Rightsizing the CIS Department: Victim of Fate or Master of Destiny

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Abstract

Increasing demand for information systems professionals frequently translates into increased enrollment of CIS majors. This groundswell in demand poses both a challenge and an opportunity for CIS programs. Rightsizing the CIS Department, through active management of the admissions process not only works to improve the quality of graduates, but provides a much fairer mechanism for allocating scarce faculty and classroom resources than does a more open admission policy. This paper explores the formulation of one such admission policy in a successful CIS program and presents the initial results of its application.

Keywords: Enrollment management, growth, rightsizing, curriculum

1. THE CIS PROGRAM

Our CIS Department is housed within the College of Business Administration. Other departments within the College include Accounting, Finance, International Business & Marketing, Management & Human Resources, and Technology & Operations Management. The program immerses the students in the object-oriented paradigm while allowing them to choose a specialization in application software development, business systems analysis, interactive web design, and telecommunications. Our school is on the quarter system and awards students successfully completing the CIS program with the degree of Bachelor of Science in Business Administration with an option in Computer Information Systems.

All CIS students must take a core set of classes emphasizing a minimum of one course from each of the four tracks plus a careers in CIS course before being allowed to declare a track specialization. The first course students take is object-oriented programming using the Java language. Subsequent courses emphasize systems development using the Unified Modeling Language, telecommunication networks, database development, Visual Basic, and C++. Currently, we are using these tools to move our emphasis toward server-side programming and electronic commerce. The capstone course requires students to organize as teams for the development of a software project, often for a real business or other organization.

2. A CONSEQUENCE OF SUCCESS

As part of our ongoing efforts to remain current, our department began a shift in 1994 away from traditional structured programming, choosing instead to embrace an object-oriented approach to software development. We believed that this change was not only necessary to

keep us in line with best practice in the field, but also to remain competitive among institutions of higher learning. At that time our enrollment had been relatively steady – holding at about 700 students. Much to our surprise, our level of enrollment was about to experience an unprecedented increase. We now believe that our revised curriculum, the growth in public awareness of the Internet, and the sudden rise of .com businesses all contributed to the rapid escalation in demand for CIS education that we were about to experience.

Beginning in 1995, the number of students enrolling in CIS began a sharp increase. Between 1994 and 1998, the total number of CIS students rose each year from an initial level of 710 majors to a total of 1276 majors – an increase of eighty-one percent (see Figure 1). Moreover, by 1998, the trend in increasing demand by students showed no sign of abating. Throughout this time, we undertook several measures to manage enrollment prior to formulating our own admission policy. For a discussion of these measures and a look at what did, and did not, work, see Curl et al., 1999.
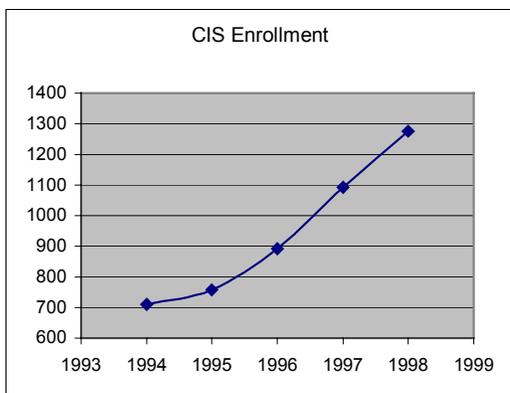

Figure 1: CIS Enrollment 1994-1998

3. JUST SAY NO

Under normal conditions, prospective CIS students are admitted throughout the year to begin study in a subsequent quarter. These students come from one of three sources: freshman applicants, currently enrolled students from other disciplines wishing to change their major or minor, and transfers from schools outside of our university. Admission criteria are standardized for all students in the university so that department chairs need only be informed of the result of the admission process. We were to learn that this need not be the case. Our first lesson in formulating an admission policy came in the form of the simple maxim: Just say no. Taking the council of our registrar, we discovered that academic departments have a number of tools available for enrollment management. We chose the simplest and

perhaps most politically expedient approach of closing the CIS major to new students for much of the year. In practice, this meant restricting admissions by limiting the timing and number of applicants we would accept.

