COLLABORATION SERVICES WORKING GROUP REPORT
Document Management and Collaboration Services:
Enabling the Highest Order of Excellent

February 2005

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OVERVIEW
The Collaboration Services Group was formed in the fall, 2004, to bring together members of the University community who were concerned about the challenges of working together in a networked environment where most work and communication is increasingly accomplished electronically. Beyond the issues of sharing and organizing electronic documents and e-mail, the Group was particularly concerned with how communication and collaboration can be facilitated, how processes and procedures might be simplified and anticipating services needed to address future challenges.

In order to assess how widespread these issues and concerns were, the Group invited each Dean and Vice President to recommend staff who could meet to review some of their program’s activities and needs. Recognizing that it was premature to do a systematic assessment of each unit’s requirements, the goal was to create a snapshot of the University’s common issues and concerns.

We found that some members of the University community are beginning to independently address these challenges. Information Technology reported that over 100 customized “courses” have been created in the Course Management System to support academic administrative needs and committee work and almost 1.1 billion electronic mail messages were handled by central mail servers in 2004. We learned that five schools (Kellogg, McCormick, Communications, Law, Continuing Studies) and the University Library have begun or will soon be exploring how Microsoft SharePoint can be used to create Web sites that support document sharing and collaboration. We also heard how OnBase is being used by Accounts Payable to manage access to scanned images of invoices and receipts and by Alumni Relations and Development to manage donor letters and documents.

Our meetings and discussions revealed we have reached the limit of how we can use electronic mail to effectively communicate and make decisions and do not have effective ways to share, manage and track the documents that are an integral part of University collaborations. The problems are greater than what an individual unit of the University can address with limited resources and a narrow scope. The Collaboration Services Group recommends the University establish an enterprise document management and collaboration services infrastructure that will support the administrative and academic needs of the University. As with other enterprise systems, this infrastructure will not only be used to address the problems we face today, it will play a critical role in developing new services and applications essential for realizing the University’s strategic goals and objectives. Because these issues are so important for the University community as a whole, the Group recommends that Information Technology identify
short-term solutions that can quickly enhance existing resources and services, as well as new collaboration services that are starting to be used informally by the University community, while longer-term solutions are developed and funded.

ISSUES AND CONCERNS

Discussions with administrative and academic units across the Evanston and Chicago campuses were often lively and revealed many interesting examples of how people are addressing the challenges of working with paper and digital documents while finding a balance between face-to-face and electronic communications. There was general recognition that we are all facing the same types of challenges and there is genuine interest in working towards common University-wide solutions. The issues and concerns from these discussions have been summarized in four areas: collaboration and sharing, business practices and procedures, decision making and knowledge management, and enterprise systems integration.

Collaboration and Sharing

Much of the administrative and academic business of the University involves sharing information and documents. This can include daily e-mail messages, letters and correspondences, managing a school, department or program, as well as ongoing or ad hoc committee work. While computers have greatly facilitated creating documents, discussion participants described how sharing documents for comments and review is becoming a greater challenge, especially as the number and diversity of participants increases. In a typical scenario, a document is shared as an attachment to an e-mail message. The document’s author must manage the comments and suggestions from multiple replies. Sharing the next revision repeats the cycle, with each recipient responsible for managing the new attachment, making sure they know which file is the most recent version and maintaining any necessary confidentiality.

Even when documents are shared on a server, many described how difficult it can be to track revisions made by different people. We heard from administrators who, after taking budget planning spreadsheet files home to work on, discovered they had overwritten each other’s work when they copied their files back to their server and then had to collect and consolidate each other’s revisions into a single file. While some felt they are able to collaborate effectively within their department or program, they are finding it increasingly difficult when activities extend beyond their working group, such as coordinating annual budget planning.

Across the University, there was great concern about the need for being able to control access to who can see a document (especially when there are confidentiality and privacy concerns), restrict who can change a document and guarantee that only one person can edit a document at a time, while keeping track of each revision. Some warned that providing a history of a document’s evolution will become increasingly important for reviewing decisions and auditing requirements. There was general agreement on the need for secure storage, backup and recovery, as well as automating retention and disposal policies so files are not kept longer than required.
**Business Practices and Procedures**

People from different units and programs described participating in many of the same business processes and expressed frustration when faced with problems they assume others must already have solved. Department Assistants described how University requirements for review and approval, from grant proposals to petitions for changing graduation requirements, involve collecting documents and passing them around, often on foot, for signatures. In addition to the time to deliver and pickup paperwork, administrators acknowledged the disruption of having to stop what they are doing when someone appears unexpectedly with materials that need their attention. There was general agreement that enabling electronic authorization or signatures would greatly facilitate many processes.

