Program Summary

DoIT provides NIU’s core academic applications for instructional use and student learning:

- AnywhereApps for course-specific software available in the cloud;
- Helix Media Library streaming over 1,800 videos created by 549 users in the last year;
- mobile applications including Blackboard, MyNIU, and NIU Mobile App;
- over 3,000 custom Qualtrics surveys created in the last year; and
- Blackboard Learn, which supports 96% of faculty and 98% of students by delivering online courses with
  - Assessments, gradebooks, plagiarism prevention, web conferencing, distance learning, collaboration tools for non-academic organizations;
  - Content Collection for file storage;
  - eReserves library materials for academic courses;
  - Grade Submission to MyNIU;
  - MyEdu integration and Portfolios for registering academic and extracurricular achievements, creating online resumes, and connecting with employers and alumni.

Blackboard is supported with only 4 FTE of DoIT staff. Those salaries along with hardware and annual software licensing require $616,000. DoIT collects $30,000 annually from Blackboard Community users but there is no recurring source of funds for the remaining $586,000 each year.

Criterion 1: Importance to University Mission / Operations

Importance to Mission

Academic Technologies Support aligns directly to NIU’s mission by providing our faculty and students the high quality tools necessary to create the robust learning environment our community demands. Students today have a basic expectation that learning management systems and mobile apps will deliver and enrich their course content, while faculty expect ease in providing online assessments, presentation of rich media content, gradebooks, and collaboration spaces.

Beyond the basics, these tools enhance the teaching and learning experience. With an environment that is available anywhere and at any time, student engagement and learning extends beyond the classroom in an environment that is both personalized and collaborative. Faculty can use a variety of options to reach students when, where and how they want to learn while tracking more closely how students interact with the course materials and each other. The ability to detect student detachment at earlier times during the semester gives faculty the ability to intervene and ensure higher rates of student success and retention.

Importance to Operations

In addition to supporting the modern 24x7 learning environment, these applications create efficiencies that allow our faculty and students to spend more time engaged in NIU’s strong academic programs. Faculty can provide more effective instruction when they can more easily distribute course materials, create online assignments, send announcements to the entire class, perform assessments, automate grading, and manage collaboration opportunities. Course content is easily shared and even reused, making it easier for faculty to create new courses and update current courses.

Students today are online always and anywhere, bringing a multitude of laptops, tablets and smartphones to campus and expecting to be able to use them all with ease. NIU’s academic applications ensure that students can learn both in and out of the classroom: practicing presentations in residence halls and study rooms, collaborating
on assignments in real time, or, live via video or chat without having to travel to a single location, and taking the responsibility for their lifetime of learning.

**Program Portfolio**

Academic applications cannot substitute for excellent academic instruction, but these applications do provide the strong foundation for academic excellence in the 21st century. While technology that is improperly chosen or poorly used can inhibit the academic experience, teaching and learning can take center stage when faculty are not copying and distributing thousands of pages of course materials, creating their own course websites, or trying to manage their own class rosters, student accounts and passwords. Moreover, it is the **centralization** of these learning technologies that allows for collaboration across disciplines and the anywhere-anytime learning environment. Without these services available in a consistently supported and adequately funded central system, departments and colleges would purchase and support their own disparate and ultimately more expensive solutions to deliver the academic technologies that faculty and students demand.

**Program Synergy**

DoIT works closely with the Faculty Development and Instructional Design Center, evaluating faculty and student needs, and determining roadmaps in order to provide the tools of choice. Because of this partnership, all academic units and the entire student body are c

Additionally, academic applications rely heavily on the Student Administrative System and Identity and Access Control programs to provide automated deployment of tools and a seamless, consistent user experience throughout the faculty and student account lifecycles.

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**Criterion 2: Quality / Effectiveness**

**Functions and Services**

This program supports NIU’s core academic applications:

1. AnywhereApps is the cloud-based platform that delivers course-specific software to individual desktops, laptops and other devices. Instead of requiring students or technology lab managers to purchase multiple copies of expensive software, DoIT’s application cloud delivers them on demand and without having to visit a lab for access.

2. Blackboard provides a rich, online learning environment with nearly universal usage across academic units, faculty and students. Additionally, more than 25 administrative departments pay DoIT to use Blackboard Communities to share and distribute digital materials.

3. The Helix Media Library was introduced in 2014 to meet the demand for an easily accessible and secure video streaming service. Faculty, staff, and students can now create their own YouTube-like experience and even upload and view content within a Blackboard course. Moreover, they have the choice to protect the content so only NIU users can view it.

4. Our developed mobile applications allow for easy access to university information, academic course materials, maps and other enterprise system functions.

