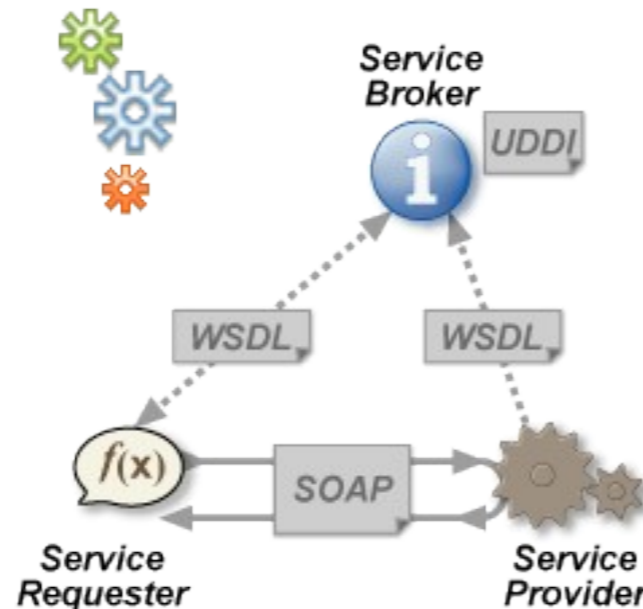# Extending Reports into Services:
New Infrastructure, Tools and Contexts

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Fort Worth, TX
May 13, 2010
2:15 – 3:15 PM

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Philadelphia

Agenda

- ∅ **Web Services and Library Services: Our Strategy and Requirements**

- ∅ **Administrative (e.g. Back Office) Reporting Needs**

- ∅ **Online Patron Services: (e.g. Customer-Facing) Needs**

- ∅ **Our Solution: LogiInfo and LogiAd Hoc**

- ∅ **What's Next: Future Developments**

Some Background…

ø **By Early 2008, the BC Libraries were in desperate need of a new Administrative Reporting System**

     ø **Legacy Crystal Reports System was woefully inadequate (8 Years Old)**

ø **We had recently developed a strategic plan (the Aerie Project) to build a flexible web services infrastructure to deliver new patron and back-office services**

ø**The goal of the Aerie Project was to create online library services that could be combined and reused in different contexts**

     ø **Library web site**

     ø **Blackboard CMS**

     ø **University administrative portal**

     ø **Personal research portal**

     ø **Personal Presence Web (share.bc.edu)**

Initially, we approached the problem on two separate tracks

∅ **Researched and tested multiple reporting and BI applications (Open Source and Commercial)**

- ∅ **Jasper**
- ∅ **Pentaho**
- ∅ **ARC**
- ∅ **Crystal Enterprise**
- ∅ **LogiReports / LogiInfo**

∅ **Simultaneously began education and research on web services platforms and solutions**

- ∅**Began to build in-house Java programming expertise.**
- ∅**Mule ESB**
- ∅**JBoss ESB**
- ∅ **Oracle ESB**

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Features we were looking for in a reporting solution

ø **Ease of Use; Intuitive Interface**

ø **Ease of Deployment (Web Browser Only; No Plugins)**

ø **Scheduling of Reports**

ø **Open Environment (e.g. Linux/Tomcat/Apache, etc…)**

ø **Ability to integrate data from multiple sources (Aleph, SFX, MetaLib, X-Services, etc…)**

ø **Reports available in multiple formats (HTML, PDF, Excel, CSV)**

ø **Viability – lots of users; active developer community**

ø **Reasonable license cost and terms**

Features we were looking for in a web services / online patron services platform

∅ **Here, our initial sense was what we required was, admittedly, vague**

∅ **We wanted to be able to "glue" together unrelated data and services to build and deploy new services.**

∅ **X-Services**

∅ **Aleph, SFX, MetaLib Data**

∅ **ILLiad and other applications**

∅ **Reusability of these new services was very important**

∅ **Open standards are very important as well (Java, Tomcat/JBoss)**

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With all of this in mind, we initially settled on

LogiInfo BI Platform

Why?

