

Date: April 13, 2000

To: Helen Parke, Chuck Bennett

From: Mike O'Kane, UNC Teaching and Learning with Technology Collaborative

Subject: UNC/Cisco Learning Assessment Engine Initiative

I am pleased to inform you that the Board of the TLT Collaborative has voted to support the TLT initiative that you have proposed, with the modifications indicated in the attached document. These modifications are intended to increase the overall value of the project to the Collaborative to support efforts that help advance the effective use of technology for teaching and learning throughout our 16 campuses.

In addition to the specific modifications that are attached, the Board also requests the following:

1. That the Collaborative Board will receive a copy of any publications associated with this effort. Such publications should acknowledge the collaborative nature of the project within the UNC system and the support provided by the UNC Teaching and Learning with Technology Collaborative.
2. Your understanding that (a) no continuing funds are associated with this allocation beyond FY 1999; (b) all funds must be expended during FY1999; and (c) you will provide documentation to show that the allocated funds were expended in accordance with the approved project proposal, using a reporting template that will be provided to you for this purpose.
3. That any deliverables to the Collaborative that are specified in the proposal or in the attached modifications (reports, presentations, etc) will be delivered as indicated, and that these may be published on the TLT Collaborative Web site, and referenced in the Collaborative's own reports.

Arrangements will be made for immediate transfer of funds in the amount of **\$30,000.00**
Use of these funds indicates your acceptance of the conditions outlined above. Please
contact my office if you have any questions in this matter,

Sincerely,

Mike O'Kane, Executive Director

c.

Melvin Johnson (Chair)
Diana Oblinger
Ken Craig

Attachment

UNC/Cisco Learning Assessment Engine Initiative

Purpose

To explore the value and potential application of the Cisco Learning Engine, combined with Outstart's *Evolution* authoring tool as an online development and delivery mechanism for academic courses, as well as other targeted web based learning applications for UNC, NCCCS and DPI.

Background

Cisco has 21 different divisions located in countries around the world. The nonprofit division is led by David Alexander who is responsible for Cisco's Networking Academy. This past year Cisco designed and is currently beta testing a database that houses reusable learning objects that are meta-tagged. This database, called the Learning Engine, was created for delivery of Cisco's Networking Academy program world-wide. Cisco recognizes the commercial value of their software and the associated template interface as an assessment-based tool for technology training. Cisco is collaborating with UNC to explore the possible value of the product for academic applications and to obtain feedback to improve design and functionality of the product. Outstart has partnered with Cisco to apply their *Evolution* authoring software to the Cisco design.

Project responsibilities of partners

Cisco is providing:

- All technology-related costs associated with the pilot period, including costs to deploy and maintain the Outstart servers and Outstart training
- Professional staff
- Travel and accommodations for UNC faculty and staff at the training and follow-up seminars
- A 1:2 contribution for costs incurred by UNC during the pilot (TBD)
- The Learning Engine at no cost to UNC

Outstart is providing:

- Discounted pricing for its development product
- One server with Citrix allowing 25 users at any one given time
- One server with the database

UNC is contributing:

- Staff consulting associated with server installation (ECU) and training facilities
- Server hosting expenses
- 2:1 contribution of development costs (\$30,000)
- Project Coordinators time
(Dr. Chuck Bennett and Dr. Helen Parke)
- Faculty donated time at UNC-CH and NCSU

Revised Proposal to UNC TLT Collaborative

The UNC Teaching and Learning with Technology (TLT) Collaborative begins operations in March 2000. As a part of the startup effort, the Collaborative will apply limited funds in the current fiscal year to promote TLT efforts that have clear strategic value and that serve common interests among the campuses to apply technology for teaching and learning. Here are some examples of projects that might meet these needs:

Modularize learning materials and develop repositories for use by multiple programs.

* Identify best practices and development strategies regarding TLT in light of Americans with Disabilities Act (ADA) requirements. Provide targeted development, research, or demonstrations/workshop associated with visualization for teaching and learning.

* Explore learning assessment tools, best practices, or performance-based approaches associated with distributed learning. Develop/purchase equipment, tools or services that will be available for use throughout UNC.

