

ESUCC

Technology Committee Meeting

Wednesday, September 3, 2014, 2:00 PM

Educational Service Unit No. 10 76 Plaza Blvd Kearney, NE 68845, 6949 South 110th Street,
LaVista, NE 68128

Attendance Taken at 2:09 PM.

| | |
|----------------------|---------|
| Bell ESU 10: | Present |
| Fisher ESU 04: | Present |
| Gegg ESU 05: | Present |
| Jeff West (NE): | Present |
| Dr Kraig Lofquist: | Present |
| Shoemake ESU 06: | Present |
| Uhing ESU 01: | Present |
| Ted DeTurk (ESU 02): | Absent |

1. Call to Order

2. Roll call

3. Agenda Item

3.1. LMS Updates

3.1.1. ESUCC Staffing/Transition

3.1.2. ANGEL/Blackboard Program Updates

3.1.3. ANGEL/BlackBoard Informational Meetings

3.1.4. ANGEL/BlackBoard Contract

3.1.5. LMS Vision/Funding

3.1.6. LMS Statewide Pilot Initiative

3.2. Technology Survey

3.2.1. BrightBytes

- 3.2.2. NDE: Ed-Fi Perceptual Survey
- 3.3. NOC Report
 - 3.3.1. E-Rate Updates
 - 3.3.2. Statewide Support Model
- 3.4. Zoom Update
- 3.5. ESUCC Application Systems Analyst Update
- 3.6. ESUCC Ed-Fi Server Hardware
- 3.7. Reports
 - 3.7.1. IMAT/Safari
 - 3.7.2. Distance Ed
 - 3.7.3. BlendEd History
- 3.8. eBooks
- 4. Next Meeting Agenda Items
 - 4.1. LMS State-wide Plan
 - 4.2. Technology Suvey
 - 4.3. State-wide Support Model
 - 4.4. ESUCC Programmer Update
- 5. Executive Session
- 6. Adjournment

{{Name: Agenda Item Name}}
{{Discussion: Agenda Item Discussion}}
{{Comments: Agenda Item Comments}}
{{Actions: Agenda Item Actions}}

LMS

Scott Isaacson gave the report regarding the Learning Management System (LMS).

Changes/Updates to the budget will allow for the ability to contract with someone to assist with the LMS.

Regarding Angel, in August an update was made. This is possibly the last update for this software. Therefore, Angel might not be an option in the not so distant future. Scott also reported that they have been working with BlackBoard to migrate courses from Angel.

Gordon Rothmeyer reported that a survey has been sent to gather information about LMS. Scott reported that the survey information would assist us in moving in the right direction as it pertains to a "statewide model." Additionally, it was shared that the cost of BlackBoard will not change, but the number of licenses will decrease (somewhere around 26,000 users at this point). Furthermore, BlackBoard is looking to move their service to the "Cloud."

Dave Ludwig has been working with Commissioner Bloomstedt regarding funding options for an LMS system. Discussions will continue, and there appears to be lots of possibilities. Dave Ludwig asked the group for feedback regarding what the LMS should look like in the future.

Wayne Bell said schools use different products and that the LMS products being used required support. The need for "support" will not change. Bob Uhing shared that as we move forward any LMS system should meet certain (minimum)(IMS Global) "standards." A recommendation was made that a "sub-committee" meet, establish deadlines and determine what LMS Systems would meet Federated Identity Management criteria. Additionally, there was a long discussion regarding the "support" of any product, or products, that might be chosen by a sub-committee. Dr. Bell shared that BlendEd (and its future) needs to be a part of the conversation.

The subcommittee will be given a timeline of 60 days to complete their recommendations and should report back by (November).

Subcommittee

Craig Hicks
Chris Goode
Jason Everett,
Dr. Curtis Case
Kirk Langer (or LPS representative)
Dawn Ferreira from OPS; and
ESU 3 representatives

A specific “charge” for the committee will be discussed and developed by tomorrow afternoon September 4).

Bright Bytes

Dave Ludwig reported that Kristine Swanson from Bright Bytes has shared that Bright Bytes would like to go “state-wide.” The cost would be around \$250,000 or \$0.75/student. Dave indicated through recent conversations he has had with NDE that Dean Folkers was initially unaware of the capabilities of Bright Bytes. Dave will continue to work with Matt Blomsted regarding possible funding for a statewide initiative.

NOC

Ron Cone shared information pertaining to NOC. One of the recent topics included shared “unique” services that can be located at individual service units. More specifically, each service unit would specialize in one particular area of expertise.

Gary Needham shared important updates regarding e-rate. President Obama has actually mentioned updates to e-rate and the e-rate process. An official document was created on July 11th. There will be changes and limits will be placed on what will be covered under “e-rate.” Wireless networking will get an initial push, providing reimbursement and such reimbursement will include wiring, switches, etc. These services will be covered starting in April (ahead of the official date in July).

Gary shared that the question before us is “what does this mean for ESUs moving forward?” Gary suggested that we should do a consolidated or state-wide “hardware bid.” Individual schools can independently decide whom to use for implementation. The COOP Committee should also be involved, as the bid will probably work best at a state level.

Bob Uhing shared that the ESUCC should be involved using information and guidance from the NOC. Bob also stated that we should be prepared to move quickly.

Zoom Update (Desktop Video Conferencing)

Gordon Rothmeyer shared that we have purchased 50 licenses. The product is being embraced and used. Adding additional licenses has come up, but at this time, it does not seem to be a priority. Additional licenses must be purchased in packages of 10. At this time, the total cost for the ESUs is between \$400 and \$450 dollars.

Ashland-Greenwood is using Zoom for a distance-learning course. Additionally, Gordon shared that Clearsee is also a nice product.

Programmer Update

A five-member team has developed a job description, and Scott Isaacson led the team. This is the first step toward bringing this position “in house.”

ED FI

NDE might require updates to ED FI, but ESUs should be reimbursed.

IMAT

We continue to move forward and more use has been noted. Ron Cone stated there have been minor issues based on unique attributes. In the notes section of the Technology Committee’s agenda is additional information.



Blackboard

Upgrade Order Form (ANGEL Products)

READ THESE TERMS CAREFULLY BEFORE INSTALLING OR ACCESSING THE BLACKBOARD™ SOFTWARE/SERVICES. BY INSTALLING OR USING THE BLACKBOARD SOFTWARE/SERVICES, CUSTOMER REPRESENTS AND WARRANTS THAT IT HAS READ THE TERMS ASSOCIATED WITH THE AGREEMENT, THAT IT UNDERSTANDS SUCH TERMS, AND IT, ITS EMPLOYEES AND AGENTS WILL BE BOUND BY ITS TERMS. IF CUSTOMER DOES NOT AGREE TO THE TERMS AND CONDITIONS ASSOCIATED WITH THE AGREEMENT, PLEASE DO NOT INSTALL OR USE BLACKBOARD™ SOFTWARE/SERVICES

This Upgrade Order Form amends the current Agreement between Customer and Blackboard Inc. (formerly doing business as ANGEL Learning, Inc.) ("Blackboard") for the Licensed Software to Customer and is effective as of the date below (the "Effective Date"). Capitalized terms used in this Order Form are defined in the Terms and Conditions.

Blackboard Inc.

| | |
|--|---|
| Billing Contact Information: 650 Massachusetts Ave., NW, 6th Floor Washington, DC 20001-3796 Federal Tax ID # 52-2081178 Phone: +1-800-424-9299 Email: BillingOps_Learn@blackboard.com | Remittance Address: Blackboard Inc. PO Box 200154 Pittsburgh, PA 15251-0154 |
|--|---|

| | |
|---|------------------------------|
| Customer PO # <u>P1400015</u> General Notes | Effective Date: _____ |
|---|------------------------------|

*In the event of any inconsistencies between this Order Form and the current Agreement, on the one hand, and any purchase order or other similar document, on the other hand, this Order Form and the current Agreement shall control.

*The License Fee is based on Customer's eligibility for any set Discount. If Customer ceases to be eligible for the Discount, the License Fee will be adjusted and the additional License Fee will be payable as of the date the Customer no longer qualifies for the Discount. For an Unlimited User Site License, Customer must submit the annual enrollment and a FTE report with the order form.

*Additional Authorized Users may be added in blocks of 250 users per block at any time during the License Term. The additional License Fee for one block of additional Authorized Users is 250 times the per user license rate of the then current annual license. On each anniversary date, a User Account License can be increased to a user license level at the price then currently available.

*Customer agrees to take the necessary action to permit Blackboard to initiate Application and IT System Services within 30 days of the Effective Date and to schedule education services under this Order Form so that all education will be completed no later than 120 days after the Effective Date.

*Customer may increase the number of Blackboard Administrators by notice given to Blackboard effective upon payment by Customer of the then-applicable Administrator fees.

*This purpose of this amendment is to renew and reduce customer's users from 40,000 to 26,000 users with a pro-rata reduction in fees for the term beginning 7/1/14 – 8/31/14.

Services Maintenance Terms

If Customer wishes to renew the Blackboard maintenance then the following terms apply:

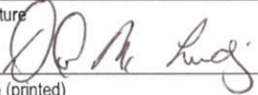
Blackboard requires an annual subscription-based maintenance program for consulting projects involving customizations to the ANGEL Learning Management System. Under the Maintenance program, customizations will be reviewed and updated as needed with each monthly ANGEL update and ANGEL version upgrade to address any issues that may arise due to the ANGEL LMS core product changes. Additionally, any bugs or defects within the scope of the customization will be addressed under the Maintenance program.

The maintenance program will not provide support related to the following:

- Improper usage of the Product including but not limited to
 - Database files removed from the Product
 - Modification of the customization
 - Prohibited usage
- Improper installation and configuration of the operating system components
- Improper hardware configuration for the size of the deployment
- Non-Supported 3rd party tools used with Product (except those where a support partnership exists)

Payment Terms

1. All dollars (\$) are in United States currency.
2. Upon receipt of the PO, your authorization key will be shipped promptly.
3. **Initial and subsequent payments are due as specified by the payment schedule.**
4. **Annual License Payments are due on the anniversary date.**
5. **REMIT TO:** Blackboard Inc., PO Box 200154, Pittsburgh, PA 15251-0154
6. **Sales Tax:** *If applicable, a copy of your Sales Tax Direct Pay Certificate or your Tax Exemption Certificate must be returned with this Order Form.*

| |
|--|
| Customer: Educational Service Unit Coordinators {{CompanyName}} Council |
| Signature  |
| Name (printed) David M. Ludwig |
| Title (printed) Executive Director |
| Date 7-31-14 |

| |
|----------------------------------|
| Blackboard ("Blackboard") |
| Signature TESS FRAZIER |
| Name (printed) VICE PRESIDENT |
| Title (printed) |
| Date |

Renewal Notice

THIS IS NOT AN INVOICE, DO NOT PAY



Blackboard

Blackboard Inc.
650 Massachusetts Ave., NW
6th Floor
Washington DC 20001
USA

Phone: (202) 463-4860 X2721
Fax : (202) 318-2619
Federal ID # 52-2081178

Send Purchase Order to

Blackboard Finance Operations
650 Massachusetts Avenue NW, 6th Floor
Washington, DC 20001 USA
Fax: (202) 318-2619
FinanceOps@blackboard.com

Unless otherwise notified, invoice will be sent to the address below.

Client Contact Information

Educational Service Unit Coordinating Council
ESU 10 PO Box 850
Kearney NE 68848-0850
USA

Client ID: 332023

Renewal Notice Date: July 24, 2014

The renewal pricing listed below is based on your contract with Blackboard and is provided to facilitate generation of purchase orders for your upcoming renewal item. The amounts listed below **do not** include applicable taxes, which will be assessed and included at the time of invoice.

Renewal ID: Bb-043415

| <u>Qty</u> | <u>Product Name</u> | <u>Product Description</u> | <u>Start Date</u> | <u>End Date</u> | <u>Price (USD)</u> |
|------------|---------------------|----------------------------|-------------------|-----------------|--------------------|
| 1 | ANGEL LMS | Blackboard ANGEL LMS | 07/01/2014 | 08/31/2014 | 16,068.11 |

Renewal Amount (USD) 16,068.11

ESUCC Coordinating Solutions to address FCC E-Rate Changes

The following are information points about the FCC E-Rate changes that will impact every public and private school in Nebraska:

- 56 million dollars will be available to public and private schools and public libraries in Nebraska
- 45 million is available to public schools in our state
- An average of 34% of the funds must be matching funds, or about 17.8 million of the 56 million will be school and library matching funds
- The federal government has set aside 1 Billion for 2015–2016 and 1 Billion for 2016–2017 for schools to use for equipment upgrades *(It is important for schools to access these funds over the next two years, no guarantees of funding beyond this timeframe)*

ESUs' technology staff will need to work with local school districts to determine:

- What wireless access do they currently have in place?
- Based on FCC E-Rate guidelines, what do they need to upgrade?
- Should each individual school district develop a project plan to better define their upgrades?

Each school district will need to bid their technology project plan including:

- Equipment costs
- Installation costs
- Maintenance costs (First two years only)

ESUCC Involvement including possible coordination of solutions for local districts:

- Enough vendors in Nebraska able to support this initiative?
- Should ESUCC bid on installing equipment into local schools?
- Coordinate this effort statewide with all ESUs providing staff support?
- Install during the summer months?

Federal Regulations: Provided by Tom Rolfes

8. C2 E-rate support will focus on broadband services and the equipment needed to deliver broadband inside libraries and schools. This includes: **Routers, switches, wireless access points, internal cabling, racks, wireless controller systems, firewall services, uninterruptable power supplies, and the software supporting each of these components.** For 2015 and 2016 Wi-Fi managed by an outside provider, basic maintenance and caching servers are also eligible. At a later date the FCC will determine if these services should remain eligible beyond 2016.

9. Starting in 2015, E-rate funding support for the following services, which are not directly Wi-Fi or broadband-related, will be eliminated: **Circuit cards/components, interfaces, gateways, servers, storage devices, telephone and video components, voice over IP (VoIP), voicemail, email, and webhosting.** The FCC will update the Eligible Services List (ESL) to reflect the changes, and cautions applicants to review the 2015 ESL carefully because of all the various changes.



New E-Rate Rules out today!

July 11, 2014

Dear Member,

Here is the official announcement from the FCC on a ruling that was made this morning regarding changes to the E-Rate program.

