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ABSTRACT

This paper describes the efforts at an American Assembly of Collegiate Schools of Business (AACSB) accredited college as the school responded to the new mission-driven management expectations and prepared for the formal review of its accreditation status by the AACSB. Under the direction of Computer Information Systems (CIS) faculty, end-user systems were developed to manage initial management efforts, track compliance with accreditation standards, track course scheduling, provide historical data to inform processes for setting faculty qualifications and intellectual contribution goals, and plan faculty requirements. In this paper, the organizational processes needing to be addressed are identified. Opportunities for improved information system support of the processes are described, accomplishments noted, and future intentions outlined. Finally, lessons learned are shared. (AEF)

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APPLYING WHAT CIS FACULTY TEACH TO SUPPORT ACCREDITATION EFFORTS--A CASE STUDY

ED 422 928

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INTRODUCTION

The management challenge for colleges of business is changing. Expectations from the many constituents, e.g., students, employers, legislatures, and the public have increased dramatically. Delivery systems are changing in response to cost pressures and to take advantage of developing technologies. Competition is increasing from profit making organizations and public institutions who are using technology to extend their reach. Management education at the university level is becoming more of an open system in which former boundaries are fading as a barrier to competition.

Accrediting organizations have responded to these new demands by moving to mission-based, process oriented, assessment-driven standards for accreditation. This movement parallels but lags developments in industry. In colleges of business, this mission-driven focus with its emphasis on process improvement requires significant adaptations for faculty and creates new demands for information to support administrative processes. The new information demands give information systems faculty an opportunity to put what they teach into practice.

The changing times demand that colleges of business direct increasing attention to new competitive forces. Industry competition, the seeming universal presence of private schools such as the University of Phoenix in many markets, and the possibility that nearly any institution can deliver courses anywhere via the World Wide Web (WWW) all necessitate greater attention to:

- Allocating limited resources to clearly focused activities
- Considering results from the perspective of multiple constituents
- The effectiveness of processes
- The need to continually improve

Colleges of business have little choice but to improve their management. To monitor processes and outputs and manage more effectively, relevant information is needed on a timely basis. Traditional central university systems often may not respond fast enough nor have the relevant information. The situation is ripe for the application of the knowledge and expertise taught in colleges of business.

This paper describes the efforts at an AACSB accredited college of business as it responded to the new mission-driven management expectations and prepared for the formal review of its accreditation status by the AACSB. Under the direction of Computer Information Systems (CIS) faculty, end-user systems were developed to manage initial management efforts, track

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compliance with accreditation standards, track course scheduling, provide historical data to inform processes for setting faculty qualifications and intellectual contribution goals, and plan faculty requirements. The system used PC-based database and spreadsheet software packages.

In this paper the organizational processes needing to be addressed are identified. Opportunities for improved information system support of the processes are described, accomplishments noted, and future intentions outlined. Finally, lessons learned are shared.

WHAT WE SOUGHT TO DO

An upcoming accreditation review and its associated information needs was the catalyst which triggered the internal college of business development efforts described in this paper. The reaccreditation effort included a major mission revision, establishment of faculty qualification criteria, assessment of compliance with faculty composition standards, development of processes for planning, faculty development, improvement of instruction, stimulation of intellectual activities, and enhancement of the curriculum.

Key process areas and information system support opportunities are shown in Table 1.

To meet these information needs, and in light of a lack of institutionally provided data, the CIS faculty established a PC-based system to support the accreditation efforts. Driven by initial needs for problem management and reports on compliance with faculty composition standards, early efforts focused on database design and development. Subsequent efforts used the database to assist in the development of a spreadsheet-based faculty planning system.

WHAT WE DID

We initially looked at a system that was commercially available and had been built using dBase. After reviewing the database structure and the limitations due to older technology, we decided to build our own system using Microsoft Access. An Access database system provided us with more flexibility, more power, access by multiple users, ease of use, ease of integration with other tools, and the ability to upgrade to new versions. The system was originally built using Access 2.0, was later upgraded to Access 7.0, and was recently converted to Office 97.

