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ABSTRACT
                This pilot study looks into how information technology
practices are being conducted in student affairs. It compares common
practices against which exemplary programs and best practices can be
measured. After gathering information from five universities, a model was
created that encompassed policy, staffing, technology, and practice as the
best ways to describe the current practices of information technology. Many
similarities and differences were found among the campuses in the use of
information technology, but most campuses do not make full advantage of it.
Integrated Student Affairs technology plans are just beginning to be
developed on campuses. Student Affairs professionals are not yet engaged in
campus wide information technology planning and decision making. Campuses
need a plan for practice, staffing, and technology to meet the need and to
address emerging issues for tomorrow. (JDM)

Managing Information Technology in Student Affairs

A report on policies, practices, staffing and technology.

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Executive Summary

1. Information Technology in Student Affairs is an accidental success.

2. Information Technology in Student Affairs is not yet used to full advantage or full potential.

3. The traditional management functions of planning, budgeting, staffing and evaluation are only beginning to be applied to Information Technology in Student Affairs.

4. Integrated Student Affairs technology plans are beginning to be developed on a few campuses.

5. Student Affairs professionals are not yet engaged in campus wide Information Technology planning and decision making.

6. There are remarkable similarities and remarkable differences in the use of Information Technology between campuses.

7. There are dramatic exceptions to all of the above.

The Problem

As we hear more about interesting Information Technology (IT) practices in Student Affairs I had wondered how the four management functions of planning, budgeting, staffing and evaluating were being used in IT. I was curious to discover our common ground, our benchmarks, and our common practices against which we can measure exemplary programs and best practice in the use of IT in Student Affairs?
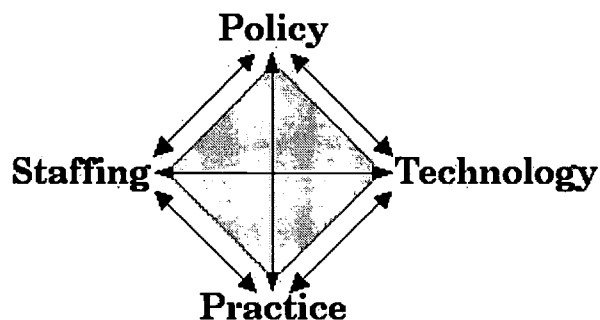
Methodology

This paper reports a pilot study using a sample of convenience. I chose nearby campuses and used an informal interview format, so I did not get precisely the same data at each campus. I was only seeking informal baseline information and stories about how IT was being used.

In the fall semester of 2000 I visited Vincennes University, The University of Southern Indiana, Indiana State University, Butler University and Eastern Illinois University. I am very thankful for the support of my Student Affairs colleagues on those campuses who were generous with their time and patient with my questions. Each visit lasted about half a day, with interviews ranging from the Vice President, professionals from the Career Center, from Student Activities and technical support staff if possible. Several campus interviews involved more offices, but none involved fewer. With only limited resources at my disposal more extensive interviews were not possible. After each campus visit I compiled notes and observations, and spent some time examining the campus web site again using the perspective of my visit.

After all the visits were completed I began to make sense of what I had learned. During the time I was visiting campuses, I had written an article for Student Affairs On-Line (Barratt, 2000) that contained a conceptual model for analyzing IT in Student Affairs, and I decided to use that model as an analytical tool. It worked extremely well in identifying themes, highlighting problems, and locating solution strategies.

This model posits four areas if IT arrayed in a diamond. I am grateful to Dan Salter, Editor of SAO for creating the graphic used in the Journal, and used here.

Policy

Staffing ← → **Technology**

Practice

While I tried to fit the material into the traditional management model of planning, budgeting, staffing and evaluation, I found that the model above was better suited to the unique features of IT in Student Affairs, enabled me to put each campus' IT

activities in Student Affairs into perspective, and enabled me to make comparisons between campuses.

<center>Policies and Planning</center>

Policies are the basic rules of management and standards of practice. Planning makes our specific and general desired outcomes explicit.

<u>IT Policies.</u>
IT policies reflect little variety on campuses. Existing policies about harassment, use of university equipment, telephone services, free speech limitations, theft and privacy have been reported to be adequate to meet the demands of student misconduct.

Policies have been added to regulate student computer use in residence halls, to make E-mail privacy policies explicit to all members of the university community. Campus IT staff have created policies to regulate hacking. Student, faculty and staff misconduct has a new outlet, but existing policies seem to apply well on most campuses.

<u>Planning</u>
Integrated IT plans for Student Affairs are only emerging as a reality on campuses. Such a plan would identify significant Student Affairs IT problems, propose solutions for these problems, identify budget recourses and staffing, and include an evaluation component. Typically IT plans identify increases in efficiency as a problem to be solved by technology. An additional component in plans should be the ability to do things never before possible. Significant problems vary from campus to campus, but certain elements occur on every campus: Hardware and software upgrades, the Student Affairs web site is one example of a problem, integration with campus IT committees and infrastructure is another.

Dramatic changes begin small, and many student services are beginning to be transformed through the use of IT. Services for distance education students, such as Financial Aid, Career Services, Advising, and Technological Assistance are emerging as new departments on campuses. Some campuses are experimenting with student development transcripts and portfolios using a web interface, which was never before possible.

Currently, IT planning in Student Affairs occurs in one of two ways on the campuses that I visited: either in people's heads or at the department level. Career Centers, for example, tend to have technology plans. However, there are few articulated division wide Student Affairs plans for using IT to promote student development and learning or to increase efficiencies of current practice. This lack of overall planning is most likely caused by the emergent nature of IT into Student Affairs and the consequent lack of knowledge and resources. While IT is recognized as important, few people grasp it in depth or breadth. The consequence of lack of planning results in lack of services to students, lack of resources, lack of coordination, and lack of developmental opportunities for students.