Overview & Strategic Value

Dr. Chuck Bennett, UNC Asheville, and Dr. Helen Parke, East Carolina University, propose the following idea to be funded at a level of \$30,000. UNCA and ECU would serve as Beta-sites for the Cisco Learning/Assessment Engine. Faculty and graduate students at each institution would receive summer stipends during May and June 2000 to produce sample modules to be shared across the UNC system. These institutions would designate teams to prepare sample RLOs that would test the usability of the Learning/Assessment Engine in higher education and K-12 educational environments. Two of the members have received training on the engine at Cisco headquarters in Phoenix. To facilitate communication with Cisco and CourseNet, a spokesperson would be designated from the team. Representatives from these institutions are committed to working closely with Cisco on this project because of the immense potential benefit to learning. The team members have expertise in visualization and Flash technology that will enhance the RLOs.

Benefit for UNC Campuses with current interest level

- Applicable to AP environments, undergraduate education, and teacher professional development
- Aligned with the *National Science Education Standards* and NCTM's *Principles and Standards for School Mathematics*
- Inclusion of real time and virtual laboratory investigations/visualizations
- Adjustments for diverse learning needs

Team members

(Representing ECU in the eastern region, UNC-A in the western region, and UNC-CH in the central region, the team members will work closely on the design and production of RLOs. Team members will assume responsibility in the following areas.

- Dr. Chuck Bennett and faculty, UNC-A, will prepare RLOs on the physics of light and visual phenomena (calculus based physics)
- Dr. Helen Parke, with faculty and graduate students at ECU, will design mathematics and science visualization RLOs with attention to diverse learning needs and RLOs on technology applications
- Dr. Paige West, UNC-CH, will prepare RLOs based on biology concepts
- Scott Despain, NCSU, will explore the viability of the Cisco Learning Engine to develop modular learning material for teaching advanced Spanish Grammar
- Mike O'Kane and staff will participate in training

Timeline/outcomes with measurable benefits

April: Access to the learning engine using a Trainer of Trainer Model so that UNC campuses will have faculty prepared to share the operation of the Learning / Assessment Engine with colleagues in Fall 2000

May: Completion of 4-8 RLOs to be reviewed with feedback

June: Completion of 4-8 RLOs to be reviewed with feedback
Revision of original RLOs with feedback from team to Cisco on usability of Learning / Assessment Engine in university environments
Presentation to TLTC of RLOs and suggestions of partnership with Cisco
Dissemination via TLT Portal/Workshops

Budget

UNC-A:

Hire 2 faculty in June to design RLO's: \$15k

ECU:

Hire 2 faculty in June to design RLO's: \$15k

or

faculty (part-time) in June to design RLO's

@ \$7.5k and equipment as listed @ \$7.5k

(at the discretion of ECU)

TOTAL Revised Request

\$30k

Deliverables for UNC:

1. Professional Development for 15 faculty and professional staff. Participating faculty and staff will have a professional development opportunity to evaluate Cisco's content development software, will attend workshops and meetings, and will be involved in design and development of learning materials using the Learning Engine software.
2. Targeted learning content of value to specific UNC programs and available to UNC for demonstration purposes.
3. Project overview and status report at Instructional Technology retreat on May 30 - June 1, 2000. The project managers will present on the current project, facilitate discussion, and assess potential interest in the software for expanded use.
4. Pilot Project report end of July, 2000, to include recommendations and cost projections for review by campus CIO's, CAO's, TLT Board and other interested groups.
5. All project materials to be available via TLT Collaborative Web site
6. Evaluation document will be developed and used to evaluate the software and its applicability to UNC.
7. Technical evaluation will provide technical specification and advise on technical issues and strategies associated with implementation following the pilot.
8. Project leaders will negotiate with Cisco and Outstart regarding effective evaluation and deployment strategies for UNC

Deliverables for Cisco:

1. First-hand experience working with academic users
2. Feedback from UNC technical group re: technical requirements for academic application of the Learning Engine environment, and issues associated with access to backend SIS systems, etc.
3. Evaluation by UNC development team re: pedagogical qualities and needs associated with the Learning Engine environment, and general applicability for academic purposes.

Deliverables for Outstart:

1. First-hand experience working with academic users, opportunity to explore academic marketplace.
2. Feedback from UNC technical group re: functional issues associated with the *Evolution* software and associated hosting strategies.
3. Feedback from UNC development team re: next release of Evolution authoring software re: product design and functionality, tools, etc.

Timetable and Project Details:

February 17:

- Initial demonstration by Cisco to campus representatives
- Initial discussion of project

March 7:

- Teleconference

March 24:

Teleconference to discuss timelines, etc.

