1999

Information Services Annual Report, 1998-99

Bates College

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Progress on 1998-99 Goals

- **Banner Implementation and Banner Upgrades**

The College continues to operate well with the Banner software. All modules except for Human Resources are in place and functional. Reiterative visits to the functioning modules for tweaking, training and report writing is ongoing. The Human Resources implementation, initially scheduled for July '99, has now been delayed until April '00. The newly hired Human Resources Director, upon review of the project, determined extending the date would be the practical thing to do. The project is demanding and the extended time should allow for adequate preparation. The key issue surrounding the implementation is the structure of positions for staff. The design and use of position control in Banner is critical to the use of the payroll, benefits administration, budgeting and recruiting modules in the system. Designing and defining a position control system at Bates will be the most time consuming task of the project and will be most critical to the success of the implementation.

The Banner Web Student Registration module was successfully implemented for the short term registration in February of '99. A team of staff, student, and faculty was established by the Registrar's Office to facilitate the implementation. The glitches identified in the short term registration period allowed the registration for the Fall term in March to go more smoothly. The implementation also provides students with access to their grades and an unofficial transcript. Plans to implement the Financial Aid and Accounts Receivable elements of this product are underway. The implementation of the Admissions area of the module was delayed until SCT fixes some basic functional problems with the product. The next upgrade to the Student Web module should address some of these issues. The Web Registration project was the first attempt to bring secured administrative data access to a population not traditionally considered administrative—students. With the expected purchase of the Faculty Web module in the upcoming fiscal year, we hope to extend this access to the Faculty population.

The Oracle software was upgraded to 7.3.3.5 in May of '98; Banner 3.x (a major release) was accomplished in August of '98, and Microfocus Cobol was upgraded in April of '99. These two upgrades solved many of the Y2K issues related to the product but also brought some additional functionality to each of the modules. The change from Banner 2.1.x to Banner 3.x was smoother than the previous major upgrade. Fewer changes to the forms and a longer testing period allowed for a more polished transition. The planned upgrade to Focus 6.5.5 and Focus Express 3.x has not yet occurred but is planned for the summer of '99. The next major release of Banner (4.x) is due for shipment in the third quarter of this calendar year. We will review the implications of this upgrade and plan for its implementation but do not expect to upgrade the

production instance of Banner until Human Resources has been in use for several months. It is likely that the 4.x upgrade will not occur until 2001.

Discussions concerning data warehousing for Banner data have not yet taken shape. We still have questions whether data warehousing is an appropriate solution for our environment. There is an obvious need for reporting tools and simplified data structures that will ease the difficulty of current reporting procedures. Efforts are in place to find appropriate tools and simplify structures with the use of data views and desktop tools. Web alternatives will also be evaluated. Initial indications suggest that data warehousing is a cumbersome alternative, compared to other solutions we are testing.

- **Network Update**

The campus voice and data network designs were updated in order to link in Pettengill Hall and relieve network saturation. Funding for the extension of the new design to the rest of the network was included in the budget request for FY99-00. Pettengill Hall funding was included in the building project and supplemented by IS operating budget funds. The updated design allows for faster access to increasingly large file sizes (for graphics and other large data files) on campus servers and network applications such as the Web.

In conjunction with the design update network we evaluated equipment vendors for equipment selection for the project. Cisco Systems was selected, based on a number of important factors. This represents a change in vendors from Cabletron to Cisco. Cisco had been a supplier of some equipment in the past but now will be our primary vendor for network electronics.

The new network design in Pettengill Hall required enhancements to our ability to manage and monitor the network. With increased network complexity the techniques and applications used in the past to manage and monitor will no longer work. We purchased and installed the first phase of enhanced network management capabilities. Additional work in this area will be included in the network redesign.

- **Server Upgrades**

Initial upgrades to servers were performed to allow for testing and implementation of the first Web/Banner product, NO Line/On Line. The upgrade was scaled to accommodate only one module; if other modules are purchased additional hardware capacity will be required.

We established a server to support network access to CDRom titles from Macs and PCs. This server improves the ability for multiple users to simultaneously access CDs on the network. Previous technology only allowed one user at a time to access a CD title. Titles previously only available in the Library on stand-alone machines will be accessible from the campus network. In addition other materials such as application documentation will be readily available.