TABLE 1

KEY PROCESSES AND INFORMATION SYSTEM SUPPORT

College of Business Process	Support Opportunities for Internally Developed Information Systems
Guide reaccreditation process	· Problem tracking and reporting
	· Compliance with standards for faculty composition, qualification, etc.
Planning	· Accomplishment tracking, e.g., intellectual contributions, faculty development activities, etc.
	· Assembling data for assessing faculty qualification criteria
	· Tracking historical course, faculty, program data
	· Projecting qualification status changes for assessment of future standards compliance, faculty development planning, and staffing requirements
Develop faculty	· Projecting qualification status changes for faculty development planning
Enhance curriculum	· Providing course and faculty student credit hour data · Providing historical data on course offerings, including frequency and enrollments
Improve instruction	· Providing faculty teaching loads, number of course preparations, and student credit hours over time
Stimulate intellectual contributions	· Providing individual and aggregate historical results to inform process for setting aggregate goals and objectives
Develop faculty	· Providing individual and aggregate

qualification criteria	historical results · Examining the impact of faculty qualification criteria under consideration · Maintaining faculty qualification status
Administer the college	· Reporting on course, faculty, facility usage and trends · Assessing historical and current compliance with accreditation standards · Planning faculty staffing or development needs to remain within standards
Market the college	· Assembling information to meet needs of various constituencies

The system was built in an iterative fashion by first assembling the components of instructional data (course, semester offerings, numbers of students), faculty data, and faculty output (service, intellectual activity, and professional activity). Existing annual faculty reporting was used to drive the initial design of the data and entity-relationship structures in the database. Access forms were designed to aid the administrative staff in populating the database. Historical data for four years and current semester data was entered in the database from annual faculty reports, from faculty vitas, and from course data that was downloaded from the university's mainframe system.

An overview of the database structure and reporting is shown below.

Database Structure. The database system is built around a structure of about 30 main entities (tables) and 15 work entities that support data collection and reporting for the following general areas. An entity relationship diagram for the database is shown on the following page.

Faculty Information

- Faculty
- Office Hours
- Evaluation
- Reassign Time
- Qualified
- Status
- Discipline

Instructional and Student-Related Information

- Course
- Section
- Faculty Section
- Room
- Other Instruction
- Responsibility to Students

Intellectual Contribution Information

- Books
- Chapters
- Journal
- Journal Publication
- Meeting Output
- Other Publication

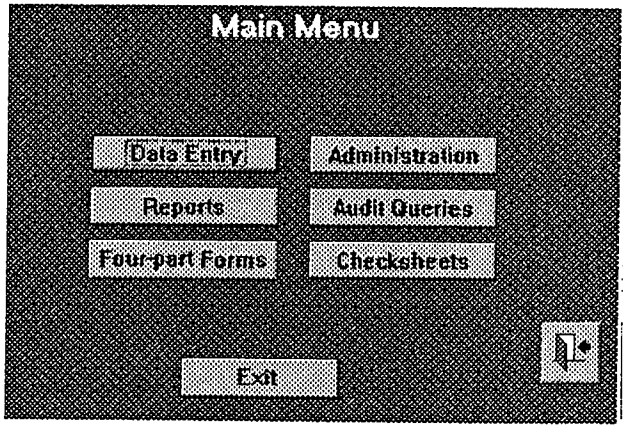
Professional Development Information

- Development
- Professional Association
- Professional Association Activity
- Professional Activity Organization
- Professional Activity

Service Information

- Service
- Service Activity

Data Entry. There are about 60 forms and subforms used to facilitate the data entry process. Most of the data entry using the forms is done by personnel in the dean's office. Class data that is maintained on the university mainframe is downloaded. The following window titled Main Menu is used by the office personnel to help them get to the various forms and reports.



