NC Race to the Top

Great Teachers & Principals

Quality Standards and Assessments

Turnaround of Lowest-Achieving Schools

Data Systems to Improve Instruction
RttT Pillars

• Data Systems to Support Instruction
  • Instructional Improvement System (IIS): Angela Quick
  • State Data use, Adam Levinson

• Standards and Assessments, Angela Quick

• Great Teachers and Leaders
  • PD: Lynne Johnson
  • NCVPS expansion, Bryan Setser

• Low performing schools: Pat Ashley
  • Transformation support system

• State Success Factors
  • Technology Infrastructures and Resources, Phil Emer
    • Cloud infrastructure, tools, and resources to support all RttT initiatives
  • Evaluation and policy analysis, Martez Hill
First was the School Connectivity Initiative

- The School Connectivity Initiative has delivered to LEAs...
  - Over $56M in new tech funding...so far
  - Substantially increased network capacity
  - Connectivity to world class NCREN
  - Access to network engineering experts
  - Future-ready Internet access
  - Equity of access
  - A foundation for shared services and Cloud
Next is SHARED SERVICES, building on SCI

• **Attributes:**
  • Aggregate demand and procure/statewide license
  • Buy services versus build infrastructure
  • Pay for use infrastructure model(s); sustainable/shared

• **Results in:**
  • Equity of access to resources
  • Scale based on aggregate demand
  • Consistent high performance, reliability
  • Infrastructure & platforms to support all goals
  • Reduced, sustainable operating costs
### A Platform for All RttT Initiatives

<table>
<thead>
<tr>
<th>Feature</th>
<th>IIS</th>
<th>State Data Use</th>
<th>Standards &amp; Assessment</th>
<th>PD</th>
<th>NCVPS</th>
<th>Transformation Support System</th>
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<tbody>
<tr>
<td>Learning Management System</td>
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<td>Collaborative Tools</td>
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<tr>
<td>Learning Objects Repository</td>
<td>✔️</td>
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<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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</table>
RttT Technology Snapshot

Users (Students, Teachers, Staff)
- NCVPS $6M
- IIS $24M
- Admin Apps
- User Devices $25.5M
- LEA Network $48.5M
- LMS/CMS $10.8M
- Learning Objects Repository $1.7M
- Collaborative Tools $4.4M
- Identity Management $1.2M
- Shared Infrastructure $11.2M

Hosting Provider Data Centers

Cloud Infrastructure  Cloud Platform  LEA Infrastructure
## Cloud Budget

<table>
<thead>
<tr>
<th>Expense Item</th>
<th>4-year Budget</th>
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<tr>
<td>DPI Cloud Services Manager [1 FTE]</td>
<td>$0.4M</td>
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<tr>
<td>Service provider contracts [including project management and planning]</td>
<td>$16.1M</td>
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<tr>
<td>Statewide software/content licensing</td>
<td>$18.1M</td>
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<tr>
<td>TOTAL</td>
<td>$34.6M</td>
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## Provider Contracts Budget

[Numbers in millions of US dollars]

<table>
<thead>
<tr>
<th>Provider</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
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<tr>
<td>Friday Institute(^1)</td>
<td>0.6</td>
<td>1.0</td>
<td>1.0</td>
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<td>MCNC(^2)</td>
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<td>0.4</td>
<td>0.4</td>
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<td>Various providers(^3)</td>
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<td>1.0</td>
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<td><strong>Totals</strong></td>
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<td><strong>2.7</strong></td>
<td><strong>3.0</strong></td>
<td><strong>2.1</strong></td>
<td><strong>16.1</strong></td>
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</tbody>
</table>

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1. Via task order per UNC system-DPI master agreement
2. Via existing DPI-MCNC services agreement
3. Multiple “cloud” providers selected via competitive procurement
## Statewide SW/content Budget

[Numbers in millions of US dollars]

<table>
<thead>
<tr>
<th>Solution</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
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<td>Learning Objects Repository</td>
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<tr>
<td><strong>Totals</strong></td>
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<td><strong>4.9</strong></td>
<td><strong>3.1</strong></td>
<td><strong>18.1</strong></td>
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## Technology Budgeted in LEA Detailed Scopes of Work

<table>
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<tr>
<th>Initiative</th>
<th>Total Budgeted</th>
<th>LEA’s Participating</th>
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<tr>
<td>Wireless Networks</td>
<td>$48.54M</td>
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<td>1:1 Initiatives</td>
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<td>57</td>
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<tr>
<td>Interactive Classrooms</td>
<td>$6.26M</td>
<td>12</td>
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</table>

These amounts are in addition to the $34.6M allotted for the NC Education Cloud.
LEAs Spending Funds on Wireless
LEAs Spending Funds on Devices
LEAs Spending Funds on Classrooms
Standard District Model
Infrastructure Blueprint

- Servers housed in Tier-4 data centers
- 24x7x365 monitoring and support
- Service Level Agreements with teeth
- Usage-based provisioning and billing
- Tiered data backup and recovery
- Near-real-time provisioning
A Service Delivery Platform

• The NC Education Cloud is a service delivery platform for modern instructional and administration support systems

