LEA IT Platforms

Platforms and Services
- BI
- AP/AR
- HR
- Finance
- Child Nutrition

Data and Content
- $$
- Staff
- Identity
- Messages
- Docs
- Student Data
- Class
- Common Core

Shared Infrastructure
- Content and Learning Management
- Identity and Access Management
- LOR & Collection Management
- Data Management

Learning
- SIS
- IIS
- PD System
NC Education Cloud Proposed Plan
The RttT Technology Project Team

**DPI**
- Peter Asmar

**Cloud Team**
- The Friday Institute
  - Sammie Carter, Systems Architect
  - James Robinson, Systems Architect
  - Larry Creglow, Project Facilitator
  - Lee Sartain, Policy Specialist

- MCNC
  - Dave Furiness, Director CNE
  - Steve Thorpe, Systems Analyst

- NCSU ITng Lab

- NC ITS
  - Bob Giannuzzi, Project Management

- NCVPS
  - Chanin Rivenbark, CTO
  - Nathan Thanos, LMS Admin

**Program Director**
- Phil Emer

**Instructional Tech**
- Neill Kimrey

**PM Office**
- Jerry Bunn

**Cloud Services**
- Ed Chase

**Data Systems**
- Julien AlHour
Organization & Collaboration

DPI Leadership Team

Program Director

advises

NC State Board of Education & Governor’s Education Transformation Commission

RttT Education Cloud Advisory Committee

Project Management

Application workload testing

Site surveys and inventory

RFP - vendor specifications

E-rate and CIPA

Planning & Design

Identity and Access Management

Content Management

Infrastructure Services Blueprint

LEA Working Groups
Community Commitment

- Region & leadership meetings
- LEA Advisory process
  - Shared Services Advisory Committee
  - Working Groups
- Cloud site
- RttT collaboration/ Pillar alignment
Process & Timeline

• Build work plan, gather resources....Completed
• Conduct site interviews.....Complete in August
• Conduct projects to inform Plan...11/1/2011
• DRAFT plan........................June 2011
• Approved Plan......................August 2011
• Build detailed implementation plans...4Q2011
• RFPs....................................3Q2011-2Q2012
• Develop, Pilot, Deploy services 4Q2011-4Q2012
• Migrate and operate.........4Q2011-4Q2014
Projects to inform the Cloud Plan
Goals, Summary & Status

• LEA & Charter site interviews
• Identity & Access Management
• Data Collection & Analysis
• Instructional Content Systems
• Consortium Buying
• Enterprise Infrastructure & Applications
• iSeries RFP
• Content Filtering and Firewall
### LEA & Charter Site Interviews

- **Goals**
  - Communications/community education
  - Data collection to support/validate NC Education Cloud plan development – align services with K12 community needs and environments

- **Status**
  - Fifty-four (54) completed as of May 13, 2011
  - Last phase will commence May 24, 2011 and complete August, 2011 – deeper dive in selected areas

### Summary of Findings (Partial List)

<table>
<thead>
<tr>
<th>General LEA Challenges</th>
<th>LEA Concerns w/ NC Education Cloud</th>
<th>Beneficial NC Education Cloud Services</th>
<th>Other Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional development</td>
<td>Recognizing the high cost of change (funding, resources, PD)</td>
<td>Identity Management</td>
<td>LEAs leveraging web hosting solution (eChalk, etc.) as an LMS/content management system. “One-stop shop” for teachers – acts as a portal</td>
</tr>
<tr>
<td>Quantity and/or age of client devices (Technology Refresh)</td>
<td>Consistency/stability/continuity of funding</td>
<td>Internet filter, spam/malware protection</td>
<td>Identity Management for instructional platforms is cumbersome and time consuming</td>
</tr>
<tr>
<td>Portfolio management/technology governance</td>
<td>Service security and reliability, data ownership</td>
<td>Digital content (eBooks, video streaming, etc.)</td>
<td>Majority of LEA expenditures related to integrated learning systems - significant debate regarding their effectiveness</td>
</tr>
<tr>
<td>Tech and ITF Ratios</td>
<td>Decoupling integrated LEA systems</td>
<td>Consortium buying</td>
<td>100% On-line testing – significant challenge --&gt; impossible</td>
</tr>
</tbody>
</table>
Vision: "Every student, teacher/staff member, parent/guardian, and school community member has a single unique username/password to access learning resources in North Carolina"

Challenges (Problem Statement):
1. Too many accounts for current services
2. Cumbersome manual process of updating account information from NCWISE to disparate local systems and services
3. Need solid foundation for K-12 cloud solutions growth
User Experience

1. User logs into a cloud service once
2. Cloud service passes user request to IAM for authentication
3. IAM passes user authorization information back to cloud service
4. User granted access to all relevant cloud services
Identity and Access Management

