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The Integrated Circuit

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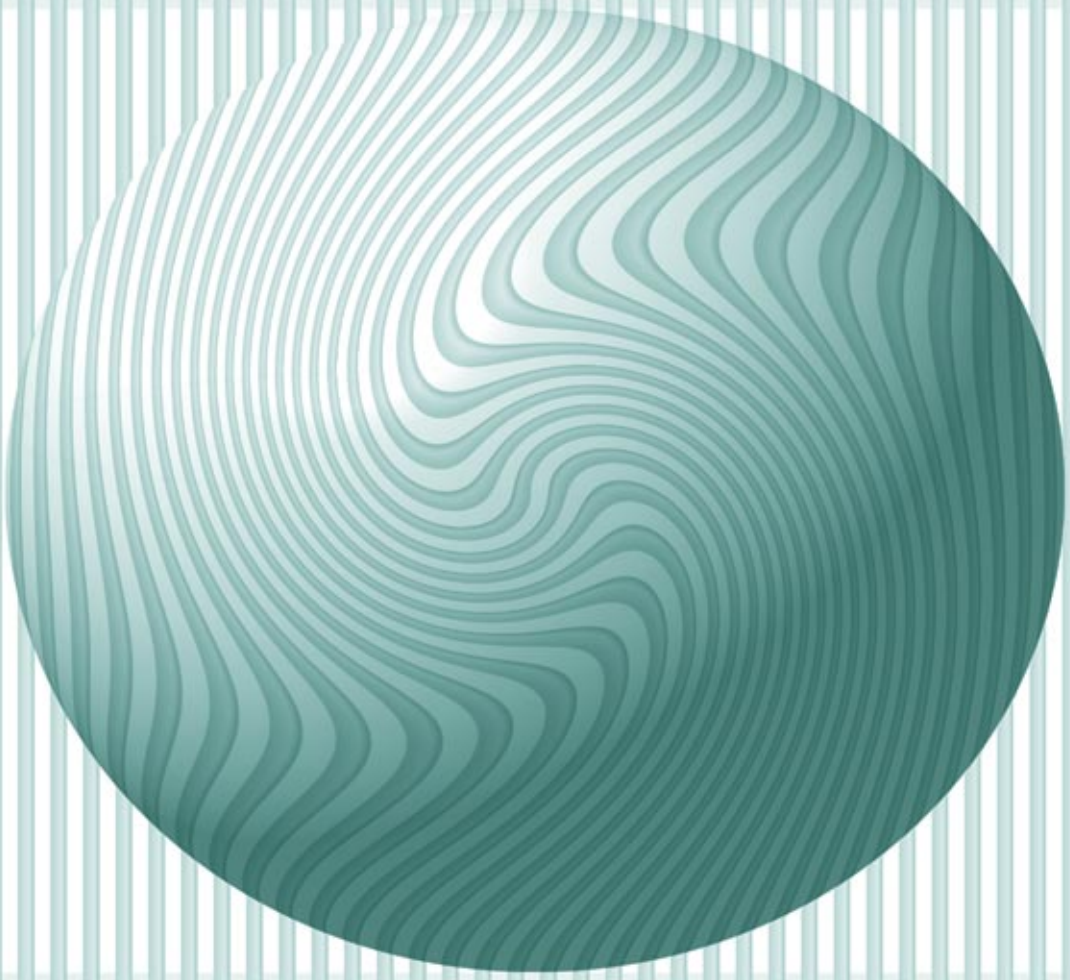
FEATURES

DEPARTMENTS



Reinventing the Enterprise

Anthony J. Aniello

There is a revolution underway in the world today. It's broader and more far-reaching than any previous revolution. It literally involves and affects everyone on the planet. It is a revolution enabled by technology but not controlled by it. It was born with the emergence of a true world economy in the last decade or so, and the requirement to function differently to be competitive in that new world environment. It was fueled by incredibly rapid advances in communications and information management technologies that effectively removed the barriers of geography, language, time, currency valuation, and to some extent even culture. Today most organizations have to be competitive on an international basis to survive. While the business world has been the leading edge of this revolution, government and certainly higher education are already

(see Reinventing, *page 2)*

Reinventing

(continued from page 1)
involved, and this involvement is beginning to accelerate dramatically. We all have to change how we do business, how we operate. This is what I mean by "reinventing the enterprise."

We have all heard of terms like reengineering, streamlining and downsizing. Certainly we've seen the results of these efforts as companies of all sizes have eliminated millions of jobs in the last few years, in order to become more efficient and remain competitive. Those organizations that have done a good job of planning for and managing change have been quite successful. Those that haven't planned and managed for change well, or haven't tried at all, are suffering if not ceasing to exist.

The University is not immune to these pressures. For us to remain a premier institution, we have to change the way we do business. We have to reinvent ourselves. We have to reduce the cost of operations, reduce the bureaucracy, increase our flexibility, become adept at quickly adapting to change, and redirect as much financial resource as possible to our primary missions of teaching, research, and public service. We have to change the way things work. President Stukel recognized this by publicly stating that his primary objectives for the administrative areas of the University over the next three to five years are minimizing or eliminating the use of paper and reengineering and streamlining business processes.

While this challenge applies to the academic as well as the business and administrative endeavors of our institution, in this newsletter we confine ourselves to discussing the latter areas. An enormous effort is already under way to deal with issues such as adapting instruction to delivery over the Internet, the use of multimedia technologies in teaching and research, and many other issues directly affecting the academic missions of the institution. These will be reported and discussed in other forums.

So how do we "reinvent" ourselves? We have to start with a critical evaluation of what we are doing and why we are doing it. We may be doing things we shouldn't, or not doing things we should. Next we must select one or two critical processes at a time and redesign them to minimize time and effort and maximize efficiency and accuracy. We need to take advantage of what technology allows us to do and free our human resources to do the things technology still can't handle. We must recognize that for the most part the University is an integrated enterprise. What happens in one place affects others like ripples in a pond. Even though we can't change, or even analyze, everything at once, we need to assess the effects of changes outside their area of immediate impact as we progress on our journey.