Institutional IT plans typically focus on running the classroom and the institution, typically omitting Student Affairs, student development and student learning. (I am engaged in an evaluation of IT Services on my campus, and have reviewed many

institutional IT plans, so I can assert this with confidence.) A general weakness of institutional plans is their myopic focus on technology and on the software used for running the institution; omitting concepts like development, learning and community. The omission of Student Affairs may be the result of our lack of participation in the campus planning process. I am confident that Student Affairs professionals can add richness to these plans and represent student development and learning in important ways.

Elements Impacting Policies and Planning

Attitudes toward change. Both individual and organizational attitudes toward change profoundly affect how IT is being used on campus and in Student Affairs. Michael Kirton's research suggests that attitude toward change is a personality trait arrayed on a single dimension. On one end of the dimension is the individual who believes in incremental slow change always confirming the current paradigm. At the other end of the dimension is the individual who believes in managing change by shifting the prevailing paradigm. In times of rapid change paradigm shifters are more able to adjust and manage the enterprise, but at the risk of too rapid change. In times of dynamic change paradigm confirmers are more likely to resist change, preventing organizations from adjusting appropriately (Kirton, 1989)

Attitudes toward IT run from the paradigm confirming:
"I wish they would stop changing software so much and make a decision."
To the more typical middle of the road:
"Lets make the best of this, but lets not move too fast."
To the paradigm shifting:
"This is the greatest opportunity that education has ever had since movable type, and we need to take advantage of it now."

Metaphors for Computer Use. A "mainframe mentality" is left over from the old days of large central computers, and is reflected in policies and practices of standardization, strong central control, and limitations on entrepreneurial innovation on campus. This attitude can seriously limit opportunities to acquire and exploit new technologies appropriately for student learning and development.

A "typewriter, paper and ink mentality" is applied to IT as a holdover from paper based office practices. Many people see IT as a way to produce paper efficiently, and not as a way to conduct business differently.

Centralization. Centralization is the degree to which power is differentially distributed within an organization (Hall, 1982, pp. 114-115). Centralization is a blessing and a curse. It allows the efficiency of standardization, but inhibits the entrepreneurial spirit of IT practices. Central planning does not work, but neither does unplanned chaos.

One of the most significant sources of restrictions on IT in Student Affairs is the central management and control of IT on the campus. While some Student Affairs offices can create their own servers, others must use existing campus infrastructures of hardware and software. This can seriously restrict the kinds of IT activities that may be done.

Student Affairs is successful with students by encouraging experimentation within acceptable limits, but the limits placed on IT on some campuses restricts all but basic activity.

Evaluation. Systematic evaluation of IT is a rare event. There is little or no effort devoted to developing campus needs assessment, to collecting IT policies, to comparing campus practices, staffing and technology, to stakeholder identification and the assessment of user satisfaction, to formative or summative evaluation. At the very least, we should be attending to the ways that students use IT and we should use these ways to create developmental and learning based interventions. Our lack of evaluation reflects a general trend in education and business not to evaluate IT.

Costs. Direct costs for IT have increased, and we have adjusted campus budgets to provide technology. Most campuses have replacement schedules for hardware and upgrade schedules for software. Indirect costs for IT are an emerging budget nightmare. Staffing, staff time and staff development are becoming significant costs. The need for technologically oriented Student Affairs staff is growing, but hiring these new staff members may be difficult. Integrating technical staff who do not have a Student Affairs perspective into the Student Affairs culture may be equally difficult. Budgeting for the salaries of anyone with technical skills may become impossible.

Opportunities and Recommendations
- Student Affairs is isolated from campus wide planning and policy making. Representation on key campus IT committees will move Student Affairs concerns into the mainstream and contribute to the campus community.
- Planning in Student Affairs does not take advantage of the potential brought through new technologies. Achieving a dialog between those advocating stability and those advocating change will move our practices forward in Student Affairs.
- Too many IT opportunities can be disruptive, and too few IT opportunities can stifle student growth. Create a planned balance between standardization and innovation by using the dynamic nature of IT within Student Affairs.
- Policies affect all levels of Student Affairs, but are generally developed by few individuals at the upper levels. Engaging staff at all levels within Student Affairs is becoming crucial.

Practices

Practices are what we do, how we use IT in our daily work. What work we do and how we do it reflects our values. We spend time on what we believe is important. Choosing between working with students and re-organizing our work practices using IT is a clear choice for most of us. In the long run using IT to re-organize our work practices will give us more time to work with students, and using IT we may be able to work with student in new ways.

Paper practices at computer speed

Paper and pencil practices have been moved to computer technology. Record keeping, copying, content delivery and data base management - all current tasks - have been moved to digital platforms without changes in processes and without using the technology to increase efficiency of work processes. IT is often used as an add-on to current practices.

Does this sound familiar? Lists of student organizations are entered onto paper forms, keyed into the computer (a slight improvement over typing), and printed out onto paper. IT allows direct web-based entry of data into a database, which is accessed from a web page. This raises an interesting question: Should the official list be electronic or paper? Old technologies and practices persist in spite of new technology. With upgrades in computer platforms and capabilities, last year's computer practices (often based on paper practices) have been moved to new computer platforms, never taking advantage of emerging IT capabilities.