5. Qualtrics, also introduced in 2014, provides faculty, staff, and students with a rich survey tool currently used for academic research, program administration, and satisfaction surveys. Over 3,000 surveys have been created in the past year.

DoIT staff develop, configure, implement, upgrade and path the academic applications, coordinate functional testing for all releases, troubleshoot both functional and technical problems, assist users with incidents and
requests, design and develop interfaces between systems, act as the primary liaison with vendor support, and develop both technical and end-user documentation and training.

**Measures of Quality**

1. System availability is measured against both planned and unplanned downtime.
2. Mean Time to Resolve (MTTR) measured by the time between the reporting and the resolution of an incident
3. Number of incidents per application
4. Breadth of adoption, evidence of skillful use, contemporary technologies, and ease of use.

**Evidence of Quality**

1. Redundancy is built into the hardware architecture for these applications, allowing them to achieve 99.6% system availability, including 28 hours set aside for planned downtime to apply new software releases and patches.
2. Mean Time to Resolve incidents is 1 day 23 hours, with 90% completed in less than 22 calendar hours. This resolution time across a base of 1,000 incidents compares well to industry standards. According to the HelpDesk Institute’s Current Practices and Salary Report, the average MTTR for application incidents is 8-24 hours.
3. Even with only 4 FTE of support staff, these applications are stable and the number of reported incidents has decreased by 33% over the last four years.
4. Breadth of adoption is nearly 100% with Blackboard, but unmeasured with other academic applications. DoIT should partner with NIU’s faculty development staff to built outcome-based assessment of skillful use by both faculty and staff, as well as benchmark application currency and ease of use.

**Quality Improvement**

- **Quality in Essence:** DoIT regularly refreshes, upgrades and expands the Blackboard server infrastructure and manages a major software upgrade every year in order to keep up with demand and remain current with new vendor features and in-house development. This upgrade cycle contains a rigorous testing phase which significantly reduces the risk of downtime and incidents.
- **Quality in Output and Use:** Our implemented solutions, whether part of the vendor-delivered suite or developed by DoIT staff, are both efficient and cost-effective. In the recent past, DoIT developed a custom Blackboard building block for faculty to submit final grades directly from their Blackboard grade center to PeopleSoft, thus saving time and reducing opportunities for data entry error.
• **Quality in Staffing:** DoIT invests in staff training to ensure we can support the technology and be meaningful contributors to a forward-looking roadmap for these technologies. DoIT staff also coordinate a campus-wide Blackboard Admin Group which meets monthly to determine priorities, discuss ongoing issues, and plan on how to meet functional and technical requirements.

• **Quality in Operation:** This program is committed to continuous service improvement and maintaining a high standard of support.
  - Even before users might notice a problem, automated alerts are generated when service components are slow or non-responsive.
  - User-reported incidents are actively managed to ensure timely resolutions.
  - Programmers work closely with functional users to ensure that business needs are met.

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**Criterion 3: Productivity / Efficiency**

**Scope of Program**

DoIT staff handle both the front-line customer support and the back-end development for AnywhereApps, Blackboard, Helix Media Library, mobile applications, and Qualtrics. Development includes application software and patch installation, coordination of functional testing of all software releases, troubleshooting functional and technical problems with systems, design and development of interfaces between systems, and communication with vendor support.

The hardware infrastructure for the AnywhereApps and Blackboard systems include more than fifty physical and virtual servers that are each integrated with several enterprise-level services.

Each application upgrade requires extensive planning and high-quality testing. The last Blackboard upgrade test plan included 339 specific areas of functionality performed by approximately fifteen staff in three departments. Test plans included more than 20 customizations that are part of our current Blackboard environment.

**Productivity Comparison**

As of October 2014, Blackboard still held a commanding lead of 33.5% of all universities and a 43% installed base in universities with more than 2,000 students. DoIT partners with Faculty Development staff to provide outstanding support for Blackboard and its related systems. This collaborative model is recognized as a best practice in higher education and is one other institutions strive to replicate. While many universities struggle to remain current with Blackboard releases, NIU’s annual upgrades are a model. Our presentations at national and regional conferences have been well received and we confidently share our best practices with others. Moreover, we have shared our custom, in-house solutions with other universities and continue to the open source community by releasing our custom building blocks and software.