FCC ADOPTS LANDMARK E-RATE MODERNIZATION ORDER TO BRING HIGH-SPEED WI-FI TO EVERY SCHOOL AND LIBRARY NATIONWIDE

Today, the Federal Communications Commission adopted an E-rate Modernization Order that will expand Wi-Fi networks in schools and libraries across America. The new rules are the next major step in a comprehensive modernization of E-rate, the first such effort since the program's creation 18 years ago. The program increases focus on the largest and most urgent need-closing the Wi-Fi gap-while transitioning support away from legacy technologies to 21st Century broadband connectivity, ensuring E-rate money is spent smartly, and improving program administration. The reform will expand Wi-Fi to more than 10 million students in 2015 alone. The Order and Further Notice of Proposed Rulemaking (FNPRM) adopted by the FCC accomplishes three major goals:

Closes the Wi-Fi Gap

- Sets an annual funding target of \$1 billion for Wi-Fi while ensuring support continues to be available for broadband connectivity to schools and libraries.
- Directs at least \$1 billion in support for Wi-Fi for Funding Years 2015 and 2016 to connect over 10 million students and thousands of libraries each year by establishing reasonable budgets for applicants.
- Allows support for Wi-Fi purchased as a managed service and caching servers through the new internal connections funding mechanism
- Continued use of new Wi-Fi funding methodology after Funding Year 2016 will be evaluated as part of a review of the long-term funding needs of the program.
- Increases support targeted for Wi-Fi in rural school districts substantially - a nearly 75 percent increase; and targets a nearly 60 percent increase in urban and suburban districts.

- Begins a multi-year transition of all program funding to broadband, by gradually phasing down support for non-broadband services.
- Adopts clear broadband goals to measure overall program success, while maintaining local flexibility to determine the needs of individual schools and libraries.

Maximizes E-rate Spending

- Incentivizes consortia and bulk purchasing.
- Increases transparency on how E-rate dollars are spent and on prices charged for E-rate services.

Makes the E-rate Administration and Application Processes Faster, Simpler, More Efficient

- Streamlines the process for multi-year applications.
- Expedites process for small dollar, cost-effective applications.
- Speeds review of all applications.
- Moves to electronic filing of all documents.
- Simplifies discount calculations.
- Strengthens efforts to combat waste, fraud and abuse by toughening document retention and site inspection rules.

By taking action today, the Commission has ensured that the new E-rate rules will be in place in time to support Wi-Fi upgrades across the country beginning in the 2015-2016 school year.

The FNPRM Seeks Comment on:

- Long-term program funding needs necessary to meet goals and funding targets established in the Order.
- Further steps to facilitate the use of cost-effective consortium-based purchasing.
- Alternative methodologies for allocating support for library Wi-Fi connectivity.

Building on Success

Today's Order builds on the top-to-bottom administrative review of the E-rate program that was the first stage of Chairman Wheeler's comprehensive approach to modernization.

This administrative review is already delivering huge dividends:

- More funds: The FCC identified \$2 billion that could be freed from existing reserve accounts and other sources over the next two years toward an initial down payment on broadband expansion. The \$2 billion for Wi-Fi over the next two years under today's Order comes from these reclaimed reserves. <http://www.fcc.gov/document/fcc-boost-investment-broadband-schools-libraries-2b>
- Faster processing: The FCC, working with the program administrator, USAC, has already doubled the pace with which E-rate applications are being processed, compared to any previous year in E-rate history. <http://www.fcc.gov/blog/managing-e-rate-maximize-benefits-schools-libraries>

Brings E-rate into the 21st Century

- New digital learning technologies are opening new opportunities for students, teachers and library patrons.
- In schools, emerging educational technology allows an increasingly interactive and individualized learning environment and expands school boundaries through distance learning applications.
- In libraries, high-speed broadband access provides patrons the ability to apply for jobs; interact with federal, state, local, and Tribal government agencies; engage in life-long learning; and stay in touch with friends and family.

The plummeting costs of tablets and netbooks, increasing Wi-Fi speeds, and innovative cloud-based software are allowing this technological transformation of learning, much of which would have been impossible five years ago. But too many U.S. schools and libraries lack the infrastructure necessary to fully utilize today's learning technologies-particularly when it comes to Wi-Fi in the classroom.

- Three out of five schools in America lack the Wi-Fi needed to deploy 21st Century educational tools.
- Half of school buildings have older, slower internal wiring that won't carry data at today's broadband speeds.

August 12, 2014

HIGHLIGHTS OF THE E-RATE MODERNIZATION ORDER

The Federal Communications Commission (FCC) adopted the [E-rate Modernization Order](#) on July 11, 2014. The Order takes major steps to modernize and streamline the E-rate program and focuses on expanding funding for Wi-Fi networks in eligible elementary and secondary schools and libraries across America.

The rule changes identified below will become effective for funding year 2015 unless otherwise noted.

Closing the Wi-Fi Gap

The Order sets a target of providing \$1 billion in annual support for eligible internal connections, which will be referred to as "category two" services. Services needed to support connectivity to schools and libraries will be referred to as "category one" services.

Support for the E-rate program remains capped at \$2.25 billion, adjusted for inflation annually since 2010. However, to help meet the target of \$1 billion for eligible internal connections in the short term, the Order states that the additional funding announced by the Wireline Competition Bureau (WCB) earlier in 2014 will allow the FCC to make an additional \$1 billion available annually in FY 2015 and 2016. If demand for category one services exceeds available funding, the Universal Service Administrative Company (USAC) will shift funds targeted for category two services to meet category one demand. Alternatively, once category one demand is met, the FCC may redirect remaining funds to support category two requests. Funds not committed for category one or category two services may be carried forward to be used in a subsequent funding year. The Order expresses confidence that there will be sufficient funding available for FY 2015 and 2016 to meet the \$1 billion annual target for internal connections.

The highest discount level for category one services remains 90 percent, except that the highest discount rate for voice services will be 70 percent in funding year 2015, and will decrease by an additional 20 percentage points each subsequent funding year.

The highest discount level for category two services is set at 85 percent.

Schools applying for category two funding can request discounts on purchases of up to \$150 (pre-discount) per student for category two services over a five-year period. Libraries applying for category two funding can request discounts on purchases of up to \$2.30 (pre-discount) per square foot over a five-year period. To ensure that category two budgets are sufficient to meet the demands of small schools and libraries, the Order establishes a funding floor of \$9,200 (pre-discount) in category two support available for each school or library over a five-year period. Applicants will calculate their funding eligibility using the adjusted discount matrix. The costs for services shared by multiple entities must be divided between the entities sharing the service.

The two-in-five year rule will not be in effect for applicants that receive support in FY 2015 and 2016.

The five year budget will apply only to those entities that receive support in FY 2015 and/or 2016, and the first year of the applicant's five year budget will be the first funding year in which the applicant receives support.

Applicants can seek support for category two eligible non-recurring services purchased on or after April 1, three months prior to the start of the funding year on [July 1](#).

Funding for internal connections is available for routers, switches, wireless access points, internal cabling, racks, wireless controller systems, firewall services, uninterruptable power supply, caching, and the software supporting each of these components used to distribute high-speed broadband throughout schools and libraries.

Basic maintenance services, managed Wi-Fi, and caching are eligible for category two support. Support for these services will be available only to those applicants that receive category two support in funding years 2015 and/or 2016.

Support is eliminated for circuit cards/components; interfaces, gateways, antennas; servers (except those WCB may find necessary for caching); software; storage devices; telephone components, video components, as well as voice over IP or video over IP components, and the components, such as virtual private networks, that are listed under Data Protection other than firewalls and uninterruptible power supply/battery backup.

The discount rate applicants receive for voice services will be reduced by 20 percentage points beginning in funding year 2015, and reduced by 20 additional percentage points in each subsequent funding year. This phase down will apply to all costs incurred for the provision of telephone services and circuit capacity dedicated to providing voice services, including: local phone service, long distance service, plain old telephone services, radio loop, 800 service, satellite telephone, shared telephone service, Centrex, wireless telephone service such as cellular, and interconnected VoIP. If the FCC takes no further action on this phase down by the opening of the funding year window for funding year 2018, the phase down will continue.

The following services are no longer eligible for any E-rate support: paging; telephone service components, including directory assistance charges, text messaging, custom calling services, direct inward dialing, 900/976 call blocking, and inside wire maintenance plans; e-mail; web hosting; and voicemail.

Data plans and air cards for mobile devices will remain eligible for support only if a school or library can demonstrate that individual data plans are the most cost-effective options for providing internal broadband access for portable mobile devices at its facility.

Maximizing the Cost Effectiveness of E-rate Spending

USAC must make publicly available on its website information regarding services and equipment purchased by school and libraries. Applicants may opt out of this public disclosure requirement only if a specific law, rule, or other restriction bars publication of the purchasing price data.

Vendor contracts executed after the effective date of the Order may not contain any restriction barring publication of this pricing data.

WCB may designate master contracts as "preferred master contracts" and (1) exempt a preferred master contract from the FCC Form 470 filing requirement, (2) require the preferred master contract to be included in the bid evaluation if an applicant chooses to file an FCC Form 470 for a service covered by a preferred master contract, or (3) both.

A consortium lead may seek bids on behalf of the schools, school districts, and libraries for which it has authority to seek competitive bids for E-rate eligible services, even if it does not have authority to purchase services for the consortium members.

The Order directs USAC to prioritize review of E-rate applications from state and regional consortia applicants.

Maximizing the E-rate Administration and Application Processes Fast, Simple, and Efficient

Applicants entering into new qualifying multi-year contracts will be permitted to use a streamlined application process in subsequent funding years if they submit a complete FCC Form 471 for the first funding year of the contract. Applicants in existing multi-year contracts must submit a complete FCC Form 471 for funding year 2015, to qualify for the simplified process in subsequent funding years. This simplified application

process will be available to any applicant, beginning in funding year 2015, as long as: (1) the multi-year contract is five years or less, and (2) to the extent applicable, any changes in the requested services are within the scope of the original FCC Form 470 and multi-year contract. The technology plan requirements for category two services are eliminated. Technology plan requirements were eliminated for category one (then priority one) services in 2010.

An applicant is exempt from the requirement to file an FCC Form 470 for an Internet access service if: (a) the service offers bandwidth speeds of at least 100 Mbps downstream and 10 Mbps upstream for a pre-discount price of \$3,600 or less annually, including any one-time installation and equipment charges, and (b) the service and price are commercially available. Each school or library must receive the eligible service at a cost of less than \$3,600 annually and applicants may not average the cost of services across a number of buildings to qualify for this exemption.

Applicants must have a signed contract or **other legally binding agreement** in place prior to submitting their FCC Forms 471 to USAC. This ensures support for those applicants that have negotiated and agreed to contractual terms, but have difficulty obtaining signatures prior to the submission of their FCC Forms 471.

Applicants and service providers will be required to file all documents with USAC electronically. USAC will be required to provide all notifications electronically. USAC will phase in this requirement over the next three funding years.

Applicants are encouraged to file waiver requests with the FCC seeking E-rate support for establishing direct connections between eligible schools and libraries.

Each school district must calculate and use a single district-wide discount rate rather than calculating and using building-by-building discount rates.

- Independent charter schools, private schools, and other eligible educational facilities must calculate their discounts separately if not affiliated financially or operationally with a school district. Those independent charter schools, private schools, and other eligible educational facilities that are seeking support for more than one school building should factor all students in facilities under the control of their central administrative agency into the discount calculation.
- Consortia applications will continue to use a simple average of all members' discounts to calculate the overall consortium discount, but will now be required to use each member's district-wide discount.

Library systems should apply using the discount rate of the school district in which the central outlet or main administrative office to determine within which public school district the library system lies. However, a library system with a majority of branches or outlets in rural areas can qualify for the rural increase even if the school system it uses to calculate its discount does not qualify for a rural increase. All library branches or outlets within a library system will receive the same discount rate.

Schools and libraries located in rural areas, as defined by the U.S. Census, will be considered rural for the purposes of the E-rate program. School districts and library systems with a majority of schools or library outlets that are in rural areas can qualify for an increased rural discount rate. USAC will post a tool on its website that will allow schools and libraries to obtain urban/rural status.

Schools utilizing the Community Eligibility Provision (CEP) of the National School Lunch Program shall calculate their student eligibility for free or reduced priced lunches by multiplying the percentage of directly certified students by the CEP national multiplier. Schools and school districts should then use the resulting number for that school when calculating the district-wide calculation in the same manner as schools using NSLP data.

Schools that use surveys to determine their E-rate discount must calculate their discount using only the surveys they actually collect.

Previously, schools using a school-wide income survey could project a percentage of eligibility for the entire school population if they had a 50

percent return rate.

An applicant that pays the full cost of the E-rate supported services to a service provider will be able to receive direct reimbursement from USAC beginning in funding year 2016.

USAC's existing invoice filing deadline – the latter of 120 days after the last day to receive service or the date of the FCC Form 486 notification letter – will be codified as part of the FCC's rules for the E-rate program. This filing deadline rule also allows applicants to request and automatically receive a single one-time 120-day extension of the invoicing deadline. This filing deadline rule will be effective upon announcement in the Federal Register of approval by the Office of Management and Budget.

The document retention period will be extended from five to 10 years after the latter of the last day of the applicable funding year, or the service delivery deadline for the funding request. This revised document retention period rule is subject to the Paperwork Reduction Act and will become effective upon announcement in the Federal Register of approval by the Office of Management and Budget.

E-rate applicants and service providers must permit auditors, investigators, attorneys, and other appointed personnel to enter their premises to conduct E-rate compliance inspections.

USAC will work with the FCC and the Office of Native Affairs and Policy beginning in FY 2014 to develop and provide Tribal-specific E-rate training targeted to Tribal schools and libraries and to create a formal Tribal liaison at USAC to assist with Tribal-specific outreach, training, and assistance.

When the Order becomes effective 30 days after publication in the Federal Register, parties must file appeals of USAC decisions with USAC first before appealing to the FCC. Parties seeking a waiver of the FCC's rules must request the waiver directly from the FCC.

Possible ESU Involvement in FCC E-Rate Changes

Gary Needham, Member of NITC Ed Council and ESU 9 Technology Director

At this date the full impact of the 2015-16 e-rate changes is still unclear. However, we do know that there is a significant emphasis for the next 2-5 years on wireless infrastructure in schools. Qualifying schools appear to be eligible for a discount on expenditures of up to \$150 per student or \$9,200 per building, whichever is larger. (The \$9,200 may be per NCES/NDE building, meaning a combined elementary and high school may qualify as 2 buildings.)

In the installation of “wireless infrastructure,” there are many components in which ESUs are regularly involved across the state, and all of which are potentially eligible for e-rate reimbursement. They might be broken down as follows:

- Wireless system (access point and controller) hardware and software
- Wireless system maintenance
- Cable and associated cabling hardware
- Cabling installation
- Switches, routers, and firewalls
- Switch, router, and firewall maintenance (software updates and labor)

In order for any work performed by an ESU to become e-rate eligible, the ESU would have to have a USAC Service Provider Identification Number (SPIN) and bid directly on school district Forms 470 through the bid process or subcontract for a bidder that does have a SPIN.

Network Nebraska has initiated a conversation seeking the guidance of the ESU NOC regarding its potential role in the process, particularly as a possible coordinator of a state-level bidding process. Due to the timeline of the e-rate changes, NOC will have to pass an action item on September 18 directing the involvement of Network Nebraska.

Small schools in particular could have a difficult time wading through both the bidding requirements and the vendor selection. ESUs will do what they can to guide the process, but this could be a large amount of administrative work for staff who wear many hats.

Due to the complexity of the issue, I am seeking administrative guidance from this committee on behalf of NOC regarding a possible state bidding process, including the possibility of Network Nebraska working with ESU Coop on the hardware bids.