Efficiency Practices

Increases in efficiency using IT are either gradual or radical. Obvious increases in the speed of document preparation and printing are a fine example, but it still takes forever to get a new brochure printed centrally. Some offices increased productivity with a small staff, and other offices have saved thousands on paper and mailing. The efficiencies of technology change staff and budgeting. The burden of data entry is being shifted from central processing (Registrars, Purchasing etc.) to the student and the end-user, without examining the real gains in efficiency. IT is designed to increase efficiency, but always allows us to do things never before possible.

There is a growing effort to modify work processes to take advantage of today's technology, and this has resulted in more staff time being available to work with students. Less time spent on mundane task means more time interacting with students.

This slow increase in efficiency resulting from computer use has been occurring for fifteen years, and has been driving fundamental changes in Student Affairs practice and roles. All brochures have clip art, and each office has a clip art specialist among the staff. There has been a subtle expansion of the roles of activities of professionals, resulting in additional work expanding our professional range.

Innovative Practices

While information technologies are designed to increase the efficiency of current work processes, they enable us to do things never before possible. We are only beginning to shift our paradigm and exploit the potential of IT in Student Affairs. For example it is now easy to have students keep an up-to-date Student Affairs transcript using web based technology and active server pages, but I haven't heard of anyone doing it yet. The virtual counseling center is an increase in the efficiency of delivering brochures and content, and individual counseling centers are beginning to use chat and E-mail as a communication method.

E-mail Practices

MS Outlook has become the standard Student Affairs E-mail tool on campuses, with a few exceptions. Documents are attached to E-mail rather than mailed. Most of the

advanced features of Outlook are unused, such as shared calendaring, shared document creation, shared file space and document libraries.

Students use a variety of E-mail platforms from Pine to Campus Pipeline. On campuses with poor E-mail systems (telnet based systems, systems using shareware like Pegasus), students use Hotmail, Yahoo or similar E-mail vendors. On campuses with good E-mail students use the campus system.

If we are trying to build community, and students daily go 'outside' the community for basic E-mail communication, we have fewer opportunities to affect these students. On campuses with good student E-mail systems the potential for community building is strong. E-mail may become the preferred way to send official notices to students with the potential to become students 'permanent address'.

Productivity Software Practices

Windows, MS Word, and Excel are the standard software suite on most campuses, for reasons of availability rather than features. Productivity software is rarely selected for features, and most of the features are rarely used. This may reflect the "typewriter, paper and ink" metaphor for IT.

Campus Software Practices

The software that runs today's institution does not meet the needs of Student Affairs professionals. While BANNER and PeopeSoft can manage our finances and register our students, they have limited capability to increase the efficiencies of our work. The advent of portals linked to these software packages, for example Campus Pipeline and BANNER, does make the campus software system more user friendly. Student Affairs professionals are seldom engaged in working with the implementation of these portals. But even good campus portals may not draw students away from Yahoo! and Hotmail.

Courseware, such as BlackBoard CourseInfo or WebCT, are only occasionally used for student organizations or student government. In my experience courseware is not designed to meet the needs of student organizations, however if students are using software in that fashion, then we should pay attention.

The Leading IT Department Practices in Student Affairs

Career centers. Career centers, in the limited sample of this study, are the leaders in using information technology. I suspect this leadership role is the result of their function as information brokers, working with students to create resumes and with employers to create information summaries about employment opportunities. Matching these sets of information is facilitated with technology. Unfortunately, there is a large commercial market, and a great deal of money to be made in connecting people and jobs. Non-college based organizations like monster.com are quickly outperforming campus-based career centers.

Admissions. Admissions offices depend on technology. As with career centers, non-campus based organizations such as collegemomadvice.com, xap.com and icollege.com and are out performing campus-based programs. States are entering into contracts with private companies such as xap.com that act as a statewide portal for

recruiting students. Many professional organizations, like ACPA Commission XII, are providing information directly to students about specific undergraduate majors.

Security and Confidentiality Practices

Information security is a paper and ink, lock and key event, and confidential computer files are kept on disks or on an office machine without appropriate security protection. Of more concern are confidential files kept on a central machine with username and password access. While password access is a basic security measure, like a key, it does not guarantee confidentiality in this era of hacking. An often quoted number attributed to the FBI is that 80% of all hacking comes from someone inside the network who has a password.

On many campuses, usernames and passwords are used as digital signatures. On my campus access to the BANNER system requires both, and any data I enter are tagged with my user name. Quite often, an E-mail coming from a faculty member or staff member is assumed to be authentic (a psuedo digital signature) if it comes from their account. However, on my campus about one third of the lab machines are left in a logged-in state, and open offices with unattended machines are common.

I found no other uses of digital signatures in Student Affairs, or on campuses. Very few Student Affairs professionals have even heard of digital signatures, certservers and PGP. The US government now recognizes digital signatures as legal, but the specifics have yet to be worked out.

Cable TV Practices

Cable TV sometimes is and sometimes isn't under the management of the same campus information technology infrastructure. Using cable as a learning tool is an old technology, and providing residence halls with movies to stimulate discussion facilitated by hall staff is a regular occurrence. Partnerships between the campus and cable service providers can be very profitable, given our student consumer base. Cable and Internet connections are seen as a part of the residence hall entertainment package, not as developmental and community building tools.

Third Party Vendor Practices

Third party vendors drive practices. There are large numbers of commercial vendors providing IT services to Student Affairs professionals. There is money to be made, and the economies of scale help vendors to fill many small market niches. Conversations between commercial vendors and Student Affairs practitioners are beginning, which will increase software functionality. We are not yet sure what we want or need, and vendors have been working hard to meet what they perceive to be campus needs.