sequence_no
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section_yr
section_counter
delivery_mode
section_closed
section_students
section_pre-reg
section_start_time
section_end_time
section_loc
bldg_code
section_room
section_number
sub_sect
mon
tue
wed
thu
fri
sat
sun
gpa
eval_course
eval_instructor
course_counter
course_id
course_cap
course_name
discipline
course_hours
course_progr
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room_capacity
add-rec
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fs_sem
fs_yr
fac_id
eval_yr
eval_instr
eval_res
eval_prof
eval_serv
fac_id
Disc_year
Disc_sem
Disc_discipline
Disc_percent
Disc_qual
Disc_qual_now
fac_id
fs_sem
fs_yr
office_hours
service_id
fac_id
service_act_sem
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chap_bk_pages
chap_eval_year
chap_pub_year
chap_notes
chapt_intel_code
fac_id
Status_year
Status_sem
Status_rank
Status_FT
Status_%FTE
service_id
service_name
service_category
service_origin
journal_id
journal_name
journal_ref
journal_type
journal_rank
fac_id
date revised
accounting
cis
economics
finance
management
marketing
journal_id
fac_id
jpub_title
jpub_vol
jpub_no
jpub_date
jpub_pages
jpub_eval_yr
jpub_oth_autho
jpub_pub_year
jpub_notes
jpub_intel_code
fac_id
reassign_year
reassign_sem
reassign_type
reassign_hour
desc
area
status
fac_id
fac_name
fac_street
fac_city
fac_state
fac_zip
fac_home_phor
fac_office_pho
fac_email
fac_office_num
fac_doh
fac_dot
prof_act_org_id
fac_id
prof_act_sem
prof_act_yr
prof_act_title
prof_act_hrs
prof_act_desc
prof_act_categor
org_id
org_name
prof_assoc_id
fac_id
prof_assoc_yr
prof_assoc_desc
prof_assoc_hrs
prof_assoc_title
prof_org_id
prof_org_name
prof_org_id
fac_id
meeting_title
meeting_date
meeting_location
mtg_output_title
mtg_output_pages
mtg_output_eval_yr
mtg_output_oth_aut
mtg_output_ref
mtg_output_type
mtg_output_year_dc
mtg_output_notes
fac_id
resp_sem
resp_yr
resp_new_preps
resp_preps
resp_advisees
resp_istud_coop
resp_stud_org
resp_teach_inn
resp_notes
fac_id
o_pub_title
o_pub_date
o_pub_desc
o_pub_eval_yr
o_pub_publisher
o_pub_oth_autho
o_pub_pub_year
o_pub_vol
o_pub_no
o_pub_intel_code
fac_id
oth_inst_year
oth_inst_sem
oth_inst_category
oth_inst_hrs
oth_inst_desc
dev_id
fac_id
dev_category
dev_technology
dev_yr
dev_hrs
dev_desc
dev_location
dev_dollars

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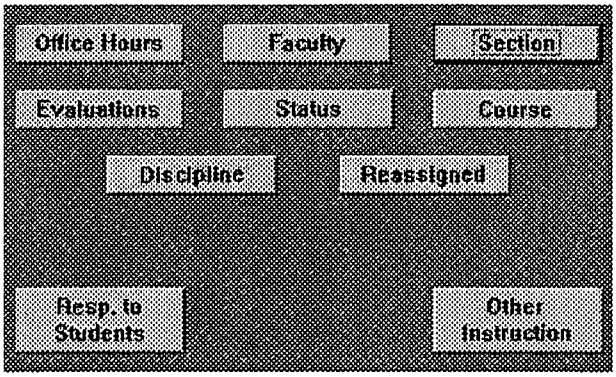
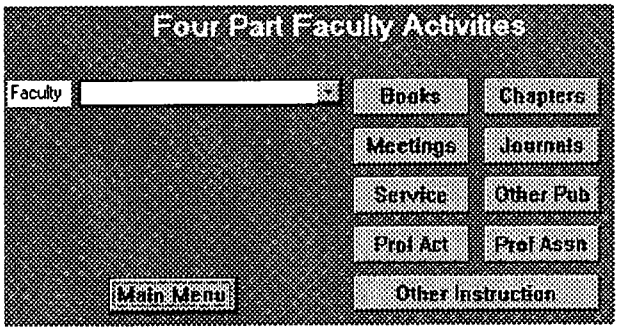
The Data Entry button on the Main Menu window brings up another menu window shown on the following page. This window allows the user to select the forms that perform data maintenance on various tables. This includes data on faculty, office hours, course data, sections offered, discipline of the faculty, reassigned time (administration, research, and curriculum development) other responsibilities to students



(advisement load, job placement, organization advisors), and other instruction (internships, independent studies, thesis committees).