Vision for Nebraska K-12 Technology Infrastructure Core

Draft September 3, 2014

Infrastructure Problems & Frustrations

- Uneven availability of technology & services
- Inconsistent or poor support of some services
- Centralized services not meeting needs
- Duplication of efforts
- Some services not sustainable
- Costs too much

Vision

To provide an enterprise-grade, efficient and economical technology platform through which applications and services are delivered to improve school academic and operational performance and learner outcomes.

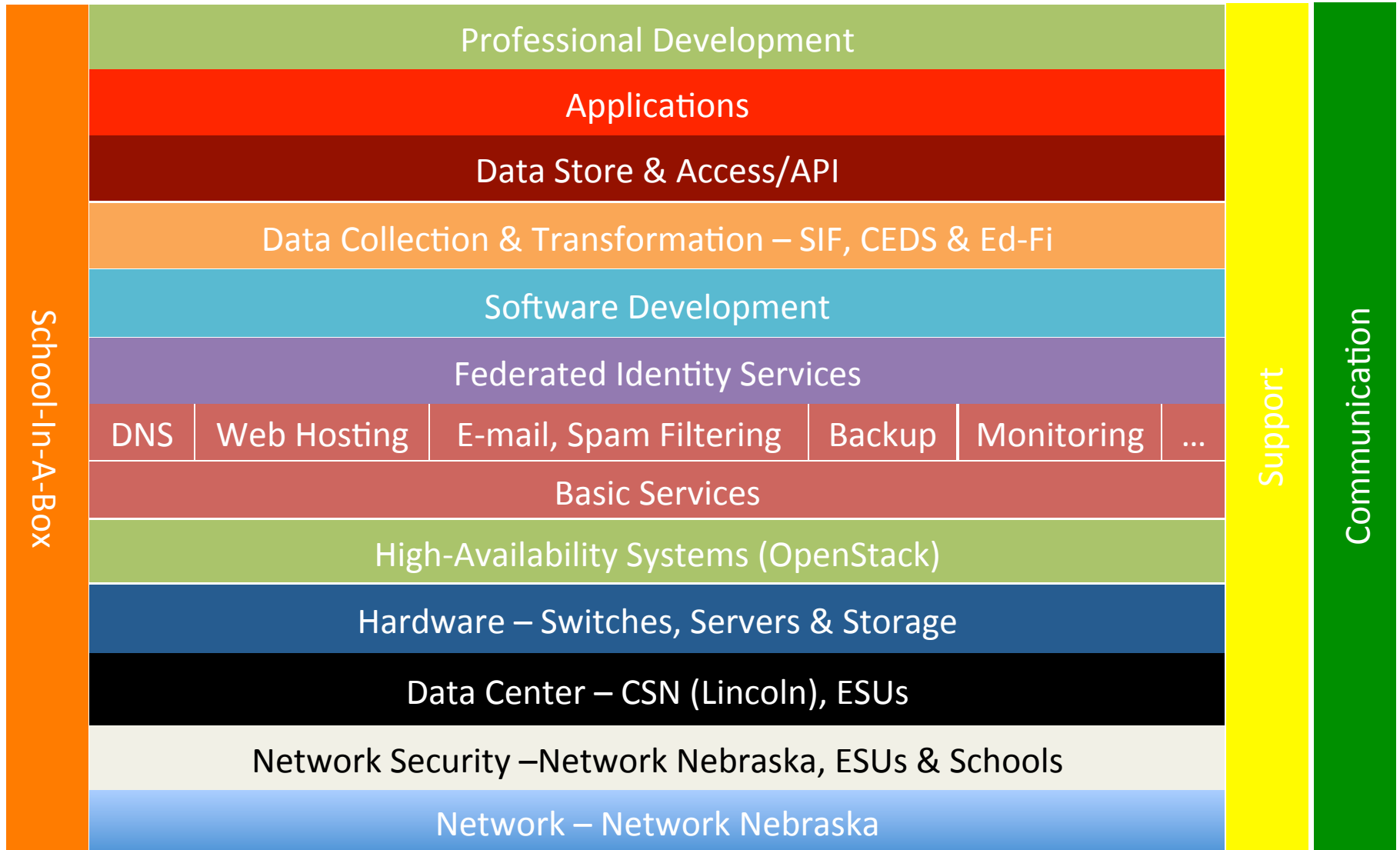
Goal

- Technology systems become like a transparent utility for all users.
- Users think of technology systems, data, applications and services as:
 - Ultra-reliable & a natural way to reach every student, every day, at any time and in any location
 - Reliable as electricity, water and phone service

What Changes?

- Technology services available statewide
- Increased choice – a la carte services
- Shared management and control
- Improved support expectations
- Services more efficient and sustainable
- Realignment of existing staff responsibilities, reducing duplication and inefficiencies

Infrastructure Layers



Suggested Beginning Steps (2014-15)

- Refine - collect ESU and school needs and feedback
- Communicate – statewide discussions of best practices, align efforts & practices
- Pilot the team approach with ESUCC systems support through contracted services
- Develop & implement more formal project plans

Develop & Implement Formal Project Plans (2014)

- Pool existing, available hardware (ESUCC, ESU 2, 10) & existing data centers
- Establish system-wide ticketing strategy/system
- Initiate rough documentation system
- Establish high-availability team and shared fabric
- Begin offering shared backup service & redundant VM hosting
- Begin migrating existing ESUCC, NNNC & GNENC VMs into shared environment
- Consider consolidating e-mail services (Zimbra: NNNC, LPC, ESU 9)

Intermediate Steps (2014-15)

- Determine partner interest & involvement (NDE, Network Nebraska, University of Nebraska, IlliniCloud)
- Build Identity team & project plans
- Build Software Development Team
- Engage w/NDE to enhance Data team & Ed-Fi Project w/SDS work
- Refine documentation, ticket systems, communications & processes
- Assess interest and priorities for remaining teams
- Seek startup funding (grants, partnerships) to implement priority projects, layers & teams

Shared Ownership, Governance & Control

- Pooled funding for hardware, data center/hosting costs, staff contracts
- Governed by participating ESUs & districts (through ESUCC board, committees and affiliates?)
- A strong linkage between needs expressed by participants, services delivered and evaluation of effectiveness & efficiency
- To the maximum possible extent, provide user/distributed administration controls for services (let participants provision, customize and control services they subscribe to)
- Technical teams cross ESU boundaries and all team members have administrative access/controls over systems within their team's scope
- Centralized auditing/logging of administrative access and activities & strict documentation expectations of all team members

Increased Choice/A la Carte

- Low barrier to entry – To the extent possible, participants may subscribe to services individually (i.e. DNS, backup, basic VM, or single application only)
- Service costs must factor in sustainability & lower-level infrastructure to support
- Some services may depend on others (data dashboard requires data store & collection)
- Catalog of available services

Support Expectations

- Support requests are acknowledged immediately
- Support requests are routed and worked quickly
- Timely progress updates and communications regarding the issue being worked
- Automated notifications of internally-initiated issues
- Confirmation that an issue is resolved
- Opportunity to provide feedback

Ticket System

- Universal ticket system – all teams use
- 3 Ways to request support:
 - E-mail
 - Phone call (1 number for all support requests)
 - Web ticket
- Dispatching & Monitoring – people assigned to ensure tickets are routed and worked according to expected response times and follow-up with assigned team member when they aren't
- Defined response intervals for each type & severity of issue
- Feedback encouraged by inviting user to provide feedback at close of each ticket
- Managerial review and follow-up of tickets not meeting expectations

Team Staffing Approach (1)

- Bring existing staff into specialized teams based on the infrastructure layers
- Change to horizontal focus on fewer layers vs. current vertical focus based on geography
- Team members selected for a team based on skill set, aptitude, fit and interest
- Perform tasks more efficiently in areas of specialty than in less familiar areas
- All staff on all teams need to practice excellent interpersonal & documentation skills and be open-minded to design and support solutions with other teams and team members

Team Staffing Approach (2)

- Teams have a standing or rotating primary on-call person, with one or more designated backups—No “one-man shows”
- Primary on-call member uses monitoring systems, takes and works tickets related to the team
- Primary or dispatcher may call on backup members for help in peak times or when exceptional problems arise
- Team members will maintain general understanding in many areas as well as specific expertise in their assigned areas of responsibility
- Members would commonly overlap – serve as primary on one team, potentially more as primary or backup, depending upon workload & expected needs

Documentation

- Centralized, database-driven documentation application(s), customized for easy use at all infrastructure layers
- Layer-sensitive entry screens (different for documenting physical cable connections vs. IP network address assignments vs. software configuration instructions)
- Connection to ticket system for FAQ/ Knowledgebase automation & easy device, connection and configuration lookup

Project Management

- Comprehensive and transparent project plans
- Clear next steps & expectations
- Coordination & alignment of project plans system-wide and across teams, including dependencies and user priorities
- Carefully contemplated and mutually agreed-upon timelines
- Accountability and support for all team members to achieve previously-agreed deliverable timelines

Change Management

- Established process for peer review of proposed changes to assess potential side-effects and impact of service interruptions
- Allow routine configurations to change without undue burden while catching and reviewing changes that are high-risk or high-impact
- Automated connections to ticket and documentation systems

Evaluation

- To what degree does each service meet participant needs and expectations?
- Are all team members fulfilling their responsibilities in a timely and professional manner?
- Does each service meet its budget expectations?
Is it self-sustaining?
- To what degree does each service improve ESU & school performance and learner outcomes?

Sustainability

- Each service will operate at break-even
- Include allowances for equipment and software maintenance, life cycles & replacement cost
- Long-term funding is a combination of:
 - Participation/usage-based fees
 - System-wide investment (for basic levels of service that benefit all)
 - Partnerships & outside investment

Startup & Initial Development Costs

- Infrastructure and services may require initial investments to begin operating
- Startup funding may include:
 - Setup fees paid by participants
 - System-wide investment (for basic levels of service that benefit all)
 - Partnerships & outside investment
 - One-time allocations (Legislature, NDE)
 - Grant funding

Wide-Area Network

- Network Nebraska operates core now (1.5 staff)
- Create/expand system-wide NOC (at Network Nebraska or ESUCC) to provision, monitor, test & diagnose NN-to-school, NN-to-ESU & ESU-to-school links
- Primary team member with cross-trained backups
- Remote access statewide to all participating head-end and edge WAN equipment
 - Schools & non-team have limited/read-only access to WAN devices

Network Security

- CISSP (standards-based) model
- Adherence to specifications of 10 CISSP domains
- Some Network Nebraska monitoring systems in place now
- Formalize monitoring duties & expand tools
- On-call team member & cross-trained backups
- Handle requests for firewall rule changes
- Diagnose & correct access problems
- Investigate & respond to security events, intrusions

Data Center

- Install, maintain, monitor & document system hardware and physical connections in the Data Center environment
 - Servers & disk storage
 - Network switches, firewalls & devices
 - Environmental – Power, generator, UPS, HVAC
- Primary on-site & cross-trained backup at each data center or in close proximity
- Initial location thoughts: Nebraska Hall (Lincoln), ESUs 2, 10, & 3
- Alternates & future possibilities: ESUs 6, 18, 19, College Park (Grand Island), Scottsbluff, UNO/UNMC

Hardware

- Team designs & specifies system-wide hardware to meet usage needs
- Develop installation procedures & documentation of hardware setup, pre-configure for installation in data center
- Available to help diagnose suspected hardware problems
- Few, common & interchangeable hardware components can be deployed and moved between data centers to simplify maintenance, repairs and parts management

High-Availability Systems – OpenStack

- Open, standards-based virtual machine management environment
- Team provides VMs to-spec for in-system use and use by ESUs and school districts for custom applications
- Automated, fast provisioning of new virtual machines as needed
- Multi-site redundancy and automatic failover of virtual machines
- Forecasts needs for hardware upgrades, replacement

Operating Systems & Basic Services

- Team specializes in installing & maintaining current and optimal operating system deployments for the environment
- Aim for consistency of versions & patch levels
- Sub-teams for Windows & Linux
- Strong support for user-managed basic services like DNS, web hosting, e-mail, backups, ...

Backup & Disaster Recovery

- Team establishes data “class” (static/OS, configuration, operational, archive) & appropriate backup intervals & storage
- Configures backup jobs to meet requirements
- Monitors backup jobs for success & resolves problems
- Tests backup system’s ability to restore data
- Performs or assists with data recovery when needed

Software Development

- Keep & bring software systems in-house or under fixed contract (SRS, COOP, Data Collection, Dashboard, Portal, Identity, NVIS)
- Standardization of:
 - Development methods, environments, languages & documentation
 - Application hosting
 - Look, feel
 - Integration with identity & other services
- Ability to share development staff between projects

Identity & Access Management

- Centralized identity provider (IdP) service
- Ubiquitous, delegated account management system
- Support for district, ESU and regional IdPs
- Operates a Nebraska K-12 Identity federation
- Gateways to 3rd party providers such as Google
- Inter-federation with other K-12 federations and InCommon for broad access to worldwide resources
- With connection to Data Store & Collection system, allow districts & ESUs to automate most account provisioning tasks

Data Store & Collection

- Education data drawn securely from source systems in real-time and made available to user-facing applications to personalize learning
- Data stored securely in Nebraska in a scalable database environment for controlled, easy access when needed (Secure Data Store)
- Education data = course enrollments, attendance, gradebook, formative and summative assessments, etc.
- Source systems = SIS, LMS, assessments & online student learning activities

Data Transformation

- Support for open, widely-adopted standard data models (SIF, CEDS, Ed-Fi)
- Agents and API facilitate smooth transfer of data between Secure Data Store, data sources and applications
- SIF = Schools Interoperability Framework
- CEDS = Common Education Data Standards
- Ed-Fi Data Standard = aligns with CEDS and provides additional data detail

Data Access

- Secure, modular API
- Applications “plug-in” to data easily
- Granular per-user access-control
- Easy to build & deploy applications in the environment

Applications

- Dashboard front-ends
- Automate state reporting tasks
- Student learning activities & assessments feed formative data back to data store
 - FasttMath
 - DIBELS
 - NWEA MAP
- Nebraska-built SIS becomes possible

Applications

- SRS
- COOP Purchasing
- NVIS
- LMS
- Learning Object Repository
- Portal

School-In-A-Box

- Small, rack-mountable server to be easily deployed in a school district
- Hosts local (in-district) applications and data
- Participates in the system-wide OpenStack fabric, providing enhanced remote support, backup, disaster-recovery and redundancy options

LAN & Wireless Support

- Team provides a combination of remote and on-site support for network issues on school and ESU premises
- Relies on remotely-manageable switches, wireless gear and monitoring capabilities
- Emphasis on efficient remote diagnosis and resolution
- Training of district contacts in techniques for last-foot troubleshooting
- On-site network design and support when needed

Professional Development

- Teams design and distribute the work of preparing training materials & modules and facilitating training activities
- Leverages LMS, LOR and BlendEd delivery of professional development content to extend reach of on-site, in-person workshops
- Cultivates & shares specialized expertise in PD topic/focus areas so topic-area content is delivered by experts while also reducing duplication of efforts

Professional Development

- Team members receive regular opportunities for training in their areas of specialty
- Are expected to present more general training to other teams in the system for their familiarization and general knowledge
- Badges, professional certifications and continuing education are recognized and valued



Zoom Contact: Matthew Melser – Sales Executive
 E-mail: Matthew.Melser@zoom.us Tel or Fax: 650-567-5020
 Order Valid if executed by: 8/24/14

Zoom Service – Zoom Named Host Professional

Term

"Initial Term" months - 12
 Subsequent "Renewal Term(s)" months - 12

Order will automatically renew unless written notice of termination is sent at least 30 days prior to the commencement of the next renewal term in accordance with the Zoom Video Communications Terms and Conditions or Services Agreement

Anticipated Availability Date for New or Change Service: (Typically within 3 Business Days from Zoom's acceptance of a valid Order.)

