Life science focus
- + Field proven frameworks
- + Solutions that last
- + Lowest total cost of ownership
- + Partner versus Vendor mindset

First 5BL Client: Arizona Biospecimen Locator (ABL)



First 5BL Client: Arizona Biospecimen Locator (ABL)



Arizona Biospecimen Locator (ABL):

- Public can **browse** information on biospecimens available for research
- Research staff can **request biospecimens**
- Consortium Scientific Review Committee **reviews request for biospecimens**
- Institution approves request and **ships biospecimens**
- Researcher **receives** biospecimens and **returns** unused biospecimens

Second 5BL Client: NFCR



Second 5BL Client: NFCR



Modifications

- Assigned users can **browse** information on biospecimens
- Research staff can **request biospecimens**
- Consortium Scientific Review Committee **reviews request for biospecimens**
- NFCR approves request and **ships biospecimens**
- Researcher **receives** biospecimens and **returns** unused biospecimens
- Prospective requests and fulfillment on the roadmap**

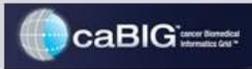


5AM Focus Areas with Representative Clients



5AM Focus Areas with Representative Clients

PHR/Clinical Data Management



Biospecimen Management



Translational Medicine

THE BEN & CATHERINE **IVY** FOUNDATION



Science and Analysis

Johnson & Johnson



Agenda



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Our Understanding



Our Understanding

■ LAF AYAO Objectives

- + Improve survival rates of the 70,000 young adults diagnosed with cancer every year
- + Use common resources, innovation, and collaboration to begin to understand the best treatments for this under-researched population

■ LAF AYAO Key Concepts

- + Establish an infrastructure that will enable data sharing among and across sites.
- + Standardize clinical annotations, sample collection and storage protocols, and quality control procedures across sites
- + Patient samples will be de-identified prior to becoming externally accessible from their source institution

LAF AYAO Goals



LAF AYAO Goals

Phase	Task	Biospecimen Locator
1	Complete Specimen Inventory	Survey Materials and Results Available
	Federated Repository	Analysis and Implementation Work needs to be done
	Policy and Management	Model available for investigation of variables, standards, prospective research capabilities a part of NCFR (Asia Virtual Tissue Bank)
2	Integration of caTISSUE and non-caTissue	Non-caTissue capabilities available now, caTissue next (Phoenix Children's adopted)
	Implement Management and Policy decisions	Done twice with same code base
3	Develop Data Portal Proof of Concept	Brand-able version available now

Agenda



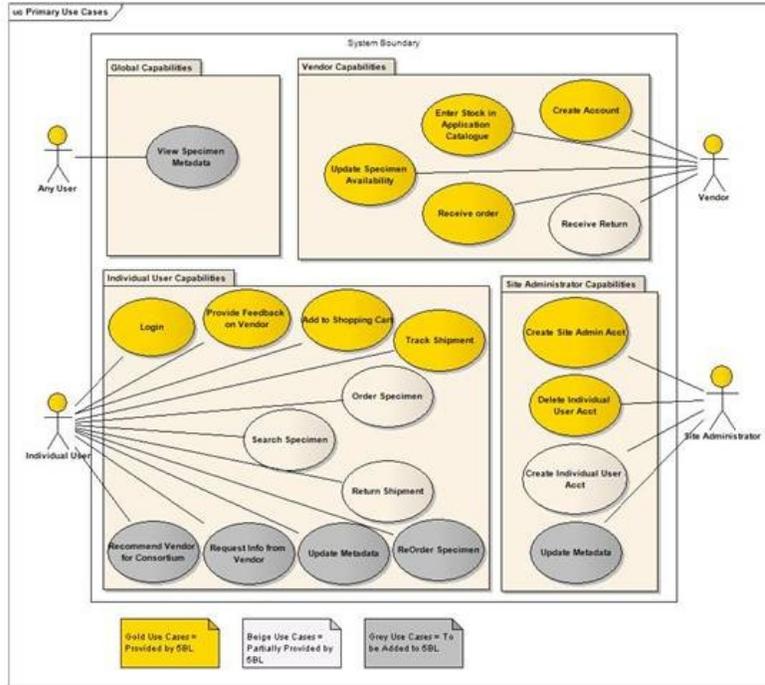
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Use Case Mapping – What's Covered, What's Not