Reinventing the way the University operates is not an optional exercise. It is a must. It must also be done relatively quickly by University standards. All the major processes need to be reengineered in the next three to five years if we are to retain our status as a top flight, leading edge institution.

This is a daunting task, particularly in an institution like ours which is not used to rapid change. But we must learn how to deal with it. We have, in fact, been learning how to deal with change for several years now. The new student systems at UIC and UIUC, current efforts to redo the University personnel system, introduction of electronic forms, and electronic budget submission are examples of positive response to change. But now the pace has to pick up considerably. Our ability to act and react has to become more timely.

We are seeing the beginning of this new phase of activity with the initiation of a project under the auspices of the Office of Business Affairs to reengineer the University's procurement processes. This broad-based and ambitious effort is aimed at revamping how we do procurement from start to finish, including the financial aspects and relationships with vendors. The project will be described in more detail in one of our articles, featuring an interview with Dick Margison, the Associate Vice President for Business and Finance.

Other articles will cover topics such as reduction in the use of paper and the power and flexibility that can become available to colleges and departments through direct, easy access to data and communications. I hope you find them informative and thought provoking. The prospect of change can be cause for great excitement or great fear. I hope you embrace the excitement presented by the possibilities, and that any fears will be replaced by knowledge and a willing, positive attitude.

■ *Anthony J. Aniello is Associate Vice President of AISS.*

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About the Illustrations:
Cover: symbolic abstraction of the revolutionary changes occurring in the business world today.

Page 3: digitization of student data, modeled by Jolie Wernette-Horn.

Page 5: leaping executive, gamely modeled by Stephen Mey.

Student Reporting Data in the Information Warehouse

Pete Asick

Since our last Warehouse update article in the July/August 1995 *TIC*, we've been busy with the Information Warehouse effort. Now we want to let you in on the latest Warehouse activities at both campuses.

UIUC

One important and eagerly awaited piece of the Warehouse is U of I Direct student reporting data. Colleges and administrative offices will soon be able to write their own U of I Direct reports from this data.

Early in 1995, after extensive meetings with clients who used the earlier student database, the Warehouse team took U of I Direct student data stored on the mainframe, and used it to create several U of I Direct reporting tables. Through the year these clients helped us test and refine the tables, using SAS on the mainframe as a reporting tool. This work is ongoing.

More recently a small group of college office clients began testing a new retrieval method for reporting from the U of I Direct reporting tables. This feature is now available at the personal computer level (DOS/Windows). A beta version has been created for Macintosh, and we are looking for a few testers. To use the new retrieval method you must install a communications program on your workstation, allowing you to connect to the U of I Direct reporting tables in the Information Warehouse. Using Microsoft Query 1.0 within Excel 5.0, you can query the tables and retrieve data. There are two advantages to retrieving data in this manner. Not only do many campus offices already have the software, using this tool you don't need to know how to write complicated programming code to extract the data. Using basic desktop "point and click," an extract of data can be retrieved and manipulated.

Plans for the U of I Direct student data portion of the Information Warehouse are in full swing. Campus offices will have a new mailing view (a view is a subset of fields from different tables brought together for a specific type of information retrieval) to create mailing labels, or communicate with their students via e-mail. In the meantime, testing continues on the main reporting tables. Changes or revisions to these tables will be presented in releases scheduled to occur at regular, short intervals. This will allow us to keep you informed about what is being worked on and its priority, and to help us better utilize our resources.

By midterm, another new view, allowing college offices to work with their own student data by term and course, should be ready. By the same time, we also hope to have all the reporting tables in production and ready for a larger group of testers.

The final piece of U of I Direct student data for the Information Warehouse will be a repository with a description of all the individual elements from which the student data is compiled. We will complete this project in cooperation with the UIUC Office of Admissions and Records.

