

Nebraska Information Technology Commission

Project Proposal Form

**New or Additional State Funding Requests
for Information Technology Projects**

FY2007-2009 Biennium

Project Title	Student Information System
Agency/Entity	University of Nebraska

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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, for which new or additional funding is requested.” Neb. Rev. Stat. §86-516(8) In order to perform this review, the NITC and DAS Budget Division require agencies/entities to complete this form when requesting new or additional funding for technology projects.
2. **WHAT TECHNOLOGY BUDGET REQUESTS REQUIRE A PROJECT PROPOSAL FORM?** See the document entitled “Guidance on Information Technology Related Budget Requests” available at <http://www.nitc.state.ne.us/forms/>.
3. **DOWNLOADABLE FORM.** A Word version of this form is available at <http://www.nitc.state.ne.us/forms/>.
4. **SUBMITTING THE FORM.** Completed project proposal forms should be submitted as an e-mail attachment to rick.becker@nitc.ne.gov.
5. **DEADLINE.** Completed forms must be submitted by September 15, 2006 (the same date budget requests are required to be submitted to the DAS Budget Division).
6. **QUESTIONS.** Contact the Office of the CIO/NITC at (402) 471-7984 or rick.becker@nitc.ne.gov

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Section 1: General Information

Project Title	Student Information System
Agency (or entity)	University of Nebraska

Contact Information for this Project:

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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 University of Nebraska currently operates separate student information systems for each of our four campuses. A vendor developed student information product, the SunGard SCT SIS PLUS system, is utilized by our UNL, UNO, and UNK campuses. UNMC operates an in-house developed student information system. These SIS systems are running on a variety of database management products, operating platforms, and hardware environments.

The SCT SIS PLUS system was developed in the 1970s and is based on dated design principles and technologies (e.g. terminal access and batch processing) that are becoming technologically obsolete. The SIS PLUS vendor announced 5 years ago they would continue to provide basic system maintenance to comply with federal and other higher education regulatory requirements but would not implement any significant PLUS system enhancements in the future. SCT is no longer actively marketing the PLUS system and the PLUS client base has declined from a peak of approximately 450 schools in 2000 to less than 70 and this number continues to decline. Indications are that SCT will likely terminate maintenance for PLUS in the 2009 - 2010 timeframe.

Additionally, PLUS provides limited support in a number of areas that are becoming increasingly important in the higher education arena - e.g. prospecting and recruiting, 24x7 availability, the ability to offer and administer courses that are not term-based, web-based access to data and services, workflow support, reporting capability, decision-support, and flexibility in registration and billing. These functionality "gaps" are addressed either through the purchase of additional function specific software products that must be integrated with PLUS, a costly process, or through in-house developed applications. Enhancements to PLUS developed in-house often require complex interfaces due to the lack of technical integration in

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the PLUS system. It is becoming more and more expensive to implement and maintain these “external” applications to provide functionality the base PLUS system does not offer.

As we face increasing competitive pressure to provide any time any place access to information and enhanced services we are finding it more and more difficult, and in some cases virtually impossible, to implement new desirable features and functionality due to the PLUS system architecture and technical limitations.

If the University of Nebraska is to remain competitive in the future we must implement new student information systems which allow us to be more innovative, responsive, and effective in meeting these challenges.

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

1. Describe the project, including:
 - Specific goals and objectives;
 - The University of Nebraska Board of Regents reaffirms and restates its position that all University of Nebraska administrative computing systems, especially including but not limited to student information systems (SIS), will be standardized and made compatible, resulting in a virtually integrated enterprise.
 - Improved access to information – greater access to more data on a more timely basis
 - Improved services – i.e. web-based any time, any place access
 - Consistent service level across all campuses
 - Eliminate the need to develop and operate campus level applications to supplement base SIS system functionality
 - 24x7 system availability
 - More responsive and agile – ability to implement change on a more timely basis
 - More effective and efficient through ability to implement best business practices across UN system
 - Implement CRM and workflow
 - Improved reporting and decision-support capability
 - Improved integration capability to UN financials
 - Expected beneficiaries of the project; and
 - 47,000 students
 - 13,000 faculty, staff, and administrators
 - Prospective students
 - Parents