March 31:

Meeting at GA:

Michelle Bruce, VP of Education Services, Outstart

David Alexander, Cisco

Mike O'Kane

Helen Parke

Chuck Bennett

Jeff Huskamp, CIO, ECU

Agenda:

Outstart authoring tool demo

Expectations of Focus Groups: 1) Subject Matter Experts, 2) Technical Staff

Choosing first training group participants, limit 15

Choosing Technical staff to be part of the Technical Focus Group

Directions to SME's on content to bring for training - communication to SME's

Training location

Plan for Trainer of Trainers model

RIO emphasis level

Server hosting and access by pilot participants

1st week of April:

Michelle will provide UNC with:

Educational pricing of hardware/software/maintenance

Educational pricing for consulting/training services

Client and server specifications

April 11:

Helen and Mike: draft evaluation form for use by UNC faculty in workshop

April 11:

SME's Teleconference call, April 11 @ 10am EST for 1 hour.

Participants: Mike, Helen, Chuck, Michelle, David and all 15 content SME's to answer any of the SME's questions concerning content to bring to training

Review evaluation form

April 25:

Outstart team deploys servers at ECU and configures ECU workstations that will be used in the workshop (Citrix and authoring environment). ECU provides server location and network connectivity

April 25:

Cisco is reviewing server strategy and will report at this meeting (whether they plan to deploy servers within their own network, and at what cost to educational

institutions, or whether UNC would need to deploy its own servers, also for DPI, NCCCS,..)

April 26:

Technical Meeting at UNC GA to review long term implementation issues for UNC

- Access to SIS data and other backend systems
- Server requirements and strategies
- Authentication issues
- Backout strategies
- Cost assessment/cost-sharing

April 27, 28, 29:

Outstart Authoring Training Workshop at ECU
Workshop for 15 UNC faculty/staff to initiate development phase

Afternoon 4/29:

Review of workshop and initial evaluation

May Timeframe

Continuing Content Development
Ongoing feedback re: development and pedagogy evaluation

June:

Continuing Content Development
Finalize list of key questions that need to be answered by development group

June/July timeframe:

Two roundtable sessions for feedback and show and tell

End of July timeframe:

Structured feedback, Evaluation reports

Intellectual Ownership/Copyright

Neither Outstart nor Cisco will have any ownership in learning content developed by UNC faculty or staff and maintained within the environment. Learning content may not be used for any purpose (including demonstration) except with express written consent of the owners (which may or may not include payment of royalties). In the event of disengagement all content will be returned to UNC in text of original multimedia format, in a manner that is easily readable.

UNC has no ownership in either the Cisco or Outstart products, and freely provides evaluation materials to assist in product improvement, as outlined in this document.

What commitments does Cisco make to provide their products at no charge to educational institutions?

Strategies for Disengagement

All parties may elect to back out of the project during or at the end of the Pilot period (July 31, 2000).

All equipment, software, and content will revert to original owners. No additional costs will be charged to any party. All funds that have been previously paid to each party will be considered paid in full.

No party makes any commitment for continuing engagement at this time beyond those outlined for the Pilot project period.

UNC Participants (Development and Evaluation Team)

ECU:

Helen Parke, Barry DuVall, Dave Hillis, Harold Stone, Bob Gotwals, Patrick Weaver, Dionna Draper, March Hajre-Chapman, Alan Branigan

NCSU:

Scott Despain

UNC-Asheville:

Chuck Bennett, Ed Katz, Mike Ruiz

UNC-CH:

Paige West, Shannon

Other:

Mike O'Kane, plus two evaluators (TBD)

UNC Participants (Technical Team)

Jeff Huskamp

ECU technical staff

Two TBD from Alliance, Web Student Services

Chuck Bennett

UNC Project Management Group:

Tim Stephens: Liaison with UNC Information Resources and overall Cisco Partnership

Mike O'Kane: Liaison with TLT Collaborative

Chuck Bennett: Technical and UNC-Asheville team leader. Chuck will (a) determine needs and manage the implementation of an effective server strategy for the beta test period, that may combine Cisco and UNC resources; (b) coordinate with campus technical services and Alliance staff with regard to the Beta period; (c) determine and publish the long-term support needs and costs associated with implementation of the Cisco software as a strategic delivery solution for UNC.