Billing Currency USD

Monthly Recurring Charge (Unless prepaid, invoiced monthly in advance throughout the term of this order.)

| Description | Qty | Rate | Total Annual Amount |
|-----------------------------------|-----|---------|---------------------|
| Zoom Named Host Education Pack | 50 | \$4.95 | \$2970.00 |
| Zoom Host 100 Capacity Add On | | | |
| Zoom Cloud Room Connector | 6 | \$41.58 | \$2994.00 |
| Zoom Cloud Room Connector | 2 | FREE | FREE |
| Zoom Host Toll Free Add On | | | |

Check For Annual Pre-Pay Option:

Total Annual Pre-Pay Amount To Be Invoiced Per Term: \$5964.00
 (Toll Free Audio Plan Add On does not have a prepay option, only monthly)

Additional Order Items:

Add On Hosts – Add On Host shall be added in the following quantities
 Business 10 Pack – 1 host add on minimum
 Business 50 Pack – 5 host add on minimum
 Business 100 Pack – 10 host add on minimum

General Items

Maximum number of simultaneous Meetings per Named Host = 1

Maximum number of participants per session cannot exceed 25 for Named Hosts, with the exception of any Host with add on 100 participant capacity, in this case participants per session cannot exceed 100.

Subscription Service Fees: Invoiced monthly in advance throughout the term of this order if on monthly payment terms. For annual prepay option, service fees for the annual term are invoiced upon service start date with net 30 payment terms. Pricing includes unlimited VOIP and available Toll audio conferencing minutes per month per Host.

Special Payment Terms

Zoom Video Communications invoicing for Services begins on the first day that the service is available for use by the Subscriber and monthly thereafter. Subscription Service Fees are invoiced monthly in advance for the duration of the Order Form, except for annual pre-pay option which is invoiced once in the first month of the annual term. Commitments not utilized by the Subscriber during the month for which they are committed may not be carried forward into any subsequent month or term. Payment terms are Net 30 days from invoice date.

Service Description and Terms

Service and Support Information can be found at:

Information on Support Services for Zoom Subscribers may be found at: <http://support.zoom.us/>

A description of Zoom Services may be found at: <https://www.zoom.us/pricing>

Named Host Description and Terms

A Named Host is any host who may host an unlimited number of meetings ("Meeting(s)") using the Service; provided that a Named Host may only host the above-listed maximum number of simultaneous Meetings at any given time. Each Meeting must be hosted by a Named Host and may include no more than the above-listed maximum number of meeting participants, including the Named Host.

Named Host accounts are individualized and may not be shared or used by anyone other than the one employee to whom the Named User account is assigned. The identification of Named Hosts must be unique to an individual and may not be of a generic nature. The exception to this would be an instance where a Named Host account is assigned to a physical named conference room to host group Zoom video conference sessions, which is allowed under the terms of this agreement. Subscriber shall identify those employees assigned to Named Host accounts. The List will be maintained by the Subscriber's Site Administrator, who will update the List so that it is current at all times.

Subscriber may change the committed number of Named Hosts accounts only upon submission and acceptance of an additional Order Form.

Zoom will have the right, upon reasonable notice, to audit Subscriber's records (including but not limit to the List) during normal business hours to ensure Subscriber's compliance with the above requirements. Zoom will pay the cost of the audit unless it is found that Subscriber is misusing the Service by, for example, assigning more Named Host accounts than Subscriber has subscribed to, sharing a Named Host account among multiple employees (beyond the allowed use of a shared account in a physical conference room), or providing a Named Host account to a non-employee.

Subscriber Information

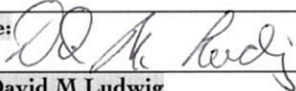
Zoom's creation of a website for Subscriber to access the Zoom Services shall constitute Zoom's acceptance of Subscriber's duly authorized offer to purchase Zoom Services in accordance with the following Terms and Conditions.

If Subscriber has a signed Services Agreement with Zoom, such agreement will govern Subscriber's use of Zoom Services ordered on this Order Form.

If Subscriber does not have a signed Services Agreement with Zoom, use of the Zoom Services by Subscriber is governed by the Zoom Terms and Conditions found at: <http://www.zoom.us/terms>

Subscriber

Account Name: Educational Service Unit

| | |
|--|---|
| Signature:  | Billing Information |
| Name: David M Ludwig | Billing Contact Name: Deb Hericks |
| Title: ESUCC Executive Director | Billing Contact Title: Executive Assistant |
| Date: August 8, 2014 | P.O/P.R.# (If Required): P1500001 |
| Address: 6949 South 110 Street LaVista, NE 68128 | Billing Address (if different): 6949 South 100 Street LaVista, NE 68128 |
| Phone: 402-597-4915 | Billing Phone: 402-597-4843 |
| Email: dludwig@esucc.org | Billing Email: dhericks@esucc.org |

Zoom Video Communications

4633 Old Ironsides Dr. Suite 478, Santa Clara, CA 95054
Zoom BILLING CONTACT NUMBER
(650) 397-6096

**Application Systems Analyst (Position Timeline)
Educational Service Unit Coordinating Council
September 2014**

The following timeline has been established for the employment of an Application Systems Analyst:

| | |
|------------------------------|--|
| September 15-October 3, 2014 | Position Announcement |
| October 6-10, 2014 | Review of Applications Development of Interview Questions |
| October 13-24, 2014 | Interview Top Five Candidates |
| November 10, 2014 | Recommendation for Employment and Candidate Contact |
| November 18-19, 2014 | Ratification of Employment (ESUCC Meeting) |
| December 1, 2014 | First Day of Employment |

**Job Description: Application Systems Analyst
Educational Service Unit Coordinating Council
September 2014**

Department: ESUCC

Job Title: Application Systems Analyst

Education Level: 2 or 4-year degree in Computer Science, Management Information Systems or related field

Certification/Licensure: Zend Certification preferred

Knowledge & Experience:

1. Ability to participate in a collaborative team environment
2. Active listening and responsiveness to team, partner and user questions and concerns
3. A friendly, cooperative, professional attitude of service
4. Effective personal communication skills
5. Ability to research and develop logical and creative solutions to problems with team members
6. Detail-oriented
7. Programming experience and general programming skills in more than one development environment

Essential Functions of Position:

1. Collaborate, consult and communicate effectively with Technology and Project directors, advisory groups and partners to develop clear system specifications, design documents, goals and priorities.
2. Develop and maintain application algorithms, processes and code that are efficient and effective at meeting system specifications.
3. Write and maintain thorough documentation of all work within code and through supporting documents.
4. Implement and utilize an organization-wide revision control system to assist in tracking and documenting system revisions.
5. Research and recommend system changes to keep applications in stable, current and supported technologies.
6. Deliver, design, modify, develop, write, implement and maintain highest quality software applications for the company.
7. Design, build, test, debug, troubleshoot, tune and re-factor new and existing code within Eclipse or Zend Studio and using PHP 5.x, Zend framework, JavaScript, jQuery, PHP Unit and Selenium.
8. Develop PHP applications in a UNIX/Linux environment.
9. Administer databases using PostgreSQL.
10. Use JQuery, Ajax, JavaScript, HTML, JSON, XML and CSS as development tools to provide the desired user experience.
11. Provide project plans and level-of-effort estimates regarding completion for all projects and commit to plans
12. Ensure that deployed applications are properly maintained throughout their lifecycle
13. Provide technical-level application support to troubleshoot issues and work with the appropriate resources/parties to resolve them

Physical Requirements: (Place an "X" in the column pertinent to your job duties)

| | Never 0% | Occasional 1-32% | Frequent 33-66% | Constant 67% + |
|---|-------------|---------------------|--------------------|-------------------|
| Standing | | X | | |
| Walking | | X | | |
| Sitting | | | | X |
| Bending/Stooping | | X | | |
| Reaching/Pushing/Pulling | | X | | |
| Climbing | X | | | |
| Driving | | X | | |
| Lifting (50# max) | | X | | |
| Carrying (25 feet) | | X | | |
| Manual Dexterity Tasks (using telephone, computer, adding machines, copiers, printers, other office equipment, etc.) | | | | X |



Committee Report

PROJECT NAME: I-Mat

PROJECT DIRECTOR: Rhonda Eis

REPORT PERIOD: August 25, 2014

COMMITTEE REPORT:

Safari Montage:

-EdCast program bugs discovered over the summer are fixed. All of the Learn360 links that were corrupted have been restored on all ESU servers. New Learn360 content will be added this fall.

-NROC links are being added and will be available in September.

- Servers were updated to 5.9.33 to address known issues. Safari Montage development team is currently testing 6.0. No release date available at this time.

-The IMat affiliate is working on a draft to address EdCast Procedures for sharing content statewide. This document will be shared with the Technology Committee for review and approval once completed.

IMAT Projects: IMat will begin previewing new content from various vendors this fall and will include both videos and other resources for the LOR.

NEW BUSINESS:

IMat Affiliate Meeting in 2014

September 4: Safari Montage 9:30-11:30 / Fall Vendor Preview, 12:30-4:00

September 5: IMat Meeting, 9:00-2:00

November 13: IMAT/TAG Copyright Training, 8:30-12:00 / IMAT Meeting 1:00-3:30

OLD BUSINESS:



Committee Report

PROJECT NAME: Distance Learning

PROJECT DIRECTOR: Gordon Roethemeyer

REPORT PERIOD: September 3, 2014

COMMITTEE REPORT:

- 50 Zoom licenses for 2014-15 were purchased in August with billing deferred until September. 14 entities are participating. The agreement includes 8 shared CRC port licenses in addition to the 50 Pro User licenses. Total cost \$5946.00 split between 14 ESUs with per unit costs between \$400 and \$485 each.
- Scott, Gordon and Deb are sharing the duties for LMS support of Angel 8.0 and BB Learn.
- Scott & Gordon provided onsite training to teachers at Scribner-Snyder school on August 13th.
- Lots of time is currently devoted to helping schools import courses from Angel into BB Learn and batch uploading user lists.
- Scott and Gordon prepared an LMS Usage survey and ask for the help of the Dist. Ed. Advisory Committee to get responses from appropriate individuals at all schools.
- The DEAC is promoting a VFT event for K-12 students featuring a presentation by Supreme Court Chief Justice John Roberts to the UNL Law College on Sept. 19th.

NEW BUSINESS:

OLD BUSINESS:

Nebraska Information Technology Commission

Project Proposal Form

Funding Requests for Information Technology Projects

FY2013-2015 Biennial Budget

IMPORTANT NOTE: Project proposals should only be submitted by entering the information into the Nebraska Budget Request and Reporting System (NBRRS). The information requested in this Microsoft Word version of the form should be entered in the NBRRS in the "IT Project Proposal" section. The tabs in the "IT Project Proposal" section coincide with sections contained in this Microsoft Word version of the form. Information may be cut-and-pasted from this form or directly entered into the NBRRS. **ALSO NOTE** that for each IT Project Proposal created in the NBRRS, the submitting agency must prepare an "IT Issue" in the NBRRS to request funding for the project.

| | |
|----------------------|--|
| Project Title | Nebraska's BlendEd eLearning System |
| Agency/Entity | Educational Service Unit Coordinating Council (ESUCC) in coordination/collaboration with: Key stakeholders from Nebraska's P-16 educational community |

Project Proposal Form
FY2013-2015 Biennial Budget Requests

Notes about this form:

1. **USE.** The Nebraska Information Technology Commission (“NITC”) is required by statute to “make recommendations on technology investments to the Governor and the Legislature, including a prioritized list of projects, reviewed by the technical panel...” Neb. Rev. Stat. §86-516(8). “Governmental entities, state agencies, and non-education political subdivisions shall submit all projects which use any combination of general funds, federal funds, or cash funds for information technology purposes to the process established by sections 86-512 to 86-524. The commission may adopt policies that establish the format and minimum requirements for project submissions.” Neb. Rev. Stat. §86-516(5). In order to perform this review, the NITC and DAS Budget Division require agencies/entities to complete this form when requesting funding for technology projects.
2. **WHICH TECHNOLOGY BUDGET REQUESTS REQUIRE A PROJECT PROPOSAL FORM?** See the document entitled [NITC 1-202](http://nitc.ne.gov/standards/) “Project Review Process” available at <http://nitc.ne.gov/standards/>. Attachment A to that document establishes the minimum requirements for project submission.
3. **COMPLETING THE FORM IN THE NEBRASKA BUDGET REQUEST AND REPORTING SYSTEM (NBRRS).** Project proposals should only be submitted by entering the information into the NBRRS. The information requested in this Microsoft Word version of the form should be entered in the NBRRS in the “IT Project Proposal” section. The tabs in the “IT Project Proposal” section coincide with sections contained in this Microsoft Word version of the form. Information may be cut-and-pasted from this form or directly entered into the NBRRS. **ALSO NOTE** that for each “IT Project Proposal” created in the NBRRS, the submitting agency must prepare an “IT Issue” in the NBRRS to request funding for the project.
4. **QUESTIONS.** Contact the Office of the CIO/NITC at (402) 471-7984 or ocio.nitc@nebraska.gov

**Project Proposal Form
FY2013-2015 Biennial Budget Requests**

Section 1: General Information

| | |
|--------------------|---|
| Project Title | Nebraska’s BlendEd eLearning System |
| Agency (or entity) | Educational Service Unit Coordinating Council (ESUCC) in coordination/collaboration with Key stakeholders from Nebraska’s P-16 educational community |

Contact Information for this Project:

| | |
|------------------|--|
| Name | Matt Blomstedt |
| Address | 455 South 11 th Street, Suite C |
| City, State, Zip | Lincoln, NE 68508 |
| Telephone | 402-499-6756 |
| E-mail Address | matt@esucc.org |

Section 2: Executive Summary

Provide a one or two paragraph summary of the proposed project. This summary will be used in other externally distributed documents and should therefore clearly and succinctly describe the project and the information technology required.