Vendors not specifically targeting students, like monster.com, are growing in numbers weekly, and not engaging the Student Affairs community in any dialog. Vendors specifically targeting students are growing at a slower rate, but many of them take great care to work with Student Affairs professionals. Many of the technology vendors at our conference exhibit areas are attending programs focused on their areas, and are seeking partnerships with us.

Student Development, Learning and Community Building Practices
Connections between student development and learning and information technology in Student Affairs are limited. The current literature and on-line education has now includes IT as a topic, the core concept of learning and community is still face-to-face. The Good Practices in Student Affairs statement and the Blimling and Whitt (1999) statement and book all but omit any mention of technology and its role in student development, learning and community building.

Opportunities and Recommendations
• The IT environment is unprecedentedly dynamic. Working in IT requires us to listen to students, to listen to software vendors, to participate in campus-wide discussion to identify new opportunities for practice.
• In the future Information Technology will be different. Any office that maintains current IT practices in this dynamic environment will become irrelevant. Even IT professionals have forsaken prediction and have begun a practice of exploring any and all reasonable options.
• Third parties and commercial ventures are developing IT practices for student populations. We need to partner with these vendors to ensure that our core values are represented in their practices.

Staffing

Staff members are the heart of Student Affairs practice. As IT becomes more prevalent, staff jobs and staff roles begin to shift. Staff development, always a Student Affairs strong point, is becoming a regular source for IT training.

New Roles for Student Affairs in Staffing
IT is emerging as a new role within Student Affairs, cutting across all areas and departments. The appropriate staff IT knowledge base and skill set is not clear, but it is clear that people are now using IT frequently in their work. This role is emerging as the technology becomes more commonly used.

Current Staff
Staffing patterns are remarkably similar between campuses. The typical staffing pattern is to select someone from within Student Affairs who has IT knowledge and skills and assign them to a leadership role. These individuals are doing wonderful things and are strongly supported by everyone. They work on specific problems and projects, serve on appropriate committees and support campus wide initiatives, building bridges across the campus to computer central, and to technical support staff. Unfortunately, these staff are entry-level or mid level professionals and do not actively participate in the planning process which will fully integrate IT into Student Affairs.
Typically there are two types of IT staff: 1) IT staff who support practice are Student Affairs types with computer interests who are doing great things, are typically under 40 and have been developed and rewarded by their managers to increase their knowledge and skill base. 2) IT staff who support technology are typically from

technical backgrounds and have a difficult time understanding mainstream Student Affairs culture.

IT staff development is not yet systematic in most offices, and responds to immediate need and not to long range plans. Individual learning goals and staff development plans, common in business settings, are still being developed in Student Affairs. Support and secretarial staff are technically advanced with the software they use on a regular basis, but are rarely seen as a staff development resource.

Typical Web Development Scenario
1. The Vice President directs the Associate Director, who has some extra time, to "Please take care of the web pages".
2. The Associate Director hires a student worker for minimum wage, but the student worker leaves for a job in town doing the same work for $45 per hour.
3. The entry-level professional or graduate assistant, already overworked, is given the responsibility because she knows something about web pages.
4. No plan is created, no training is provided and no web strategy is developed.
5. The new web pages contain material available on paper, presented using Generation D aesthetics, and does not reflect appropriate information architecture and does not share a campus-wide look and feel.

Varieties of Staff Knowledge Base and Skill Set
Among Student Affairs staff there is a tremendous variety in the depth and breadth of knowledge about IT on campus. Some staff members are active users and have enhanced their own knowledge base and skill set, and some staff members avoid IT at all costs. CSAOs and Department/Division heads typically have some familiarity with IT in Student Affairs and typically refer questions about IT to staff members who are perceived to be technically literate. This limited knowledge reduces the effectiveness of management decisions. While it may lead to increases in efficiency, it does not lead to new practices.

Vertical or horizontal integration within Student Affairs and between Student Affairs and the general campus is only beginning to emerge. Knowledge and practice is specialized and compartmentalized along department and functional area lines. Career centers know career IT stuff, counseling centers know counseling IT stuff, etc. without much crossover in knowledge and skill.

Opportunities and Recommendations
• There are still very few Student Affairs staff with an extensive IT knowledge base and skill set. Staff development programs, and redefined roles can shift staff members into needed areas.
• Campus IT staff are generally technically oriented and do not understand Student Affairs. We have the opportunity to work with campus IT technical staff and provide staff development programs in our areas of expertise.

Technology

Technology is the stuff behind IT; wires, routers, servers, PCs, printers, scanners, cameras, and the software that runs all of this hardware.

OS Technology: Windows Wins

Windows, Windows everywhere, and not a Mac in sight. Windows was chosen not because of the features, not because it is integrated with the campus software system, but because it is available. The rare Mac is in the hands of a dedicated Mac user, often an IT oriented person, but since the campus is Windows based, the Mac users are always outsiders.

Campus Technology Wiring And Cable

Wiring, and now fiber optics, is continually being upgraded for digital communication and cable. The wiring target is a port per pillow, but we are not yet sure how we can use it for student development and learning. We feel a need to offer cable and Internet connections because our competitors do, and so we can be among the most wired, but we don't really have a plan to use this wire to further our Student Affairs mission.

Presentation Technology

PowerPoint is slowly replacing acetate overheads, but few offices are examining the expense of PowerPoint projectors and computers to make presentations. The overhead projector came out of bowling alleys, succeeding because it is robust and inexpensive technology. PowerPoint and other presentation software is neither.

Server Technology

Some campuses allow Student Affairs to have servers and some don't. Some Student Affairs servers are coordinated and integrated with the campus network, and some are not. Many different server software packages are used to run servers. Server technology in Student Affairs is a reflection of our lack of planning and our integration within the campus at large.