UIC

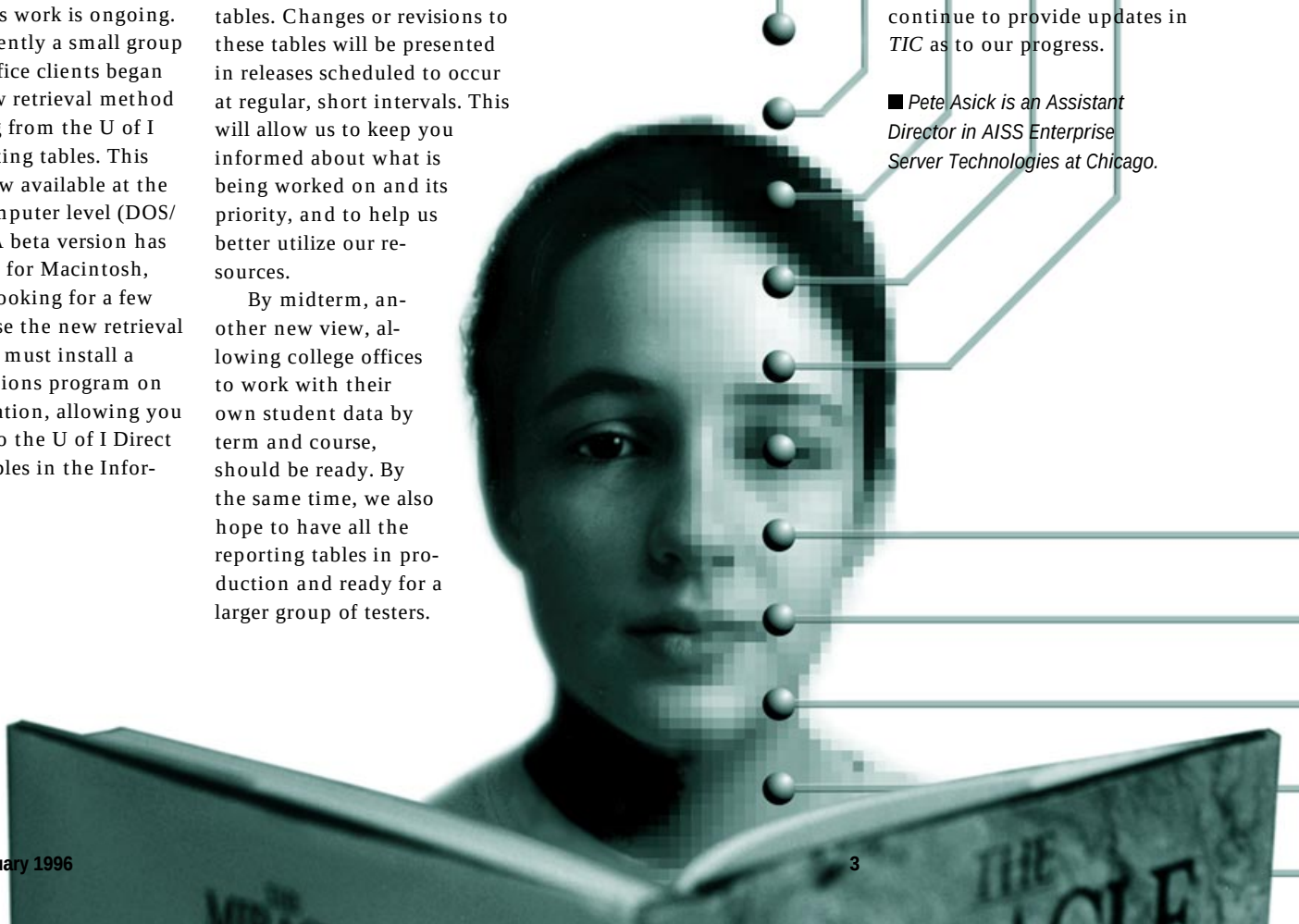
At Chicago, we made an addition to the existing student data environment. The current Integrated Student Information Systems (ISIS) DB2 extracts were our first Warehouse effort. Implemented several years ago, ISIS supports many of the student information reporting needs of the UIC campus community. In late October a copy of the ISIS DB2 extracts was made available on a Warehouse server.

This copy includes every table in the existing ISIS extracts. We did this to give users time to familiarize themselves with a new environment without encountering new data as well. The Warehouse server version is created on the same schedule as that of the mainframe system.

As with the U of I Direct effort, communications software is required to allow Windows-based machines to connect to the Warehouse database.

We've received suggestions for several changes to the ISIS warehouse, the most popular being to improve the timeliness of the data. That suggestion was followed by requests to make all active registration terms available. Clients have also asked that more information from the ISIS on-line environment reside in the Warehouse. We will make these enhancements to ISIS on the Warehouse server, and will continue to provide updates in *TIC* as to our progress.

■ *Pete Asick is an Assistant Director in AISS Enterprise Server Technologies at Chicago.*



Here's AISS

Hagit Itzkowitz

Hagit joined AISS at Urbana in 1993 as a Research Programmer in the Interoperability and Connectivity (InterCon) group.

Hagit earned her B.Sc. in Electrical Engineering from the Technion, Israel Institute of Technology in 1986. Following that she worked for the Electronics Systems Division of the Israeli Air Force as a Research and Development engineer and project manager, and attained the military rank of captain. More recently she was employed as a senior systems sustaining engineer at Elonex Inc., in Silicon Valley, CA.

At AISS, Hagit works as a network client administrator. Already a Microsoft Professional Product Specialist, she is now pursuing Microsoft System Engineer certification.

Hagit's husband Alex is an assistant professor in Electrical and Computer Engineering. In her spare time, Hagit creates artwork collages. She is also fond of traveling all over the world, and scuba diving occasionally in tropical waters.

Troye Kauffman

Troye came to AISS in 1987 after receiving his B.S. in Computer Science from UIUC. He is now working on his thesis for an M.S. in Computer Science, and hopes to complete the degree before the century and his advisor's patience run out.

His work at AISS started with system and application support, which gave him license to dabble with DB2, MVS batch, VSAM, SNA networking, ACF2, and several other products he hopes nobody remembers that he knows anything about. Working with PCs from the ancient days (when people actually loaded software from 5.25" floppies), he has looked forward to every improvement in PC technology. These days he works on the integration of technology across platforms, and various Enterprise Server Technologies group (EST) projects.

When not at work, Troye is busy having fun with his wife Herlinda and their two children, son Andrew, 9, and daughter Micaela, 7; scouting (as a Webelos leader and a scout leader trainer); and making home improvements (yes – propeller heads can lay ceramic tile, put up drywall, and install siding).

Lisa Ferris

Lisa is a Personnel Assistant in AISS Administration and Planning/Human Resources at UIUC. Before coming to AISS in October 1994, she worked for four years at Personnel Services.

Lisa's responsibilities include processing documents for academic, non-academic, and student appointments. Other responsibilities may involve salary surveys or special projects for Assistant Vice President Thom Brown.

When not at work, Lisa keeps very busy with her two children Tasha, 11, and Caleb, 5, who always have her going in different directions. Other favorite pastimes include bowling, horseback riding, volleyball, softball, reading, and meeting new people.

Mark Wright

Mark is an Information Technology Consultant for AISS Client Support Services at UIC. Before coming to AISS, he worked as a network manager and general computer consultant for the UIC Department of Ophthalmology in the College of Medicine.

At AISS, Mark's primary consulting focus is the UIC College of Medicine and some of its departments, including Medicine, Genetics, Ophthalmology, Otolaryngology, and Surgical Oncology. He has already received Microsoft Professional Product Specialist certification, and is on track to obtain Microsoft Systems Engineer certification.