Faculty activity other than teaching is entered by selecting the Four-part Forms button on the Main Menu. This brings up the Four Part Faculty Activities window that follows. This window allows the user to select a specific name from the



faculty table and a form to enter data for that faculty member on various activities over any period of time.

These forms are used to enter most of the non-teaching faculty activity for each calendar year. Books, chapters, journals, meeting output (proceedings, papers), and other publications (working papers, regional reports) are all part of intellectual activity that is entered with slightly different formats. Service documents the activity related to college and university committees. Professional activity captures activity related to seminars and professional meetings, as well as other activity involved in learning new methods or new technology. Professional associations are used to record faculty activity relative to offices held and work done that is associated with professional organizations. Other instruction is another link to entering other types of instruction such as independent studies.

Reporting. The reporting system is supported by about 200 SQL queries, 50 different report definitions and a number of spreadsheet designs. Selected report titles are shown in the following list for each general reporting area. With the database, it was possible to prepare summary reports, such as those required for the AACSB self-study report, and to provide detail backup reports to support validation of the reports.

Administrative Support

- Reports for the AACSB self-study report
- Course Scheduling by Department, Room, Instructor and Time
- Office hour maintenance and reporting
- Teaching Assignments by Faculty, Area and Semester
- Projected compliance with AACSB standards by academic area

Instructional Output

- Student credit hours by programs, courses, and discipline
- Other instructional activity by faculty and semester
- Percentage Coverage of Student Credit Hours by Academically or Professionally Qualified Faculty
- Percentage Coverage of Student Credit Hours by Full-time Faculty by Discipline

Faculty Qualifications

- Faculty Size Composition and Qualification
- Faculty Qualification and Recent Publications

Intellectual Activity

- Books, Proceedings, Presentations, Abstracts,

Journals and other publications by faculty and year

Service Activity

- Service activity by faculty, year and type of activity

Professional Development

- Professional development activity by faculty, year and type of professional development
- Professional activity by professional organization

VALUE OBTAINED

Perhaps, one of the best ways to demonstrate the value obtained from the system is through samples of the reports the system provides on one of the more complex aspects, that is, compliance with AACSB standards for faculty composition. Some of the summary level key reports for the self-study report are described next.

AACSB standards exist for the minimum number of full-time equivalent faculty required, the minimum number of academically qualified faculty, the minimum number of academically or professionally qualified faculty, and the maximum number of academically qualified faculty with no doctorate. Table 1, Faculty Size, Composition, and Qualifications, contains a sample report providing the information needed to judge compliance with the standards.

AACSB standards also address whether there is sufficient coverage by qualified faculty for each program and within each discipline. Table 2, Percentage Coverage of Student Credit Hours by Academically and/or Professionally Qualified Faculty by Degree Program and Discipline, includes a sample report addressing this requirement.

Similar reports to address other AACSB standards are titled, Percentage Coverage of Student Credit Hours by Full-time Faculty by Discipline, and Percentage Coverage of Student Credit Hours by Academically and/or Professionally Qualified Faculty by Degree Program and Location.

Reports such as the above, and many others have made the facts of historical practices evident. Also, they allow us to see the impact of current or projected conditions on compliance with accreditation standards. This has helped the college focus its attention on faculty qualification status, staffing levels, allocation of faculty to academic areas, scheduling of full-time and part-time faculty for courses, and faculty development needs.

LESSONS LEARNED

We experienced many of the typical problems encountered in end user system development, not the least of which was the catch-as-catch-can development process as efforts of CIS faculty and administrative staff were frequently diverted to other matters. The development effort was complicated by high start-stop-restart costs, intermittent resource availability for data entry, and a validation process dependent on faculty availability and responsiveness. We did not progress as fast or as far as we had hoped.

The project has certainly been a learning experience for the faculty and staff involved. Besides providing valuable information as intended, it has provided ample classroom examples of the difficulties of end user system development. At the time of writing, aspects of the system are still undergoing development. Revised decision rules necessitate modification, refinements in data attributes, and extensive data validation. The system will be used extensively to provide reports for the first draft of our self evaluation report due early in the Fall 1997 semester.