When tasks are infrequent, such as accreditation or program review, people described the challenges of inventing new ways to collect and manage information and develop the necessary reports. Or, as they embark on new tasks, discovering how time consuming and difficult it can be to find answers to questions about policies and procedures. They also recognized that they might not even know there are questions they should be asking or might not be aware when they are being guided by incorrect or out-of-date assumptions.

There was general recognition in our discussions that greater efficiencies and improved service could be realized by being able to link communications, documents and procedures electronically. This would make it possible to assure compliance with federal regulations concerning privacy and access to information, authorization and approval, file retention and disposal, and to anticipate the needs for audit histories. Equally important, it would be easier to implement University policies and procedures, even for highly sensitive areas like tenure and promotion and job actions. Staff expressed particular interest in having the resources available that would empower them to develop procedures that could be replicated by others, no matter what part of the University they represent.

**Decision Making and Knowledge Management**

Increasingly, the University’s intellectual and business assets are in digital formats. People described how committee work and reports are developed in word processing documents, budget planning takes place around spreadsheet files, and presentations take advantage of digital slide shows. Managing these assets ranges from printouts in desks and file cabinets to files saved on personal hard drives or shared file servers, which might not be properly backed up or secured. Unless mandated by an office, school or department, the naming and organization of folders is up to the individual. While people involved in small work groups said they can typically figure out each other’s conventions, they feared that as the number and diversity of partnerships becomes larger and more diverse, finding information will become increasingly difficult. This was described as being even more problematic for people replacing someone who has left the University or taking over a non-permanent appointment.
The situation is even worse around electronic mail, where much of the University’s communication and collaboration takes place. For some, email has become the way to manage the documents they receive and send as attachments. Rather than move attachments to organized folders where they can be retrieved, an associate dean, for example, described searching through a giant “In” mailbox with perhaps thousands of messages, for an email message with a link to a file still in the attachments folder. Even if the email and attachments are backed up on a shared server there is no guarantee that anyone else will be able to find a specific document in the future.

Others recognized that relying too heavily on the convenience and informality of email may make it difficult to review and understand their official business activities in the future. A vice president described collecting email “OKs” from his directors before approving a purchase request from his business office. An associate dean described exchanging email with Facilities Management to make agreements and confirm costs for services. Discussions often highlighted the critical connection today between electronic mail and documents for general communication and official decision making. It was suggested that the ability to route messages and create electronic forms could relieve some of the challenges of collecting and sharing information that are currently being addressed using electronic mail and provide a more complete record of business transactions.

As decision making becomes more collaborative and more distributed across two campuses and multi-school programs, the ability to structure and chronicle the decision making process will become increasingly important. Some expressed concern that the volume and complexity of their activities are already beyond the point where better organizing documents and email and enforcing naming conventions is not enough. They suggested that robust search and retrieval capabilities and even personal “Google” solutions will be essential. Some believe we have gone beyond what current email systems are designed for and we should be prepared to explore new ways of managing document-based communication and collaboration.

Enterprise Systems Integration
We heard from many people that the distinction between data and documents is blurring and recommendations for linking data in enterprise systems with documents. In addition to receipts for purchases and resumes for job applications that are already being integrated with enterprise systems, research proposals, procedures and adverse event reporting will need to be integrated with grant, financial and human resource data. It was also pointed out that development information for endowment agreements should be linked to the development, financial and human resources systems. Because many people work across multiple enterprise systems, there was concern that these issues be addressed in ways that provide a consistent and familiar interface to documents associated with data in different systems.

Some participants explained that information collected using paper forms and transferred to enterprise systems, and even information collected electronically, may be copied or printed out to gather signatures for approval or to maintain a local record in anticipation
of possible future questions. Some programs, afraid to discard documents and information for student records because they are unsure they will be available when needed, admitted to maintaining copies of applications, recommendations, supplemental materials, progress towards degree and petitions for specialized programs which may also be kept by other administrative and academic units. There were discussions about how shared virtual folders might enable multiple programs to share documents and data about graduate students, for example, in a common, secure, trusted way that should eliminate the need for keeping local copies and maintaining shadow systems.

RECOMMENDATIONS
The result of our discussions with members of the University community is the realization that we have reached the limit of how we can use electronic mail to communicate and make decisions and do not have effective ways to securely share, manage and track the documents that are an integral part of University collaborations. This creates challenges and inefficiencies today for how we work together and share information, solve problems and develop procedures, manage our cumulative knowledge and experience over time, and deal with the complexity of information we expect from enterprise systems. These challenges go well beyond what individual units or programs with limited resources and a narrow scope can address independently by creating silos of competing solutions. The Collaboration Services Group recommends the University create an enterprise document management and collaboration services infrastructure for the University.