Outside the office, Mark's interests include outdoor activities such as hiking, camping, and especially golf. He also enjoys reading fiction, nonfiction, newspapers, and magazines. His and his wife's greatest joy is their daughter Lainie, born in March 1995.

Today's Successful Enterprise: Making a Leap of Faith

Doug Wolfersberger

Technology certainly has done its part in making us rethink "how" we run our business.

Running a successful business requires vision – a vision of where we would like our business to be in one to five years. Clearly the University is a huge enterprise and we must be prepared to examine every aspect of its business process if we expect to meet the financial challenges that lie ahead. Our goal is to create the most efficient processes possible to support the University's mission – instruction, research, and public service.

What are the competitive factors we must deal with, and how are they projected to influence the way we must do business in the future? Do we project an increase or decrease in State funding support? What changes do we project in the Federal budget situation (providing Congress decides to *pass* another budget) that would affect research grant funding significantly? Are student enrollments projected to increase or decrease, and how would such changes effect instructional processes at the three campuses? Are staffing levels projected to increase or decrease? These are but a few of the questions the University must ask itself, and be held accountable for answering.

Those answers will help form a "vision statement," or guide for reinventing the enterprise and positioning it to meet the challenges of the future. The vision statement then becomes our roadmap for meeting those challenges.

Running a successful business means having the courage to examine existing policies, procedures, and business processes with a critical eye, and continually ask the question "why do we do this?" It means accepting the challenges that come with change. You would be surprised at the number of laws, external agency policies and procedures, and executive mandates, some created years ago, that directly influence what we do and how we must do it. It seems clear to me that one of the keys to truly reinventing the enterprise is getting external agencies to work with us to streamline business processes. Everyone must recognize that orchestrating change externally is infinitely more difficult than doing so internally, where we have more control over our business practices. Nonetheless, we must remain firm in our resolve to do what's necessary to change the external processes that influence our business.

A successful business requires a firm commitment, at the highest levels within the enterprise, to streamline existing business processes as much as possible. We can do many things today to improve our lot in life. We've all heard President Stukel talk about reducing the amount of paper that flows through our institution. Consider that the cost of paper has risen by 60 percent during the past year, and this fact alone should motivate us to automate our business processes. As we examine paper-dependent processes we also have an opportunity to examine the why and how of those processes. Did you ever track the paper processes within your own office and try to determine just how many people touch a document as it toils its way through the system? I think you'd be surprised how many people are involved and how few of them add any value to the process. Each person who touches your document adds cost to it – the question is, do they offset this cost by adding value to the process? It's no different at the enterprise level. Many of our procedures have been in place for years, and it's time to review and ascertain their value.

Technology affords the opportunity, in a controlled environment, to examine our existing business processes and automate, consolidate, or eliminate steps wherever possible. Sometimes this requires changes to existing policy and procedures, and we must be prepared to make those kinds of changes as well.

Over time such changes will redefine the roles and responsibilities of our clerical and support staff. Tomorrow's knowledge worker will rely more and more on an intelligent workstation with information systems and productivity tools to help people do their jobs. Increasingly data will be accessible via this workstation, allowing sophisticated ad hoc data analysis. As our dependency on automated systems grows, we must become more proficient in using technology to meet business process requirements. A critical success factor here is our ability to develop training programs that will help faculty and staff make the transition to the electronic business environment.

The Departmental Administration System (DAS) applications and associated electronic forms are examples of what lies ahead. Given the right level of commitment it becomes easy to envision an all-electronic University – electronic forms to handle new appointments and personnel changes for existing staff; direct deposit for payroll and other cash disbursements; electronic ordering systems that support internal and external service providers; on-line report management systems that deliver formatted reports directly to your desktop; and of course communication services like electronic mail and electronic data interchange (EDI). It's all just around the corner.

■ *Doug Wolfersberger is Assistant Vice President of AISS College and Department Business Services.*

Reengineering the University's Procurement Process

Terry Tedrow

"One of my top priorities as President is the streamlining of our administration and a reduction in our bureaucracy. . . . we have initiated a Procurement Reengineering project that will result in both service enhancements and cost savings. The purpose of the project is to reexamine and redesign the process through which departments and individuals at all three campuses requisition, purchase, receive, and pay for goods and services."

– James J. Stukel
University of Illinois President

The Procurement Reengineering project is a critical University initiative, according to Associate Vice President for Business and Finance, Richard Margison. The University's procurement process is very labor-intensive and paper-intensive, heavily burdened with a high volume of small-dollar transactions. University administration is committed to making the changes necessary to substantially improve our procurement services, and to invest in the technologies required to make the process more efficient and cost effective.

Getting started

To make the reengineering project a reality, the University is working in partnership with the consulting firm of Coopers & Lybrand, which has conducted similar reengineering projects at Yale and Carnegie-Mellon Universities, among others. Their approach to process reengineering is based on a methodology that takes into account the needs of a multicampus university such as ours. Such an approach is designed to:

- Focus on implementation – the University will not realize any benefits unless it implements changes. Therefore they will move quickly through the analysis of the current process and into the redesign and implementation planning.
- Obtain user feedback – solutions must be based on clearly identified user needs. Direct input from the users is necessary to determine their needs, so the redesigned process addresses their greatest concerns.
- Integrate representatives from all three campuses, to create a single project team – the University's procurement process will be structured as one project with multiple components.
- Work within the environment dictated by the State of Illinois – the State imposes a vast array of controls and regulations upon the University. The redesign project must work within the confines of such mandates.

The first thing the consultants did was to develop a process map, illustrating the procurement process at all three campuses. This map provides information about each process, including costs, time, delays, and errors, and help the redesign team develop ideas for improvements. Some of the information the consultants extracted from the map included:

- Touch time – the typical number of minutes an employee spends actually working on a transaction. Combined with salary information, touch time can indicate the cost of each step, and of the process itself.
- Lag time – the time between process steps, when no one is working on a transaction. Examples include sitting in an "in box" and waiting for additional information. Lag time can both increase costs and reduce customer satisfaction.
- Value-added analysis – distinguishes between activities that add value from a customer perspective, and those that do not. By eliminating non value-added activities, process costs can be reduced and customer service enhanced.