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- High school advisors
 - Non-traditional students seeking professional development, career enrichment educational opportunities
 - State of Nebraska via a better educated work force
 - Expected outcomes.
 - More efficient and effective operation
 - Provide better operational and administrative decision-support
 - Service improvements
 - Ability to implement best business practices
 - Improved responsiveness to competitive pressure
 - Improved flexibility and the ability to adapt to change
 - Seamless student-centric service model
 - Ability to develop and deploy additional new services and instructional programs targeting the growing non-traditional student population
2. Describe the measurement and assessment methods that will verify that the project outcomes have been achieved.
- Changes will be dramatic. Many improvements will be reflected in the ability to provide new, additional services and options that would not have been possible previously.
 - Increased retention – our ability to offer better services to include improved advising and progress monitoring capability should lead to improved student retention and higher graduation rates
 - Enhanced recruitment – we should be able to drastically improve our reach and yield with more advanced tools in this area.
 - Ability to monitor and assess progress based on longitudinal studies via improved reporting.
 - Increased revenues – more students, more credit hours (see #2 above)
 - Before and after satisfaction surveys of faculty, staff, and students.
3. Describe the project's relationship to your agency comprehensive information technology plan.
- This project proposal is consistent with the University of Nebraska Information Technology Plan and is included in the 2007- 2009 plan.
 - Implementing a new SIS systems will allow the University to operate more efficiently.
 - We will be able to more easily implement best business practices with all campuses operating the same basic student information system.

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- Consistent platforming, languages, technical infrastructure, will lead to improvements in maintenance and reduce complexity and the cost of system administration.
- Maintain the University position as a leader in the field of technology and student services
- A single SIS system solution will allow us to better leverage our technical resources
- Enhance decision-support through improved access to information/data.

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).
 - Implementing new SIS systems will allow the University to operate more effectively and efficiently and better serve the post-secondary educational needs of the State of Nebraska.
 - The ability to deliver enhanced student services should lead to increased enrollments and retention levels.
 - We will be able to more easily implement best business practices under a common student information system environment.
 - We should also be able to implement new options for payment and billing that should allow more students access to a UN education.
 - Provide better, more consistent service throughout the UN system.
 - Improve overall administrative capability through enhanced decision-support.
 - Consistent platform, languages, technical infrastructure, will lead to cost savings in hardware, software, and maintenance costs and reduce the complexity of SIS system administration and support.
 - A new SIS will eliminate the need to develop extensive additional new SIS services and functionality
 - Improve our ability to implement changes and enhancements
 - Better share and leverage existing technical resources and skills through the standardization of technology.
 - Benefit from economies of scale and through centralization/consolidation as appropriate.
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.

Continue to operate current SIS systems

- This option was deemed unacceptable and also rejected since the SIS PLUS system vendor is no longer enhancing this product and will discontinue maintenance of the

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PLUS system (or maintenance will become prohibitively expensive) within the next 3 - 4 years.

