

*[Refer to white cover sheet.]*

Utah schools strive to provide the conditions necessary for improving student learning with technology, and to prepare our students to succeed in the 21st century.

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Highlight these recommendations: *[page 6 of the legislative audit completed in 2005]*

[http://www.le.state.ut.us/audit/05\\_04rpt.pdf](http://www.le.state.ut.us/audit/05_04rpt.pdf)

1. Providing adequate technology resources including teacher laptops and student access in classrooms
2. Providing professional development opportunities, support and time to implement the training
3. Providing sufficient technical support to keep the systems operational
4. Providing stable funding tied to short-term and long-term plans
5. Setting equipment standards at the school and district level
6. Managing computer and printer inventory
7. Conducting an annual Total Cost of Ownership (TCO) review

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## Funding Sources

### Federal

- **E-rate** - comes from the taxes on your telecommunications bill for Universal Service Fund
  - last year provided \$9.3 million to UEN and districts <http://www.uen.org/e-rate/>
  - Utah **2004** legislative audit of E-RATE  
Utah has received \$46 million in E-rate commitments since 1998 and their annual commitments have increased in each of the past years. However, our best estimate shows that Utah may have been able to secure as much as \$47 million more in additional commitments had school districts applied for reimbursement. [http://www.le.state.ut.us/audit/04\\_rorpt.pdf](http://www.le.state.ut.us/audit/04_rorpt.pdf)
  - Highlights for how the legislature can help schools receive more E-RATE funding: *[refer to the E-Rate audit]*
    1. **Audit Recommendation:** track and apply for all eligible funds  
**Need:** Funds are allocated as reimbursement so they must front the costs. A stable funding source would lessen the fiscal risk to districts who apply for E-RATE discounts
    2. **Audit Recommendation:** Increase participation by impoverished schools and work toward UEN funding all school connections  
**Need:** A broader mandate to UEN to provide the network infrastructure to all public schools to give Utah economies-of-scale for applying for the E-RATE discount
    3. **Audit Recommendation:** Adjust personnel, financial tracking, and data collection to better discover discounts to apply for  
**Need:** Districts need stable funding for technical and support positions to free up time for the district technology coordinators, and schools need help collecting poverty data to help schools qualify for higher discounts. We're recommending a survey for schools to use
- **NCLB** - Title II Part D is called Enhancing Education Through Technology (EETT).
  - last year provided approximately \$3.2 million - half in flow-through funding and half in competitive grants to high poverty districts <http://www.usoe.org/curr/edtech/grants/state/>

- this year the President proposed zeroing out that budget. Losing that funding would further erode Utah's classroom technology infrastructure.
- **Perkins** State Basic Grant
  - last year provided \$13.1 million <http://www.ed.gov/programs/ctesbg/o4allot.html>
  - funds Career and Technical Education (CTE) including Technology Life and Careers (TLC) for middle schools and Information Technology and Technology and Engineering courses for high schools

### Statewide infrastructure - Legislative Funding:

- **UEN** Network backbone
  - This year \$18.2 million [http://www.uen.org/steering/html/materials\\_pdf/june2005\\_1page.pdf](http://www.uen.org/steering/html/materials_pdf/june2005_1page.pdf)
  - UEN continues to provide leadership and support for E-RATE training issues in districts
- **District** LAN infrastructure: SB 51 - \$5 million last year; \$2.5 million this year
  - used to build district infrastructure for online testing including student workstations
  - when not used for testing, can be used for classroom instruction

### Curriculum Infrastructure - General funds:

- **USOE** general funding is used to support educational technology activities such as:
  - SB 154 - writing competency software - Fall 2005 in high schools
    - requires pre and post assessments
    - requires writing across the curriculum using the 6 Traits
    - requires increased student writing across all curriculum areas
  - Sci-ber text - online resources, Calculator-based-labs with electronic probes, and nanotechnology to support the science core.
- State Educational Technology **Plan** is our guiding vision for educational technology *[refer to the yellow Plan]*

### District Infrastructure - General funds:

- From 1990 to 2001 the state legislature funded the Educational Technology initiative (**ETI**) which provided line item and some one-time funding for classroom technology. *[refer to page 4-5 of the audit for more detail.]*
- In 2002, the ETI line-item funding was rolled into a **block grant**. Subsequent years the block grant was reduced by half.
- **EDWeek** - Annual Technology Counts Survey - students per instructional computer in the classroom *[refer to green documents with the EDWeek data.]*
  - 2001/02 **15.0** - rank 50th in nation
  - 2004/05 **14.3** - rank 51st in nation

#### **ACADEMIC GOAL: One-to-one access ratio** *[refer to white cover sheet]*

Our Utah Educational Technology Plan for Utah was approved in November of 2004 by the State Board of Education. *[refer to page 4 in technology capacity the yellow State Plan]*  
<http://www.usoe.org/curr/edtech/plans/state/2004/UtahEdTechPlan2004.pdf>