As they looked into the current procurement process, Coopers & Lybrand consultants discovered that not all the effort and cost associated with procurement occur in the central administrative departments, and that much work is conducted within the academic departments. Most University departments have "shadow systems" in place, to gain access to process and budgeting information. Some of these systems are fully automated, some fully manual, and others a mix of both. But all have required the investment of considerable time and effort – adding further cost to the overall procurement process.

Work Distribution Survey

So to get a broader picture of the time and costs expended throughout the University, Coopers & Lybrand sent out a Work Distribution survey to a number of administrative and academic departments, asking people involved in the process how much time they spent on procurement-related activities. Combined with average salary information, such a survey provides a comprehensive view of how people spend their time, how much the overall process costs, and where a new process might bring about savings and service improvements.

Next, the consultants met with people within the departments, who are closely involved in procuring goods and services – faculty, administrators, business managers, clerks, and secretaries. The purpose of these meetings was to understand procurement from the customer perspective, including:

- what they like about the current process
- what they don't like about the current process
- what their experiences have been
- their functional requirements for a new process
- their suggestions for improvement

Not surprisingly, there was a broad and deep consensus that the process should be changed.

Project Management

The Procurement Reengineering project is guided by a Project Steering Committee of University and campus officials chaired by Vice President for Business and Finance, Craig Bazzani. This committee is responsible for establishing the overall goals of the project, addressing key policy issues, reviewing the new process design, and supporting its implementation.

A Procurement Redesign team, consisting of staff from our three campuses, has also been formed. All operations specialists, the redesign team has experience in various aspects of the procurement process. The team's responsibility, with guidance from Coopers & Lybrand, is to design and engineer the new process as well as the organizational structure and technology that will support it.

How and when?

The Procurement Reengineering project will be executed in three phases. Phase 1 involved the assessment, just described, of the current process, including technology, internal controls, and organization (staff deployment and skill sets). This phase is complete.

Phase 2, which began during January '96, will focus on the actual design, integrating innovative practices employed at corporations and other universities, the capabilities of enabling technologies, and improvement efforts already under way on the three campuses. The Procurement Redesign team is now at work to develop a design and implementation plan for the improved procurement process. It is estimated this phase will be completed in three months.

Phase 3 will be the actual implementation of the redesigned process, introducing it and its supporting technology, policies, and organization across the University's three campuses.

Conclusion

Margison believes the Procurement Reengineering project will change more than just the procurement process. The project will affect not only how we buy and pay for material, it will establish a University-wide, process-oriented model for how we conduct all our future business. This is important not simply as a business issue, but as an academic one as well. President Stukel perhaps put it best when he said we must improve the way we conduct our business so that our real mission "– teaching, research, and public service – can gain a greater portion of our time, attention, and funding."

■ *Terry Tedrow is Associate Publications Editor in AISS Publication Services.*

Note: Some of the information in this article was taken from documents prepared by the consulting firm of Coopers & Lybrand.

Relationships with the Outside World

Larry Smith

For an organization to have a meaningful existence today, it must interact with the rest of the world. The way those interactions are managed affects how the organization is viewed by the world, and how successful the organization is in extending its influence. Efficient management of those interactions means devoting fewer resources to support them, and channeling more to the organization's mission instead. Reinventing the enterprise influences both the relationships and the means of supporting them.

At one time, organizations exchanged information by sending paper documents back and forth, with subsequent manual processing. In some instances this is still true, but in many others processing has become more efficient by incorporating some form of electronic data interchange (EDI).

EDI is an evolving technology, and the University is using a number of types of EDI in its relationships with the outside world.

Student Information

The University exchanges information electronically with the U.S. Department of Education. Students who need financial aid can apply to the Department of Education, which sends data pertaining to potential or current U of I students back to our financial aid office. The University then sends corrections (if needed) back to the Department of Education, which in turn sends us a revised application.