- The SIS PLUS system does not meet our current or future operational, informational, or service needs. We have already invested a great deal of time and money to purchase or develop enhanced functionality around the PLUS system and we have reached to point where continued investment in any additional PLUS-based development when similar functionality is available in other student information systems no longer makes sense.
 - The SIS PLUS system was designed and developed in the early 1970s and the technology and architecture no longer are appropriate to serve as a basis for one of our most mission-critical applications. It is also becoming more and more difficult to find and retain technical staff with the skills, knowledge, and ability to maintain the PLUS system as the technology continues to age.
 - Inconsistent level of service campus to campus.
 - Difficult to pull data/information together at the institutional level because of the differences in data, process, and procedural related to the separate campus-level instances of SIS.
 - Separate campus-level instances and the differences in how these separate instances were implemented require different, redundant, and costly development efforts to develop and deploy enhancements.
 - Inter-operability considerations - have to log into the separate campus SIS systems and they do not interface easily.
 - Inter-campus operations, processes, and procedures and the consistent delivery of services difficult.
 - SIS PLUS technology and design make it difficult to implement web-based applications.
 - Data structures are archaic and make reporting very difficult and costly.
7. If the project is the result of a state or federal mandate, please specify the mandate being addressed.
- Compliance with Federal financial aid rules and regulations.
 - Compliance with Federal SEVIS requirements.
 - Other required federal reporting.
 - FERPA compliance.
 - ADA compliance.
 - HIPAA compliance.

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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.
 - New, more current hardware, software, operating system, language, data base management system, and other technical components.
 - Move from terminal based access, batch processing, and the limitations imposed by the dated technology reflected in our current SIS systems to web-based, real-time, more flexible and dynamic technologies.
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.
 - The SIS system options we are evaluating all offer significant improvements in accessibility, reliability, security, and scalability.
 - Address conformity with applicable NITC technical standards and guidelines (available at <http://www.nitc.state.ne.us/standards/>) and generally accepted industry standards.
 - The SIS system options we are evaluating all conform to applicable NITC and generally accepted industry technical standards and guidelines.
 - Address the compatibility with existing institutional and/or statewide infrastructure.
 - The SIS system options we are considering are compatible with existing institutional and state-wide infrastructures.

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.
 - This project is sponsored by the University's Board of Regents, Central Administration, and our four campuses. All entities are in agreement that the replacement of our existing SIS systems is necessary.
 - The plan for implementing a new SIS system is to begin the process of defining requirements, evaluating options, selection, and implementation as soon as possible. It is anticipated this process will take approximately 30 - 36 months.
 - There will be a number of project teams to include:
 - University-wide SIS Steering Committee made up of high-level administrative staff to provide overall project administration, direction and an institutional vision/strategy.

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- U-wide SIS Task Force made up of high-level operational and technical staff to define functional requirements, and provide tactical analysis, design, and implementation support.
- U-wide work groups will be required at the operational level to address detailed functional requirements and to implement best business practices.
- Campus level work groups will be required at the operational level to address campus-specific processing, policy, and implementation requirements.

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

- Preliminary analysis - 3 to 4 months
 - Organize project teams
 - Define long-term University of Nebraska student information and services vision and strategy
 - Define operational, data, and service delivery requirements
 - Identify available SIS system options
- Evaluation and Selection - 1 - 6 months
 - Evaluate SIS options
 - Select most appropriate SIS option
- Implementation - 24 - 36 months
 - Develop implementation plan
 - Implement SIS system

11. Describe the training and staff development requirements.

- Any new SIS system will include many new and different hardware and software components which will require new skills and expertise. These will be filled through a combination of new staff and training of existing staff as appropriate depending on the SIS option selected.

12. Describe the ongoing support requirements.

- The ongoing support structure is already in place with programmers on each campus. Modifications to the support structure, if any, will be minimal.

Section 7: Risk Assessment (10 Points)

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

- While there are always risks, software development has changed over the years. Development environments now support an iterative process where software can quickly be built and tested and used. The software is then modified after it has been used to reflect the current needs - not the need of the outdated analysis done in the past.

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Software is constantly improved based on current need. In theory it is a never ending loop of improvement.