Security And Confidentiality Technology

Security is a lawsuit waiting to happen. While anti-virus programs are common (not common enough though) data security programs to protect sensitive data and desktop firewalls to protect individual machines are rare. With noteworthy exceptions like counseling centers and student discipline, data security is non-existent. Data security and encryption programs, available on-line or at Sam's Club, offer easy to use and simple solutions, but no one seems to be worried yet.

Digital Signature Technology

The use of a login ID and a PIN number or password is taken as a digital signature on most campuses. Other forms of digital signatures, such as PGP, are not even being discussed. We require students to carry a campus ID but we do not have the equivalent ID for electronic communication. As E-mail becomes our preferred method of

communicating among ourselves and with students, the issue of electronic signatures will become important. As student IDs are often part of the Student Affairs enterprise, electronic signatures may become part of our enterprise.

Campus Computing Systems

Central campus operations software like People Soft and BANNER do not address the IT needs in Student Affairs, but don't blame the vendor. We have not yet done a good job in describing what it needs from a campus wide system. Integration of Student Affairs practices into the campus wide system is an important issue.

Opportunities and Recommendations

- Homegrown programs are a great way to meet immediate needs, but when staff leave they become difficult to maintain.
- Third party vendors may have hardware and software requirements that are incompatible with all stakeholders. For example, career center software that requires the use of cookies may not work with some corporate clients.
- New ways to create and use web interfaces for data files (.asp files) have become easy. This permits new efficiencies in collecting and providing information.

Concluding Remarks

It may be that IT is a passing fad, and it may be that none of us will actually go to a work place in a few years. My suspicion is that IT will present us with a "yes, and" scenario. We are already on the path to using IT, and now is the time to become intentional in our activities. We have been successful so far because of the dedication of a few people. We need to take the next step along this path.

Learn

- Inventory your current campus IT reality to create situational awareness.
- Learn about today's and tomorrows practices, software and hardware.
- Listen to students and watch how they use IT.
- Listen to IT users on your staff.
- Listen to software vendors.
- Look at the "Great Sites" like amazon.com.

Visualize

- How can IT increase the efficiency of your work?
- How can you enter data into the system only once and share it electronically?
- How can IT transform your day-to-day operations?
- How can IT transform your work processes?
- What can you do now with computers and cable that you could never before do?

Plan

- Develop a plan for practice, staffing and technology to meet immediate needs immediately that is adaptable enough to address emerging issues tomorrow.

- Cooperate in creating the campus-wide technology plan.

Connect
- Explicitly connect IT with your student development, learning and community building goals.
- Actively participate in key campus IT committees.
- Become active in professional organization's IT committees.

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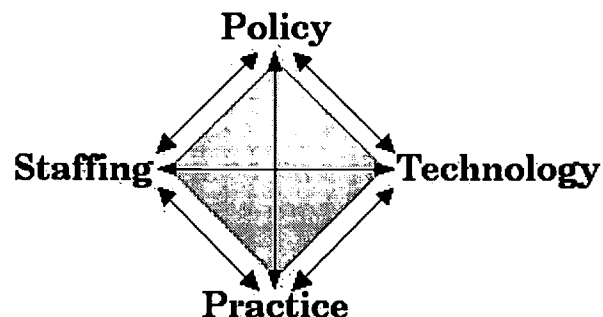
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institutional IT plans, so I can assert this with confidence.) A general weakness of institutional plans is their myopic focus on technology and on the software used for running the institution; omitting concepts like development, learning and community. The omission of Student Affairs may be the result of our lack of participation in the campus planning process. I am confident that Student Affairs professionals can add richness to these plans and represent student development and learning in important ways.

Elements Impacting Policies and Planning

Attitudes toward change. Both individual and organizational attitudes toward change profoundly affect how IT is being used on campus and in Student Affairs. Michael Kirton's research suggests that attitude toward change is a personality trait arrayed on a single dimension. On one end of the dimension is the individual who believes in incremental slow change always confirming the current paradigm. At the other end of the dimension is the individual who believes in managing change by shifting the prevailing paradigm. In times of rapid change paradigm shifters are more able to adjust and manage the enterprise, but at the risk of too rapid change. In times of dynamic change paradigm confirmers are more likely to resist change, preventing organizations from adjusting appropriately (Kirton, 1989)

Attitudes toward IT run from the paradigm confirming:
"I wish they would stop changing software so much and make a decision."
To the more typical middle of the road:
"Lets make the best of this, but lets not move too fast."
To the paradigm shifting:
"This is the greatest opportunity that education has ever had since movable type, and we need to take advantage of it now."

Metaphors for Computer Use. A "mainframe mentality" is left over from the old days of large central computers, and is reflected in policies and practices of standardization, strong central control, and limitations on entrepreneurial innovation on campus. This attitude can seriously limit opportunities to acquire and exploit new technologies appropriately for student learning and development.

A "typewriter, paper and ink mentality" is applied to IT as a holdover from paper based office practices. Many people see IT as a way to produce paper efficiently, and not as a way to conduct business differently.

Centralization. Centralization is the degree to which power is differentially distributed within an organization (Hall, 1982, pp. 114-115). Centralization is a blessing and a curse. It allows the efficiency of standardization, but inhibits the entrepreneurial spirit of IT practices. Central planning does not work, but neither does unplanned chaos.

One of the most significant sources of restrictions on IT in Student Affairs is the central management and control of IT on the campus. While some Student Affairs offices can create their own servers, others must use existing campus infrastructures of hardware and software. This can seriously restrict the kinds of IT activities that may be done.

Student Affairs is successful with students by encouraging experimentation within acceptable limits, but the limits placed on IT on some campuses restricts all but basic activity.