- **Strategic Planning and Operational Plans**

Working with the Dean's Office and members of the Computing Services Committee, we worked to form a new IS Advisory Committee. This required faculty legislation and approval

through administrative channels. We anticipate that working with this Committee will support a more deliberative and formalized consultation process for planning and operations than has been available in the past, with membership that includes faculty, staff and student representation.

The first major task, with the new Committee as the core membership, has been to prepare a strategic plan. The end of the time frame of the IS 1996-1999 strategic plan, and the implementation phase of the Goals 2005 planning process for the campus coincided this year. To take IS and Library planning to the next step, the President convened the ad *hoc* Information Services and Library Strategic Planning Committee. The Committee consists of the IS management team, the leadership of the Library, the Information Services Advisory Committee, and representatives of the Treasurer's office and the Dean of Faculty office. This committee began work in November.

As this is written, the report of the Committee is in its final stages of draft and review. In the process of gathering information and making recommendations, the Committee met a broad cross section of faculty and staff, gathered information on the state of IS and Library concerns at comparable campuses, assessed information on the external conditions that will affect IS and Library planning in the coming years, and engaged in a series of deliberations, not yet complete, to develop recommendations for the President on the future direction of the operations. The Committee also made efforts to gather information from students (in addition to including three students on the committee), with some limited results. Apparently, computing and libraries were not hot-button issues for students this year. A subcommittee of the Committee also gathered information from the IS and Library staff and a variety of other sources in order to fulfill the President's charge to examine the management structure of the organization.

The intent of the plan is to develop long-range goals and vision for the organization that are directly linked to annual operating goals and Goals 2005. We expect to revise the plan, and the annual goals, every year. A final version of the plan will be finished by the end of the summer.

- **CBB Collaboration**

IS will be working with Bowdoin and Colby to take advantage of grant opportunities for collaborative work in the languages as well as videoconferencing options for each of the campuses.

We have devoted a good deal of planning time to the CBB grant projects, especially in the areas of videoconferencing where Jim Bauer took much of the technical responsibility and in the User Education areas where Linda Spugnardi chaired the committee responsible for faculty projects and Library and IT collaboration. The videoconferencing system is in place on the three campuses and is being used by CBB committees to do their work. The system will be used more widely in the fall for faculty CBB projects in addition to other planned uses. We will have the capacity to videoconference beyond our three campuses in the future.

One of the organizational goals of the project was to develop linkages among the IS/IT organizations that parallel the successful cooperative interaction in the Library area that is firmly established. The steering committee has had a series of meetings about the future of the

collaborative enterprise (that is, after the current Mellon project funding runs out) and has identified some short- and long-term projects and activities that will strengthen planning and collaboration. During the coming year, we expect to revise the CBB strategic plan already in place for libraries to include IS/IT organizations as well.

The User Education committee sponsored three meetings of Library and IS/IT staff on the Bates, Bowdoin, and Colby campuses. These meeting allowed sharing of information and have improved the already established and ongoing Library collaborations. They also have given a beginning to IS/IT opportunities for collaboration between the three campuses. Another outcome of the committee's work has been to put into place a number of collaborative faculty projects, following, which are being supported by Library and IS/IT staff.

Biology
Barry Logan, Bowdoin College and Robert Thomas, Bates College
> This project will develop a web gallery devoted to plant images with special emphasis placed upon plant species native to Maine.

Classics
James Higginbotham, Bowdoin College and Margaret Imber,Bates College
> This project will enable us to construct web based modules that explore aspects of ancient Mediterranean societies.

Education
Karen Kusiak, Colby College, Marcia Makris, Bates College, Sarah Mackenzie
    and Lu Gallaudet, Bowdoin College
> This project will promote and sustain both faculty and student collaborative activities in the development of technologically enhanced resources for student teachers.

Geology
Peter Lea, Bowdoin College, Robert Nelson, Colby College, Michael Retelle, Bates College
> This project involves developing online resources for environmental geology studies in south-central Maine.

Pyschology
Bill Klein, Colby College, Paul Schaffner, Bowdoin College
> This project will incorporate various technologies that will allow our students to experience directly, and explore collaboratively, the various social aspects of behavior.