- This same philosophy can be applied to major system implementations. The current generation of software is much more flexible and configurable. It has much more functionality. This newer software allows us to take what others have done (like Kent State, Tennessee, Oregon State) and use that as a starting point. We can implement much quicker - but more importantly we can adapt at a rapid pace even after implementation. We can use the software; we can learn the software; we can adapt the software. This is again a continuous process of refinement and improvement.
- Since there are many others who have been through the Student Information System implementation cycle - we can also build on what others have learned in the past. Consultants are more mature and knowledgeable and have proven methods and tools to successfully implement this type of system. Higher Education is a unique market where we share what we have done with our competitors. We can literally stand on the shoulders of others who have done this before us. We will be relying on the best practices developed over the last ten years and hopefully we will be adding to this growing archive of strategies and techniques.
- Lastly the University of Nebraska has experience in implementing large complex systems, such as SAP, on time and on budget.

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

- The project plan developed will identify obstacles, barriers and risks and strategies to mitigate each.
- Data Migration Toolkits will be provided by the vendor as migrating or converting data between legacy and newer application solutions remains one of the most complex and resource-consuming application deployment projects. The necessary research, specifications development, and associated programming requirements demand significant time and understanding of the old and new application systems as well as a comparison and understanding of both data components and their intended uses.
- A vendor provided Data Migration toolkit will efficiently convert legacy data to a new production system. Additionally, it will reduce the time necessary for migration and help identify errors without requiring a high-level technical skill set or additional third-party software. Combined, these tools will provide significant time savings and resource reduction necessary for researching, defining, programming, and validating the converted data through predefined templates, extract programs, and testing procedures. The Data Migration toolkit will include:
 - Baseline to new system data mapping definitions
 - COBOL data extraction tools
 - Customized SQL scripts
 - Customized SQL*Loader control file
 - Data translation tools (crosswalk structures)
 - PL/SQL conversion scripts, with accompanying database functions

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- Data migration artifacts
- Error validation
- The University will engage an implementation partner who has a record of providing proven models and methodologies delivered by experienced trainers, consultants, and project and account management professionals. Throughout a services engagement, the implementation partner will be instructed to focus on maximizing the business value of our IT systems. With service standards centered on the principles of business process, our implementation partner will be required to understand our business practices and determine how the new student information systems will best support our institution in achieving its unique and strategic business goals.
- Quality milestone checkpoints will be implemented throughout the project to insure we deliver to the highest standards.

Section 8: Financial Analysis and Budget (20 Points)

15. Financial Information

Financial and budget information can be provided in either of the following ways:

- (1) If the information is available in some other format, either cut and paste the information into this document or transmit the information with this form; or
- (2) Provide the information by completing the spreadsheet provided below.

Instructions: Double click on the Microsoft Excel icon below. An imbedded Excel spreadsheet will be launched. Input the appropriate financial information. Close the spreadsheet. The information you entered will automatically be saved with this document. If you want to review or revise the financial information, repeat the process just described.



Excel Spreadsheet
(Double-click)

<<< This embedded spreadsheet appears at the end of this PDF version of the document.

Budget Table Notes:

- * Current cost estimate consists of all contractual services, including design, programming, project management, and consultant travel and expenses.
- ** Other operating costs include financing interest, cost of space & furniture, and project contingency fund.

16. Provide a detailed description of the budget items listed above. Include:

- An itemized list of hardware and software.

<u>Hardware & Software</u>	<u>Description</u>	<u>Est. Cost</u>
Production Data Base Server	IBM p570: 12 POWER5+ CPUs and 64GB RAM	\$395,496
U-Wide Work Flow Server	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
U-Wide Data Base & Appl Test/Dev Server	IBM p560: 8 POWER5+ CPUs and 32GB RAM	\$63,394

