NDSU Technology Action Plan Request

I. Action Plan Introduction and Authorizations

NDSU ORGANIZATION OR UNIT
ITS

TITLE OF PROJECT
Expansion of Lecture Capture Project due to increased faculty and student interest

Project Duration (3 years maximum)  
From: December 1, 2011  
To: June 30, 2012

Type of Project (Check one)  
New X  
Previously Submitted  
Renewal

Total Technology Fee Request $18,000

Project Director  
(Check be NDSU faculty or staff)  
Nancy Lilleberg

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Name (Type or Print)  
Signature  
Date

Project Director  
Nancy Lilleberg

Unit Head  
Jean Ostrom-Blonigen

IT Division Consultant  
Luke Prather

Executive Summary (maximum of 175 words)

NDSU has seen steady growth in the use of Lecture Capture using the Tegrity software system, ITS is ready to open up the project to more student and faculty participants. We currently face two challenges:

1. Space constraints on the Tegrity hosted system
2. The limited number of the equipped classrooms, especially in the main classroom auditoriums.

(1.) The North Dakota University System (NDUS) is investigating a statewide license of either Tegrity or Panapto for all 11 higher education institutions. If and when this happens, we expect that NDSU will have a campus-wide solution instead of a “per hour” license (NDSU currently has a Tegrity license for 500 hours of stored captures.) A statewide solution will go by total FTE’s at the institution, thereby allowing all interested faculty to participate, and NDSU will enjoy a high percentage of savings because of the expanded license base. Due to the uncertainty of the NDUS initiative, we are not asking for Tegrity licensing at this time.

(2.) We currently have six classrooms instrumented for lecture capture, and Spring 2010 Technology Fee funding for an additional classroom to be equipped after equipment on backorder is received. This proposal requests funding for two additional Lecture Capture classrooms. We have identified three larger classroom auditoriums that need audio/video recording functionality: Ladd 107, CME Auditorium and Sudro 24. One of these rooms will be equipped using Spring 2010 funds, and the other two would be equipped through the granting of this proposal.
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II. Project Overview

1. How does this project meet student needs?

Here is a screen shot of the Tegrity Lecture Capture solution. This is what the student would see.

Students use the Lecture Capture functionality to:
- Prepare for tests and assignments
- Alter playback audio rates
- Access missed content
- Bookmark troublesome concepts
- Search for troublesome concepts
- Access course content in blended classes

2. What audience does this project directly serve? What audience is indirectly served? How many students are affected?

Students registered in classes that use Lecture Capture are directly served. By choosing larger, well-used lecture halls that are used by instructors who are willing to use the technology, we plan to maximize the usage of the equipment while serving hundreds of students at any given time.

Another use for the captured lectures would be to offer more of the large, lecture-based general studies classes as online classes instead. The lectures that are captured in face-to-face classes are repurposed to online classes, increasing the registration options of students seeking to satisfy their graduation requirements. The online students would be another audience directly served.

3. For projects that target a subset of NDSU's students, please describe the possibility for broader application in the future.

As funds become available to equip more classrooms for Lecture Capture, more students and instructors will be served. Distance and Continuing Education and ITS will work to increase the use of Lecture Capture on campus, including equipping additional classrooms as possible. This, in turn, increases the likelihood for more online courses and the growth of NDSU's Distance Education offerings.

When the NDUS lecture capture initiative comes to fruition, NDSU will have licensing for either Tegrity or Panappto for the entire student body, allowing a much broader usage at a more affordable price.

4. Describe both the immediate and long term impact of this project.

If the funds are secured in time for Spring semester 2012, Ladd 107 and the CME auditorium will be equipped for Lecture Capture so that instructors teaching in those classrooms can record their classes. The students in the
classes could view the recordings as needed for the reasons listed earlier in this proposal. Studies have shown that if Lecture Capture is incorporated in a class and the students use it for review, student retention and grades improve. More students and instructors will benefit from the lecture capture technology if two additional classroom auditoriums are equipped. Blackboard Collaborate, another NDUS initiative, will be in place for Spring, 2011. Collaborate is a simpler, more stripped-down product that shares similar functionality with lecture capture. The equipment added to the lecture capture rooms will also work well for Blackboard Collaborate.