**Resource Comparison**

Application support crosses from front-line customer support through desktop client support and then to back-end application development. As such, comparisons among universities are difficult because only portions of Full-Time Equivalents (FTEs) are generally assigned to any single application. Within DoIT:

- .5 FTE support AnywhereApps;
- 2.5 FTE support Blackboard, the Helix Media Library, and Qualtrics;
- 1 FTE is provided by the Service Desk for 7x24x365 front-line phone support.
Cost and Revenues

- AnywhereApps costs $75K annually, which includes the .5 FTE of support staff and the software licensing for Citrix. Sixty applications are served annually to 4,000 users at a cost of $18.75/user.
- Blackboard is nearly $600K annually and projected to rise by at least 4% annually. With 6,000+ course sections, this averages just under $100/course.
- The Helix Media Library license averages $5K/year. With 1,800 videos created last year, this yields about $3/video or $.10 per view.
- Qualtrics requires little to no staff support and the software licensing is $23K/year. With 3,000 surveys created last year, this products costs approximately $7.50 per survey, with each including full statistical analysis and anonymous or directed surveying.

Even though it is used by nearly every student and the great majority of faculty at NIU, Blackboard has never had a recurring funding stream. While the salaries are currently funded through General Revenue (02) accounts, the hardware and software costs have been traditionally funded by the Provost and by charging fees to non-academic departments ($30K annually).

The substantial cost reduction from FY13 through FY15 is due to a reduction in staff costs and the cost-savings in moving from physical servers to a virtual server environment. However, software licensing costs continue to rise by close to 4% each year and only 4 FTE for support does not allow DoIT to manage both current operations and future enhancements to this critical system.

Criterion 4: Internal & External Demand

External Demand

According to a Campus Technology report from October 2014, 92.6% of higher education institutions use an online learning management system. These institutions represent 97.9% of the entire population of enrolled students. It is simply unthinkable that an institution of NIU’s size would reverse course in this critical area. Indeed, new
technologies and delivery methods continue to meet the demands of faculty and students who have been accustomed to rapid growth and development in their own consumer technology devices at home. The support of academic applications, especially mobile apps, must continuously expand to allow NIU to merely keep current with the latest tools and technologies.

**Internal Demand.**

In Fall 2014, 3,145 course sections used Blackboard with nearly every student (19,795) enrolled in at least one Blackboard course. These course sections make heavy use of announcements, grades, and posting files and items for course readings.

![Percentage of Blackboard Courses Using:](chart)

AnywhereApps currently distributes 60 application bundles to faculty, staff and students anytime, anywhere on their own devices. With more than 20,000 sessions each semester and nearly 4,000 unique users, this academic offering takes advantage of both simplified access and efficient software licensing to support hundreds of classes and lab spaces across campus.

In only one year, 549 users have uploaded over 1,800 videos to the Helix Media Library, many of which are included in course assignments and integrated with Blackboard. Finally, over 3,000 Qualtrics surveys have been created in just one year. While not all academically based, this represents substantial demand across the campus community.

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**Criterion 5: Opportunity Analysis**

**Cost Savings Opportunities**

Direct cost savings with the existing product suite and staff resources is not possible. These widely-used applications are supported with a bare minimum of support staff and on equipment that is not covered by capital refresh funding.
However, there may be a higher-value product for learning management. While Blackboard is still the industry leader, many universities have moved to open source platforms that promise inexpensive software licensing, but generally more expensive staffing requirements and the same hardware costs. Other universities are moving to hosted systems that remove hardware costs while increasing software licensing. DoIT will lead a campus committee in FY17 to review the new generation of online learning and course management systems and make a recommendation based on a value proposition that includes both cost and feature quality.

Immediate cost savings can be realized by reducing duplicative systems. NIU licenses both Blackboard Collaborate and Adobe Connect: two videoconferencing and distance learning systems with a large degree of feature overlap. Similarly, Blackboard’s improved Portfolio product replicates other portfolio tools on campus.

**Future Revenue / Resources**

Our primary mission with this program is support our academic units. Therefore, we do not market or make this service available for revenue generating opportunities which might limit or reduce or capability to provide the best service possible to our primary customers.

**Improvement Opportunities**

The current state of Blackboard, while not comfortable, is minimally sustainable. Future initiatives in this area are not practical with current staffing so new ideas and implementations are closed to us now.

More important than improvements to Blackboard is the concept that it holds critical data that can be used in unique ways to identify students who are struggling in real time. This informs advisors, professors, and students in the race to find ways to improve retention. This is an essentially untapped area today and could become a key and distinguishing factor for any institution that is able to make advanced use of this data. As such, it holds the most opportunity for improvement of any service DoIT offers.

**Opportunities in the Field**

Current staffing levels do not provide the opportunity for cross training and this puts the support of these systems at risk. Upgrades and maintenance to both software and hardware must be applied regularly to meet security standards, but this is often done at the expense of staying current with academic technologies and maintaining close business relationships with customers to understand their business practices and requirements. Expansion of available academic technologies is a measure of highly-ranked universities and an expectation of 21st-century students and newly-minted Ph.Ds. Current staffing and funding levels are simply not sufficient to expand these services.