Evaluation. Systematic evaluation of IT is a rare event. There is little or no effort devoted to developing campus needs assessment, to collecting IT policies, to comparing campus practices, staffing and technology, to stakeholder identification and the assessment of user satisfaction, to formative or summative evaluation. At the very least, we should be attending to the ways that students use IT and we should use these ways to create developmental and learning based interventions. Our lack of evaluation reflects a general trend in education and business not to evaluate IT.

Costs. Direct costs for IT have increased, and we have adjusted campus budgets to provide technology. Most campuses have replacement schedules for hardware and upgrade schedules for software. Indirect costs for IT are an emerging budget nightmare. Staffing, staff time and staff development are becoming significant costs. The need for technologically oriented Student Affairs staff is growing, but hiring these new staff members may be difficult. Integrating technical staff who do not have a Student Affairs perspective into the Student Affairs culture may be equally difficult. Budgeting for the salaries of anyone with technical skills may become impossible.

Opportunities and Recommendations
- Student Affairs is isolated from campus wide planning and policy making. Representation on key campus IT committees will move Student Affairs concerns into the mainstream and contribute to the campus community.
- Planning in Student Affairs does not take advantage of the potential brought through new technologies. Achieving a dialog between those advocating stability and those advocating change will move our practices forward in Student Affairs.
- Too many IT opportunities can be disruptive, and too few IT opportunities can stifle student growth. Create a planned balance between standardization and innovation by using the dynamic nature of IT within Student Affairs.
- Policies affect all levels of Student Affairs, but are generally developed by few individuals at the upper levels. Engaging staff at all levels within Student Affairs is becoming crucial.

<center>Practices</center>

Practices are what we do, how we use IT in our daily work. What work we do and how we do it reflects our values. We spend time on what we believe is important. Choosing between working with students and re-organizing our work practices using IT is a clear choice for most of us. In the long run using IT to re-organize our work practices will give us more time to work with students, and using IT we may be able to work with student in new ways.

Paper practices at computer speed

Paper and pencil practices have been moved to computer technology. Record keeping, copying, content delivery and data base management - all current tasks - have been moved to digital platforms without changes in processes and without using the technology to increase efficiency of work processes. IT is often used as an add-on to current practices.

Does this sound familiar? Lists of student organizations are entered onto paper forms, keyed into the computer (a slight improvement over typing), and printed out onto paper. IT allows direct web-based entry of data into a database, which is accessed from a web page. This raises an interesting question: Should the official list be electronic or paper? Old technologies and practices persist in spite of new technology. With upgrades in computer platforms and capabilities, last year's computer practices (often based on paper practices) have been moved to new computer platforms, never taking advantage of emerging IT capabilities.

Efficiency Practices

Increases in efficiency using IT are either gradual or radical. Obvious increases in the speed of document preparation and printing are a fine example, but it still takes forever to get a new brochure printed centrally. Some offices increased productivity with a small staff, and other offices have saved thousands on paper and mailing. The efficiencies of technology change staff and budgeting. The burden of data entry is being shifted from central processing (Registrars, Purchasing etc.) to the student and the end-user, without examining the real gains in efficiency. IT is designed to increase efficiency, but always allows us to do things never before possible.

There is a growing effort to modify work processes to take advantage of today's technology, and this has resulted in more staff time being available to work with students. Less time spent on mundane task means more time interacting with students.

This slow increase in efficiency resulting from computer use has been occurring for fifteen years, and has been driving fundamental changes in Student Affairs practice and roles. All brochures have clip art, and each office has a clip art specialist among the staff. There has been a subtle expansion of the roles of activities of professionals, resulting in additional work expanding our professional range.

Innovative Practices

While information technologies are designed to increase the efficiency of current work processes, they enable us to do things never before possible. We are only beginning to shift our paradigm and exploit the potential of IT in Student Affairs. For example it is now easy to have students keep an up-to-date Student Affairs transcript using web based technology and active server pages, but I haven't heard of anyone doing it yet. The virtual counseling center is an increase in the efficiency of delivering brochures and content, and individual counseling centers are beginning to use chat and E-mail as a communication method.

E-mail Practices

MS Outlook has become the standard Student Affairs E-mail tool on campuses, with a few exceptions. Documents are attached to E-mail rather than mailed. Most of the

advanced features of Outlook are unused, such as shared calendaring, shared document creation, shared file space and document libraries.

Students use a variety of E-mail platforms from Pine to Campus Pipeline. On campuses with poor E-mail systems (telnet based systems, systems using shareware like Pegasus), students use Hotmail, Yahoo or similar E-mail vendors. On campuses with good E-mail students use the campus system.

If we are trying to build community, and students daily go 'outside' the community for basic E-mail communication, we have fewer opportunities to affect these students. On campuses with good student E-mail systems the potential for community building is strong. E-mail may become the preferred way to send official notices to students with the potential to become students 'permanent address'.

Productivity Software Practices

Windows, MS Word, and Excel are the standard software suite on most campuses, for reasons of availability rather than features. Productivity software is rarely selected for features, and most of the features are rarely used. This may reflect the "typewriter, paper and ink" metaphor for IT.

Campus Software Practices

The software that runs today's institution does not meet the needs of Student Affairs professionals. While BANNER and PeopeSoft can manage our finances and register our students, they have limited capability to increase the efficiencies of our work. The advent of portals linked to these software packages, for example Campus Pipeline and BANNER, does make the campus software system more user friendly. Student Affairs professionals are seldom engaged in working with the implementation of these portals. But even good campus portals may not draw students away from Yahoo! and Hotmail.

