Smith College IT Strategic Plan
Executive Summary – May 2011

Goldstein & Associates, LLC
Introduction

We are pleased to submit to you this executive summary of the information technology strategic plan. The plan reflects our recommendations and the consensus for action among the participants in the planning process. This executive summary highlights the vision and principles that guide the plan, presents the strategic opportunities and the initiatives required to attain them and the implications for IT governance, organization and staffing.

The detailed plan provides additional information about each initiative and presents the relative priority and optimal timelines for their implementation. These timelines will require further adjustment as implementation plans are developed and resources are allocated to accomplish the plan. The detailed plan also includes more extensive descriptions of the new competencies and positions required in ITS, the balance of central and departmental responsibility for IT and the charge to IT governance groups. It also includes a forecast of one-time and recurring investments required to implement the plan.

Vision and Principles

The plan positions Smith to be more aggressive and comprehensive in its use of technology to support all facets of the college's mission and strategy. It responds to a number of different strategic drivers. First, it enhances Smith's ability to recruit the best students and faculty by providing the technology tools and support that individuals have come to expect from a leading institution. Second, it increases the College's capacity to support the efforts of faculty members to use technology in innovative ways to enrich and enhance learning. Third, the technology strategy enhances the College's capacity to effectively engage its constituents and create deeper and more meaningful connections to Smith. Fourth, it improves the operational efficiency and effectiveness of the college by deploying better analytical tools, further automating processes and expanding self-service. Lastly, it provides the technologies that will enable faculty, students and staff to be more mobile and to collaborate more efficiently with colleagues from around the world. Likewise, the strategy positions the institution to use technology to make its scholarly content more accessible to collaborators and individuals from around the world.
Smith’s long-term technology direction is captured in the following statement of vision.

*The effective use of technology and information is vital to Smith’s strategic directions and institutional goals. Technology will continue to enrich Smith’s educational offerings, provide students and faculty access to a global network of collaborators and augment place-based learning. It will provide new avenues for engaging diverse stakeholders including prospective students, alumnae, and the community at large.*

Technology at Smith will embrace best practices and never lag behind in the ability to meet reasonable expectations. In most areas, it will stay near the leading edge\(^1\) of technology adoption. The College will seek to be innovative in areas that support effective pedagogy and scholarship. It will sustain a technology infrastructure that is secure, reliable and sufficiently robust.

As Smith pursues its IT vision, its decisions and priorities will be guided by seven principles. Smith will:

- Foster innovation and take risks in the application of proven technology in faculty research and effective pedagogy. In all other areas, be a close follower in technology adoption.
- Use technology to enhance place-based education and ensure that place does not become a competitive disadvantage.
- Create opportunities for students to develop a technology fluency and aptitude that will serve them throughout their lives.
- Invest in technology that facilitates individual and institutional collaborations both within the Five Colleges and beyond.
- Use technology to enable faculty, students and staff to work effectively anytime, from any place and with any device.
- Apply proven technologies in innovative ways to improve and sustain constituent engagement and effective administrative services and campus operations.
- Use technology to support efficient and effective administrative services and data driven decision-making.

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\(^1\) Organizations at or near the leading edge of technology adoption are those that seek to be among the early majority of adopters of technology. They tend to follow behind the innovators and early adopters of a technology. Being near the leading edge suggests that Smith will adopt technology that is proven but not necessarily broadly used within its peer group.
Strategic Opportunities

Smith’s IT plan incorporates ten strategic opportunities that contribute to one or more aspects of Smith’s vision. The diagram on following page illustrates the interrelatedness of the strategic opportunities and their support to the vision. Each opportunity requires the implementation of multiple initiatives over a three to five year time horizon. The detailed plan provides a complete description of each opportunity, its supporting initiatives, projected timeline and expected outcomes.

The strategic opportunities are interrelated and include actions that support multiple outcomes. For example, adoption of cloud computing solutions is called out as its own strategic opportunity. It is also a tactic that ultimately will enable the realization of other strategies including enhanced mobility, improved disaster recovery and potentially others. Likewise, Five College collaboration is both a strategic opportunity and an enabling tactic of multiple goals.

The strategic opportunities are described below.

**Teaching and Research Excellence**

*Accelerate adoption of effective learning technologies, as appropriate.*

Through targeted investments in infrastructure, support staff and faculty led projects, this initiative will accelerate the current use of technology in Smith’s courses. It includes expansion of the number of technology enabled learning...
spaces (classroom and non-classroom based), creating mechanisms to support faculty adoption of effective uses of technology in courses, the development of processes to assess the impact of technology on learning outcomes and increased development of hybrid and online courses in collaboration with the Five College collaboration.