Computer Science
David Garnick and Eric Chown, Bowdoin College and Clare Congdon, Colby College
> This project group will develop constructopedias for classroom use and move the curriculum into robotics.

IS was able to use a vacant position to hire Greg Struve as a Training and Application Support Specialist . Part of Greg's responsibility will be to support the Language Lab and continue to work with the faculty. Greg will have additional responsibilities and will have additional faculty members to work with.

- **Pettengill Hall**

This project required significant amounts of time from much of the Infrastructure group this past year. The voice and data network design and implementation for the project was our responsibility rather than part of the general contractor contract. In addition Jim Bauer, Mike Perron and other IS staff took responsibility for planning and implementing many non-IS aspects of the building project, including furniture selection, signage, vending and kitchen design.

- **Planning for Year 2000**

Much work has been done to determine Y2K compliance and remediation needs. This work will continue through 1999 as noted in the following summary:

We instituted a review of desktop software and have posted results on the web. Additional information is being gathered on business-critical applications to ensure the validity of compliance statements.

All faculty and key administrative offices and users were informed of their Y2k responsibilities. Any software not purchased or installed by IS will be researched by the individuals or departments using the software. IS is available for guidance and has provided departments with a list of questions to use when speaking to vendors.

Internal clocks of supported desktop hardware have been tested and the results have been posted on the web.

Network and Unix operating systems and associated software are compliant. Assurances from the vendors who have used sophisticated testing procedures in like environments have been obtained.

The phone system is Y2K compliant but voice mail is not. Voice mail will be upgraded summer of '99.

The BatesCard system will be brought into compliance summer of '99.

The Course Evaluation system has been fully reviewed and remediation steps identified. This is running on a 486 machine using an old version of Lotus. We believe that it can continue to run in 2000 since there are no date-related calculations taking place in the program. A complete test will occur summer '99.

Though Banner has been certified as Y2K compliant we will be undergoing a test to verify compliance in our environment. The test will be done in concert with a Focus upgrade which is required for compliance. Microfocus Cobol was upgraded in March '99 to comply. There are some indications that the export utility in our current version of Oracle may have a Y2K problem. We will upgrade to 7.3.4 by December 1999.

The III Library system has vendor assurances of Y2K compliance. The vendor has provided the College with the appropriate version of the software in 1999 and has guaranteed its compliance.

- **Redesign and implement HelpDesk and AV operational merger and revise student worker positions within IS**

With Media/AV Services officially becoming part of IS, and with the two new employees starting in late August, we decided we had to experiment with student employees in a more active role than previously had been done at the Bates helpdesk. We revised the student IS positions to the following titles: Senior HelpDesk Assistants, HelpDesk Assistants, HelpDesk Technical Assistants. This allowed us to have the HelpDesk open 88 hours/week and to have only 2 helpdesk professionals. We employed 22 students at a given time. It also allowed us to send student technical assistants out for emergency calls from faculty and staff and students. These student assistants also went to student rooms to help solve problems with software and integration of peripherals. The two professional helpdesk staff covered 2 evenings /week to be available for events requiring AV staff. They came in at 1:00 pm on those late days. This left the HelpDesk short handed for a number of hours on those days. We had more student help in answering the phone than we had anticipated.

The Help desk received more than 10,000 calls from May 1998 to May 1999. Of these calls, 3,039 were entered into the database software we used to track and forward calls. The remaining calls were closed either during the first telephone call or by a member of UAG dispatched immediately following the call. For the calls entered into our database, the typical time between contact and resolution was 48 hours. Some calls remained open longer pending equipment that had been back ordered. Since March, most calls have been closed within 24 hours. The student technical assistants made visits to student rooms on 383 calls for help with their software.

The assessment of this experiment has reinforced suspicions that training on technical issues comes slowly to student workers and so, it seems, do general skills in interacting well with clients. Some faculty felt that service was not what it had been or what they would like it to be. This was due in part to new policies about home and non-supported computers and software. In addition, some incorrect or incomplete answers were given. We are in the process of rethinking how we answer questions and give support/ training with the staff available to support this. The new model will likely involve other IS people having HelpDesk shifts. Training will likely focus on more small group or one at a time learning for faculty and small group learning for administrators. Workshops will be offered for students and others who respond well to that mode of learning. We hope to have one person focus support on a department so that there is more personalization and mentoring taking place. However, we will lose both full-time HelpDesk professional staff this summer. This will decrease our options for the near future.