ø **Purely web-based reports - no plugins or additional software**

ø **LogiStudio: Easy to learn report development environment**
- no coding required

ø **Support for a Java application servers – BC uses Tomcat**

ø **Access and join data from virtually any data source – SQL, Web**
Services, Text Files, XML, Google, Twitter, Screen Scrape, Excel, etc…

ø **Export to Excel, Word, PDF, CSV, HTML, and XML**

5/25/10

But, the clincher was

Server-based, NOT user-based, licensing

Why is this crucial?

ø **Much more economical. Don't need to pay for individual users.**

ø **LogiInfo potentially becomes a full-blown dynamic web application development environment, not simply a back-office reporting system.**

ø **We are free to deploy applications for *everyone* at Boston College. Not just library staff.**

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We realized that LogiInfo could actually fulfill many of the web service needs we identified in planning for the Aerie Project

Ø **For example, LogiInfo's ability easily to "glue" together data from multiple, unrelated sources would allow us to build a context-sensitive Course Reserve service that:**

Gets a Student's Current Schedule (Source: BC Scheduling System)

+

Gets the items on reserve for a given course (Source: Aleph DB)

=

New Service: My Course Reserves

Also, because this new My Course Reserves service was built in LogiInfo, it is highly portable - another need we identified in the Aerie plan

∅ **For example, we can embed the service in Blackboard/Vista CMS, in the University Admin Portal and in course-specific LibGuides.**

∅**The service can be inserted directly into an HTML page via a JavaScript "Widget".**

∅ **Styles (CSS) can change on the fly to seamlessly integrate with the host web page or application.**

∅ **The service can mimic Aleph X-Services, and return the course reserve data as pure XML that can be used in any way the calling application requires.**

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Sample Widget – To embed in HTML. Automatically generated by LogiInfo

```
<FORM>  <!-- The FORM element is required if there are INPUT elements in the Widget -->

<!-- Include this once for each page. -->
  <SCRIPT src="https://arc.bc.edu:8443/LibraryAdminServices/rdTemplate/rdWidget/rdWidget.js">
</SCRIPT>

<!-- Include this for each widget on the page.  -->
  <DIV ID="myWidgetDiv" >Loading...</DIV>
  <SCRIPT>
    var myWidget= new rdLogiWidget;
    myWidget.definition="CourseDocs";
    myWidget.containerID="myWidgetDiv";
    myWidget.setParameter("lgxPreview","41403");
    myWidget.load();
  </SCRIPT>

</FORM>
```

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Sample XML for Requested In-Process Web Service

<rdData>
<dtRequestedInProc PATRONID="0000012826 " NAME="Ashley,Jane" EMAIL="ASHLEY@BC.EDU" PHONE="6175524155" SYSNO="002671977" TITLE="Educating nurses : a call for radical transformation / Patricia Benner ... [et al.] ; foreword by Le" AUTHOR="" BARCODE="B947846   " REQ_DATE="20100506" PICKUP_LOC="ONL " REQ_ARRIVAL_DATE="20100222" calcReqDate="2010-05-06" calcArrDate="2010-02-22" calcPickupLoc="O'Neill Library"/>

<dtRequestedInProc PATRONID="0000011418 " NAME="Bregman,Adeane" EMAIL="BREGMAN@BC.EDU" PHONE="6175523136" SYSNO="002678481" TITLE="Der Tod - Tor zum Leben ein Trostbuch Dietrich Steinwede" AUTHOR="" BARCODE="B924574   " REQ_DATE="20100510" PICKUP_LOC="BAPST" REQ_ARRIVAL_DATE="20100308" calcReqDate="2010-05-10" calcArrDate="2010-03-08" calcPickupLoc="Bapst Art Library"/>

<dtRequestedInProc PATRONID="0000011418 " NAME="Bregman,Adeane" EMAIL="BREGMAN@BC.EDU" PHONE="6175523136" SYSNO="002683693" TITLE="The Hudson River to Niagara Falls : 19th-century American landscape paintings from the New-York Hist" AUTHOR="" BARCODE="B927861   " REQ_DATE="20100511" PICKUP_LOC="BAPST" REQ_ARRIVAL_DATE="20100325" calcReqDate="2010-05-11" calcArrDate="2010-03-25" calcPickupLoc="Bapst Art Library"/>