5. Who will pay for ongoing expenses following the technology fee funded portion of this project (e.g., who will replace hardware or software after it has reached its end of life)?

Ongoing funding has not been identified, but the audio/video equipment being installed is expected to last 5-6 years instead of the usual 3-year time frame. The issue of ongoing expenses will need to be addressed.

6. Describe how this project will follow NDUS’s best practices in information technology. (Please make sure the NDUS IT Division staff you consulted signs in Part I of this form.)

- According to a 2009 study by Wainhouse Research, 24% of the universities polled consider Lecture Capture as “mainstream use,” 37% report “some use” and 29% report “may use soon” which leaves only 11% as “will not use.” These figures show that Lecture Capture is becoming a mainstream technology. NDUS and its students do not want to be left out of this proven technology.
- Lecture Capture is an improvement over podcasts of lectures because of the ability to bookmark and search the captures, which is much more time efficient for student use.
- More and more instructors are using captured lectures as a way to reduce required seat time. This blended approach to classes has been well received by students who appreciate the flexibility of completing class work when they prefer to.
- Lecture Capture works especially well in subject areas where students benefit from repeated viewing of content, as when complex information is discussed or formulas are written on a board.

Within the Division of Information Technology, Lecture Capture mostly affects Information Technology Services. The Instructional Services area of ITS would provide the training and support for instructors and students using Tegrity. The Classroom and Clusters area of ITS installs the hardware and software in the classrooms and works closely with Instructional Services with the planning of the project. The Blackboard Application Developer from Enterprise Computing and Infrastructure has been involved with related Blackboard building block installations.

7. What service on campus is most similar to the one proposed here? How does this project differ?

The IVN (Interactive Video Network) classrooms are the closest thing to Lecture Capture that NDUS has, in that instructors who teach in the IVN classrooms can teach a face-to-face class while recording the class for later playback.

The difference between IVN and Lecture Capture is twofold. The output of Lecture Capture is more user-friendly because it is easily searchable and bookmarked by the student. The archives of an IVN class are just linear recordings so that students would have to either watch the whole session, or fast forward through it to find specific subject matter.

The other difference between IVN and Lecture Capture is that there are a set number of IVN rooms on campus with none of them seating more than 40-50 students. With Lecture Capture, we want to equip the larger lecture halls that seat over 100 students to get the best return for our investment and so that we serve the largest number of students.

Blackboard Collaborate (previously Wimba Classroom) is also similar to lecture capture, but it lacks the ability to bookmark and search for troublesome concepts. Tegrity also allows students to add their own notes to the captured content, which Collaborate can’t do.
With the help of this action plan funding, Information Technology Services will equip Ladd 107 and CME auditorium with the following equipment:

- Pan-tilt zoom camera
- Touch panel controller
- Pressure sensitive mats that control the camera
- Video capture cards
- Wireless microphone
- Resource controller (the “brains” which tie everything together)
- Additional required equipment for integration

The planned classroom equipment is generic enough to work with any Lecture Capture system that NDSU (or possibly the University system) would decide to use. We are basically adding audio/video capture to the classroom, which is a basic functionality that is not tied to any particular vendor or specific technology.

Here are some usage statistics that show how lecture capture and Tegrity are currently used for Fall Semester, 2011:

<table>
<thead>
<tr>
<th>Class</th>
<th># of Recordings</th>
<th># of Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHRM 532: Infectious Disease</td>
<td>11</td>
<td>114</td>
</tr>
<tr>
<td>PTDI: Rheumatology, Endocrine &amp; Reproduction</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Intro Statistics Online</td>
<td>7</td>
<td>98</td>
</tr>
<tr>
<td>Programming/Thesis Prep</td>
<td>15</td>
<td>42</td>
</tr>
<tr>
<td>Genetics Online</td>
<td>26</td>
<td>408</td>
</tr>
<tr>
<td>Genetics</td>
<td>52</td>
<td>5313</td>
</tr>
<tr>
<td>General Biology I</td>
<td>9</td>
<td>3613</td>
</tr>
</tbody>
</table>

The data shows evidence of the traditional classes becoming online Distance Education courses. The numbers do not include Spring or Summer semester activity.
List the date for each project milestone. These milestones should represent the **significant** accomplishments that will be associated with the action plan. For each milestone, please indicate its expected outcome and the means for assessing that outcome. (The table may be extended as needed.)