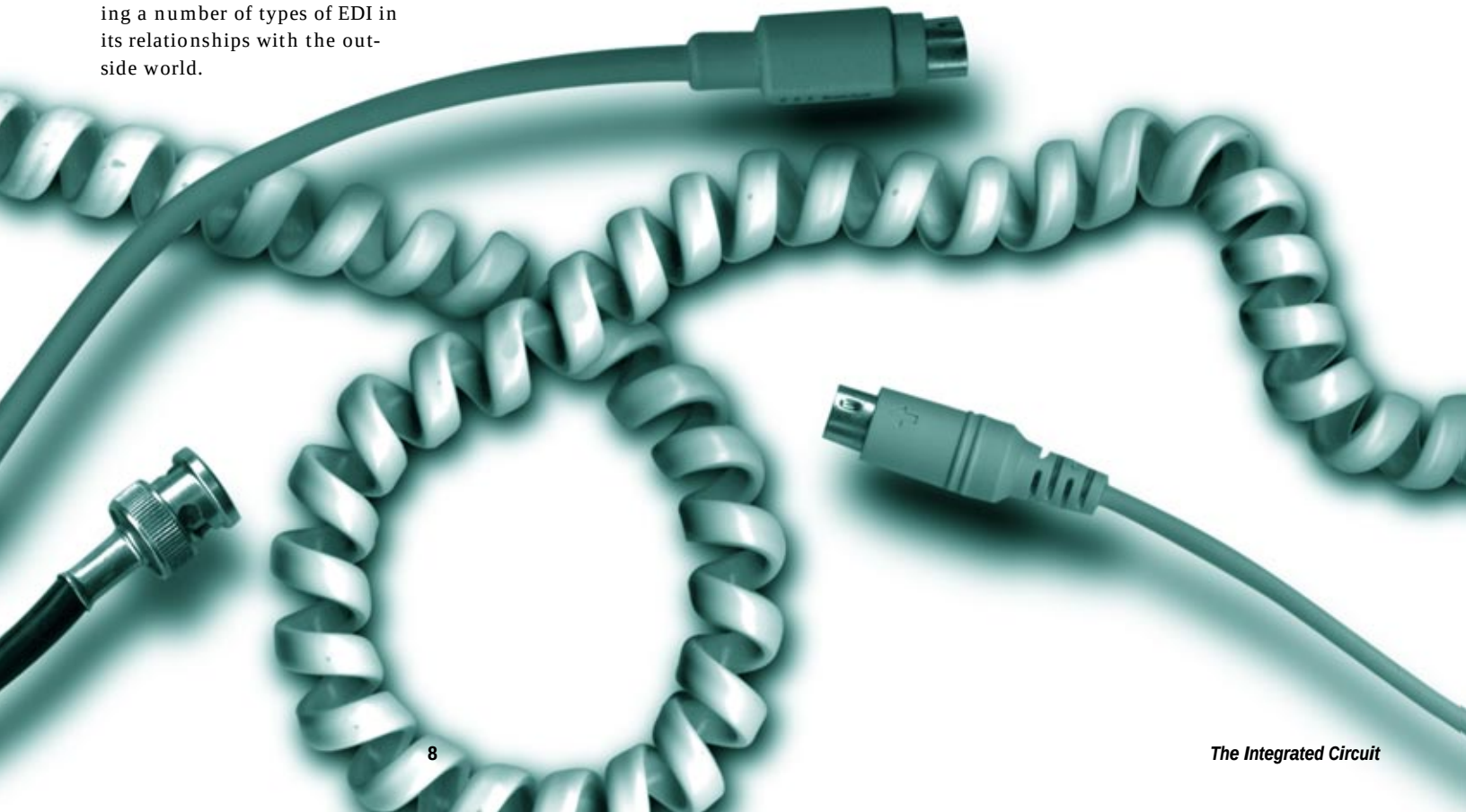
Currently data between the U of I and the Department of Education is exchanged electronically over the IBM Information Network (IBMIN). However, the Department of Education is converting from IBMIN to General Electric Information Services (GEIS). In anticipation of this change, the University has established a connection to GEIS and is testing its data exchange procedures.

Clearinghouses are an example of how the world outside the University is being restructured. For instance, the National Student Loan Clearing House collects information regarding whether a person is still a student, and provides this information to financial institutions holding outstanding student loans, when the institutions wish to check the status of those loans.

The University used to supply this information to the Illinois Student Assistance Commission (ISAC), while other lenders forwarded individual requests for status verification to the Office of Admissions and Records. The information is now extracted and fed electronically via Transmission Control Protocol/Internet Protocol (TCP/IP) File Transfer Protocol (FTP) to the clearinghouse, which responds to all such requests for information.

Testing organizations function somewhat like clearinghouses, providing data on numerous students to numerous institutions. The American College Testing (ACT), Scholastic Aptitude Test (SAT), Veterinary Aptitude Test (VAT), and Graduate Record Examination (GRE) agencies send tapes reporting test scores of all students who want their scores reported to the University of Illinois. If the student then applies for admission, or is already a University student, the testing information becomes part of that student's University admission and placement record.

We are working with ACT on a pilot project in which the agency collects applications for undergraduate admission and forwards them to the indicated institutions. The data is encrypted and transmitted to us daily via FTP, where it is received, decrypted, and made available to our Office of Admissions and Records.



Library Resources

The University Library receives daily updates of newly cataloged bibliographic data via FTP from the Online Computer Library Center (OCLC). This information is loaded into ILLINET Online, the electronic catalog shared by 45 libraries statewide, to facilitate library resource sharing.

Payroll Processing

On the financial side, the University dispatches vast amounts of machine-readable data to state and federal government agencies. For example, we send tapes of accounts payable data to the State of Illinois Central Management Services (CMS) for the state payment process. Tapes of payroll data for staff paid from state funds go to the State of Illinois Comptroller's Office for its payroll preparation.

We send W-2 tax withholding information on tape to the Internal Revenue Service.

In the distant past (but during my career), there was no direct deposit of payroll checks. Subsequently, the University put direct deposit information on tape and sent it to a limited number of local banks.

Today the direct deposit of employee payroll checks paid from local University funds is accomplished via the National Automated Clearing House Association (NACHA). The University transmits payroll data via the IBMIN to a NACHA clearinghouse, which can forward appropriate information and dollars to any NACHA bank nationwide.

Check information for payroll and accounts payable for UIC and UIUC is sent to Bank One in Springfield via the IBMIN. Bank One uses the information to authenticate checks returned to it for payment. It also returns status information to the University via the IBMIN. We place this information in our Report Management System for reference by user payroll and accounting offices.

Another type of information the University exchanges electronically has to do with employee voluntary deduction amounts for 403(b) accounts with Fidelity Investments. This information is forwarded to Fidelity via the IBMIN.

Accounts Receivable

Customers can mail payments for University accounts receivable directly to Bank One. The bank deposits the funds to University accounts and forwards remittance information electronically via remote job entry (RJE). Routing these payments directly to the bank is more efficient, and results in a significant dollar benefit for the University.

Delinquent accounts receivable information is sent to CMS via tape, for its "offset receivables" process of identifying people or institutions who are being paid by one state agency, while delinquent in their obligation to another state agency.