The model of having a technical support person available to a small number of faculty is one that has important implications for successful use of technology and for on-going learning and development. We hope to have some success moving in that direction, though demand for services continues to outstrip our available human resources.

- **R&D**

The software which has been the focal point for file and print services on the network for the past eleven years is no longer widely supported in the industry. The Banyan Company, maker of Vines, is now focusing their corporate energies on Microsoft Windows NT as a network operating system rather than their own version of Unix. This change in corporate focus has given us a chance to evaluate other ways to provide these network services to the campus community. Our work has been to look at the technical aspects of Windows NT and Linux as possible alternatives to Vines. It appears that both will have certain strengths. We have been utilizing both for over a year now and are becoming more aware of the strengths and weaknesses surrounding both environments.

- **Ladd Phase II implementation**

The renovation of the Library in the beginning of the year included the plan to extend network access and power supplies to additional locations throughout the building. This allows users to carry portable equipment into a variety of Library study settings with access comparable to their dorm room or office. The construction project included power and data connections to the periphery of the Library's ground floor and third floor, as well as connections to all the closed rooms and group study areas. Currently, all six conference rooms, the White lounge on the second floor, the photocopy area on the Main floor, as well as the carrels and tables on the Main floor have been activated (about 75 locations in all). The final phase of the project (now put off until the summer of 2000) will provide the hardware to connect an additional number of carrels and tables to the network. This work can be phased in.

The instruction room built in the first phase of the Library renovation continues to provide the central site for IS and Library instruction in computer use and information access. We are nearing the point where an additional classroom may be needed to serve peak use times, though we will assess this situation once the new rooms in Pettengill Hall are in place and in use.

- **Professional Development**

Staff training and development is a necessity to maintain competence and contentment among employees. During the 98-99 year, the staff took part in various conferences and training programs to hone their knowledge and skills. The Integrated Applications staff attended classes in Focus, Oracle 8, PL/SQL, SQLplus and Oracle Web. Four individuals also attended the annual SCT Summit Conference in Orlando — an intensive 4 day conference that proves invaluable to our efforts in implementing and maintaining Banner. The Management Team attended various conferences that promote interaction and collaboration with other colleges and universities, such as, CAUSE, NERCOMP, EDUCOM, CLAC, NEDAC, Group of 17 Librarians and others.

In the upcoming year, we have plans to continue with Oracle education and maintain a strong presence at the SCT Summit meeting. Planned training efforts include C programming, Oracle Web, SQLPlus, database and network administration, Unix, helpdesk and training conferences.

Other Goals and Issues of Interest

Service demands

- Expansion of Service Coverage from 8x5 toward 24x7: Having built a large and robust computer network we see the Bates community using it more and more frequently and a rising dependency and expectation that support for it covers all hours of the day every day of the week. Information Services is not currently staffed for this level of support. Few staff members have been hired with an understanding of working more than a normal 8:00 a.m. to 5:00 p.m shift Monday through Friday. Many staff members have taken on additional hours to fix network and print facility problems and to backup critical computer systems on a best effort and as available basis. On occasion we have been the target of frustration and criticism when systems have not been available or failed on weekends. We think it important to address the issue of staffing a 7 day a week twenty four hour a day environment. This coverage may not be required every day of the year but a specific calendar should be developed and articulated to the Bates community.

- Significant demands are being placed on the organization to provide more and more support for a growing world of diverse products and conflicting needs. There are also requests to provide extended hours of direct coverage, including an operations function. We have not been able to allocate staff to accommodate these requests without serious degradation of service during business hours.

- Information Services has supplied limited support over the years to faculty in support of the curriculum. Most support has been in purchasing hardware, connecting to the network and repair service after the fact. This year we experimented with service contracts on all Bates owned equipment and with CBE, a vendor, providing a technician to repair Bates owned equipment and warranty work for personally owned machines. We found that people with personally owned machines did well with this program but we did not get adequate return on the contracts for Bates owned equipment. This year we will move to an hourly rate for the technician and will charge for personally owned machines needing repair. Warranty work on machines purchased from Bates will not be charged. We will evaluate this model in December.