<table>
<thead>
<tr>
<th>Date</th>
<th>Milestone</th>
<th>Expected Outcomes</th>
<th>Means of Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. December, 2011</td>
<td>Order equipment for classrooms</td>
<td>Equipment order that falls within our budget</td>
<td>Order is submitted</td>
</tr>
<tr>
<td>2. Holiday break</td>
<td>Install equipment</td>
<td></td>
<td>Installation is finished</td>
</tr>
<tr>
<td>3. January, 2012</td>
<td>Train participating instructions</td>
<td>At least 4 instructions trained.</td>
<td>Instructor level of confidence</td>
</tr>
<tr>
<td>4. Spring semester, 2012</td>
<td>Instructors start recording their classes, and students receive instructions on how to use the system</td>
<td>Recorded lectures and student use</td>
<td>Administration screens in Tegrity product give number of recordings and views</td>
</tr>
<tr>
<td>5. April, 2012</td>
<td>Survey of customer satisfaction and the effectiveness of lecture capture</td>
<td>Completed surveys by faculty and students who use the system</td>
<td>Statistics gathered will aid in future plans and statewide plans</td>
</tr>
</tbody>
</table>
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V. Supporting Documentation

Here are some results from the survey given to students who benefitted from Lecture Capture during Spring semester, 2011:

How has the use of Tegrity impacted your course experience compared to other courses in which Tegrity was not used? - Your overall satisfaction with the course

- Significantly reduced: 0 (0%)
- Reduced somewhat: 0 (0%)
- Had no impact: 7 (21%)
- Increased somewhat: 14 (41%)
- Significantly increased: 8 (24%)

How has the use of Tegrity impacted your course experience compared to other courses in which Tegrity was not used? - Your success in the course

- Significantly reduced: 0 (0%)
- Reduced somewhat: 0 (0%)
- Had no impact: 7 (21%)
- Increased somewhat: 17 (50%)
- Significantly increased: 5 (15%)

How has the use of Tegrity impacted your course experience compared to other courses in which Tegrity was not used? - Your grade in the course

- Significantly reduced: 0 (0%)
- Reduced somewhat: 0 (0%)
- Had no impact: 8 (24%)
- Increased somewhat: 16 (47%)
- Significantly increased: 4 (12%)
How has the use of Tegrity impacted your course experience compared to other courses in which Tegrity was not used? - The amount of material learned

- Significantly reduced: 0 (0%)
- Reduced somewhat: 0 (0%)
- Had no impact: 10 (28%)
- Increased somewhat: 15 (44%)
- Significantly increased: 4 (12%)

How has the use of Tegrity impacted your course experience compared to other courses in which Tegrity was not used? - Depth of learning

- Significantly reduced: 0 (0%)
- Reduced somewhat: 0 (0%)
- Had no impact: 8 (24%)
- Increased somewhat: 18 (53%)
- Significantly increased: 3 (9%)

How has the use of Tegrity impacted your course experience compared to other courses in which Tegrity was not used? - The effectiveness of your studying

- Significantly reduced: 0 (0%)
- Reduced somewhat: 0 (0%)
- Had no impact: 10 (29%)
- Increased somewhat: 15 (44%)
- Significantly increased: 4 (12%)

How has the use of Tegrity impacted your course experience compared to other courses in which Tegrity was not used? - How often you came to class

- Significantly reduced: 1 (3%)
- Reduced somewhat: 3 (9%)
- Had no impact: 19 (56%)
- Increased somewhat: 6 (16%)
- Significantly increased: 0 (0%)
After your experience using Tegrity this term, please indicate how important it is to you to see Tegrity used in your future courses.

- Tegrity is essential
- Would not want to use Tegrity in other courses
- Tegrity would enhance some of my courses
- Tegrity would enhance most of my courses
- Tegrity is essential - I want it in all of my courses

Overall, how would you rate the ease of use of the Tegrity system?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Difficult</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Not Easy</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Acceptable</td>
<td>7</td>
<td>21%</td>
</tr>
<tr>
<td>Easy</td>
<td>11</td>
<td>32%</td>
</tr>
<tr>
<td>Very Easy</td>
<td>10</td>
<td>29%</td>
</tr>
</tbody>
</table>

Overall, what was the impact of Tegrity on your learning in this course?