• Initial statewide services
  • Hosted i-series
  • MS Live@edu and Google Enterprise
  • Learning Management System (LMS)
  • Web collaboration
  • Identity management
Cloud-Enabled LEA

Mobile Devices

Desktops & Lab PC’s

Network Appliances

Cloud-Enabled LEA

Directory Structure determines access privileges

Services Available TODAY Through The Cloud

Directory Structure

Storage Pools

Web servers

LMS

Email & Collaboration

Media & Content

Application Delivery

VoIP Call Managers

Administrative Apps

Wireless Controllers/Network Mgmt

Firewalls & Filters

Other Schools

Administrative Sites

LEA Local Services

Network Appliances

PoE Switch

Traditional Switch

Enterprise Class Wireless AP's

PoE Switch

School Router

WAN Connection

LEA Router
Shared Services possibilities

• Email migrations into the cloud (Google, MS)
• Central hosting of administrative applications – instead of hosting an AS/400 for instance
• Statewide Directory for services delivery
• Virtual desktops inside a web browser on an old PC or on a new netbook
• Unified Learning Management System and Learning Object Repository
Shared Services possibilities

- Managed/shared wireless services
- Network dashboards using statewide directory
- Content filtering as a service provided by the network – controlled in the LEA
- Other Network services... security, firewall
- Backup and disaster recovery
Shared Services end game...

- LEAs pay substantially less as part of a buyers’ consortium
- A shift in emphasis from technology support to instructional support
- Increased IT efficiency – fewer more highly utilized servers and other resources
- Increased service reliability – servers hosted in professional data centers with backup, DR, and service level guarantees
Organization & Collaboration

DPI Leadership Team → Program Director

Program Director → advises

SBE/GTEC

RttT Education Cloud Advisory Committee

LEA Working Groups

Infrastructure Working Group

Platform Working Group

Service/Project Specific Working Groups

Project Management

Application workload testing

Site surveys and inventory

RFP - vendor specifications

E-rate and CIPA

Planning & Design
NC Education Cloud Advisory Process

• **Strategic level advisory committee**
  • Membership=16
  • Reflects cross section in Regions by LEA size, function and position
  • Longer term role envisioned

• **Project specific working groups**
  • Infrastructure
  • Platform
  • Other specific topics
The RttT Technology Project Team

Cloud Team

The Friday Institute
Sammie Carter, 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

DPI
Peter Asmar

Program Director
Phil Emer

Adam Levinson

Cloud Services
NEW

Network & E-rate
Ed Chase

Instructional Tech
Neill Kimrey

PM Office
Jerry Bunn

PM Office

Jerry Bunn

Network & E-rate

Ed Chase

Instructional Tech

Neill Kimrey

Cloud Services

NEW

Program Director

Phil Emer

Adam Levinson

Peter Asmar

DPI
Timelines & Calendar

- Gather resources...............1/15/2011
- Initial Site interviews.........4/18/2011
- DRAFT plan........................5/1/2011
- Approved Plan......................6/1/2011
- Complete site interviews..7/1/2011
- RFPs................................2nd half 2011
- Deploy services....................4Q2011-1Q2012
- Migrate and operate..........4Q2011-4thQ2014
Site Interviews

- Objectives
  - Communications/community education
  - Data collection to support Shared Services plan development
  - Community buy-in

- Process Summary
  - Develop on-line data collection template
  - Pre-populate template with known information
  - Distribute link to template to LEAs and charter schools
  - Conduct site interviews – 3 person interview team typically

- Data Collection High-Level Schedule
  - Phase 1 – Interview 5-6 LEAs in each of 8 regions
Site Interviews

- **Objectives**
  - Communications/community education
  - Data collection to support Shared Services plan development
  - Community buy-in

- **Process Summary**
  - Develop on-line data collection template
  - DPI Regional Instructional Consultants schedule site interviews
  - Pre-populate template with known information
  - Distribute link to template to LEAs and charter schools
  - LEAs fill in the template prior to the site interview

- **Conduct site interviews**
  - Interview team typically - Dave Furiness, DPI Instructional Consultant, Contractor - Systems Consultant
  - LEA participants – CTO/Technology Director and designated staff, Media & Instructional Technology leadership, and CFO
  - Ed Chase, Neill Kimrey, and/or Phil Emer likely to participate in largest (top 5-10) LEA site interviews
Site Interviews

- **Data Collection Schedule**
  - **Phase 1** – Interview 5-6 LEAs in each of 8 regions

<table>
<thead>
<tr>
<th>WBS</th>
<th>Tasks Description</th>
<th>Task Load</th>
<th>Start</th>
<th>End</th>
<th>Duration (Days)</th>
<th>% Complete</th>
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<td>Develop Data Gathering Template</td>
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<td>3</td>
<td>Conduct Site Interviews</td>
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</table>
Collaborate with us!

- Inform and encourage leadership to help us identify and capitalize on opportunities.
- Coordinate strategic and spending plans
- Support data gathering, work groups, pilots
- Share your comments: cloudhelp@ncsu.edu
- For updated information, FAQ and status visit:
  - [http://cloud.fi.ncsu.edu](http://cloud.fi.ncsu.edu)
THANKS!