One of its academic goals is to provide every student access to a computer. The state of Maine mandated a one-to-one initiative for every student in grades 6 through 9. Michigan is

also doing a one-to-one initiative. Maine's rationale was that it was good for economic development and excellent for student learning. USOE could provide more information on the educational benefits of one-to-one access for our 21st century students in our public schools. *[refer to pages 7-8 of the Best Practices audit for teacher laptops and student classroom access]*

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## Classroom Services

### Concurrent Enrollment

- can be taught face to face in the high school or over the distance learning video network - students receive both high school **credit** toward graduation and college credit
  - 2003/2004 - 153,727 credits granted; 23,384 students participated
  - legislative funded at \$37.16 per university credit

### Distance Learning via 2-way video and satellite

- Video **conference** format
  - 750 courses - grades 7-12
- **Instruction** provided by University faculty or by certified K-12 teachers
- Provides statewide access and educational **equity** for rural students
- Underlying **technology constantly improving** - migrating from analog to digital end-sites as funds are available

### Online Learning via Utah Electronic High School

- First **state-wide** electronic high school in the nation
- Courses meet the Utah Core with an **open-entry, open-exit** policy making it is flexible for students
  - 2003/2004 - \$600,000 - 24,000 student accounts - \$24.00 per student 3,420 credits granted
  - 2004/2005 - \$700,000 - 38,000 student accounts - \$19.00 per student; 8,544 credits granted
  - 2005/2006 - \$1 million - between 30 and 80 students a day are requesting accounts.

**ACADEMIC GOAL:** Expand distance learning, concurrent enrollment, EHS, and investigate K-6 electronic options *[refer to white cover sheet]*

Equity for our rural students depends on distance learning, concurrent enrollment, and the virtual high school.

Unlike the students pictured on this slide, current Utah K12 students will work in the information and electronic-collaboration age. Consistent access to 21st century tools is as essential to their future as a pencil or paper was to our schooling.

### Utah Education Network (UEN) Services

- UEN manages and **nurtures** the network backbone for K12 academic and administrative use benefiting the whole state
- UEN **hosts** the core curriculum, teacher tools and other educational resources for USOE
- UEN hosts the Utah **Pioneer Library** for \$512,000 giving Utah economies of scale (total state cost without partnership: \$3.85 million) - if individual districts were to purchase the resources without the Pioneer partnership:

- Alpine \$6.53 per student
- Daggett \$75 per student
- Jordan \$5.70 per student
- Washington \$7.72 per student
- average \$15.90 per student without the partnership - we currently pay \$1.02 per student with the partnership

## Instructional use of computers and technology

### • Samples:

- Chinese language via live broadcast
- Geographic Information System (GIS) and Global Positioning System (GPS) software for geography and science teachers
- Health instructors using pedometers, strapless heart rate monitors, body composition analyzers, blood pressure monitors, and data tracking software to monitor physical fitness progress
- Assistive technology for students with disabilities
- Calculators for high school math courses
- K-12 educational technology core including keyboarding standards for 5th and 7th grade
- Waterford Reading Program; Carbon - Peterson Elementary; Granite - Fox Hills Elementary
- Research-based teaching practices using technology such as the EMINTS project involving 8 high-poverty districts

**ACADEMIC GOAL:** Assist, and expect data based decision-making in the agency and in schools *[refer to white cover sheet]*

This kind of classroom support is important for teachers as they learn new ways to inform instruction.

The other kind of needed classroom support includes student access to classroom technology. Forty-seven percent of all computers in K12 are over 4 years old. Much of the funding formally used for classroom technology has been diverted to help districts meet testing, data, and administrative needs.

## USOE Assessment and Data Services

- Utah Test Item Pool Service (**UTIPS**) - online tool for periodic testing for the core standards
- Data **warehouse** operational
- Single **Student Identifier** in fall 2005
- Core tests returned, per student, in **4 working days**
- Pre-equating and scaling will **shorten** the August 15 turn around for final state-wide result - other options include double bubbling and local scanning
- Fall 2005 **data analysis tools** protected by password for student-level data for parents, educators, etc.
- Moving forward with **online assessment**. Every district will be participating at some level this coming school year in the uniform online system SB 51 addressing part of the district infrastructure

costs. Need approximately \$1 million per year for software license to have enough seats and support for all end-of-year tests to be delivered to all students.

**ACADEMIC GOAL:** Develop a seamless K-16 assessment system including rapid, complete U-PASS testing results *[refer to white cover sheet]*

**ACADEMIC GOAL:** Without violating FERPA, share data to expand the K-16 database  
Utah's not new to end-of-level assessment. We've been collecting student performance data for years using criterion-referenced tests that are correlated to our state core curriculum.

With the dawn of new technologies and networks, Utah's data collection and decision-support structure would improve with ubiquitous administrative access to business tools and automated ways of delivering assessment.

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## Professional Development

### Pre-service

- colleges of education offer at least **one** technology class for their teacher candidates
- Utah does not have a technology integration **requirement** for pre-service teachers

**ACADEMIC GOAL:** New teachers coming into K-12 system prepared to fully integrate technology into the curriculum *[refer to white cover sheet]*

Idaho requires every teacher to demonstrate technology competency as a pre-requisite to licensure and to renew licensing.