• Current Accomplishments
  • Clearly identified major challenges related to identity management and access to educational services for LEAs
  • Established active communication channels with stakeholders to verify architecture plans
  • Active Working Group with 22 members from 8 LEA regions, Charter Schools, DPI, ITS, and NCVPS
  • Public draft whitepaper of IAM architecture model with requirements and specifications defined

• Action Items
  • IAM Proof of Concept Model – Summer 2011 - to refine requirements/specifications and inform RFP process
  • Getting input user data from authoritative data sources
Data Collection & Analysis

• Goals:
  • To investigate and deploy contemporary analytics and business intelligence tools
  • Modify State TCO formulas to include cloud services
  • Streamline and automate data flows between LEAs, DPI, and technology systems

• Key actions to date
  • Formed Working Group
  • Initial Investigation of Business Intelligence Offerings

• Key actions next
  • Begin deep analysis of Site Interview & AMTR Data
  • Begin work on Total Cost of Ownership Modeling
Instructional Content Systems

• **Goals:**
  - Support anytime and anywhere learning opportunities with a 24/7 service accessible from any device with a web browser
  - Provide educators and students with tools to create content, private and public, and facilitate conversations around the content
  - Provide educators tools for curating existing web content
Instructional Content Systems

• Key actions to date
  • Met with various stakeholders
  • Met with some vendors and some existing clients to get some background information
  • Started planning document with some graphics

• Key actions next
  • Meet with other RttT project coordinators (IIS and PD) to prevent duplication of effort and expenses
  • Finish ICS executive summary
Apple iTunes allows users to search through, tag, access, organize, and build social networks around content – and iTunes U adds the ability to add content and collections.

Blackboard and MoodleRooms among many others provide learning management system (LMS) platforms that provide a portal, content management, collaboration tools, grade books, and content creation tools.

Pearson, Houghton Mifflin Harcourt, McGraw Hill, and News Corporation are publishers and content owners with K12 education content and software holdings. The Pearson PowerSchool suite incorporates content management, content access, content creation, collaboration, student data, and education intelligence – said another way, PowerSchool endeavors to be the one-stop-shop. eCollege is perhaps the right model though.
Shared Learning Infrastructure Network

- **Data/Report templates**
- **Common-core aligned content**
- **Data management tools**
- **LOR & collection management**
- **Content distribution node**
- **Operational Data Store**
- **Content cache**

**LEA-SLI**

**NC-SLI**

**US-SLI**

- LEA1
- LEAn

**Teachers**
**Administrators**
**Students**
**Parents**
Consolidium Buying

• Goal:
  • Revise NC education services and equipment procurement
  • Optimal purchasing model
    • Aggregate purchases
    • Efficient cycle
    • Optimal Use of E-rate when applicable
    • Benefit from economies of scale and effort
• **Key actions to date**
  • Challenges identified:
    • The current bureaucratic procurement methodologies
    • The capacity of current state k12 entities to provide procurement service
    • The Federal E-rate guidelines that will sometimes need to be navigated
    • The coordination of technology procurements that are paramount to a successful implementation of the Federal Race to the Top as well as the North Carolina Ready, Set, Go initiatives.

• **Key actions next**
  • Validate LEA / Charter Procurement issues and concerns
  • First meeting of Working Group 05/18/11
Goals:
- Migrate 20 LEAs from local infrastructure to cloud hosted infrastructure in FY12
- Migrate all LEAs to cloud infrastructure in 3 years

Currently reviewing vendor proposals

Next Key Actions:
- Negotiate & Award Contract
- Identify 20 pilot LEAs
- DPI & Pilot LEAs validate vendor migration, test, and schedule plans
Managed Firewall & Content Filtering Services

• Goals
  • Premise-based firewall solution
  • Cloud-based content filtering/malware protection
    • Option 1 - Replacement of existing LEA/charter school solution
    • Option 2 – Complimentary service, e.g. enhanced malware protection or remote client filtering/malware protection

• Key actions to date
  • E-Rate filed for bundled service offering (Internet access, firewall, content filtering/malware protection)
  • Laboratory testing for a filtering solution completed

• Key actions next
  • Detailed Service descriptions of Firewall and Content Filtering Service offerings should be sent out to the community by May 31.
  • Conduct functional pilots in June/July
  • Conduct service pilots in July/August
Enterprise Infrastructure & Applications

• Goals and Actions: TBD
Recommendations

- Modernize finance, budget, HR, and operational support systems.
- Deploy a shared learning infrastructure that includes:
  - A learning object repository and collections management system
  - Data management tools (operational data store)
  - Identity and access management
  - Open access methodologies
- Transition LEA infrastructure to a cloud-centric service model.
Recommendations [2]

• Form an **education service agency** and support network.

• Initiate a **digital inclusion** model to address anywhere any time access to the Shared Learning Infrastructure platform.
More Cloud Information

• Web site—place for FAQ, Guidelines, Presentations, Organization, Team members, news, links to NCDPI & others:
  http://cloud.fi.ncsu.edu

• Questions/comments: cloudhelp@ncsu.edu