**Implement a digital repository/digital asset management solution**
Digital asset management (DAM) consists of management tasks and decisions surrounding the ingestion, annotation, cataloguing, storage, retrieval and distribution of assets. Digital photographs, animations, videos and music are samples of media asset. Digital asset management systems include software and hardware systems that aid in the process of digital asset management.

Smith’s unique academic assets are increasingly available in digital format. However, data, images and other artifacts are stored in standalone databases that are difficult to access. This initiative complements planning spearheaded by the library to examine the digital asset management, intellectual property and policy issues that surround the creation of a digital repository. It calls for a comprehensive initiative to provide digital preservation services for scholarly resources, helping to ensure their integrity, authenticity, and usability over time. This initiative also includes establishing the protocols for organizing content, tools to facilitate integrating content into course materials and policies to govern access to content.

**Operational Excellence**

**Implement a business intelligence solution.**
Smith lacks the technology, organizational capacity and management processes to adequately support data driven decision-making. This strategic opportunity will replace the college’s shadow databases and ad-hoc reports with an integrated data warehouse and tool set for analysis. The projects completed will improve data governance, train staff to be better data analysts and through a phased deployment, introduce the technology Smith requires to support operational reporting, longitudinal analysis, predictive modeling and other forms of advanced analytics.

**Enhance the effectiveness of administrative technology.**
Administrative processes do not take full advantage of Banner and other already implemented technologies. Current capabilities are under-utilized, available functionality is not completely deployed and processes have not been tailored to take full advantage of software features. Significant complementary software applications do not easily share data with Banner.

This strategic opportunity takes a three-part approach to enhance Smith’s administrative operations through technology. The first set of initiatives focuses on optimizing the use of Banner. The second better integrates complementary
technologies with Banner to create a single institutional data set that will serve as the foundation for business intelligence. The third part extends administrative systems’ capabilities through deployment of additional technologies and a repositioning of the skills within administrative computing.

Enhance web self-service.
Smith delivers many of its services to prospective students, students, faculty and staff via the web. This enables many of these services to be delivered as self-service, eliminating the need to visit an office during normal business hours. This degree of anytime, anywhere self-service has become a minimum expectation of College constituents.

This strategic opportunity extends and expands the College’s web self-services. Initial opportunities to extend self-service include both major support processes such as electronic billing, admission application submission and review, and financial aid award notifications as well as to support minor administrative processes such as conference enrollments for student clubs and organizations. The opportunity includes the exploration of the pros and cons of implementing a portal to help constituents organize web-based services and information.

Smith without Boundaries
Improve constituent engagement.
Social networking and similar highly interactive web-based technologies are transforming the way organizations and individuals communicate and collaborate. These technologies present Smith with new methods to connect key constituencies including alumnae, parents, students, Five College students and faculty, and perspective students, to the College and one another. It creates new avenues to bring the digital content and events of the College to these varied constituents.

This strategic opportunity creates the capacity to explore and deploy multi-media, social networking and other interactive web technologies to enable constituents to access existing campus resources, lectures, short courses, etc. Additionally it considers how CRM2 solutions can be used to support more sophisticated communication and outreach to alumnae and prospective students.

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2 CRM – refers to a category of software known as constituent or customer relationship management (CRM). CRM software is used by organizations to track and tailor their interactions with constituents based on their interests and preferences.
Support Five College academic collaborations.
In the next five years, Smith is likely to engage with other Five College institutions to share faculty appointments and courses. Greater academic collaboration will increase the number of students and faculty who require physical and virtual access to the resources of each of the Five Colleges.

This strategic opportunity outlines several collaborative initiatives that Smith should champion to use technology to make the student and faculty experience seamless across the Five Colleges. Unlike the other strategies in this plan, Smith cannot execute these initiatives without the support and resources of the other four institutions and Five Colleges, Inc. These are areas in which it is in Smith’s interest to take a leadership role within the Five Colleges including providing staff, financial support and a willingness to compromise on technology and process design decisions in support of its larger strategic objectives.

Enhance faculty, student and staff mobility
Smith faculty and students are increasingly mobile on and off-campus (including Five Colleges). Providing students, faculty and staff the ability to work effectively at anytime and from anywhere is becoming a baseline expectation of the campus community. This initiative deploys the technologies and support services required by a mobile population. The position of a digital media specialist will assist in supporting the increased demand for web and mobile applications.