Courseware, such as BlackBoard CourseInfo or WebCT, are only occasionally used for student organizations or student government. In my experience courseware is not designed to meet the needs of student organizations, however if students are using software in that fashion, then we should pay attention.

The Leading IT Department Practices in Student Affairs

Career centers. Career centers, in the limited sample of this study, are the leaders in using information technology. I suspect this leadership role is the result of their function as information brokers, working with students to create resumes and with employers to create information summaries about employment opportunities. Matching these sets of information is facilitated with technology. Unfortunately, there is a large commercial market, and a great deal of money to be made in connecting people and jobs. Non-college based organizations like monster.com are quickly outperforming campus-based career centers.

Admissions. Admissions offices depend on technology. As with career centers, non-campus based organizations such as collegemomadvice.com, xap.com and icollege.com and are out performing campus-based programs. States are entering into contracts with private companies such as xap.com that act as a statewide portal for

recruiting students. Many professional organizations, like ACPA Commission XII, are providing information directly to students about specific undergraduate majors.

Security and Confidentiality Practices

Information security is a paper and ink, lock and key event, and confidential computer files are kept on disks or on an office machine without appropriate security protection. Of more concern are confidential files kept on a central machine with username and password access. While password access is a basic security measure, like a key, it does not guarantee confidentiality in this era of hacking. An often quoted number attributed to the FBI is that 80% of all hacking comes from someone inside the network who has a password.

On many campuses, usernames and passwords are used as digital signatures. On my campus access to the BANNER system requires both, and any data I enter are tagged with my user name. Quite often, an E-mail coming from a faculty member or staff member is assumed to be authentic (a psuedo digital signature) if it comes from their account. However, on my campus about one third of the lab machines are left in a logged-in state, and open offices with unattended machines are common.

I found no other uses of digital signatures in Student Affairs, or on campuses. Very few Student Affairs professionals have even heard of digital signatures, certservers and PGP. The US government now recognizes digital signatures as legal, but the specifics have yet to be worked out.

Cable TV Practices

Cable TV sometimes is and sometimes isn't under the management of the same campus information technology infrastructure. Using cable as a learning tool is an old technology, and providing residence halls with movies to stimulate discussion facilitated by hall staff is a regular occurrence. Partnerships between the campus and cable service providers can be very profitable, given our student consumer base. Cable and Internet connections are seen as a part of the residence hall entertainment package, not as developmental and community building tools.

Third Party Vendor Practices

Third party vendors drive practices. There are large numbers of commercial vendors providing IT services to Student Affairs professionals. There is money to be made, and the economies of scale help vendors to fill many small market niches. Conversations between commercial vendors and Student Affairs practitioners are beginning, which will increase software functionality. We are not yet sure what we want or need, and vendors have been working hard to meet what they perceive to be campus needs.

Vendors not specifically targeting students, like monster.com, are growing in numbers weekly, and not engaging the Student Affairs community in any dialog. Vendors specifically targeting students are growing at a slower rate, but many of them take great care to work with Student Affairs professionals. Many of the technology vendors at our conference exhibit areas are attending programs focused on their areas, and are seeking partnerships with us.

<u>Student Development, Learning and Community Building Practices</u>
Connections between student development and learning and information technology in Student Affairs are limited. The current literature and on-line education has now includes IT as a topic, the core concept of learning and community is still face-to-face. The Good Practices in Student Affairs statement and the Blimling and Whitt (1999) statement and book all but omit any mention of technology and its role in student development, learning and community building.

<u>Opportunities and Recommendations</u>
- The IT environment is unprecedentedly dynamic. Working in IT requires us to listen to students, to listen to software vendors, to participate in campus-wide discussion to identify new opportunities for practice.
- In the future Information Technology will be different. Any office that maintains current IT practices in this dynamic environment will become irrelevant. Even IT professionals have forsaken prediction and have begun a practice of exploring any and all reasonable options.
- Third parties and commercial ventures are developing IT practices for student populations. We need to partner with these vendors to ensure that our core values are represented in their practices.

<center>Staffing</center>

Staff members are the heart of Student Affairs practice. As IT becomes more prevalent, staff jobs and staff roles begin to shift. Staff development, always a Student Affairs strong point, is becoming a regular source for IT training.

<u>New Roles for Student Affairs in Staffing</u>
IT is emerging as a new role within Student Affairs, cutting across all areas and departments. The appropriate staff IT knowledge base and skill set is not clear, but it is clear that people are now using IT frequently in their work. This role is emerging as the technology becomes more commonly used.

<u>Current Staff</u>
Staffing patterns are remarkably similar between campuses. The typical staffing pattern is to select someone from within Student Affairs who has IT knowledge and skills and assign them to a leadership role. These individuals are doing wonderful things and are strongly supported by everyone. They work on specific problems and projects, serve on appropriate committees and support campus wide initiatives, building bridges across the campus to computer central, and to technical support staff. Unfortunately, these staff are entry-level or mid level professionals and do not actively participate in the planning process which will fully integrate IT into Student Affairs.
Typically there are two types of IT staff: 1) IT staff who <u>support practice</u> are Student Affairs types with computer interests who are doing great things, are typically under 40 and have been developed and rewarded by their managers to increase their knowledge and skill base. 2) IT staff who <u>support technology</u> are typically from

technical backgrounds and have a difficult time understanding mainstream Student Affairs culture.

IT staff development is not yet systematic in most offices, and responds to immediate need and not to long range plans. Individual learning goals and staff development plans, common in business settings, are still being developed in Student Affairs. Support and secretarial staff are technically advanced with the software they use on a regular basis, but are rarely seen as a staff development resource.