But political expediency is not without its price. We are a public university and any policy change that appears to run contrary to the spirit of public service must be approved by our administration. Beginning in winter 1998, we began discussions with our dean and associate vice president as to the viability of our approach. It should be noted that perhaps our best arguments for limiting enrollment were being made for us by the students themselves. It was not unusual to hear students complain of waiting two or three quarters (i.e., two semesters) *before* being allowed to enroll in a required course. Those who were unable to enroll were becoming increasingly vociferous and did not hesitate to escalate their complaints to higher levels.

We understood the two principal issues to be the timing and number of students we wished to accept; the administration introduced two additional ones: the mix of students from each of the sources noted previously and the duration of closure. While seemingly simple, each of these issues involves careful thought. Questions that were addressed included: (1) the inception and timing of closure, (2) applicability of this timing to changes of major versus new admissions, (3) the proportion of students to be accepted from each of our three sources, and (4) the level of enrollment that would cause us to resume our normal admission policy.

The result of these discussions was an admission policy that addressed all of these issues. We restricted the timing for new students to the applications received during the month of November for study beginning in fall of the subsequent year. Changes of major would be allowed only in the winter. We would continue to represent our sources of new students in the same proportions as we had historically. Finally, based on historical attendance rates and available faculty resources, we agreed to limit the total number of new students accepted to 200 per year with a long-range goal of 800 students in the program. As expected, the effect of this policy change was immediate. For fall 1999, the number of students majoring in CIS declined from a previous high of 1276 to a more reasonable level of 1129, or a 12% decrease.

The foremost shortcoming of simply limiting new majors is that it does little to improve the quality of the incoming students. Statewide policy for limiting program enrollment provides only a first come, first serve approach to admission. Limiting new admissions provides a more rational approach to providing service, however it does nothing to address the quality of those admitted. Clearly, with so many students demanding CIS as a major, a better way could be found.
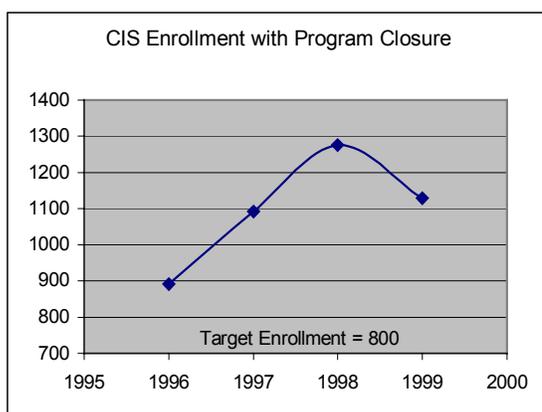
Figure 2: CIS Enrollment 1996-1999

4. A HIGHER STANDARD

Academic departments within our university are normally required to accept new majors when the applicant is in good standing. The policy just described is an exception to this rule. Our second lesson in formulating an admission policy took the form of crafting a higher standard for new CIS students. We learned that in cases of exceptional and prolonged demand, the relevant department may request a customized admission policy, thereby conveying upon it the status of being *impacted.*

Beginning in spring 1998, while we were closed to new majors, the CIS Department began earnest discussions on the issue of impaction. While seemingly a panacea, we found impaction to be much less politically expedient than closing the program to new students. For example, declining to accept further applications can be approved at the level of the campus president; not so for a custom admissions policy. Customized admissions plans must be approved by the trustees for the entire statewide university system. Furthermore, because of the timing of the admissions cycle, this policy must be in place one year in advance of the affected student's attendance. This follows since it is desirable that prospective students have notification at the time of application.

We found that designing a customized admission policy is not as simple as it might appear. Beginning as a political process and ending as work for the staff in Admissions, every aspect of such a policy must be considered and carefully crafted into a workable solution. Issues we considered included: enrollment targets, faculty-student ratios, classroom space, student diversity, California residency, new students versus transfers, and the reputation of our program, among others.

Many of these issues are not independent. Some, in fact, are at odds with one another. We discovered that the term *best qualified* must be intepreted from the California taxpayer's perspective. Our trustees have defined *best qualified* to mean *those residents of California who are best qualified.* In short, by choosing impaction, we cannot accept any out-of-state students, including those we would otherwise welcome.