Agile and Reliable IT
Source technology to collaborations and the cloud.
The alternatives to self-operating technologies and support services are growing more numerous and mature. Smith is already engaged in some IT collaborations within the Five Colleges. In addition, the College has turned to third parties to host some applications such as the content management system.

This strategic opportunity positions Smith to source more technologies to commercial providers and other higher education collaborations. It enables Smith to systematically review and determine the optimal sourcing strategy for each major technology and support service. It lays the technical and policy groundwork to expand use of cloud computing. Technologically it relies on initiatives highlighted in other strategic opportunities including the continued upgrading of the wired and wireless network and identity management. It also includes initiatives to mature the organization’s capability to evaluate, select and manage more varied sourcing strategies.

Maintain a reliable IT infrastructure and improve capacity to prevent or recover from disaster.
This initiative commits the College to annually assess the condition of its infrastructure and make investments to enable its on-going renewal and
replacement. A reliable infrastructure with sufficient capacity to meet current and future demands is foundational to all of Smith’s strategic technology opportunities. It is critical that Smith maintain a network with adequate capacity and redundancy to provide access to critical technologies on and off campus. Computing hardware and software must be kept up to date and continue to be replaced at regular intervals.

Major Smith technologies are vulnerable to prolonged (hours or days) outages in the event of a disaster in the primary data center. In addition, the College faces increasingly complex information security threats. This initiative expands formal disaster recovery planning and implements strategies to reduce the time required to recover from disaster. It also expands current information security capabilities and practices.

A summary of the initiatives linked with each strategic opportunity and the associated benefits is included in table 1.

Resource Requirements
These strategies require Smith to substantially increase its investment in technology. Smith currently allocates approximately 4.2% of its total operating budget to technology. High-level estimates suggest that Smith may need to increase its annual operating expenditures for technology by more than 50% over five years to support new technologies and approximately 8 to 10 additional staff. In addition, the college should expect one-time expenditures of a similar magnitude. While some redistribution of resources is possible, most of this requires new investment.

Organizational Implications
The plan challenges ITS to significantly re-orient its skills and services. As services are sourced externally the College will require fewer positions focused on operating technology. At the same time, the plan calls for the addition of new consultative skill sets and positions to support the improved use of technology in instruction and operations. For example, the organization requires new or additional competencies in business intelligence, project management, digital media and instructional technology. The administrative computing team needs a broader focus and additional skills in systems integration, and web and mobile application development. User support needs to incorporate additional remote and self-service technologies to increase its productivity and extend its ability to support a mobile

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3 In FY11, the core ITS base budget was $7,169,848 or 3.8% of the college’s total operating budget. Including CATS and other departmental expenditures, the college allocated about 4.2% of its total operating budget to technology operations.
user population. Finally, the complexities and importance of information security requires a dedicated position.

College-wide, Smith needs to clarify and pro-actively manage the division of responsibilities between ITS and departmental technology staff. Departments such as the Science Center continue to require dedicated staff to support unique technologies. Administrative departments require business analysts with technology skills to help configure Banner and other administrative technologies to work in concert with business processes. Departments also require access to staff with the skills to build ad-hoc reports and queries to leverage the new business intelligence infrastructure. As services and technologies evolve, college leaders need to continue to work collaboratively to manage the focus of departmental staff and avoid duplicating services that are or should be offered by ITS.

**IT Governance**

IT governance is needed to monitor and adjust strategies, establish annual priorities, lead efforts to change culture and practice in concert with technology change, and to spur continuous exploration of new developments in technology. Smith has in place the basic structure it requires for IT governance. Adaptations to the charge, authority and membership of the committees will improve their effectiveness.

Three appointed committees will carry out IT governance. Responsibilities of each committee are introduced below.

| **Technology Steering Committee (TSC)** | • Focus on all areas of technology; • Oversee implementation of the IT plan; • Recommend annual investment priorities, policies and changes to IT services to Senior Administrators and the Committee on Mission and Priorities. |
| **Committee on Educational Technology (CET)** | • Focus on technology related to teaching, learning, and research; • Align educational technology strategy with effective pedagogy, faculty interest and student expectations; • Recommend priorities for investment; • Sponsor initiatives to expand the use of technology in education. |
| **Committee on Administrative Technology (CAT)** | • Focus on technology related to administrative services, campus operations and the effective use of data to support decision-making; • Recommend priorities for investment and identify opportunities for collaboration across administrative |
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- Sponsor initiatives to improve efficiency and effectiveness through the use of technology;
- Solicit appropriate input from faculty regarding their administrative technology requirements.