Use Case Mapping – What's Covered, What's Not



5BL/AYAO Actor and Functional Mapping



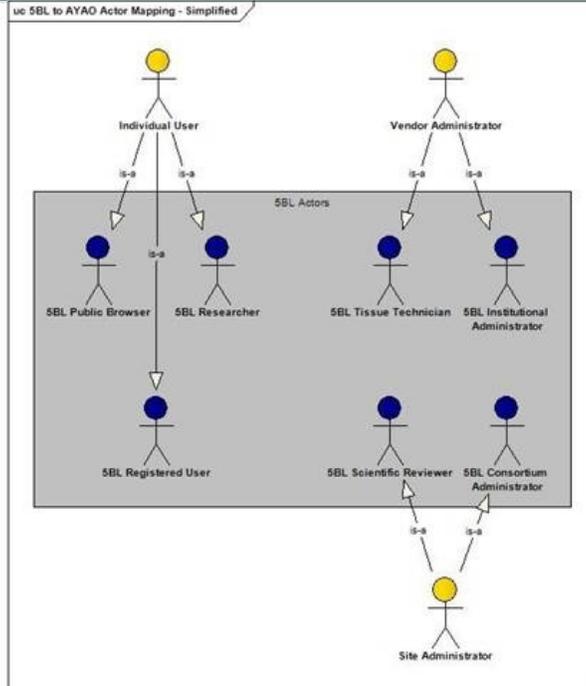
5BL/AYAO Actor and Functional Mapping

5BL Actor	5BL Functions	AYAO Actor
Researcher	Search, Submit Biospecimen Request, Receive Shipment, Return Biospecimen, Maintain Biospecimen Disposition <ul style="list-style-type: none"> • Access to their own data only, view access to all biospecimens 	Individual User
Consortium Administrator	Manage Registrants, Manage Institutions <ul style="list-style-type: none"> • Access to all Institution's functions/data 	Site Administrator
Scientific Reviewer	Review Biospecimen Requests, Comment on Biospecimen Requests, Vote on Biospecimen Requests	Site Administrator
Institutional Administrator	Manage Institutional Users, Manage Biospecimen Requests <ul style="list-style-type: none"> • Access to own Institution's functions/data only 	Vendor Administrator
Tissue Technician	Manage Inventory, Distribute Biospecimens, Receive Returned Specimens <ul style="list-style-type: none"> • Access to own Institution's data only 	Vendor Administrator

Actor Analysis – LAF/5BL Decomposition



Actor Analysis – LAF/5BL Decomposition



What does “Partial” mean - Use Cases Analysis



What does “Partial” mean - Use Cases Analysis

- **Search Specimen (UC #2)**
 - + 5BL allows searches on a minimum set of data fields based on NCI’s CBM model. 5BL does not currently support all AYAO metadata.
 - + 5BL does not do the following:
 - Sorting based on metadata.
 - Sorting based on fields not currently in the system.
 - Sorting based on relevance of matches
 - Sorting based on distance from user
- **Order Specimen (UC #5)**
 - + 5BL allows for Consortium members and Vendors to review and approve requests prior to generating orders, based on the governance model defined by ABRC and NFCR.
 - + 5BL does not do the following:
 - 5BL’s request review and approval model will need to be modified to meet AYAO’s needs.

Partial Use Cases - continued



Partial Use Cases - continued

- **Return Shipment (UC #8)**
 - + 5BL lets the user mark an individual specimen as being returned. No further action is taken.
 - + 5BL does not do the following due to Order Level Shipping:
 - Request to return specific specimen
 - Notification sent to sender
 - Vendor specifies shipping address for specimen
 - System removes specimen from Site Order History.
- **Receive Return (UC #16)**
 - + 5BL lets the Tissue Technician enter the information about a returned specimen into the system, including updated quantity. No further action is taken.
 - + 5BL does not do the following:
 - Receive time-stamped Return Request (notification only)
 - Input shipping requirements for return of specific specimen

NOTE – Not particularly difficult. Choice was made for users to handle return communications outside of the system.

Partial Use Cases – continued



Partial Use Cases – continued

- **Create Individual User Account (Use Case #11)**
 - + 5BL lets the Site Administrator create new user accounts in the system, specifying the username & password and security permissions.
 - + 5BL does not do the following:
 - Allow user to accept Terms and Conditions Form
 - Allow AYAO Governance to vet Individual User credentials)
 - Allow AYAO Governance to inform Site Administrator of Individual User account approval.

NOTE: We did have this implemented initially for ABRC, but the Governance Committee changed their mind – these features are not difficult to recreate