One point was made clear to us: Any viable policy must successfully address entering freshmen, changes of major or minor, and transfer students. Of principal concern to us was the measure of performance to be used in choosing the best students and the level at which we would determine acceptability. Performance measures that we considered included faculty interviews, essays, aptitude tests, letters of recommendation, previous coursework, GPA, and SAT scores.

After a number of discussions among ourselves and in concert with our administration, we agreed upon a combination of three such measures: previous coursework, GPA, and SAT scores. As a refinement to our selection process, we decided that the actual measures employed and the levels deemed acceptable would vary depending upon which group was being considered. After lengthy deliberations, we formulated the policy shown in Table 1. As was the case under program closure, our goal is to support a population of 800 CIS students.

Our policy features a two-level admissions framework designed to accommodate the backgrounds of both lower and upper division students. For our purposes, changes of major and transfers are considered the same. We require all freshmen and lower division students to have taken the SAT with minimum scores of 450 for verbal and 500 for math. Applicants must also satisfy a minimum eligibility index requirement of 3400, which we compute by multiplying GPA by 800 and adding the combined SAT score. Freshmen and lower division transfers meeting these minimums are then ranked by eligibility index from highest to lowest.

Upper division and transfers from other schools may not have taken the SAT before entering college, so we base our decision on a proven track record – a college GPA of 2.7 or higher, completion of all General Education Area 1 (this includes English composition), and Introductory Statistics with a grade of 'C' or better. Upper division transfers meeting these minimums are then ranked by GPA from highest to lowest.

Selection Criteria for CIS Admission

Freshmen and Lower Division Transfers
- SAT scores:
  - Verbal: 450
  - Math: 500
- Eligibility index: 3400 or higher
- Lower division transfer: Good standing
- California resident

Upper Division Transfers
- College GPA 2.7 or higher
- Completed General Education Area 1 (Communication in the English Language)
- Completed Statistics with Applications with a grade of 'C' or higher
- California resident

Table 1
CIS Admission Criteria

In both of the above cases, students that meet the minimums are not necessarily accepted into our program. The purpose for ranking the applicants is to provide a means of further distinguishing performance in the event that the number of qualified applicants exceeds our enrollment target for a given year.

Finally, to provide fair treatment to each of our sources of incoming students, we continue to accept applicants in the same proportions as we have historically.

5. INITIAL RESULTS

One of our greatest concerns in setting a higher standard for admission is that it would be so high that the pool of applicants would simply choose to go elsewhere. In fact, it appears that just the opposite has happened. As we have raised our standards, the number of applications has *increased* from 390 last year to 490 for fall 2000. The applicant pool for 2000 appears to be more qualified as well. The average high school GPA for accepted applications improved from 3.12 for fall 1999 to 3.52 for fall 2000. SAT scores likewise show a marked improvement. Verbal scores increased from 458 to 535 and math scores increased from 525 to 599. These results are shown in Table 2.

At the time of this writing, we do not yet know how many of the successful applicants will actually enroll this fall. Since our incoming students are better qualified, it follows that they also have more choices with regard to institutions of higher learning. Historically our "show rate" for CIS students has been about 50% of those we accept. How the change in applicant qualifications will affect our final attendance for fall 2000 remains to be seen.

Accepted Applicants	1999	2000
• High School GPA	3.12	3.52
• SAT Scores:		
• Verbal	458	535
• Math	525	599
• Applications:		
• Accepted	231	200
• Rejected	159	290
• Total	390	490

Table 2
CIS Applicant Characteristics
1999 vs. 2000

6. CONCLUSION

We believe that actively managing the admission process is the correct approach to rightsizing our department. For us, the task has not been an easy one. It required satisfying a number of competing interest groups and the thoughtful balancing of resources in the face of sometimes conflicting goals. To the extent that we can claim success in this endeavor, the key for us has been a unified faculty, a credible vision of our future, and a supportive administration. Early results indicate that we are on the right path to better qualified students and, we hope, better prepared graduates.

7. ACKNOWLEDGEMENTS

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