- We have purchased special software and assisted to a certain degree in connecting analog devices in laboratories. However, we have not been as proactively involved in demonstrating tools and techniques to enhance curriculum work, ensuring faculty training and follow up support for faculty in the use of technology in the curriculum as we should. We intend that restructuring the work of the training group will provide more focused support for faculty members.

- The Bates College community is rapidly advancing in its use of technology. As it does, there is an increased demand for new and extended support services. We anticipate that the volume and complexity of service requests (help desk calls, new installations, trouble shooting) will continue to rise as users take on more complex work. In college

computing circles, this is being called the "support crisis," where capacity to install new equipment quickly overtakes capacity to provide technical support. The demands we see on the horizon include extending help desk and support functions into evenings and weekends, and operations and trouble-shooting services to seven days a week, twenty-four hours a day. We also see increasing demand for support for faculty in using technology in the curriculum in the Language Department model. We can make some inroads in these service areas, but major expansion will require additional staff.

Salary and staffing concerns

Maintaining competitive salaries and adequate staffing levels of technical staff will be an ongoing issue. The rate of increase of salaries for computing personnel is greater than that of the general job market. This trend is consistent across information services job categories, and is especially pronounced for data base analysts, support services staff, Web experts, and systems programmers. If Bates salaries do not stay competitive, then we risk becoming a permanent training site for people who leave for more lucrative employment in a very short time. While we expect turnover for some staff, we must be able to keep highly talented people in order to provide a stable computing environment. We see an upcoming need for additional staff positions, including a Webmaster, outlined below, a senior programmer/analyst to work on higher level projects for Banner, and an entry-level programmer for more routine integrated applications work.

Network, servers, and desktop demands

We see no indication that the current trend of continuous change in industry standards will slow, with major revisions of most software packages every year, bringing demand for increased bandwidth, memory, speed and capacity. We must plan for continual replacement and upgrade of desktop machines, network infrastructure and software, as well as new and more powerful servers to provide information on campus. There are requests in the current year's budget for items of this nature, and they will continue in coming years. As a planning concern, we do not believe we can expect that a desktop machine will be fully functional for the full four years of a student's experience, as new software versions and new capabilities are introduced and older versions become incompatible with new versions.

Data storage

We expect that demand for data and data storage will continue to expand. This will include demands for data and data analysis as Banner use matures, which will require storage capacity for data sets and software to update them. We also expect classroom and research use of data sets, such as geographic information systems data, to increase, which will require greatly expanded capacity for network storage of data. We are providing systematic backup facilities for desktop machines to control the need for secure storage on the network, but we expect that systems with large scale sharable data will continue to grow.

Planning

We are enthusiastic about the new budgeting approach taken by the finance department, but we are concerned about the number of projects identified as technology related. These initiatives seem to all have value for the departments proposing them. We will begin a process with Finance to analyze these requests, but can anticipate that we will need to work out a systematic process to analyze, prioritize, and adequately fund requests. We hope to develop a strategy that does not imply that because requests are submitted that they will automatically be done.

Sales functions

Our capital request includes planning for centralized space for IS functions, perhaps in Coram. The 110 Russell Street building will still be needed for delivery, inventory and repair functions, though the building will present ongoing problems because of its location across a busy street and its zoning status. We have initiated discussions with the Bookstore to determine if they would be able to take over sales functions, which would provide a more professional location than currently possible at 110 Russell Street. This would require additional space for the Bookstore. It would allow us to design Russell Street location for the inventory and repair functions without a showroom or sales area.

Telecommunications financing

The current financial model for telecommunications is probably not viable in the long run. In it, the College provides dial tone services and instruments to students at no cost, and subsidizes this with revenue from long distance calls, charged at the tariff rate. Increasingly, students, faculty and staff have options for long distance services that are both easy to use and highly discounted. We can anticipate that the revenue stream will diminish as users choose lower cost options.We have restructured the budget to allow complete analysis of this problem. We have no current plan to change the financial model, but would be prepared to work with the Financial Office to develop a proposal for the 1999/2000 academic year.