Agenda

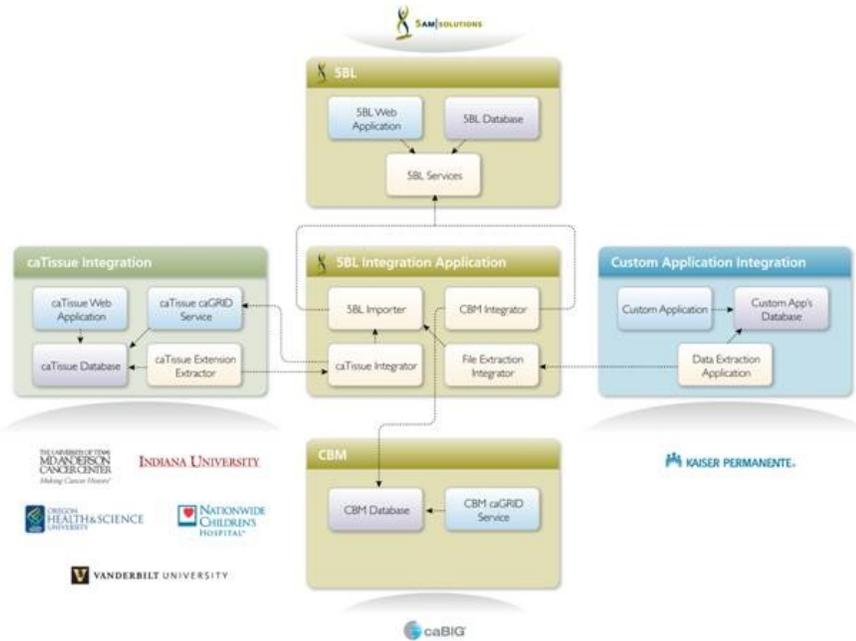


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Proposed Solution Approach

Proposed Solution Approach



Agenda



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What do we have today?



What do we have today?

- 1. AYAO Use Cases**
- 2. Existing Products (5BL, caTissue 1.1)**
- 3. Current BIG HEALTH Capabilities**
 - + Products (e.g., caTissue 1.1)
 - + Services (e.g., Person and Organizations (NES/COPPA))
 - + Specifications (e.g., Specimen Service)
 - + Standards (e.g., Common Biorepository Model, ISO 21090)

How do we organize these three assets



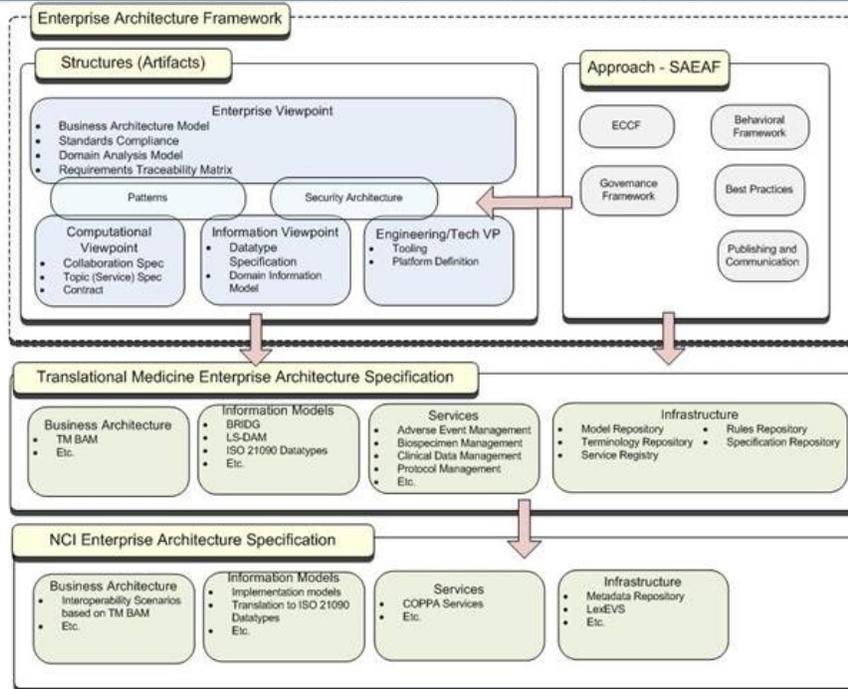
How do we organize these three assets

- We must represent our efforts in a coherent, interoperable framework to marry the three distinct components
- The Services Aware Enterprise Architecture Framework can be used to do it!

The Enterprise Architecture Approach



The Enterprise Architecture Approach



5AM AYAO High Level Tasks



5AM AYAO High Level Tasks

1. Use SAEAF & the RM-ODP viewpoints at conceptual level.
2. Gap analysis between use cases, products, and specifications
3. For each artifact, inquire what can become part of NCI EAS & what should be extensions.
 1. Within NCI, engage appropriate governance bodies.
4. Develop system.

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Glassbox™ Software Development Process

- Integrating the voice of the end user into the process
- Enabling client visibility into all stages of the development process
- RUP base, Agile Results, Constant Refinement, Production Quality software every day



<http://5amsolutions.com/methods/glassbox.php>

Resources Used and Provided by 5AM



Resources Used and Provided by 5AM

- **BIG HEALTH AYAO Concept Page**
 - [https://bighealth.nci.nih.gov/index.php/Adolescent and Young Adult Oncology %28AYAO%29 Biorepository](https://bighealth.nci.nih.gov/index.php/Adolescent_and_Young_Adult_Oncology_%28AYAO%29_Biorepository)
- **5AM Biospecimen Locator**
 - <http://www2.5amsolutions.com/l/864/2010-01-19/G9XKD>
- **Common Biorepository Model**
 - <https://cabig.nci.nih.gov/workspaces/TBPT/CEM>
- **BIG HEAS Wiki:**
 - http://ec2-174-129-196-76.compute-1.amazonaws.com/mediawiki/index.php/Main_Page
- **Contact:**
 - Bill Mason, bmason@5amsolutions.com or Jungdae Kokotov jkokotov@5amsolutions.com