Two groups will complement the IT governance committees:

- **Initiative Teams** – Ad-hoc groups will be appointed to sponsor, coordinate or support discrete projects or initiatives. Their membership, charge and duration will be determined on a case-by-case basis. Initiative teams are accountable to one or more core committees.
- **Communities of Interest** – Communities of Interest will be regular, informal gatherings of IT and non-IT professionals, faculty and students with an interest in a particular technology or technology topic. Communities are sounding boards for IT decisions, may identify new technology opportunities and share best practices.

Details regarding the charges and membership of the committees are included in the full plan.

**Critical Success Factors**

This plan represents a robust set of activities for Smith to implement over the next three years. To be successful there are a number of critical factors that must be in place to ensure the College’s success in implementing the strategies outlined in this plan.

- First, leadership must review the ten strategic opportunities and **confirm the priorities** and phasing for implementation. Not all of the initiatives can be nor should they be implemented at once. Campus leadership must review the initiatives and prioritize them in alignment with the overall goals of the College.
- For each initiative, Smith must **identify dedicated resources** to support the implementation. Such resources include project management expertise as well as functional and IT staff. In some cases functional staff time may require backfilling so they can truly dedicate their attention to project tasks. Project costs should also be refined to ensure a complete accounting of expected investment requirements.
- Successful implementation of new technology requires a **partnership between functional owners and IT** and unified leadership to guide the campus through the cultural change that will naturally occur as a result of the adoption of new technologies and new ways of working at Smith. The IT Governance committees will play a crucial role in monitoring project progress and be willing to adjust priorities and timelines as needed and in
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light of the rate of absorption of change and adoption of technology by the campus community.

• Given the magnitude of change it is critically important that routine and transparent communication be made to the campus regarding the goals of the strategic plan and the progress made on the implementation of each initiative.