Typical Web Development Scenario
1. The Vice President directs the Associate Director, who has some extra time, to "Please take care of the web pages".
2. The Associate Director hires a student worker for minimum wage, but the student worker leaves for a job in town doing the same work for $45 per hour.
3. The entry-level professional or graduate assistant, already overworked, is given the responsibility because she knows something about web pages.
4. No plan is created, no training is provided and no web strategy is developed.
5. The new web pages contain material available on paper, presented using Generation D aesthetics, and does not reflect appropriate information architecture and does not share a campus-wide look and feel.

Varieties of Staff Knowledge Base and Skill Set
Among Student Affairs staff there is a tremendous variety in the depth and breadth of knowledge about IT on campus. Some staff members are active users and have enhanced their own knowledge base and skill set, and some staff members avoid IT at all costs. CSAOs and Department/Division heads typically have some familiarity with IT in Student Affairs and typically refer questions about IT to staff members who are perceived to be technically literate. This limited knowledge reduces the effectiveness of management decisions. While it may lead to increases in efficiency, it does not lead to new practices.

Vertical or horizontal integration within Student Affairs and between Student Affairs and the general campus is only beginning to emerge. Knowledge and practice is specialized and compartmentalized along department and functional area lines. Career centers know career IT stuff, counseling centers know counseling IT stuff, etc. without much crossover in knowledge and skill.

Opportunities and Recommendations
- There are still very few Student Affairs staff with an extensive IT knowledge base and skill set. Staff development programs, and redefined roles can shift staff members into needed areas.
- Campus IT staff are generally technically oriented and do not understand Student Affairs. We have the opportunity to work with campus IT technical staff and provide staff development programs in our areas of expertise.

Technology

Technology is the stuff behind IT; wires, routers, servers, PCs, printers, scanners, cameras, and the software that runs all of this hardware.

OS Technology: Windows Wins

Windows, Windows everywhere, and not a Mac in sight. Windows was chosen not because of the features, not because it is integrated with the campus software system, but because it is available. The rare Mac is in the hands of a dedicated Mac user, often an IT oriented person, but since the campus is Windows based, the Mac users are always outsiders.

Campus Technology Wiring And Cable

Wiring, and now fiber optics, is continually being upgraded for digital communication and cable. The wiring target is a port per pillow, but we are not yet sure how we can use it for student development and learning. We feel a need to offer cable and Internet connections because our competitors do, and so we can be among the most wired, but we don't really have a plan to use this wire to further our Student Affairs mission.

Presentation Technology

PowerPoint is slowly replacing acetate overheads, but few offices are examining the expense of PowerPoint projectors and computers to make presentations. The overhead projector came out of bowling alleys, succeeding because it is robust and inexpensive technology. PowerPoint and other presentation software is neither.

Server Technology

Some campuses allow Student Affairs to have servers and some don't. Some Student Affairs servers are coordinated and integrated with the campus network, and some are not. Many different server software packages are used to run servers. Server technology in Student Affairs is a reflection of our lack of planning and our integration within the campus at large.

Security And Confidentiality Technology

Security is a lawsuit waiting to happen. While anti-virus programs are common (not common enough though) data security programs to protect sensitive data and desktop firewalls to protect individual machines are rare. With noteworthy exceptions like counseling centers and student discipline, data security is non-existent. Data security and encryption programs, available on-line or at Sam's Club, offer easy to use and simple solutions, but no one seems to be worried yet.

Digital Signature Technology

The use of a login ID and a PIN number or password is taken as a digital signature on most campuses. Other forms of digital signatures, such as PGP, are not even being discussed. We require students to carry a campus ID but we do not have the equivalent ID for electronic communication. As E-mail becomes our preferred method of

communicating among ourselves and with students, the issue of electronic signatures will become important. As student IDs are often part of the Student Affairs enterprise, electronic signatures may become part of our enterprise.

Campus Computing Systems

Central campus operations software like People Soft and BANNER do not address the IT needs in Student Affairs, but don't blame the vendor. We have not yet done a good job in describing what it needs from a campus wide system. Integration of Student Affairs practices into the campus wide system is an important issue.

Opportunities and Recommendations
- Homegrown programs are a great way to meet immediate needs, but when staff leave they become difficult to maintain.
- Third party vendors may have hardware and software requirements that are incompatible with all stakeholders. For example, career center software that requires the use of cookies may not work with some corporate clients.
- New ways to create and use web interfaces for data files (.asp files) have become easy. This permits new efficiencies in collecting and providing information.

Concluding Remarks

It may be that IT is a passing fad, and it may be that none of us will actually go to a work place in a few years. My suspicion is that IT will present us with a "yes, and" scenario. We are already on the path to using IT, and now is the time to become intentional in our activities. We have been successful so far because of the dedication of a few people. We need to take the next step along this path.

Learn
- Inventory your current campus IT reality to create situational awareness.
- Learn about today's and tomorrows practices, software and hardware.
- Listen to students and watch how they use IT.
- Listen to IT users on your staff.
- Listen to software vendors.
- Look at the "Great Sites" like amazon.com.

Visualize
- How can IT increase the efficiency of your work?
- How can you enter data into the system only once and share it electronically?
- How can IT transform your day-to-day operations?
- How can IT transform your work processes?
- What can you do now with computers and cable that you could never before do?

Plan
- Develop a plan for practice, staffing and technology to meet immediate needs immediately that is adaptable enough to address emerging issues tomorrow.

- Cooperate in creating the campus-wide technology plan.

Connect
  - Explicitly connect IT with your student development, learning and community building goals.
  - Actively participate in key campus IT committees.
  - Become active in professional organization's IT committees.

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