Campus WWW Management

There is a growing need to have someone manage the College's WWW environment. The CWIS Team has worked with College Relations and with Jim Hart and Rob Spellman (on the technical side) to set guidelines and maintain a structure that makes sense for Bates and provides a good image to the world. The IS/Library strategic plan will have recommendations on how to provide professional management support for the Bates Web.

Goals for 1999-2000

- Begin to implement the IS/Library Strategic Plan.

- Implement the Human Resources module in Banner

- Continue implementation of updated network design based on available funding.

- Enhance Network Management, monitoring and diagnostic capabilities.

- Implement Web for Faculty (pending capital funding).

- Continue to redesign HelpDesk and Training function

- Connect with UMaine, Colby and Bowdoin for added Data, Video and Voice capabilities.

- Examine alternatives for Voice communication charge back models.

- Begin steps required to renegotiate telephone toll rate contracts.

- Enhance bandwidth to the Internet.

- Continue to implement new network service.

- Continue migration of file and print services away from Vines.

- Upgrade Focus software for report writing.

- Install new HelpDesk software to improve tracking.

- Finish CBB Mellon grant and develop long range plan.

- Resolve dial-in ISP issues.

Capital Projects 1-3 Years Out

• **Desktop Replacement Cycle**

The College currently has 1,000 desktop machines and shared printers in use on campus. Planning on replacement of 1/5 of these devices each year at an average cost of $2,500 per device would require $500,000 per year. We think printers have a longer life span than desktop systems so we are looking at a need for an additional $200,000 dollars per year to accomplish a 3-5 year replacement life cycle. We consider this an average life cycle since some machines need to be replaced more frequently and some less frequently to serve the computer power requirements in certain academic areas. We have requested this additional fund in our operating budget for 1999/2000.

• **Renovations for IS Space**

Information Services has been seeking space to co-locate IS functions. Our preliminary investigation suggests that Coram provides a potential solution to some of the space needs for our organization. It has the centrality to all campus users, potential for office spaces and public labs, and proximity to the Library that make it very attractive. It lacks the potential for shop, storage, repair and warehouse space currently filled by 110 Russell St.

We have proposed that the College engage a professional architect to work with us to do a needs analysis for IS and a feasibility study of Coram or some other location that provides centrality on campus and proximity to the Library to meet some of those needs.

• **New Academic Building equipment and ongoing support**

This component has many prongs. The first and most fundamental is that the building is only partially wired to utilize state of the art electronics and computers. While offices and labs are fully networked there are many locations in the building which will not have active network jacks. Secondly no new desktop computers are included in the budget for the building equipment. This is due to the need to meet the approved budget figures for the building project. The conduit has been installed to many of these locations but the cable and electronics to deliver network services will not be installed. The building will have a number of state of the art facilities which will allow the faculty to experiment with use of these technologies in the classroom in new and different ways. As faculty discover what features and devices work best for them additional classrooms in the building will need to be outfitted. This will allow for better use of funds since we will be able to install newer devices at lower costs than if all the classrooms were outfitted now.

Once the building is operational there will be additional demands placed upon Information Services to support the added resources to be made available to the faculty in curricular support and training as well as general equipment maintenance.

- **Document Imaging**

Several areas of the College have expressed a need for document image storage and retrieval capability. Primary examples are the Registrar Office's need to move away from microfiche storage of transcripts for past students , the Development Office's need to move away from the voluminous amounts of storage associated with gift data, pledge data, and other departments' needs to deal with inventory documents, copies of check transactions, and many other data elements. This technology is dependent on additional server, data storage and retrieval software which we do not currently own nor have expertise with.

- **Information Security (over the network)**

As users become integrally linked to the network to support their day to day work and research, security of that information at all levels of the network needs to be examined. This includes encryption of data both when stored on a computer or network server as well as when that information is transmitted over the network. Another area of information security is authenticating users for access to "secured" resources. This is to ensure that "you are in fact who you say you are." We have developed some experience with PIN numbers for the Banner student module. We will need to be sure our controls are adequate as more administrative and personal information is available with Web access.