The goal of **Nebraska’s BlendEd eLearning System** is to implement instructional and content technologies to enhance teaching and learning to support all modes of blended instruction. *blended education* has been promoted by educational researchers as a one of the most promising recent innovations in education because it calls for making strategic choices about when face-to-face (synchronous) instruction is needed and when and how online (asynchronous) instruction can be best used to provide elements of student control over time, place, path and pace and provide more equity, efficiency and flexibility. [Heather Staker](#) and [Michael B. Horn](#) of the Innosight Institute offer this definition of Blended Learning-

“Blended learning is any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path, and/or pace.”- <http://www.innosightinstitute.org>

The primary components of the project include:

- 1) **Learning Object Repository (LOR) Content Repository System** - to support a statewide digital instructional content repository for existing and future collections of multimedia learning objects and course materials of all types (e.g. audio, video, graphical, textual) that are standards-aligned and meta-tagged (i.e. appropriately catalogued and classified);

Project Proposal Form
FY2013-2015 Biennial Budget Requests

- 2) **Learning management system (LMS)** - to support a statewide learning management system that allows teachers to organize instructional content, support collaborative learning activities, and deliver instruction to students both in and out of the classroom;
- 3) **Federated Directory Services system (LDAP)** - to support a statewide directory service that facilitates single sign-on access for every teacher and learner;
- 4) **Statewide Professional Development (PD) System**: A comprehensive system of professional development for the implementation of **BlendEd** incorporating LOR, LMS, & LDAP for a singular PD system to provide technology-assisted instructional design training, embedded professional development and PD content shared between and among the NDE, ESUCC and higher education; and
- 5) **Evaluative System**: A persistent system of assessment, analytics, and interventions that allows the State to diagnose and remedy areas of specific curriculum or teacher shortages (e.g. science, technology, engineering, mathematics, English language learners, advanced placement, etc..).

(**Note: see **Appendix A** for more detail concerning each of these components*).

The **Nebraska BlendEd eLearning System** has the potential to revolutionize daily teaching and learning in Nebraska schools and will build upon Nebraska's strong history and experience of offering video-based distance learning to K-12 students.

It will establish a new paradigm of blended, technology-assisted/enhanced instruction for the traditional face-to-face classroom, allow teachers to better reach and serve their students within the video distance learning classrooms, and also allow the development of fully online courses and modules that can be utilized in the classroom or delivered synchronously or asynchronously to remote learners.

Implementation of these technologies will enable teachers to utilize and share learning objects and other educational content and reference materials that would significantly enrich and deepen the learning experiences offered to Nebraska students, particularly those in the K-12 sector. This project will extend learning opportunities currently unavailable to many students in Nebraska's smaller schools due to a lack of certified teachers in certain areas, including the STEM subjects (i.e. science, technology, engineering, and math) and the languages.

This project will also encourage and facilitate greater collaboration between K-12 and higher education educators, the building of extended educational communities of learning, and support ongoing professional development and lifelong learning opportunities for the students and citizens of the State of Nebraska.

The deployment and implementation of these technologies will utilize:

- the existing high-bandwidth, statewide network called Network Nebraska;
- a redundant array of application, content, database, and web servers;
- a centralized directory services structure that allows authentication and access authorization utilizing a unique identifier for every student, teacher, and staff member;

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- a system to assign and enforce appropriate levels of copyright and digital property rights to licensed and teacher-produced learning objects for use and re-use.

The project is intended to encourage and incent many separate educational entities to come together to collaborate and establish a plan of action to promote the appropriate adoption of these instructional tools, technologies, and associated instructional techniques.

The implementation of this project will include strategic phases of capacity building over the next four years to reach the greatest number of teachers and students in the shortest period of time in the most cost effective manner possible.

Section 3: Goals, Objectives, and Projected Outcomes (15 Points)

1. Describe the project, including:
 - Specific goals and objectives;

This project is broad in both scope and anticipated impact. It is proposed based on the premise that the state of Nebraska is obligated to: **1)** provide the best possible public education for all K-12 level students and; **2)** provide post-secondary educational opportunities to its citizens to insure a well-educated workforce, a necessity if our students and citizens are to remain competitive and the state of Nebraska is to remain economically viable in the future.

The primary goal of **Nebraska's BlendEd eLearning System** is to implement instructional and content technologies to enhance teaching and learning. This project will further extend educational opportunities and improve outcomes for learners of all ages throughout the state of Nebraska.

These eLearning technologies are already utilized extensively by Nebraska's higher educational community, but are not consistently available among Nebraska's K-12 schools. This project would leverage the expertise and experience of educators already involved with eLearning initiatives around the state to help develop and implement the **Nebraska BlendEd eLearning System** within Nebraska's K-12 community.

It is important to note, these technologies are not intended to replace the classroom teacher or traditional classroom-based instruction. Rather, they would supplement the traditional classroom learning experience by providing teachers and students new instructional, organizational, communication, and support capabilities.

Additionally, these technologies also provide the means to deliver instruction to students outside the confines of the traditional classroom and school schedule. These technologies support "any time, any place, any path, any pace" learning for all students ranging from those seeking credit recovery and remedial instruction to those seeking advanced placement/dual credit learning opportunities.

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Implementation of these technologies would also allow access to a vast array of rich multi-media instructional materials and other instructional tools to support enhanced collaboration, assessment, and diagnostic and intervention tools.

Nebraska's **BlendEd eLearning System** can be accomplished by achieving the following **eight objectives**:

1. **Implement a statewide Content or Learning Object Repository (LOR)** to collect, store, organize, classify, categorize, control access to, share, and retrieve digital learning objects (i.e. a digital content repository may also consist of multiple repositories with federated search capabilities including multiple existing digital collections from Nebraska's P-16 community).
 - a. Implement a system for the appropriate meta-tagging of content which involves the assignment of attributes to facilitate cataloging, classification, searching, securing, and the retrieval of learning objects.
 - b. Develop work flow processes for the vetting, approval, and standards alignment of submitted learning objects and collections.
 - c. Support the assignment and enforcement of digital property rights thereby addressing the issues of copyright and intellectual property rights.
 - d. Harvest and consolidate as many existing digital content collections as possible (e.g. NROC, existing ESU digital video, NET/PBS resources NeBooks, etc).
 - e. Provide the ability to search and access other relevant instructional reference materials from out-of-state digital content repositories (e.g. Smithsonian Museum, Florida Orange Grove, K-12 Instructional Software, Khan Academy, MIT's Open Courseware, etc..).
2. **Implement a statewide Learning Management System** (i.e. a web-based LMS) to support the development and delivery of a statewide professional development system, instructional content, assessment and grading, lesson planning, collaboration and communication, and other instructional support capabilities.
 - a. Implement a system to programmatically create a course site for every course that a teacher is assigned to teach and link every student to every class they are enrolled in every semester.
 - b. Provide parental access to curriculum, attendance, daily learning activities, progress, and assessment information.
 - c. Establish collaborative communities of learners who will have access to a wide variety of social networking, video, audio, and group work capabilities.
 - d. Utilize the Learning Management System to provide teachers and students access to instructional materials and learning opportunities on a 24 x 7 x 365 basis.
3. **Implement a federated lightweight directory access protocol system (LDAP)** to facilitate the development of a system authentication for every K-12 teacher and learner through a single unique identifier and password that will be utilized to access the **BlendEd Learning System** and content repository resources.
 - a. Implement and configure a statewide centralized directory service model that will be capable of interfacing with existing school district and/or ESU directory services through federated authentication.

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- b. Coordinate with the Nebraska Department of Education to utilize their statewide unique identifier for all K-12 students and staff.
 - c. Develop automated processes to build and maintain a directory of IDs and passwords for every K-12 student and teacher
4. **Develop and implement interfaces** to allow existing teacher and student systems to automate the upload of all teaching assignments, course/section offerings, and student enrollments at the start of every term from every participating school district into the learning management system (LMS).
5. **Deploy collaborative support services** to minimize implementation and ongoing administrative, professional development and other training, operational, and support costs.
6. **Provide professional development and instructional design training.**
- a. How to develop and submit learning objects.
 - b. How to teach effectively using learning and content and learning management technologies.
 - c. Create a network of curriculum and multimedia developers.
 - d. Create collaborative professional learning networks
7. **Extend and broaden educational opportunities** to areas and to learners where they would not otherwise be available. This is critical for our sparsely populated areas, at-risk student populations and differing student learning abilities. Those schools who currently lack qualified teachers in some subject areas and access to other educational resources to meet the needs of all students will have the opportunity to broaden opportunities for all learners.
- a. Incentivize districts and partners (through the leadership of the ESUCC, ESUs and NDE) to develop and share learning objects and complete courses in language, STEM, and other curriculum areas where teacher shortages exist.
 - b. Build on the incredible success of Nebraska's online initiatives such as the ESUCC's ANGEL/eLearning project, ESU 13's NEVA (Nebraska Virtual Academy) and the GNENC (Greater Nebraska Education Network Consortium) on line classroom, and Omaha Public Schools' Credit Recovery system.
 - c. Provide equitable access to all learners, regardless of location, socio-economic status, or size of school.
 - d. Use **Nebraska's BlendEd eLearning System** as a "launch platform" for interventions that address specific subject area shortages and individual student academic performance issues
8. Use **Nebraska's BlendEd eLearning System** to develop specific interventions to achieve each of the Governor's and P-16 Steering Committee's eight education goals:
- a. Adopt a college and career preparation core curriculum that requires four years of English and three years each of math, science and social studies in Nebraska school districts by the 2014-2015 school year.
 - b. Eliminate the academic achievement gap between Nebraska's K-12 Caucasian students and its African American, Hispanic, and Native American students.
 - c. Develop an effective longitudinal data system that provides information on the Nebraska education system from preschool through post-graduate degree attainment and entry into the workforce to help align resources with strategic goals.

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- d. Attain a high school graduation rate of 90% or higher in each Nebraska high school.
- e. Improve Nebraska's college-going rate to the top-10 tier nationally.
- f. Provide affordable access for Nebraska students to attend Nebraska's postsecondary institutions.
- g. Improve time to degree completion and increase graduation rates of Nebraska's postsecondary institutions.
- h. Provide all students with the science, technology, and math skills needed to succeed in postsecondary education or the 21st-century workforce; and increase the number and diversity of individuals who pursue careers as educators and professionals in the areas of science, technology, engineering, and math.

- **Expected beneficiaries of the project;**

The main beneficiaries of **Nebraska's BlendEd eLearning System** will be:

- 1) Nebraska K-12 students, teachers and parents.
 - a. Students and teachers will benefit from access to additional rich instructional materials and technologies that would otherwise be inaccessible.
 - b. Teachers will be able to access statewide professional development and educational resources to assist them in learning how to most effectively utilize the proposed instructional technologies to include instructional design training and through collaboration with other teachers in their subject areas via communities of practice.
 - c. Nebraska K-12 schools will benefit by direct cost avoidance of not having to separately purchase expensive credit recovery and online learning systems, subscribe to commercial instructional materials and services, and provide the technical resources necessary to implement and support the required technology components.
 - d. Teachers will be better able to concentrate preparation and instruction in their areas of expertise and endorsement.
 - e. Students will be able to access information about assignments, test schedules, class notes, links to relevant reference resources, utilize digital drop-boxes to submit homework, and participate in online chat and discussion groups as appropriate.
 - f. Administrators will be able to "keep their money at home" by accessing or purchasing course opportunities from in-state offerings or statewide content subscriptions.
 - g. Parents will have an enhanced opportunity to access data and monitor progress, communicate with teachers, and generally become more active participants in their children's education.
- 2) Nebraska's higher education institutions will also benefit through:
 - a. Direct participation in the **BlendEd eLearning System** and collaboration with the K-12 community concerning research on the effectiveness of various educational technologies and instructional techniques on educational outcomes for different ages, areas of study, instructional modalities, learner styles, etc;
 - b. Participate with ESUs and the NDE in pre-service and in-service teacher professional development;

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- c. Utilizing the resultant research to improve teacher education programs to produce teachers that are more literate and effective in the use of instructional technologies;
 - d. Better prepared, more literate high school graduates with experience in the use of online educational technologies; and
 - e. Improvement of the college-going rate.
- 3) The overall vitality of the Nebraska economy will benefit from a more skilled and knowledgeable work force and the reduction of the out migration of Nebraska talent. The integrated system will also more closely resemble technologies critical for the economic development opportunities by connecting existing work force development efforts, career and technical education, and entrepreneurship/business development efforts of the community college system, Department of Education, Department of Labor, and Department of Economic Development. The same system will help link K-12 as a legitimate resource for expanding specific capacities needed for Nebraska's business community.

- **Expected outcomes.**

- 1) Development and implementation of the five primary components of the system (LOR, LMS, LDAP, professional development and instructional design training, and an interventions system - see Executive Summary section).
- 2) Expand the existing Nebraska Virtual Instruction Source (NVIS) website to list all traditional, blended, online and video distance learning opportunities for Nebraska students
- 3) Improved coordination between the four entities of the Nebraska Virtual Partnership (i.e. ESUCC, NDE, NET, University of Nebraska)
- 4) Creation and continued growth of a digital content repository (a.k.a. the Nebraska Knowledge Repository) that enables the uploading, searching and retrieval of learning objects that originate either as licensed content, existing collections, open educational resources, or teacher-produced content
- 5) Better coordination and collaboration of educational entities across the entire P-16+ spectrum
- 6) Improved student engagement and motivation
- 7) Improved evaluation/assessment capability
- 8) Improved student data management capability
- 9) Statewide system for storing and classifying instructional content and standards-aligned, digital curriculum
- 10) Growing LMS/LOR access from the current level of approximately 40,000 K-12 students across the state to 160,000 students and 11,000 teachers by 2016 to full deployment to all K-12 students and teachers by 2018
- 11) Cost savings resulting from economies of scale realized through consolidation of: licensing agreements; hardware and software purchases; and operational, training, and support services
- 12) Enhanced parental participation capabilities
- 13) Additional learning opportunities for students, including rural, urban, and different ability K-12 students (e.g. more subjects, AP courses, remedial and advanced credits, etc...)

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- 14) Ability to better monitor student performance and outcomes through longitudinal data and learning analytics
- 15) Ability to implement more timely and responsive interventions to address student achievement and performance issues
- 16) Development of communities of learners and collaborative learning opportunities
- 17) Development of communities of practice in education
- 18) High school graduates that are better prepared for college and are familiar with the eLearning technologies they will encounter at the higher education institutions they attend after graduation from high school

2. Describe the measurement and assessment methods that will verify that the project outcomes have been achieved.

- 1) Detailed metrics and evaluation instruments will be constructed to measure each of the outcomes '1 -18' listed in the Goals and Objectives-Expected Outcomes section above with specificity that exceeds the scope of this document;
- 2) In general, student performance, achievement and longitudinal tracking will be measured through the Department of Education's NSSRS system;
- 3) The primary project component success will be measured through actual deployment and implementation and participation levels;
- 4) Teacher collaboration and communities of practice will be measured by teacher surveys and growth rate of teacher adoption;
- 5) Actual growth rate of student and teacher use will be measured each year to meet the 2016 goal of 160,000 students and 11,000 teachers, which constitutes 50% of the Nebraska public K-12 populations.

3. Describe the project's relationship to your agency comprehensive information technology plan.

The Educational Service Unit Coordinating Council (ESUCC) is not a State Agency and therefore is not required to submit a comprehensive information technology plan. However, the proposed **BlendEd eLearning System** is aligned with the NITC Statewide Technology Plan's Digital Educational Initiative. The ESUCC does not qualify for federal E-rate so therefore does not have to submit a technology plan to the Nebraska Dept of Education under that provision. However, the ESUCC is the organization that provides coordination for statewide initiatives for the 17 ESUs, each of which files a Technology Plan to the Nebraska Dept of Education, and works with 253 school districts, each of which must also file their own technology plan.