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Hardware & Software	Description	Est. Cost
U-Wide SAN Storage	IBM DS4800: 16TB Storage	\$327,555
Tape Backup	IBM TS3310: 5 LTO drives and 174 Tape Slots	\$111,975
Lincoln -Self Service Server	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
Lincoln -Core Application Server	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
Lincoln -Core Application Server	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
Lincoln -Platform Server 1	IBM p560: 8 POWER5+ CPUs and 32GB RAM	\$63,394
Lincoln -Platform Server 2	IBM p560: 8 POWER5+ CPUs and 32GB RAM	\$63,394
Lincoln -Messaging Server	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
Omaha -Self Service Server	IBM p510: 2 POWER5+ CPUs and 8GB RAM	\$13,852
Omaha -Core Application Server	IBM p510: 2 POWER5+ CPUs and 8GB RAM	\$13,852
Omaha -Platform Server 1	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
Omaha -Platform Server 2	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
Omaha -Messaging Server	IBM p510: 2 POWER5+ CPUs and 8GB RAM	\$13,852
UNMC -Self Service Server	IBM p510: 2 POWER5+ CPUs and 8GB RAM	\$13,852
UNMC - Core Application Server	IBM p510: 2 POWER5+ CPUs and 8GB RAM	\$13,852
UNMC -Platform Server 1	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
UNMC -Platform Server 2	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
UNMC -Messaging Server	IBM p510: 2 POWER5+ CPUs and 8GB RAM	\$13,852
Kearney -Self Service Server	IBM p510: 2 POWER5+ CPUs and 8GB RAM	\$13,852
Kearney - Core Application Server	IBM p510: 2 POWER5+ CPUs and 8GB RAM	\$13,852
Kearney -Platform Server 1	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
Kearney -Platform Server 2	IBM p550: 4 POWER5+ CPUs and 16GB RAM	\$32,429
Kearney -Messaging Server	IBM p510: 2 POWER5+ CPUs and 8GB RAM	\$13,852
Enterprise Server Upgrade	IBM Z890-360	\$350,000
Desktops/Laptops	Implementation team	\$58,000
Hardware Maintenance	1 st 5 years	\$1,148,540
Student Mgmt Software		\$4,102,941
Student Mgmt Software Maintenance	1 st 5 years	\$5,283,594
Database Software		\$2,000,000
Database Software Maintenance		\$2,575,516
Operations Software & Maintenance		\$531,203
Other Software	e.g., printing, analytics	\$70,000
Other Items	Description	Est. Cost
Consulting & Travel Expense		\$7,395,000
Financing expense	Financing of (a) student mgmt & database software and hardware and (b) consulting/travel	\$2,475,749
Network connectivity	Reverse proxy servers, switch ports, network fabric, additional firewall support	\$324,000

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<u>Hardware & Software</u>	<u>Description</u>	<u>Est. Cost</u>
Remote access	Consultants and Implementation Team	\$68,400
Space & furniture	Rent & furniture rental for implementation team	\$171,000
Office supplies		\$4,500
Training	Change Management	\$320,000
Contingency fund		\$500,000

- If new FTE positions are included in the request, please provide a breakdown by position, including separate totals for salary and fringe benefits.

Backfill Dollars	Annual	Total Project
Estimated 20 positions @ \$30,000 each	\$600,000	\$1,800,000

Positions/Personnel	Annual Salary*	Annual Benefits*
Senior Database Administrator	\$100,000	\$20,000
Database Administrator	\$66,700	\$13,300
Operating System	\$70,800	\$14,200
Operating System	\$70,800	\$14,200
Total	\$2,108,300	\$61,700

* The above salary and benefit amounts represent the first year's cost. A 3% annual salary increase is assumed for subsequent years for all positions (not including backfill positions).

- Provide any on-going operation and replacement costs not included above, including funding source if known.
 All anticipated on-going operation costs are presented in the "Year 5" column of the budget table. Estimated on-going costs identified in the attached table include:
 - Hardware maintenance
 - Software maintenance
 - Personnel
 - Network connectivity
 - Training (Change Management)
- Provide a breakdown of all non-state funding sources and funds provided per source.
 The vast majority of funding will come from the University's budget. A small portion of the cost may be offset by student fees.

17. Please indicate where the funding requested for this project can be found in the agency budget request, including program numbers.