The International Society for Technology in Education (ISTE) has a set of nationally-developed standards that address what pre-service teachers should know and be able to do for technology skills and integration in the 21st century.

Professional development needs for technology integration would be lessened if the beginning teachers came to the job more conversant with the teaching strategies for technology use in the classroom.

### Inservice

- **investing** in teacher professional development is an investment in student academic achievement - over 100 research studies
- USOE currently deploying **regional expertise** to build data-analysis capacity in rural districts
- Utah does not have a **technology integration requirement** for teacher licensure renewal - the audit recommends the consideration of the ISTE National Education Technology Standards for Teachers *[see page 10 of Best Practices audit]*
- industry standard is to devote 25-30% of a **technology budget** to professional development - use distance learning, online resources, and other collaborative tools to extend and enrich the professional development being done in academic curriculum areas
- Research-based teaching practices with strong professional development standards such as E-MINTS provide a **wholistic approach** to using technology in the classroom

**ACADEMIC GOAL: Improve educator's technology integration skills** *[refer to white cover sheet]*

Technology integration for learning is more than a teacher using the computer to produce resources; it's a combination of teaching pedagogy and classroom management, student access, and technical support. *[see the chart on page 2 of the Best Practices audit]*

As access issues are addressed, professional development needs to have equal emphasis. Teachers need work-time to develop teaching methods and expertise with educational technology.

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## Challenges/Strategies

- **Credit** for distance learning and electronic resources options
  - High school credit from outside sources including online, distance, and concurrent enrollment
  - All instructors need to have the **highly qualified** status
  - Distance Learning \$37.16 per university credit doesn't **cover the actual costs** for small classes at rural schools
  - Access to online textbooks and increasingly sophisticated technology
- Student Information Systems (**SIS**)
  - Districts use a combination of the state-sponsored SIS-2000+, PowerSchool, locally developed, or other commercial software to **meet their local needs**
  - Difficult-data to track such as graduation rates will be **more readily available** with the new Student ID numbers.

**BUSINESS GOAL: Implement electronic registration for all Utah secondary schools**

**BUSINESS GOAL: Develop and maintain data fields to provide regular information for each section of the annual state report, federal reports, and for an annual strategic plan review** *[refer to white cover sheet]*

Because it's possible to track education trends at the state-level with emerging technologies, we are uncovering how data can help us target our remedial resources where they are most needed. One shining example is the collaboration between the state office and districts in using business-intelligence software licensed at the state level. *[COGNOS]*

We are continuing state-level discussions between district technology coordinators, superintendents, and other stake holders to find the economies of scale needed to implement such broad and deep data-mining. With enough political will and broad cooperation, we can extend and improve the data streams we need to make informed decisions. Integrating disparate data structures is possible.

The additional value to schools of this collaboration is to help alleviate some of the reporting burdens districts and schools now have, and support them in their efforts to streamline important business practices such as online student registration.

- Technology **Infrastructure** and Open Source software
  - Technology **support** *[refer to chart on page 2 of Best Practices audit]*
    - virus, spyware, and other mal-ware and security issues are using precious support resources

- schools are typically understaffed for the technology support *[refer to page 10 of Best Practices audit]*
- **give ratio of Utah schools from TCO**
- Newer software is not always backwards compatible with older computers
- Licensing fees and license compliance management uses up personnel and budget resources
- Investigating **options** for Open Source software like Linux and Open Office for older Intel-based computers
  - Indiana is investing in open source solutions for student access
- Business users typically use ? productivity applications; school users typically use a combination of ? **multimedia and productivity** applications
  - Maine's learning goals required student computers have multimedia hardware and software
- **Student Access** *[refer to pink TCO sheet]*
  - Working towards more authentic, performance-based formative assessment in all classrooms
  - Having student access limited to labs is like taking 30 minutes a day to go to the **'pencil' lab**.
    - **ANALOGY:** Legislators lining up to share computers in the back of the room on their 'lab day.'
  - Student access to technology tools isn't a one time hardware acquisition - systemic funds/plans
    - Granite district supports a rotation cycle to phase out older technology on a regular basis

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## GOAL SUMMARY

### Academic Operations

One-to-one access ratio

Expand distance learning, concurrent enrollment, EHS, and investigate K-6 electronic options

Develop a seamless K-16 assessment system including rapid, complete U-PASS testing results

Without violating FERPA, share data to expand the K-16 database

Assist, and expect data based decision-making in the agency and in schools

New teachers coming into K-12 system prepared to fully integrate technology into the curriculum

Improve educator's technology integration skills

### Business Operations

Implement electronic registration for all Utah secondary schools

Develop and maintain data fields to provide regular information for each section of the annual state report, federal reports, and for an annual strategic plan review

Develop customer satisfaction instruments for the Utah State Office of Education and encourage the same from districts, schools, and other education service providers

Implement fiscal accounting software at USOE

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