ENDNOTE

1. The recently revised accreditation standards o the AACSB and North Central Association are examples of this trend.

TABLE 1

SAMPLE REPORT
FACULTY SIZE, COMPOSITION, AND QUALIFICATIONS

Full-time Equivalent Faculty	F 1993	SP 1994	F 1994	SP 1995	F 1995	SP 1996	F 1996	SP 1997
1) Undergraduate Student Credit Ho	17,553	17,457	16,577	16,709	17,095	16,241	18,007	16,990
2) Graduate SCH	666	708	600	384	471	330	467	455
3) Undergraduate SCH (item 1)/400	43.9	43.6	41.4	41.8	42.7	40.6	45.0	42.5
4) Graduate SCH (item 2)/300	2.2	2.4	2.0	1.3	1.6	1.1	1.6	1.5
5) Minimum FTE faculty required (item 3 + item 4)	46.1	46.0	43.4	43.1	44.3	41.7	46.6	44.0
6) Actual FTE faculty	59.1	61.3	59.3	61.3	57.8	59.5	60.5	61.0
Full-time Faculty								
7) Minimum full-time faculty required (item 5 x 0.75)	34.6	34.5	32.6	32.3	33.2	31.3	34.9	33.0
8) Actual full-time faculty	55.0	58.0	57.0	55.0	55.0	56.0	58.0	58.0
Academic Qualifications								
9) Minimum FTE faculty required to be academically qualified (item 5	23.1	23.0	21.7	21.5	22.2	20.9	23.3	22.0
10) Actual FTE faculty who are academically qualified	41.3	44.5	43.3	44.5	40.0	41.8	38.8	30.0
Academic and Professional Qualifications								
11) Minimum academically and/or professionally qualified FTE required (item 5	41.5	41.4	39.1	38.7	39.9	37.5	41.9	39.6
12) Actual FTE faculty who are academically qualified	41.3	44.5	43.3	44.5	40.0	41.8	38.8	30.0
13) Actual FTE faculty who are professionally qualified, but not academically	7.0	6.3	6.8	7.0	10.3	11.0	13.0	13.5
14) Total FTE faculty who are academically qualified and/or professionally	48.3	50.8	50.0	51.5	50.3	52.8	51.8	43.5
Academic Qualifications with No Doctorate								
15) Maximum permitted FTE faculty who are academically qualified, but with no doctorate (item 6 x 0.10)	5.9	6.1	5.9	6.1	5.8	6.0	6.1	6.1
16) Actual FTE faculty who are academically qualified, but with no doctorate	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0

TABLE 2

SAMPLE REPORT PERCENTAGE COVERAGE OF STUDENT CREDIT HOURS BY ACADEMICALLY AND/OR PROFESSIONALLY QUALIFIED FACULTY BY DEGREE PROGRAM AND DISCIPLINE

MINIMUM STANDARD = 60%

	F 1993	SP 1994	F 1994	SP 1995	F 1995	SP 1996	F 1996	SP 1997
BS ACCT	67.8%	92.6%	88.7%	85.3%	53.9%	76.5%	73.8%	72.9%
BS BA								
Accounting	90.6%	95.0%	88.2%	97.1%	100.0%	100.0%	100.0%	58.3%
CIS	92.8%	96.3%	86.1%	95.4%	97.4%	96.6%	95.5%	86.1%
Economics	78.1%	80.0%	76.5%	79.3%	73.8%	84.3%	80.9%	71.6%
Finance	92.2%	85.9%	89.0%	100.0%	75.4%	76.1%	86.9%	75.9%
Management	52.6%	59.4%	67.6%	56.1%	61.0%	59.5%	64.0%	56.9%
Marketing	100.0%	81.5%	91.7%	100.0%	100.0%	92.5%	90.3%	78.0%
Service Courses	57.4%	47.3%	86.1%	83.8%	83.7%	86.5%	90.0%	
MBA								
Accounting	76.1%		45.8%	100.0%	100.0%	100.0%	36.8%	100.0%
CIS	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Economics	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Finance	100.0%	100.0%	100.0%	100.0%	100.0%		100.0%	
Management		100.0%		66.7%		100.0%		65.0%
Marketing	100.0%	100.0%	100.0%		100.0%		100.0%	

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