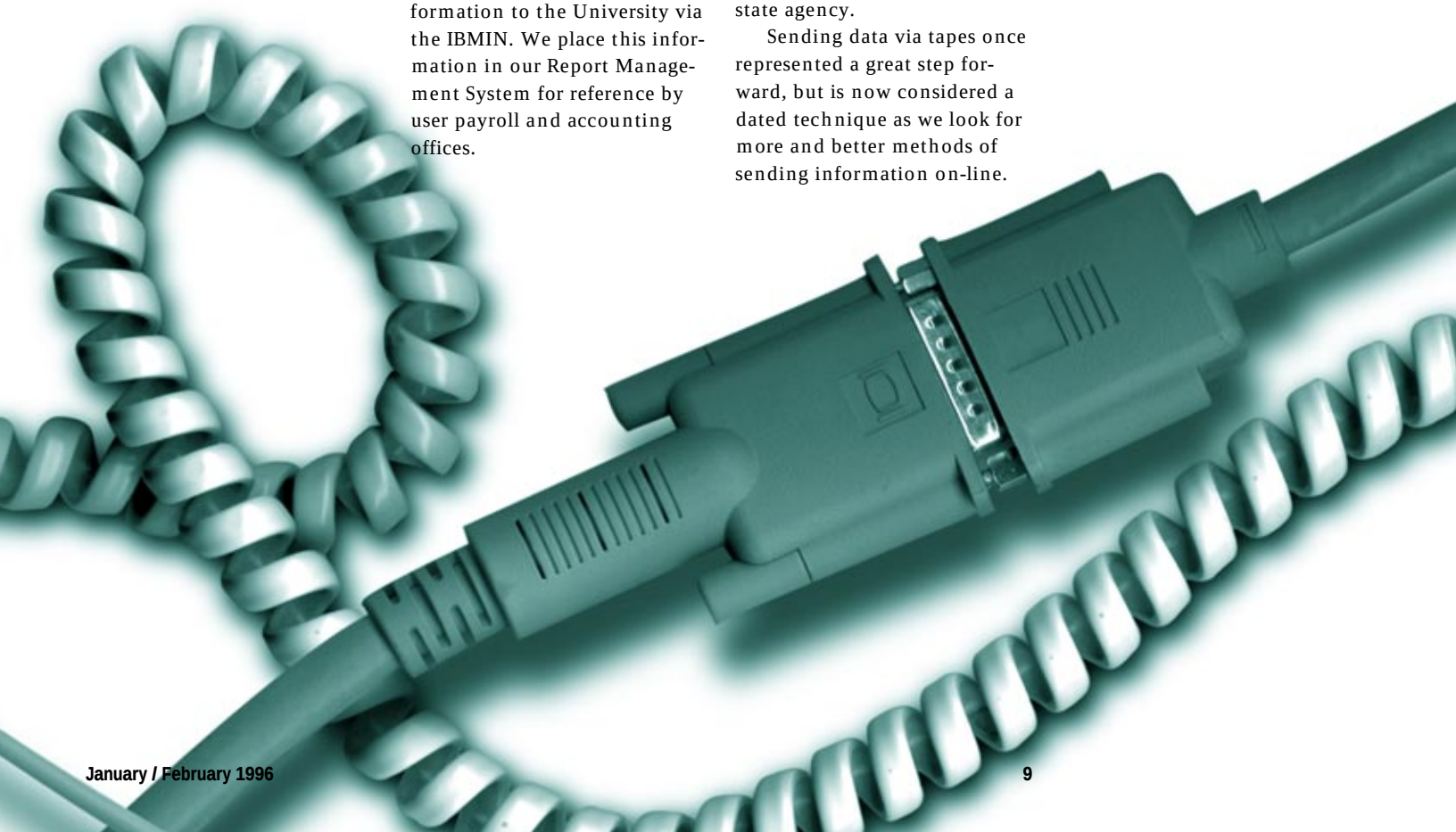
Sending data via tapes once represented a great step forward, but is now considered a dated technique as we look for more and better methods of sending information on-line.

Purchasing

AISS and the Office of Business Affairs are investigating the feasibility of receiving electronic invoices from Federal Express, possibly using the EDI X12 (a standard EDI general business transaction set) format over the IBMIN, or a simpler format via FTP. In either case, the format would be converted for input into an existing Purchasing payment process.

As the University continues to update itself technologically in its business processes, the nature and type of support for these relationships will continue to change. We anticipate that a common interest with outside organizations, combined with concerted reengineering efforts, will move us forward in supporting these relationships in timely and cost-effective ways.

■ *Larry Smith is Director of Systems Integration in AISS Enterprise Server Technologies.*



Hot Lines: Goodbye PROFS, Hello AdMail

Jonathan Budil

Every new year brings change. At AISS one of the biggest changes for 1996 is the approaching retirement of the PROFS e-mail system. We have already begun phasing out our centralized e-mail service. Many of our clients are aware of this, but the reasons behind the move may not be clear. Simply put, feature-rich LAN-based e-mail alternatives to PROFS are becoming more popular across campus, not to mention the long-standing campuswide e-mail services that are available to all faculty and staff and on which many clients have already obtained accounts. In view of these two factors, it is no longer cost-effective for AISS to continue providing what has become a redundant e-mail service. However, this does not mean we intend to abandon our clients who have come to depend on PROFS. Rather, AISS will give its clients the option of having e-mail accounts on a transitional UNIX server, which will run for a full year after PROFS is discontinued, giving our clients time to find a new e-mail system that suits their needs. We've named this new system "AdMail". AISS will offer training and support for AdMail so that clients will find the change from PROFS easy and even welcome, since it will be accompanied by a friendlier interface and a richer set of features.

What Is AdMail?

"AdMail" stands for "Administrative Mail," and will be part of the new server's Internet hostname: admail.aiss.uiuc.edu. Unlike PROFS, which was proprietary software running on an IBM mainframe, AdMail is based on an open standard client/server architecture. Such a system is already in widespread use across the U of I campuses and the Internet. The AdMail server will support both Post Office Protocol (POP) and Internet Message Access Protocol (IMAP) client software. These protocols are also offered on the mail servers run by the Computing and Communications Services Office (CCSO) at UIUC, and the Academic Data Network (ADN) at UIC, which means that when AdMail goes away after June 30, 1997, AISS clients will already know how to use the client software for other e-mail options on campus.