Section 4: Project Justification / Business Case (25 Points)

- 4. Provide the project justification in terms of tangible benefits (i.e. economic return on investment) and/or intangible benefits (e.g. additional services for customers).**

**Project Proposal Form
FY2013-2015 Biennial Budget Requests****Tangible Benefits.****1) Provide teachers and students access to instructional tools, technologies, and resources**

Currently a minority of Nebraska K-12 districts currently utilize a variety of learning management systems (e.g. ANGEL, Blackboard, Moodle) while some districts do not access any learning management systems at all. This initiative will allow all K-12 teachers throughout the state access to instructional technologies and resources and offer their students enhanced educational opportunities.

2) Provide students equitable educational opportunities

The Nebraska **BlendEd eLearning System** would “level the playing field” for Nebraska’s rural and disenfranchised students by offering students in schools educational opportunities that would otherwise not be available to them.

3) Improve instruction and educational outcomes

Nebraska’s BlendEd eLearning System has the potential to create a system of specialization where more teachers are teaching fewer numbers of course preparations which would equate to a more effective, energetic, enthusiastic, and better prepared teacher workforce. This initiative also has the potential to increase the frequency of teachers teaching wholly within their endorsed area, a discrete capacity building initiative.

4) Expand educational opportunities

As Nebraska experiences significant budget and economic pressures, a continuing population shift from rural to urban areas, and a shortage of instructional resources for some subjects in some areas of the state we must look to new ways to provide the best educational opportunities possible to Nebraska’s students and citizens. The **BlendEd eLearning System** would provide teachers and students throughout the state access to educational content, instructional tools, and online courses to address these problems.

5) Address teacher shortages

This initiative will help to address a major problem for our rural teachers in our smaller schools who for decades have taught five, six (sometimes seven) different courses per day, sometimes outside of their endorsed area. Each course requires a unique preparation of one to two hours for each hour of class delivery, each and every day, five days per week. In some schools, a single teacher is an entire department (e.g. science) for grades 7-12. There is literally not enough physical time in the day to adequately prepare for the next day’s instruction so teachers are forced to skimp on one course or activity to prepare for another.

6) Establish a statewide instructional content system

This **BlendEd eLearning System** initiative will provide all teachers and students throughout the state of Nebraska access to the instructional materials and course offerings in the state’s instructional content repository system (aka the Nebraska Knowledge Repository). This statewide digital content repository will be established to house teacher-created content or other existing content collections aligned to state standards in one easy-to-access location.

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7) **Access to an integrated instructional environment**

Nebraska's BlendEd eLearning System has the potential to address these programmatic shortcomings by placing all of these services within one seamless and well-integrated system, easily accessible to every teacher and student over Network Nebraska. Currently Nebraska high school students who desire course opportunities not offered by their own school must either navigate the maze of online or video distance learning offerings from multiple independent entities or sign up for expensive out-of-state course offerings or independent study courses.

**Note: Access Alabama is an example of a statewide system that has been successful with integration of existing online and video distance learning systems:*

<http://accessdl.state.al.us/aboutaccess/>

8) **Use of a single unique identifier for all students and teachers**

The unique identifier number that has been created for every Nebraska K-12 student and teacher (i.e. the NSSRS/Nebraska Student and Staff Records System id referred to as the NDEid), will be leveraged as the key identifier for statewide directory services and authentication via single sign-on for accessing the statewide BlendEd applications, resources, and services.

9) **Cost effectiveness**

The **Nebraska BlendEd eLearning System** would provide all K-12 teachers access to a variety of instructional tools and technologies and dramatically increase the availability of high quality digital instructional content. This initiative will offer the state's K-12 students enhanced educational opportunities on the most cost effective basis possible by leveraging economies of scale to reduce per teacher/pupil: licensing costs; operational expenses; and support requirements. This initiative will also promote the development of online courses for subject areas of need, for credit recovery (e.g. replace usage/need isolated credit recovery coursework developed in isolation by districts or vendors), advanced placement courses, that could be utilized statewide and the adoption of ebooks/etexts to replace expensive and outdated hardcopy textbooks.

Intangible Benefits.

1) **Better prepare our students and citizens to compete and succeed**

As the world continues to "shrink" due to the influence and impact of technology and we face increasing international competition with the globalization of the world's economy there is a need for an ever greater breath of knowledge in increasingly complex, dynamic, and rapidly evolving subject areas. This is particularly important in the STEM (i.e. science, technology, engineering, and mathematics) and world language areas as well as career education where many Nebraska school districts lack highly qualified teachers or access to sufficient opportunities for such specialized curriculum.

K-12 graduates will also be better prepared to utilize the instructional technologies that they will encounter as they pursue higher education.

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2) **Leverage our educational resources and experience**

Implementation of the **BlendEd** project will leverage the talents, knowledge, expertise, and experience of our many dedicated and capable educators and utilize instructional technologies to enhance the educational experience for our students and extend learning beyond the classroom and the normal school day.

3) **Improve student engagement**

For many of today's K-12 students, the school day represents the least stimulating and interesting seven hours of their day. We must find more effective ways to engage students.

Today's student is accustomed to operating in a dynamic world of technology. The use of computers, the Internet, smart phones, PDAs, MP3 players, and gaming systems have all provided a mindset that expects technology assistance and involvement in performing virtually any task.

The attention, much less the passion, of many of today's students is no longer captured by the lecture-based teaching techniques utilized in many K-12 classrooms. This is an unfortunate by-product of today's society, but one that must be acknowledged and addressed by today's schools.

As Peter Drucker noted in 1999 – “fifty years hence we may well conclude that there was no ‘crisis of American education’ in the closing years of the twentieth-century – there was only a growing incongruence between the way twentieth-century schools taught and the way late twentieth-century children learned”.

This project would help address this important issue.

4) **Effectively utilize technology to enhance learning and knowledge building**

The availability and pervasive nature of technology today can have either positive or negative implications on the learning process. Properly applied and utilized technology can enhance learning. However, if students simply utilize technology to assist them in performing menial tasks (e.g. finding reference materials, answers to a specific question, or locating a template to complete an assignment), actual learning is not experienced.

This is the threat that technology presents educators and imposes on the students of today. If we do not change the way we utilize technology in education to productively facilitate and enhance real learning, students may become experts in how to “surf the net” but not develop requisite analytical skills and experience the intellectual curiosity and critical thinking necessary for true knowledge building and intellectual growth. The **BlendEd** initiative will help insure that the available instructional technologies are properly utilized to advance learning and academic achievement in our state.

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5. Describe other solutions that were evaluated, including their strengths and weaknesses, and why they were rejected. Explain the implications of doing nothing and why this option is not acceptable.

The other primary options considered were:

- 1) continue the current model of implementing multiple different learning management systems on a fragmented and piecemeal basis
- 2) implement instructional technologies on a mandated, highly centralized basis

• **Option #1- continue the current deployment model**

Nebraska could continue to proceed with a model of organically grown learning management adoption with no statewide coordination or leadership. This approach is not cost effective and would leave those smaller schools that represent the teachers and students with the least resources and the greatest need for instructional support, the least able to access these technologies. With this approach, it could take decades to achieve the University of Nebraska model of ‘every student, every instructor/teacher, every course section, every term’ of learning and content system implementation.

As long as Nebraska school districts continue to support isolated deployments of different types of in-congruent learning and content systems, there will never be continuity or consistency in the quality of educational opportunity and the transition for our K-12 students to higher education online learning environments will continue to be challenging.

To maintain the status quo is to say there is no need for change and the result will be “if you always do what you’ve always done you will always get what you’ve always got”. Current instructional methods are not entirely successful with all students. The classroom lecture model is not always the most efficient or appropriate instructional method. Technology can be employed to enhance instruction and to extend more equitable learning opportunities to many students in areas of the state currently lacking instructional resources.

• **Option #2 – implement a highly centralized model**

The highly centralized mandated model would imply the establishment of a single statewide instructional technology administration and support structure requiring a substantial upfront investment, a highly unlikely option given today’s financial expectations and economic challenges. This model would also require significant changes to existing educational and funding policies which would also be very challenging. This model could produce some cost savings through economies of scale and the aggregation of support services. However, this approach is also contrary to the local control model and underlying system of local funding that has been a cornerstone of Nebraska K-12 education for many years.

Options analysis conclusion

In contrast to the other options, the proposed **BlendEd eLearning System** would provide a flexible, focused, coordinated, collaborative approach to efficiently and effectively implement eLearning technologies to benefit the entire Nebraska educational community. The **BlendEd**

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proposal advocates an evolutionary approach that would utilize and leverage available existing instructional, technical, infrastructure, and support resources.

This **BlendEd eLearning System** proposal provides the framework to put in place a fully integrated, comprehensive eLearning environment, but promotes a phased adoption model. It provides a path for existing learning management deployments to migrate to or coordinate with the statewide learning management system as school districts feel it is appropriate. It would establish a single statewide learning object repository (i.e. the proposed Nebraska Knowledge Repository), which would consolidate all available instructional resources and allow Nebraska teachers and students to quickly realize the power and advantages of a federated, statewide learning object repository (LOR) and federated user authentication system.

Thirty-two other states already have significant technology-assisted and online education initiatives and are beginning to show significant gains in student achievement and benefits from their investments. Nebraska must act now to leverage and integrate its instructional technology projects that have shown early success and move toward a single, statewide system of learning and content management over a directory services structure.

Nebraska must move forward aggressively in utilizing all available instructional technologies and resources to improve educational outcomes. Hiring more teachers is not an option given today's economic circumstances; school districts must do more with fewer resources and increasing budget constraints. There is also a need to serve a growing population of special needs and non-English speaking students. Students are demanding access to extended instruction outside of the traditional classroom and traditional school schedule. The **BlendEd eLearning System** will help address all of these issues.

6. If the project is the result of a state or federal mandate, please specify the mandate being addressed.

The ESUCC is not responding to a particular federal mandate, however, it should be noted this project would assist in meeting local eLearning efforts, state digital/virtual learning goals, and national STEM initiative goals as well as assist provide school accountability and professional development necessary for school improvement goals. The State of Nebraska Department of Education has increased the mandatory graduation requirements for 2014-15 and the ESUCC is proposing **Nebraska's BlendEd eLearning System** as an effective method to assist Nebraska school districts in their quest to meet these heightened requirements. The ESUCC also seeks to fulfill its statutory responsibilities as follows:

Neb. Rev. Stat. Section 79-1246 (excerpt)

Educational Service Unit Coordinating Council; duties; Open Meetings Act applicable.

(1) The Educational Service Unit Coordinating Council shall work toward statewide coordination to provide the most cost-effective services for the students, teachers, and

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school districts in each educational service unit. The council's duties include, but are not limited to:

- (a) Preparation of strategic plans to assure the cost-efficient and equitable delivery of services across the state;
- (b) Administration of statewide initiatives and provision of statewide services; and
- (c) Coordination of distance education.

Neb. Rev. Stat. Section 79-1248 (excerpt)

Educational Service Unit Coordinating Council; powers and duties.

The powers and duties of the Educational Service Unit Coordinating Council include, but are not limited to:

- (3) Facilitation of scheduling for qualified distance education courses;
- (4) Brokering of qualified distance education courses to be purchased by educational entities;
- (5) Assessment of distance education needs and evaluation of distance education services;
- (6) Compliance with technical standards as set forth by the Nebraska Information Technology Commission and academic standards as set forth by the State Department of Education related to distance education;
- (8) Scheduling and prioritization for access to Network Nebraska by educational entities in cooperation with the Chief Information Officer and using scheduling software or scheduling services which meet any applicable standards established by the commission;
- (9) Administration of learning management systems that are in compliance with any applicable standards of the commission either through the staff of the council or by delegation to an appropriate educational entity with the funding for such systems provided by participating educational entities; and
- (10) Coordination with educational service units and postsecondary educational institutions to provide assistance for instructional design for both two-way interactive video distance education courses and the offering of graduate credit courses in distance education.

Section 5: Technical Impact (20 Points)

- 7. Describe how the project enhances, changes or replaces present technology systems, or implements a new technology system. Describe the technical elements of the project, including hardware, software, and communications requirements. Describe the strengths and weaknesses of the proposed solution.**

Nebraska's BlendEd eLearning System promises to enhance and replace the current installations of learning and content repository/management systems across Nebraska K-12 school districts by offering a statewide, integrated, single sign-on eLearning environment that supports every K-12 teacher and learner in the NSSRS system.

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The **BlendEd eLearning System** will be designed to provide and maintain an extremely high level of reliability and availability. This will become ever more important as blended learning becomes an integral part of everyday instruction. The design must also be scalable since during the multi-year phased implementation period and beyond there will a significant increase in usage levels. The design must also be extensible since there will undoubtedly be innovations in hardware, software, and services that we will want to adopt and utilize in the future.

It is anticipated that virtualization will be employed whenever and wherever practical to make the most efficient use of all available hardware and software. **BlendEd** will also continue and build upon the existing successful partnerships and programs that are already in place (e.g. Network Nebraska).

The initial focus of deployment will be to establish a production environment coupled with a disaster recovery plan to provide for the highest levels of reliability and availability possible. The next phase of implementation will be to integrate existing eLearning resources into the **BlendEd** framework and accommodate growth in adoption. The final phase of implementation will be to establish an enterprise level statewide eLearning environment to support all Nebraska K-12 teachers and students.

It is important to note that the phased multi-year approach to implementation will allow for adjustments in the overall architecture, hardware, and software to take advantage of future technical and instructional innovations as they emerge.

Server architecture includes:

[***Note:** details of the architecture and actual required hardware, etc will be dependent upon the selected LMS, CMS/LOR, portal, and other components and the level of adoption over the course of the full implementation period]

- LMS application and database servers
- LOR application and database servers
- Web servers
- LDAP servers
- Presentation HW and SW at the school, classroom, and student levels
- Miscellaneous network equipment to include routers, switches, DNS servers, security devices/firewalls, etc.

Software system deployment includes:

[***Note:** details of the actual required software, etc will be dependent upon the selected LMS, CMS, portal, and other components and the level of adoption over the course of the full implementation period]

- Learning management system (e.g. Blackboard, Moodle, Angel, Canvas, etc)
- Learning Object Repository (e.g. Equella, xpLOR, dSpace, etc.)
- Media Delivery Systems (e.g. MediaCast, Kaltura, Safari etc.)

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- Content (Safari Montage, Learn360, DiscoveryEd, NROC, Intel Teach Elements, etc.)
- LDAP software
- Portal, Virtual Desktop, and/or SSP software (e.g. Stoneware, Life Ray, etc.)

Communications requirements to include:

Implementation of the **BlendEd eLearning System** will require a very high level of communication, coordination, and collaboration among the many partners and participants to include the Nebraska Department of Education, ESUs, ESUCC, DEAC, PSCC, Network Nebraska, University of Nebraska, NET, etc. The success of this initiative will be contingent upon how effectively these entities are able to work together.