- A distraction to my learning
- Did not contribute to my learning
- Contributed somewhat to my learning
- A significant contribution to my learning
- A very substantial contribution to my learning

<table>
<thead>
<tr>
<th>Impact</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A distraction to my learning</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Did not contribute to my learning</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Contributed somewhat to my learning</td>
<td>19</td>
<td>58%</td>
</tr>
<tr>
<td>A significant contribution to my learning</td>
<td>9</td>
<td>28%</td>
</tr>
<tr>
<td>A very substantial contribution to my learning</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
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VI. Budget
(double-click on the form to begin entering data)

<table>
<thead>
<tr>
<th>NDSU ORGANIZATION OR UNIT</th>
<th>Information Technology Services - Instructional Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT DIRECTOR(S)</td>
<td>(Must be NDSU faculty or staff)</td>
</tr>
<tr>
<td></td>
<td>Nancy Lilleberg</td>
</tr>
</tbody>
</table>

### SALARIES AND WAGES

<table>
<thead>
<tr>
<th>Personnel description</th>
<th>Number employed</th>
<th>Number of months</th>
<th>Funds Requested</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Staff</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Graduate students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Undergraduate students</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL SALARIES AND WAGES** $0.00

**FRINGE BENEFITS**

**TOTAL SALARY, WAGES AND BENEFITS** $0.00

### EQUIPMENT

| A. Pan/Tilt/Zoom camera system (2 X $1,600.00) | 3,200.00 |
| B. Wireless Microphone (2 X $600)             | 1,200.00 |
| C. Touch Panel Control (2 X $2000)            | 4,000.00 |
| D. Video capture equipment (2 X $1300)        | 2,600.00 |
| E. Pressure sensitive mats (sets of 3) (2 X $600) | 1,200.00 |
| F. Crestron Control Equipment (2 X $2500)     | 5,000.00 |
|                                                |          |

**TOTAL EQUIPMENT** $17,200.00

### MATERIALS AND SUPPLIES

| A. Rubber floor mats to protect the pressure sensitive control mats (2 X $200) | $400.00 |
| B. Cat5e cable (200 feet) (2 X $200)                                              | $400.00 |
| C.                                                                                   |         |
| D.                                                                                   |         |
| E.                                                                                   |         |
| F.                                                                                   |         |
| G.                                                                                   |         |
| H.                                                                                   |         |

**TOTAL MATERIALS AND SUPPLIES** $800.00

**TOTAL TECHNOLOGY FEE REQUEST** $18,000.00

**MATCH (Describe in Match Section)** $28,500.00

**TOTAL PROJECT EXPENDITURE** $46,500.00
By equipping auditoriums such as Ladd 107 and the CME auditorium, we can create a system that is “turnkey” for the instructor, thereby increasing the likelihood of faculty usage which will allow student usage. By tying the control of the audio, video and screen capture into the classroom Crestron systems, faculty usage comes as a touch of a button, similar to what they are already used to, but it does require an upgrade to the Crestron panels (line C and F under Equipment).

Other needed equipment is a Four Input Composite Video Switcher that allows the instructor to decide what will be recorded (screen / video / both), camera equipment, and security pressure mats. The pressure mats trigger the camera to automatically focus on a different place in the classroom, like the white board, the screen, etc.. The goal is to allow the instructor to teach as he/she normally would without having to worry about the technology. The students benefit because more instructors will use a turnkey technology than one that requires more effort.
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VIII. Budget Match

The staff from the Instructional Services and Classroom Technology teams in ITS provide all the planning, ordering, installation, system administration, and user training / support for Lecture Capture. This entails at least a quarter of one staff member’s work time, and an eighth of another person’s time. There are also the supervisory and accounting staff time outlays.

When Stevens Auditorium is renovated, audio/video recording functionality will be included in the renovation project by the College of Science and Math, thereby instrumenting the classroom that would be most expensive to equip without using Student Technology Fee funds. We estimate the costs for Stevens Auditorium to be equivalent to two classrooms, approximately $16,000.

Distance and Continuing Education recently purchased an additional 250 hours of Tegrity lecture capture storage for $12,500.