Jargon-Watch

Now just in case any of you find terminology like *client/server*, *open standard*, *POP*, or *IMAP* to be more confusing than helpful, let's take a moment to review these terms.

The *client/server* architecture is something that anyone who uses a DAS application has experienced. Basically, such systems have a back-end, the *server*, which is usually a remote machine that stores all the data and provides the appropriate clients access to it. The *client* software is designed to give users a friendlier way to interact with the data. The client runs on the user's local workstation, and accesses the data on the remote server across a network such as the Internet.

Next question: what happens when a client/server architecture is based on an *open standard?* Well, look at the World Wide Web – a variety of different server packages are available, along with an even greater number of Web client software tools from which to choose (Mosaic, Netscape, etc.). Yet for the most part, you can use any Web browser to view any Web site. While it is true that certain pages look better using some browsers as opposed to others, the basic compatibility still exists. An open standard with respect to e-mail means that it is a protocol everyone can use freely, or for which anyone may write accompanying software to comply with it. As a consequence, one may choose from a great variety of e-mail software clients. This freedom of choice is in contrast to the old PROFS system, in which the client and the server were rolled into one and users had to take what they got.

The primary difference between Post Office Protocol (POP) and Internet Message Access Protocol (IMAP) is that POP requires the client (the software) to download and store messages on your local workstation, whereas IMAP keeps all messages on the server. So why do most UNIX mail servers offer both protocols? Because different users have different needs. IMAP is good for users who read their mail from a variety of workstations (home, work, on the road, etc.). Since all the mail is kept on the server, IMAP users have access to all new messages plus any previously read notes that they filed or kept. A person using a POP client can read his or her mail from any location, but the retrieved mail is available only from the location at which it was first read. Some POP mail client software gives you the option of leaving mail on the server, but this can still create confusion for the novice user, who could occasionally end up with multiple copies of the same note. The simplest solution for those who read their e-mail from more than one computer is to use an IMAP client. The IMAP client AISS will be providing is called Pine, and will be accessible via telnet and from our modem dial-ups.

While IMAP may appeal to users on the move, POP mail clients offer advantages as well. The most popular POP client on campus is Eudora, a commercial software package that is available for Windows and Macintosh. Here are some of the many things Eudora lets you do:

- view and edit multiple messages simultaneously
- copy and paste text from one window to another
- filter mail by sender, subject, or body text, to arrive in specific folders
- sort the order of messages according to sender, subject, date, or priority
- search all your messages in all your folders for a single text string
- check spelling in your messages before you send them
- attach Windows or Mac files to your mail for transfer across the Internet
- use ph, the U of I on-line student/staff directory

Thanks to a special agreement between the vendor and the University, faculty and staff may obtain Eudora software and documentation at no cost

from either CCSO or the ADN. Pine documentation is also available. While users are not limited to either Eudora or Pine for their interface needs, the level of support you will receive for these two products ranks considerably higher than what we might be able to muster for another product possibly unknown and unfamiliar to the staff of the various campus help desks.

Some of you may like the sound of Eudora's features, and you may read almost all of your e-mail at your office, but what if you'd also like to check your mail from home using the Pine IMAP client from one of the campus modem dial-ups? Fortunately, POP and IMAP are not mutually exclusive. They are like masks your e-mail wears: what's underneath remains the same. Nothing prevents you from using Pine at home and Eudora at the office. Just remember that messages you store in Pine's personal folders will not be accessible when you switch to Eudora. Also, unless you have configured Eudora to leave mail on the server, the simple act of checking your in-box with Eudora will remove the messages found there, making them inaccessible via Pine. However, if you read a message in Pine and just leave it in your in-box, you can download and file it later using Eudora. Admittedly, the use of multiple e-mail software clients can be confusing initially, but with a little practice you can get the hang of it.

AISS will offer training sessions for Pine and Eudora during the upcoming months, with the schedules to be announced in the near future. It would be a good idea right now for you to encourage all who send you e-mail to use your ph aliases as the address. Your ph alias points to whatever your current e-mail account is. Right now, if your primary e-mail account is PROFS, then that's where your ph alias is probably pointing to. When PROFS is discontinued after June 30, 1996, the ph entries can be updated again to link to whatever new e-mail system each client has adopted.

If you already have an e-mail account on campus that you prefer using, then there is no reason for you to obtain one on AdMail. In fact, some of our clients had e-mail accounts long before they acquired a PROFS account, and to them the PROFS account was an unwelcome addition because they then had to check two accounts to get all their mail. A few users got the clever idea of getting their mail forwarded to their favorite account, only to discover that in most cases, PROFS mail can not be automatically forwarded. Unwilling PROFS users did not always have the option of closing their accounts, because certain mainframe applications currently require users to have PROFS accounts for full functionality. Now that PROFS is being decommissioned, a massive effort to modify other applications that communicated with PROFS is almost complete. These modifications will make it possible for mainframe applications to send messages to AdMail or any other e-mail system that uses SMTP, the Internet's Simple Mail Transfer Protocol.

I hope you've found this brief preview of the e-mail changes AISS has in store for this year to be helpful. Our goal at AISS is to ensure that our clients make a smooth transition to another e-mail system once we cease to be a campus e-mail provider. Those of you who have already made a switch from PROFS will not require a new e-mail account; for example, AISS internally uses Microsoft Mail and Schedule Plus, and we will not be changing over because we converted from PROFS last year. We encourage any department that thinks a similar solution would work for them to implement it. AISS will aid those individuals and groups who either cannot or elect not to take on the tasks of in-house e-mail administration, in taking the first steps toward the broader campus e-mail standard.

■ *Jonathan Budil is a Help Desk consultant at Urbana.*

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