The ESUCC has structured a **BlendEd** advisory group to guide ESUCC project and ESU involvement, identified key liaisons from P-16, and proposes expanding the Nebraska Virtual Partnership to help guide **BlendEd** implementation and deployment efforts. Currently, Network Nebraska includes a Network Advisory Group (NETNAG) and it is recommended that a similar group be formed to provide a Network Nebraska Services layer advisory group, or that an appropriate expansion of an existing group come together to guide the high-level partnerships necessary for the success of the **BlendEd eLearning System** and associated services statewide.

Strengths of the proposed architecture include:

Existing implementations of learning management software will migrate as appropriate and feasible or on the expiration date of existing contracts. Current deployments will continue to operate through the transition/migration period which will result in extracting as much value out of the associated hardware, software, and currently offered services possible.

The statewide learning object/content repository system will be a new initiative that will facilitate the consolidation, organization, classification, and alignment to statewide standards of all existing instructional digital artifacts and collections and serve as the repository for current and future learning objects.

Co-locating the application, database, load balancing, and web streaming servers with the Network Nebraska core nodes will enable learning and content management applications to be run over the transport layer during the day to Network Nebraska IP addressed locations (i.e. the Network Nebraska intranet) and accessed via standard Internet connections during non-school hours and for students not located within the schools themselves.

The proposed **BlendEd eLearning System** would provide a single well-designed, integrated, distributed architecture featuring consistent hardware, operating, and software components which would also provide the following advantages (i.e. strengths):

- **Reliability** – redundancy, backup, and recovery capabilities to provide the maximum protection against downtime and service outages will be included in the design.
- **Extensibility** – would provide an excellent basis for implementing additional services and accommodating necessary upgrades and enhancements in the future.

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- **Integration** – would simplify all aspects of HW/SW/ application/services deployment, operation, and support.
- **Efficient use of resources** –would allow the most effective use of resources possible.
- **Economies of scale** for purchase, implementation, operation, maintenance, and support of hardware and software.
- Consolidation will **reduce complexity and provide ease of access** and use for teachers and students.
- Would provide all K-12 teachers and students **equal access to the same array of services and resources** which would greatly enhance the ability of teachers throughout the state to collaborate and share content and provide students a single, consistent LMS look and feel.
- Provide the **most efficient utilization possible** of available Network Nebraska bandwidth and resources and will reduce overall required hardware, software, support, operational, and training costs.

Weaknesses of the proposed architecture include:

The implementation of the proposed integrated **BlendEd Learning System** would reduce the complexity and the number of associated points of failure of a statewide eLearning environment but would potentially increase the scope of any hardware, software, network/communications, or operational outages. Minimizing the likelihood and duration of outages of all types will be a major design challenge for the overall **BlendEd** architecture.

8. Address the following issues with respect to the proposed technology:

- **Describe the reliability, security and scalability (future needs for growth or adaptation) of the technology.**

Reliability. Redundant server installations at three core Network Nebraska locations should push the up time to +99% based on hardware and software, notwithstanding the possibility of infrastructure outages. Redundant core backbone transport pathways would also be a desirable option for the future.

Security. These technologies will utilize personally identifiable and confidential student and teacher data. Strategies of encryption, user id/password authentication, and automated LDAP support services will be employed.

Scalability (& extensibility). A key criteria and consideration of the proposed architecture is to provide for growth and the addition of new services and components in the future.

The implementation and adoption of eLearning technologies will be “phased”. There are existing learning management system deployments that will be able to migrate quickly and easily. Other school districts/ESUs/entities may not adopt or implement for years. The proposed deployment will begin with high school, then middle school, with eventual implementation for the elementary grades. The proposed **BlendEd Learning System** content repository will develop and grow over time. The Identity Management component of this

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initiative will also be implemented over time in accordance with adoption of learning management and the development of the content repository.

This phased adoption model will allow the deployment of the overall **BlendEd** environment over time and provide the opportunity to take advantage of new technologies and instructional innovations as they emerge.

- **Address conformity with applicable NITC technical standards and guidelines (available at <http://nitc.ne.gov/standards/>) and generally accepted industry standards.**

This initiative will comply with all applicable NITC technical standards and guidelines. It will also endorse and enforce relevant instructional and content standards as appropriate.

Alignment with generally recognized industry standards for content management to include:

IEEE LOM (Learning Object Metadata) and variants including NETS, Common Core, CanCore, VETADATA and TLF (The Le@rning Federation).

- SCORM 1.3/2004, IMS, IMS DRI and METS – for import and export of items;
- Z39.50 – for federated searching including the ability to transform and import records;
- ECL, SRW, DSM, LORN, Google – for federated searching;
- OAI-PMH and LORAX – for harvesting;
- LDAP, CAS and External Authentication (Shibboleth and Microsoft ISA) – for authentication;
- SOAP and WSDL – for web services;
- RSS and Atom – for publishing;
- ODRL – for storage of Digital Rights; and
- MADS, MARC 21, MARCXML and MODS – for library system interfaces.
- Section 508 of the Rehabilitation Act issued from the United States federal government
- Web Accessibility Initiative (WAI) issued by the World Wide Web Consortium (W3C).

Alignment with generally recognized industry standards for learning management to include:

- IMS, SCORM, IEEE, LOM, Common Core, etc

Alignment with generally recognized industry standards for Directory Services to include:

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- LDAP Protocols - Lightweight Directory Access Protocol (LDAP) shall be used to provide access to directory and application services.
 - LDAP is the lightweight version of Directory Access Protocol (DAP), which is part of X.500, a standard for directory services in a network.
 - As a widely accepted industry standard for access to directory information, LDAP supports multi-vendor interoperability by providing an open, extensible, vendor-independent, platform-independent, protocol standard.
 - LDAP directories provide repositories for security-related data (e.g., userIDs, passwords, URLs, pointers, binary data, Public Key Certificates, etc.).
 - The LDAP protocol directly supports various forms of strong security technology used to perform authentication, privacy, and data integrity services.
 - The LDAP Version 3 proposal for Transport Layer Security (TLS) includes data encryption methods.
 - LDAP supports the use of Directory Services Markup Language (DSML)v2 and Simple Object Access Protocol (SOAP) to allow LDAP directory information to be expressed in a common format and transmitted beyond the traditional firewall and into Internet-based applications.
 - LDAP supports the use of the open, industry standard Java Naming and Directory Interface (JNDI) for directory access and support.
 - LDAP supports the use of the Security Assertion Markup Language (SAML) standard as an authentication protocol that may be used between Web servers for federated affiliation.
 - The Directory Enabled Networking (DEN) and Common Information Model (CIM) XML-based, industry-standard initiatives are being mapped into the LDAP directory structure. CIM is more comprehensive than the Desktop Management Interface (DMI) model and can be used in conjunction with the Simple Network Management Protocol (SNMP).
 - Future meta-directory services should be established with individual LDAP directory repositories and be accessible via standard LDAP protocols. Meta-directory service design should include obtaining an Object Identifier (OID) tree from the Internet Assigned Numbers Authority (IANA) that can be used to uniquely identify attributes and object classes to facilitate the matching and coordination of information among individual LDAP implementations.
- **Address the compatibility with existing institutional and/or statewide infrastructure.**

Nebraska's BlendEd eLearning System will embrace and interface with existing SIS, LMS, CMS, and IDM solutions already in place and will utilize Network Nebraska as the core transport backbone and for Internet access.

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Section 6: Preliminary Plan for Implementation (10 Points)

9. Describe the preliminary plans for implementing the project. Identify project sponsor(s) and examine stakeholder acceptance. Describe the project team, including their roles, responsibilities, and experience.

Project Sponsor: ESU Coordinating Council

Stakeholder Acceptance and roles/responsibilities: Note:

- a) ESUCC – would provide overall coordination, administration, support, and direction for the statewide K-12 eLearning implementation as appropriate in partnership with NDE, NET, higher education and other P-16 partners. The following represent some of the ESU contributing sub-entities.
 - ESUCC Projects including myeLearning/ANGEL, Instructional Materials and Distance Education, Cooperative Purchasing, and
 - ESUCC/ESU Professional Development Organization affiliate groups. (Network Operations Committee, Staff Development Affiliate, Instructional Materials Affiliate, Technology Assistance Group,
 - All ESUs directly and as represented by ESU network and DL consortia
- b) Nebraska Department of Education – Policy direction linking school improvement goals with systems development and direction on digital education. Development of technology integration leadership, coordination of state data systems, leadership in linking school accountability requirements with professional development, leadership in linking content to standards, leadership in subject areas including language arts, math, science, social sciences, and career education, and general support to lead partnership efforts.
- c) K-12 school districts – Districts would retain local control concerning the adoption and use of eLearning resources and use of instructional offerings but would be key contributors to systems to evaluate, develop and review BlendEd systems.
- d) University of Nebraska System – Scalable support for network operations, systems administration, leadership in linking P-16 resources and goals, provide guidance and direction to enhance transitions between K-12 and higher education
- e) Community Colleges – Request to provide access to dual-credit courses, instructional design, career academy and provide leadership to transition between high school and community college and career
- f) State Colleges – Request to provide leadership in teacher/administrator professional development and transition between high school and college.
- g) NET – Nebraska Virtual Partnership plans include scalable content repository and local and national content facilitation. Content repository architecture and systems.
- h) Coordinating Commission for Postsecondary Education – Request to assist in data systems to track evaluation and efforts.
- i) UNL-Independent Study High School – Nebraska Virtual Partnership plans include but are not limited Course management and delivery, Instructional Design and

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- development of courses, facilitated processes for distributed courses, and recommendations for e-course quality management
- j) Nebraska Dept. of Labor – Request to link work force and labor training efforts to career and technical education to create link between K-12 career education and job training.
 - k) Partnerships for Innovation – Request to provide ongoing leadership and collaboration between community colleges, businesses, ESUs, state agencies, and projects such as Nebraska Career Connections and such professional development related to career education.

Project Team:

The scope and complexity of this project will require the involvement of many separate entities and many different people. The ESUCC will provide overall project management to coordinate project activities. There will be project teams established for each major component area with appropriate representation from the entities listed in this section above. As previously noted, the effort will be first guided by the ESUCC **BlendEd** advisory committee, an expanded Nebraska Virtual Partnership team and staff from each partner. Network related efforts will include the ESU-NOC leadership for LDAP and hardware, ESUCC staff from Distance Education, e-Learning, & instructional materials. Additionally, ESU staff from a variety of affiliate groups and support from Network Nebraska, and partners is anticipated.

The establishment of a detailed project plan and the necessary teams to support implementation of that plan will be the first order of business if this proposal is approved and funded.

10. List the major milestones and/or deliverables and provide a timeline for completing each.

- Statewide directory services:
 - Options analysis (open source) April 2013 –August 2013
 - IDM HW/SW installed and available – October 2013
 - Develop federated authentication strategies and processes – July 2013 – December 2013
 - Develop NSSRS interfaces – July 2013 – December 2013
 - Develop LOR, SIS, LMS interfaces – July 2013 – June 2014
 - Begin deployment – January 2014
- Statewide learning object/content repository system:
 - Begin options analysis April 2013
 - LOR selection August 2013
 - LOR HW/SW installed and available – October 2013
 - Load existing digital instructional content – October 2013 – May 2014

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- Enhancement of digital content collection: October 2013 - June 2016 and beyond
- Initiate instructional design training: October 2013
- LOR pilots – October 2013 – June 2014
- Grades 9 – 12 - LOR “go-live” February 2014
- Grades 6 – 8 – LOR “go-live: July 2014
- Statewide learning management system:
 - Begin options analysis April 2013
 - LMS selection August 2013
 - LMS HW/SW installed and available – October 2013
 - LMS pilots – December 2013 – December 2014
 - Develop required interfaces to LOR, IDM, SIS systems – October 2013 – June 2014
 - Develop and implement portal strategy – October 2013 – June 2014
 - Grades 9 – 12 - LMS “go-live” begin in February 2014 for early adopters converting from existing LMS deployments
 - Grades 6 – 8 – LMS “go-live: begin in July 2014
- Professional Development/Instructional Design:
 - Areas of need analysis April 2013 – June 2014
 - Develop instructional design guidelines/standards July 2013 – December 2013
 - Develop instructional design training October 2013 – April 2014
 - Begin early adopter instructional design training April 2014
 - Collaboration with Higher Ed regarding ed tech curriculum development June 2014 and beyond
- Assessment and interventions:
 - Define assessment and intervention goals and objectives July 2013 – December 2013
 - Develop assessment methods and metrics beginning October 2013
 - Develop intervention strategies beginning January 2014
 - Deploy for grades 9 – 12 beginning July 2014
 - Deploy for grades 6 – 8 beginning January 2015
- Content and curriculum development
 - Identify curriculum subject areas of need April 2013 – July 2013
 - Develop strategy for development of needed curriculum April 2013 – June 2013
 - Secure required curriculum development resources by August 2013
 - Development of curriculum and content August 2013 and beyond

11. Describe the training and staff development requirements.

- a) Instructional design – training for staff that will develop the actual instructional design training
- b) Instructional design training for teachers

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- c) Federated LDAP authentication– technical training for implementing federated IDM
- d) LMS specific training – both technical for implementation and support; and operational training for teachers
- e) Learning object repository/LOR meta-tagging/taxonomy – existing resources or consulting to establish required meta-tagging and classification system for content
- f) Content workflow for learning object review, approval, and uploading
- g) Assignment of digital rights management and copyright
- h) Systems administration training for newly implemented and hosted systems

12. Describe the ongoing support requirements.

There will be ongoing support required for many components and services associated with the implementation of the **Nebraska BlendEd eLearning System**.

This proposal assumes that most of the required support will be provided by existing technical and instructional resources (e.g. ESUCC, NDE, NET, the University of Nebraska, and others). The proposed coordinated, collaborative implementation and support model stresses leveraging our limited resources through careful deployment and the centralization of services as appropriate (e.g. the concept of “value-added” services over Network Nebraska). However, it is acknowledged that there will necessarily be some new, additional support resources required. The type and amount of support resources will be dependent on the actual implementation timeline that develops to support the phased multi-year implementation and the associated adoption levels.

Major areas of support include (but are not necessarily limited to): infrastructure and operations, networking, instructional design, LMS, LOR, helpdesk, content approval/vetting workflow, etc.

Section 7: Risk Assessment (10 Points)

The greatest risk for Nebraska education is to do nothing.

The adoption and use of learning and content management technologies in K-12 education is already occurring throughout Nebraska (and the rest of the country) and this trend will continue. However, the trends also suggest that infrastructure, training, content and support systems must be adaptable to emerging technologies including mobile devices, cloud based systems, and multiple platform accessibility.

Nebraska’s various implementations to date (e.g. District 66, Omaha Public Schools, mylearning.org, NVIS, the Nebraska Virtual Academy, and the GNENC pilot) have all been separate and unique. This approach necessitated separate, different: licensing/purchase agreements; hardware, software, and support resources; user ids and passwords; the development of instructional design and training materials unique to each deployment; and does not encourage or facilitate the sharing or exchange of instructional and course materials. A system needs to be developed to provide the foundation for effective implementation of a wide variety of resources from a wide variety of potential partners.