<dtRequestedInProc PATRONID="0000012826 " NAME="Ashley,Jane" EMAIL="ASHLEY@BC.EDU" PHONE="6175524155" SYSNO="002671977" TITLE="Educating nurses : a call for radical transformation / Patricia Benner ... [et al.] ; foreword by Le" AUTHOR="" BARCODE="B947846   " REQ_DATE="20100506" PICKUP_LOC="ONL " REQ_ARRIVAL_DATE="20100510" calcReqDate="2010-05-06" calcArrDate="2010-05-10" calcPickupLoc="O'Neill Library"/>
</rdData>

Requested In-Process Barcode Flags Generated from XML Service

What else can we do with LogiInfo?

- ∅ **"My Library"-like portal (using Dashboards)**

- ∅ **Library Resource Recommender (based upon Major, a patron's course schedule, or other user-selected criterion)**

- ∅ **Easily build interfaces to Aleph, MetaLib and Primo X-Services and/or SOAP Services, including view/renew items, search the catalog, etc**

- ∅ **Build a full-blown Mobile Library Web site (why not?)**

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Mobile Library: Built in LogiInfo

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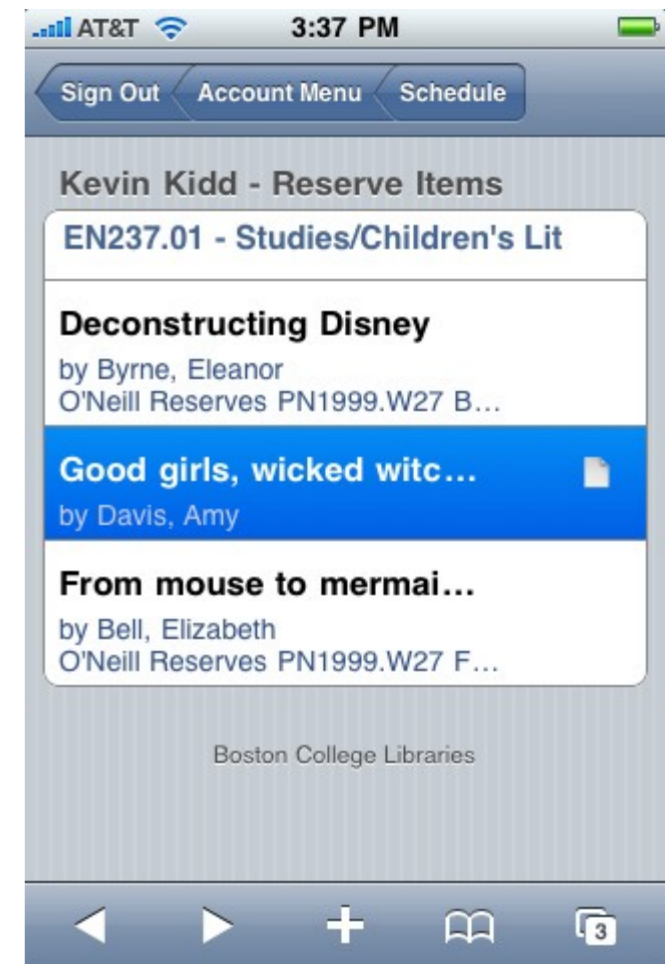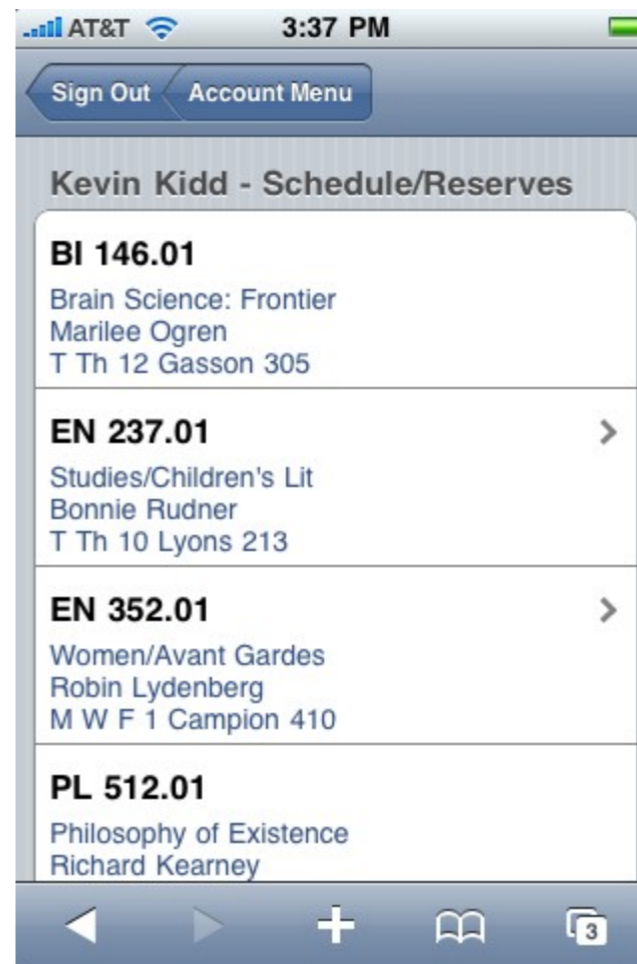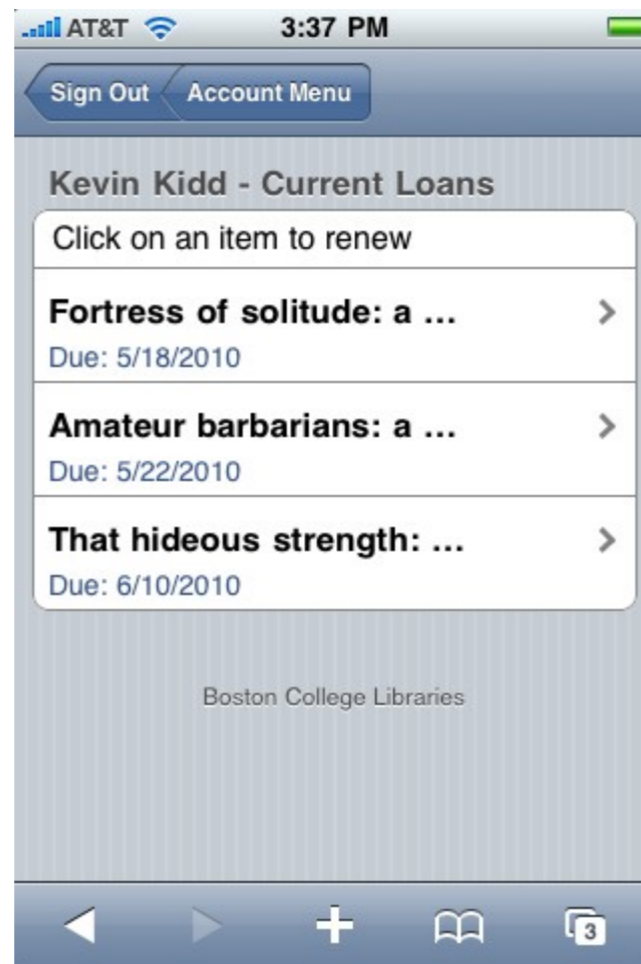
BUT – we quickly understood we needed some major infrastructure to fully realize this vision

∅ **The Aleph application database is not built for reporting (not even close)**

∅ **It is even less suited to support linking to data in other databases**

∅ **The potential that hundreds of additional users (e.g. patrons) might be accessing Aleph data on a daily basis (though LogiInfo) had worrisome performance implications.**

∅**The upshot – We needed a data warehouse for reporting and application purposes.**