This enterprise document management and collaboration services infrastructure will support group collaboration and committee work, office and administrative procedures, as well as the requirements of existing and planned enterprise systems. It will empower individuals to manage and solve problems on their own, be flexible enough to enable University-wide standards and procedures, and be robust enough to enhance enterprise systems. Central to any solution should be the following services:

**Document Management**
Support access, version and security controls for working collaboratively with digital documents and electronic mail.

**Digital Archives**
Provide robust search and retrieval functions while enforcing security and retention policies for digital documents and electronic mail.

**Imaging**
Manage scanned images of paper documents in the Document Management System and Digital Archive.

**Electronic Forms**
Facilitate Web-based data and information collection and review in place of paper or electronic mail.

**Workflow**
Enable ad hoc as well as role-based routing (parallel or sequential), task scheduling, signoff and approval to support both formal and informal procedures.
Collaboration Services
Create and manage group synchronous/asynchronous communication services around digital documents managed in the Document Management System and Digital Archives.

Any solution must be easy-to-use, provide Web-based tools and services, integrate with PeopleSoft and other enterprise systems, and meet the integration and security requirements of the emerging enterprise architecture.

Because the needs identified in this report are so important to the University community as whole, as long-term solutions and budgets are being developed the Communication Services Groups recommends Information Technology look at the existing infrastructure and identify short-term solutions for enhancing existing resources and services. This evaluation should also consider available communication and collaboration technologies that may already be used informally, such as instant messaging, BLOGs, etc, that might be incorporated into the campus infrastructure. The Group recommends that units of the University coordinate their planning and decisions to meet specific needs with these short- and long-term efforts.

STRATEGIC BENEFITS
The Highest Order of Excellence 2005-2010 provides a framework for continuing to distinguish Northwestern University by updating the strategic goals and objectives that establish a common vision for the future. Given the diversity of the University community and the complexity of many of the goals and objectives, the document management and collaboration services infrastructure recommended in this report will play a critical role in realizing this vision.

This infrastructure will make it possible for the University to more meaningfully recognize staff as a capital asset by empowering them with the necessary tools and resources to develop and share best practices. Being able to more effectively distribute and manage responsibilities will enable staff to become more proactive and customer-focused and move from transactional support to creative problem solving. By helping to remove barriers to collaboration and break down silos of information and expertise, the infrastructure will contribute to creating a greater sense of community. It will play an essential role in enabling alternative administrative support models and exploring new organizational structures. And, providing staff with challenging professional development opportunities will put the University in a stronger position to attract and retain the best staff.

In addition to administrative support, as the University continues to encourage interdisciplinary programs, this infrastructure will support collaborative searches to recruit interdisciplinary faculty and facilitate proposal submission and the review of new interdisciplinary programs. It will be essential for meeting the challenges of supporting and managing new programs with multiple requirements across schools and departments. Of critical importance and a particularly complex challenge will be developing
interdisciplinary grant proposals and managing the resulting collaborations, especially when they reach beyond the University.

This infrastructure will also play an important role in ongoing efforts to recruit the best students and cultivate an environment for learning. These efforts include planning new recruitment strategies while developing and implementing a *University Scholars Program* to increase the number of top-rated students who decide to attend Northwestern. It will also include faculty collaborations to develop new course initiatives, like *Modes of Thought*, as well as new cross-school teaching initiatives. This infrastructure will also be available to support project-based collaborative learning activities for courses, enhancing student research and internship experiences, as well as enabling student-run clubs, services and ad-hoc activities that shape student life.

**CONCLUSIONS**

The initial impetus for convening the Collaboration Services Group was the growing number of requests to use the Course Management System to support academic administrative needs and committees. The University community had identified a problem and was searching for at least a partial solution that was familiar and centrally supported, even if it was not designed for non-course activities. The Group’s survey of University interests and concerns revealed a much broader challenge - electronic mail and our ability to manage documents is no longer meeting the increasingly complex collaboration and business requirements of the University. A new enterprise document management and collaboration services infrastructure will be required to support the University’s evolving administrative and academic business needs and to fully realize the vision outlined for the next phase of the Highest Order of Excellence. The Collaboration Services Group believes that by working together, the University can begin to address these issues by identifying short term solutions for enhancing existing resources and services that may include new collaboration services already being used informally by the University community.
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