• Training will be critical to ensure the adoption of new technologies as they are implemented into the workplace. Training should be offered both in person and online to accommodate the various learning styles of staff and faculty alike. Training is also necessary in project management for the individuals identified to lead project teams. Such training, coupled with the adoption of standard project management tools will ensure that Smith project team leads develop the core competencies required to lead multiple projects over the next three years.
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| **Accelerate adoption of effective learning technologies.**   | Through targeted investments in infrastructure, support staff and faculty led projects, this initiative will accelerate the use of technology in Smith’s courses.                                                                                                       | • Create a bi-annual instructional technology showcase.  
• Add instructional designers.  
• Continue to assess utilization and pedagogical impact of learning technologies.  
• Build additional on-line and hybrid courses to support Five College collaboration.  
• Create additional collaboration learning spaces and provide necessary resources to support increased multi-media collaborative projects.                                                                                      | • Improved learning experience both inside and outside the classroom.  
• Increased number of faculty integrating technology into the learning experience.  
• Increased use of multi-media and other technologies by students in their coursework.  
• Increased opportunities for Five College Collaborations.                                                                                                                                                                                                                           |
| **Digital repository/digital asset management solution.**    | Smith’s unique academic assets are increasingly digital. This initiative provides digital preservation services for scholarly resources, helping to ensure their integrity, authenticity, and usability over time.                                                                          | • Develop strategy for the use of a digital asset management system (including researching current practices at peer and other institutions).  
• Continue work to establish policies for sharing assets.  
• Organize the project team.  
• Evaluate alternatives and select best technology solution.  
• Select implementation partner.                                                                                                                                                                                                                                                                                              | • Promotes greater utilization of Smith’s unique digital assets.  
• Increased student and faculty satisfaction with ease and access to digital assets.                                                                                                                                                                                                                                                                  |
| **Implement a business intelligence solution.**              | Smith lacks the technology, organizational capacity and management processes to adequately support data driven decision-making. This strategic opportunity will replace the college’s shadow databases and ad-hoc reports with an integrated data warehouse and tool set for analysis.  | • Prepare the college for the implementation of a BI strategy.  
• Implement data governance practices.  
• Confirm the phasing strategy.  
• Review and select the best technology solution and implementation partner.                                                                                                                                                                                                                          | • Improved decision-making.  
• Increased focus on data analysis versus report production.  
• Ability to analyze strategic data both from a longitudinal perspective.                                                                                                                                                                                                                                                                     |
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| **Enhance the effectiveness of administrative technology.** | This strategic opportunity takes a three part approach to enhance Smith’s administrative operations through technology. The first set of initiatives focuses on optimizing the use of Banner. The second better integrates complementary technologies with Banner to create a single institutional data set that will serve as the foundation for business intelligence. The third part extends administrative systems’ capabilities through deployment of additional technologies and a repositioning of the skills within administrative computing. | • Assess the current utilization of Banner.  
• Implement Banner integration and improvement projects.  
• Clean-up Banner data.  
• Analyze the use of shadow systems across the college.  
• Strategically reposition the ITS administrative computing team.  
• Perform a structured assessment of all staff members’ technology and analytical skills and provide required professional development experiences. | • Improved effectiveness and efficiency of administrative processes in strategically important areas;  
• Improved accuracy of data to support reporting and analysis; and  
• Reduced effort to manage shadow systems and move data between systems.  
• Enhanced staff capacity to use and manage technology. |
| **Enhance web self-service.** | This strategic opportunity extends and expands the college’s web self-services. Initial opportunities to extend self-service include both major support processes such as electronic billing, admission application submission and review, and financial aid award notifications as well as to support minor administrative processes such as conference enrollments for student clubs and organizations. | • Identify priorities for added web self-service.  
• Extend the capacity to develop web and mobile applications.  
• Develop and implement a short-term and long-term portal strategy. | • Increased student and faculty satisfaction with services.  
• Increased percentage of services that can be transacted from anywhere and at any time. |
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| Improve Constituent Engagement. | This strategic opportunity creates the capacity to explore and deploy multimedia, social networking and other interactive web technologies to enable constituents to access existing campus resources (e.g., JStor), lectures, short courses, etc. Additionally it considers how CRM solutions can be used to support more sophisticated communication and outreach to alumni and prospective students. | • Develop a strategic plan for technology enabled constituent engagement.  
• Assess College-wide staffing requirements to support research, deployment and use of digital media.  
• Implement technologies (e.g., Facebook applications) to enhance constituent engagement.  
• Deploy a CRM solution. | • Improved constituent satisfaction with the College.  
• Increased penetration of College communications to their desired audience.  
• Increased stakeholder participation in College events, activities and initiatives.  
• Increased revenue from new channels for donor outreach and engagement. |
| Support Five College academic collaborations. | This strategic opportunity outlines several collaborative initiatives that Smith should champion to use technology to make the student and faculty experience seamless across the Five Colleges. | • Upgrade identity and resource access management capabilities.  
• Support Five College efforts to facilitate course registration.  
• Improve student technology support processes.  
• Migrate to an interoperable one-card solution.  
• Migrate to a common learning management system. | • Increased student and faculty satisfaction with services across the Five Colleges.  
• Increased numbers of students cross-registering for courses.  
• Reduced elapsed time to receive access to campus services for students and faculty from other colleges. |
| Enhance faculty, student and staff mobility. | Smith faculty and students are mobile on and off-campus (including Five Colleges). Providing students, faculty and increasingly staff the ability to work effectively at anytime and from anywhere is becoming a baseline expectation of the campus community. This initiative deploys the technologies | • Plan and finance a regular renewal and replacement program for the wired and wireless network.  
• Pilot and if successful implement virtual student labs and virtual desktop solutions.  
• Implement tools (knowledge bases, remote desktop management) to | • Confidence that Smith will keep pace with changes in networking technology.  
• Availability of technologies that enable students, faculty and staff to securely access their data and software |
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| and support services required by a mobile population and is closely linked to Strategic Opportunity #8: Enhance Web Self-Service. | improve self-service and remote support and expand after hours support services.  
• Develop a mobile applications strategy.  
• Implement an expanded suite of collaboration tools for faculty, students and staff. | applications via the Internet.  
• Access to self-service and after hours technology support.  
• Increased productivity through improved ability to collaborate with classmates and colleagues. |
| Source technology to collaborations and the cloud. | Identify cloud and collaboration opportunities (see detailed plan for candidates).  
• Prepare policies and procurement practices for cloud and collaborations.  
• Sustain the technology infrastructure to facilitate cloud and collaborative solutions. | Reduce cost of deploying or sustaining technologies or services.  
• Increase capacity to deploy new technologies.  
• Greater ability to focus College resources on strategic services. |
| Maintain a reliable IT infrastructure and improve capacity to prevent or recover from disaster. | Update Business Continuity/Disaster Recovery Plan.  
• Develop a plan for securing new data center space in collaboration with another institution or a public or private cloud.  
• Create a dedicated position for information security (could be a shared position within the Five Colleges) focused on security policy, risk assessment, communications and training and monitoring developments in technology and regulations. | Reduced risk to business operations in the event of a prolonged system outage.  
• Guaranteed availability of stand-by systems.  
• Improved information security including awareness by the Smith community of their responsibility for information security in terms of technology applications, physical paper and digital assets. |