∅ **ARC would not work because we wanted to integrate data from sources such as SFX, MetaLib and Verde**

The Solution: LogiETL, LogiAdHoc and the Data Warehouse

∅ **In mid-2009, we started discussions with LogiXML.**

∅ **In exchange for LogiETL and LogiAdHoc licenses, BC agreed to help LogiXML developers build a generalized data warehouse.**

∅ **Initially, we are focusing on a warehouse for the Aleph database**

∅ **The warehouse can be extended to include data from SFX, MetaLib, or, indeed any other related data source**

The Aleph Data Warehouse Software and Architecture

∅ **LogiETL: Used to extract, transform/normalize and load Aleph Data into the data warehouse**

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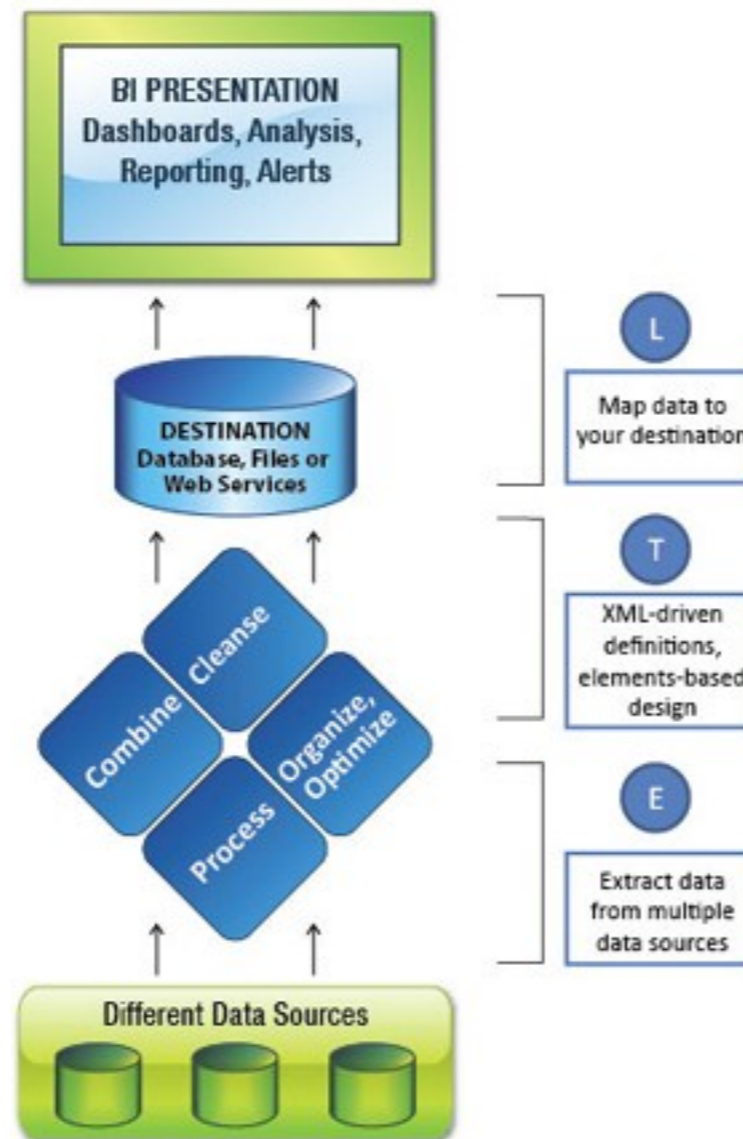
LogiETL Development Studio

The Aleph Data Warehouse Software and Architecture

∅ **Data Warehouse: PostgreSQL (Open Source Database)**

∅ **AdHoc Server: VMWare Virtual Linux Server (easy to bundle and distribute)**

∅ **LogiAdHoc: Allows non-techies to easily build reports as they require.**

∅ **No client installation. Interface is purely web-based**

∅ **Users can create charts, graphs and dashboards**

∅ **Reports can be scheduled and automatically delivered**

DEMO

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Thank You

- Questions?
- contact: kevin.kidd@bc.edu

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