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By putting in place the proposed statewide **BlendEd eLearning** framework, these implementations can be accommodated immediately and eventually integrated into a single statewide eLearning system. This approach will avoid interruption of existing implementations and additional unnecessary expense, and provide access to these important and valuable instructional tools and resources for Nebraska's K-12 teachers and students as quickly as possible.

13. Describe possible barriers and risks related to the project and the relative importance of each.

- a) Requires a great deal of cooperation and collaboration across many levels and many entities. Although considerable ground work has been laid, much of the effort is dependent on multiple partners effectively implementing a complex set of plans.
- b) No single existing P-16 level control/coordination point for initiative.
- c) Budgetary constraints and limitations.
- d) Status of the availability of Education Innovation Fund beyond 2015-16 or other funds that can support strategic investments in this effort.
- e) Resistance to adoption of the proposed technologies at all levels of stakeholders.
- f) Some existing policies may need to be updated and revised to maximize implementation of **BlendEd** technologies proposed.
- g) Capacity of project implementation team is limited and disbursed among many entities.

14. Identify strategies which have been developed to minimize risks.

The Nebraska Virtual Academy at ESU 13 and supported through consortia efforts at GNENC (ESU13), myeLearning.org (ESUCC & previously at ESU 10), District 66/Westside, and Omaha Public Schools are all innovators in the area of K-12 eLearning. Communicating the success of these initiatives and entities will be important. Building on the trust and collaborative relationships that already exist between Nebraska school districts, and ESUCC and NDE leadership and involvement will also be critical.

It is also recommended the ESUCC establish a statewide **BlendEd eLearning System** consortium with representation from all partnering entities to provide oversight for this initiative to ensure implementation of a robust, integrated eLearning system that will be inclusive of all Nebraska school districts. This effort will include stakeholders from the array of P-16 partners and interests.

Partners will have to identify staff available and prioritize time and resources necessary to meet deadlines. A project management tool will have to be used to guarantee targets and deadlines are met.

Section 8: Financial Analysis and Budget (20 Points)

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It is imperative a statewide eLearning strategy is established and implemented as quickly as possible. A variety of eLearning technologies are already being utilized extensively and successfully in our higher education institutions and in some K-12 schools throughout the state. The implementation of these technologies throughout Nebraska's K-12 community will continue. Without a statewide strategy implementations will continue to occur on a fragmented, disjointed, extremely inefficient, less effective, and much more expensive basis.

The need for statewide support and funding to provide extended learning opportunities to our K-12 students was recognized sometime ago. LB1208 earmarked the use of Nebraska Lottery money for that purpose. It put in place incentives for schools to provide connectivity to Network Nebraska and to develop and share instructional content, primarily video based instruction. Eighty percent of Nebraska's schools are now connected to Network Nebraska and over 250 video-based courses (including over 50 STEM subject related courses) are being exchanged on a daily basis.

This initiative proposes extending that model to provide every K-12 student and teacher in our state access to a comprehensive statewide eLearning environment that would significantly enhance instructional opportunities and capabilities. In addition to the many organizational and support advantages these eLearning technologies provide classroom teachers and students, they would also greatly enhance the ability to support both synchronous and asynchronous distance delivered instruction throughout the state.

Implementing a statewide eLearning strategy/environment will result in not only much more efficient and effective utilization of these technologies and a single consistent eLearning framework for Nebraska's K-12 teachers and students, but also will result in significant overall savings/cost avoidance.

The **BlendEd** initiative anticipates the following in financial support and cost savings:

- a) A single coordinated and collaborative approach to implementing the recommended **BlendEd eLearning System** will be much more cost effective than continuation of the current disjointed, piecemeal implementation model.
- b) Request Legislative support to recommit, repurpose, and expand current incentives for distance education that would invest in expanded use of **BlendEd** efforts available over Network Nebraska
- c) Utilize/leverage existing expertise and resources from a broad set of partners.
- d) Explore other funding opportunities – e.g. Federal and private foundation grants
- e) Anticipate lower per teacher/per student “subscription/use fees” for LOR/LMS access/usage through statewide contracts and licensing agreements.
- f) Replacement of expensive hardcopy textbooks with ebooks/etexts will transform and redirect traditional curricular costs
- g) User fees for services provided by ESU Coordinating Council, Network Nebraska or other partners engaged in the **BlendEd eLearning System**.
- h) Increased specific appropriations for the Nebraska Department of Education in support of technology related initiatives including ESU distance education

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15. Financial Information

The “Financial” information tab in the Nebraska Budget Request and Reporting System (NBRRS) is used to enter the financial information for this project (NOTE: For each IT Project Proposal created in the NBRRS, the submitting agency must prepare an “IT Issue” in the NBRRS to request funding for the project.)

The following embedded worksheet contains a summary of expected costs. Expected funding sources are difficult to estimate at this time. However, certain strategic investments in foundational hardware, staff time, and project management (via advisory groups and partner participation) improve the likelihood of project success. State level investment in shared services such as proposed here encourages participation, enhances possible user fee revenue, and ultimately encourages strategic collaboration to fund the project. However this proposal neither assumes nor recommends a singular funding source. Instead, it anticipates that multiple funding sources will be required and encouraged to fully develop services in the future.



Worksheet in Project
Proposal Form.xls

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Appendix A – additional eLearning technical component implementation/use information

The following describes the functionality the primary proposed components of the statewide BlendEd eLearning environment can provide.

It is important to note that eLearning technologies can be utilized to supplement classroom instruction (often referred to as “blended” or “hybrid” instruction) or deliver stand-alone course instruction to remote/distance learners and teachers can utilize all or none of these functional features as appropriate in their instruction.

Learning Management Systems/LMS - support the organization and presentation of instructional materials.

- The LMS serves as the virtual classroom for each course and the virtual backpack for the teacher and each student.
- A course site/”virtual classroom” is established for each course and class.
- Teachers are assigned to each class and each student is “enrolled” in every class they are registered for each semester.
- The LMS serves as the focal point for instructors for professional development and as they develop lesson plans, assignments, tests and quizzes, access to relevant reference materials, collaborative learning activities, track attendance, monitor grades and student progress, etc.
- The LMS serves as the student’s single point of entry to access all things academic (i.e. their academic portal). They can view their courses, class and test schedules, office hours for teachers, a calendar of events and activities, announcements and notifications, class notes, participate in chat and threaded discussion activities, view test results virtually immediately, submit homework assignments, etc.

Learning Object/Content Repository Systems support the storage, organization, classification, and controlled access to instructional materials.

- The LOR serves as the textbook and library for each course.
- Implemented on a statewide basis a LOR would serve as the Nebraska Knowledge Repository and utilized to organize, store, and facilitate the sharing of instructional content.
- The LOR based knowledge repository would serve as the basic platform around which instructional materials are developed and organized. Many publishers offer digital instructional materials and these materials are rapidly replacing the textbooks of today.
- Knowledge repositories can serve as a means to offer access to “certified” (i.e. current, accurate, standards aligned) content. This addresses the very real concerns about the validity of much of the content available on the internet accessed via the widely utilized search engines of today.

Federated Directory Services(LDAP) is a shared information infrastructure for locating, managing, administering, and organizing common items and network resources, which can

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include users, groups, volumes, folders, files, printers, devices, telephone numbers and other objects. Information within objects can be made secure so that only users with the available permissions are able to access them.

The unique NSSRS id and password for each K-12 student, teacher, administrator would be loaded into and maintained within a federated LDAP system that would be utilized as the single sign on authentication point of access for all eLearning resources and services.

Access control would be administered through a combination of directory services level and eLearning component level security authorities and permissions via a federated authentication approach that would allow access across multiple separate eLearning components (e.g. the statewide LOR knowledge repository, LMS, or other network services) via a single sign-on.

Federation is enabled through the use of open industry standards and/or openly published specifications.

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Appendix B – Glossary of Terms

Asynchronous learning

Any learning event where interaction is delayed over time. This allows learners to participate according to their schedule, and be geographically separate from the instructor. Learning could take place in the form of a correspondence course or eLearning. Interaction can take place using various technologies like threaded discussion or email.

Blended learning

An increasingly popular combination of online and in-person, classroom learning activities, blended learning courses may be typified by integrating online with traditional face-to-face class activities in a planned pedagogically valuable manner; and where a portion (institutionally defined) of face-to-face time is replaced by online activity. It is primarily focused on integrating two separate paradigms, the classroom (synchronous) and online (asynchronous).

Collaborative learning

Learning that takes place in a peer-oriented environment. The development of collaborative tools such as web conferencing, instant messaging, email, weblogs etc. allow collaborative learning to take place between individuals/ groups that are geographically dispersed.

Content Repository/Learning Object Repository (LOR)

A software application that allows for the storage, indexing, retrieval and archiving of content. In addition, it may also allow for version control of content through the use of check-in/check out. A LOR allows for the reuse of expensive content assets such as brochures, photographs, video etc. to be integrated in a variety of educational applications including a Learning Management System, digital library, or other interfaces; See also LOR; LMS; LCMS.

Courseware

Any type of instructional or educational software program.

Discussion board

A general term for any online "bulletin board" where you can leave and expect to see responses to messages you have left. On the Internet, Usenet provides thousands of discussion boards. Forums on the Internet or an intranet where users can post messages for others to read.

eLearning

Although the exact definition of the term eLearning is a hotly debated topic, it can broadly be defined as the process of sharing information and creating knowledge using an electronic medium. In other words, eLearning enables you to use the massive advances in technology such as the internet, learning management systems (LMS) and CD's to create interactive materials that increase productivity through increased knowledge retention. The benefits of eLearning include factors such as global access, lower costs, increased training speed, better performance, greater flexibility and more effective accountability. In addition, eLearning allows you greater flexibility in terms of deployment options (CD, DVD, LMS, Internet and intranet) and greater user interactivity (audio, video, interactive text, animations, and graphics). Clearly the advances in

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technology can be extremely beneficial. However, the important thing to realize is that eLearning is a specialized field that requires cross functional expertise. In other words vendor selection is a key consideration when thinking about developing an eLearning program.

Face to face (F2F)

A term used to describe the traditional classroom environment. Also see Instructor led training.

Instructional design

A systems approach to designing a learning experience. Heavily promoted by DoD investment, formal instructional design is currently under attack for fostering slow development, a printed paper mindset, and insufficient attention to informal learning.

Intellectual property

This concept is becoming more important with many companies' competitive edge residing with their employee's knowledge rather than physical assets. An example of intellectual property may be a mathematical formulae, software code or unique manufacturing process. In some cases intellectual property may be protected by law e.g. trademarks and copyrights.

Interactive multimedia

Allows two-way interaction with multimedia course material, another computer, or another user with direct response to the input, as opposed to one-way communication from TV, video, and other non-responsive media. Interactive attributes commonly include data or text entry, mouse input, touch screens, voice commands, video capture, and real-time interaction.

Interoperability

One of the requirements of the sharable content object reference model, commonly known as SCORM. In simple terms interoperability is the ability of different elements to work with each other. In the case of eLearning it translates into different software and hardware elements working in unison.

Intranet

An internal computer network owned by a company or organization and accessible only to designated staff.

LDAP – Lightweight Directory Access Protocol

See Project Proposal, Section 5 – Technical impact, sub-section 8 – Directory Services

Learning content management system (LCMS)

A LCMS is a system that is used to create, store, use and reuse eLearning content in the form of learning objects. Although the terms should denote the combination of a learning management system (LMS) and a content management system (CMS), LCMS and LMS are often interchangeable used.

Learning management system (LMS)

A web based system that allows for the addition, deployment and tracking of learning content used for training purposes. Typically an LMS includes functionality for course catalogs

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(search/browse functionality), launching courses, registering new students, tracking current/completed student progress and assessments. Most of the learning management systems are developed to be independent of any content development/authoring packages. In addition, an LMS usually does not incorporate any authoring functionalities, but rather focuses on managing learning content.

Learning object

Learning objects (LO), also sometimes referred to a reusable learning object (RLO), is the smallest building block used in any eLearning program. The main value of using the learning object approach/philosophy in training projects is the idea that LO's can stand independently of a framework such as a eLearning section/course/program and be reused in a totally different training setting. This means that LO's can be reused resulting in a much higher return on investment due to the reuse of existing assets within the organization. An important/essential factor that aids in the reuse of LO's is the labeling of metadata. If LO's are given accurate descriptors with the necessary categorization then the reuse of LO's are much more likely.

Learning portal

Any Website that offers learners or organizations consolidated access to learning and training resources from multiple sources. Operators of learning portals are also called content aggregators, distributors, or hosts.

Metadata

Information that provides macro-level details about a course object, such as author, title, subject, description, date created etc. In the eLearning industry metadata is a valuable resource to ensure the reuse of valuable content. Typically metadata is recorded in XML files and are read by LMS and LCMS systems.

Metatag

An HTML feature that describes/identifies content on a web page. Metatags are used by search engines/web crawlers to identify and categorize content.

Module

A distinct collection unit of content. Typically, one component (section) of a course or a program.

Needs assessment

An essential initial step in any eLearning development program. This step should involve discussion between the development team and the customer and all decisions should be documented.

Online learning

An umbrella term used to describe any education or training that occurs online.

Open source software

A program whose source code is available to the software development community for use and/or modification from its original design at no charge. Open source code is typically created

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as a collaborative effort in which programmers improve upon the code and share the changes within the community. Some of the most popular software programs have their origins as open source including Linux OS and Firefox.

Sharable content object reference model (SCORM)

SCORM is a suite of technical standards developed by the Advanced Distributed Learning (ADL) initiative to develop common specifications and standards for technology-based learning deployed over the internet. These standards enable web-based learning and content management systems to find, import, share, reuse, and export learning content in a consistent manner. In addition, it allows user tracking and reports to be generated based on learning objectives. Essentially, SCORM standardized the method of communication between eLearning courses and SCORM conformant learning and content management systems.

Standard

A documented and industry sanctioned eLearning specification that is controlled/enforced by a governing authority such as IEEE or ADL to ensure a particular valuable aspect of the eLearning industry such as quality, reusability and interoperability.

Streaming

A technique where media (audio, video, or both) are downloaded to the user's computer in a continuous stream. Streaming cuts down on the download time required.

Synchronous learning

A real-time, instructor-led online learning event in which all participants are logged on at the same time and communicate directly with each other. In a virtual classroom, the instructor maintains control of the class, with the ability to "call on" participants who raise their electronic hands from a distant location. Students and teachers use a whiteboard to see work in progress and share knowledge. Content can also be delivered using audio- or videoconferencing, Internet telephony, and two-way live broadcasts of lectures to students in a classroom.

Video conferencing

Using video and audio signals to link participants at different and remote locations.

Virtual classroom

A simulated classroom that allows students to interact using software such as live chat, forums, desktop sharing etc.

Virtual community

An online community where people can communicate and share ideas.

*Source - <http://www.cybermediacreations.com/elearning/glossary.html>