Helen Parke: Development and Evaluation, ECU Team leader. Helen will (a) coordinate the development and training efforts of the initial UNC beta test group; (b) coordinate the effort to evaluate the software and potential uses for UNC; (c) coordinate the development of the project report.

Jeff Huskamp: Pilot Hosting (ECU). Jeff will facilitate the project by providing a site, access and connectivity for the Outstart servers and technical staff, as well as a facility and workstations for the workshop. Jeff will also provide technical consulting.

Paige West: UNC-CH Team Leader

Joanne Dehoney: NCSU Team Leader

Cisco Team:

David Alexander ...

Outstart Team:

Michelle Bruce

Technical Notes:

Current delivery strategy for *Evolution* software is via Citrix server (full client install is also an option)

Pilot strategy for servers:

Citrix server at ECU, installed and remotely maintained by Outstart staff. Servers should be designed for rack mounting.

Web/Database server at ECU, installed and remotely maintained by Outstart staff

Pilot strategy for client (development) workstations:

4MB Citrix plugin (no cost)

NT is the preferred OS, with NS 4.7 or IE 5.0, 64MB RAM, Pentium 300 or above, 1024x768

Outstart is working with Sybase database and has plans to migrate to Oracle as part of contract with Cisco.

,Notes on Pricing:

Outstart (figures are approximate pending confirmation):

Server hardware and software (up to 25 users): \$35k (includes Citrix, database licenses, etc)

Maintenance (1 year): \$30k

(This is based on a Citrix deployment strategy for the authoring software)

NOTE THAT OUTSTART WILL PROVIDE EDUCATIONAL PRICING

Outstart provides help and support for authoring environment (inc. discussion forums with a dedicated support person,

Cisco (figures are approximate pending confirmation):

NOTES:

UNC could facilitate a relationship with Eduprise, Cisco, Outstart.
For example, assist with SIS, and with evaluation of tools
Eduprise might be interested in incorporating the product into its offerings.
UNC could facilitate a relationship with SAS re: development of online versions of SAS certification products

Why the Cisco Learning/Assessment Engine?

The past several years have witnessed an explosion in e-learning. Higher education and other educational organizations have made significant commitments to purchasing hardware, software, development time, and networking connections. One issue of increasing interest asks if teaching and assessment look the same in e-learning environments. Pew reports that explored the connection between technology and learning discovered that technology didn't necessarily make teaching and learning simpler or less time consuming, but that it was made different. Technology changed the relationships among students, faculty, and content material.

Reconsidering Faculty Roles and Rewards: Promising Practices for Institutional Transformation and Enhanced Learning

<http://www.pewtrusts.com/Frame.cfm?Framesource=programs/edu/eduindex.cfm>

How do we address issues such as helping minority & urban students reach high standards, assuring teacher quality & professional development, structuring of schools to focus on learning, and using data and reporting of results to bring all students to high standards?

The University of North Carolina supports higher education partnerships with K-12 education. Enhanced student performance is one of the key strategies suggested by the concept of "Shared Responsibility" since it should be possible for more students to accelerate progress by taking Advanced Placement courses in high school, as well as enrolling in college-level courses in high school and at community colleges. Higher education as a partner with K-12 education should enforce high goals for academic achievement, increased priority for new teacher preparation, participation in community-school partnerships to serve the needs of low income, at-risk students, and dissemination of the results of research on best practice to the schools, through active collaborations.

One possible way for these communities to share this responsibility is through the use of technology that allows for a database that houses reusable objects.

The Cisco Learning Engine

- Provides an assessment driven learning environment for student-driven learning

- Allows building learning content based on basic knowledge components
- Encourages research based instructional design and forces clarity of learning outcomes and consideration of learning components/activities
- Assessment/learner driven so that a learner can determine/demonstrate knowledge and then focus on remaining content
- Includes activity tracking
- Modular design means separable components for easier updating and modification
- Modular design allows components to be assembled/designed for different purposes and audiences
- Modular design also facilitates competing components to be selected among by different instructors (or learners)
- Components may be tagged re: ownership/licensing

Cisco is interested in evaluating the extent to which the engine might extend into the academic learning environment. Possible assessment and development opportunities include:

- Multiple sections of the same course (different learner types)
- Courses with overlapping content
- Remedial courses
- Skills assessment (for example technology skills of incoming students, faculty, etc).
- Refresher/business short courses
- Certification programs
- Faculty/Staff training and development
- Administrative planning and decision-making
- Manuals and learning aids