Enrollment Management and Tuition Discounting[1]

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Enrollment management is critical to the success of all colleges and universities, and especially in times when state appropriations are not increasing, the endowment is not producing at historical levels, and gifts are not keeping pace with inflation. Enrollment management is thought of as enrollment planning, recruitment, enrollment, and retention of students to achieve a student body that meets the goals of the college or university. Enrollment management is a very complex undertaking that presents significant challenges to all institutions.

Through enrollment management, institutions attempt to accomplish the following:

- Enroll a class of a certain size;
- Enroll a class with certain characteristics;
- Provide access to students;
- Maximize net revenue.

It is very difficult to accomplish all of these goals simultaneously, given limited college and university budgets, and especially when enrollment demand is increasing and appropriations or other sources of revenue are decreasing. In addition, maximizing these goals may run counter to some philosophic precepts that institutions have. For example, some institutions believe that all qualified students should be provided access to their institution irrespective of ability to pay; this requires meeting the full financial aid need of all admitted students, a policy which is very expensive and most schools are no longer able to provide.

Institutions have many tools to accomplish their enrollment goals. These tools include criteria for admission, both academic and non-academic, academic program offerings, facility decisions, etc. Some schools have found they can increase their enrollment by allowing freshmen to bring cars or by changing their policies toward social life on campus.

In this article, we will concentrate on the financial tools that an institution has to manage enrollment. These tools are:

- Setting the tuition price;
- Establishing financial aid policies;
- Allocating need-based financial aid;
- Allocating characteristic-based financial aid.

Setting the Tuition Price

All institutions spend a great deal of time in establishing their tuition. An institution's tuition is one of the few things on which a board of trustees will normally vote. Tuition usually does not vary too much from year to year, except in cases like the current economic environment where some universities are increasing tuition at rates in excess of 10%.[2]

In determining the tuition, institutions usually look at what they charged for the last several years, at the tuitions charged by those institutions with whom they compete, and at the institutions in their area. Given this data, most institutions raise their tuition 1% to 5%. Up until the current fiscal year, tuition increases have been averaging between 3% and 5%.[3] A few institutions will make a significant change in their tuition either up or down to reposition themselves in relation to their peers, or institutions they wish to have as peers. This is relatively risky and is not done often.

The Enrollment Funnel

An institution will usually begin an analysis of its enrollment strength by analyzing the "enrollment funnel." Table 1 represents an example of the funnel with two columns: one for the institution in question and the other for peers. Peers are institutions with which the institution compares itself and against which it benchmarks its results. It is often useful to look at what the peers do in order to assess the institution's efficiency.

Table 1

Assessment of Applicant Pool and Enrollment Results

	Your Institution	*Peers*
Inquiries	28,500	
Applicants	2,000	
Conversion Rate	7%	9%
Accepted	1,650	
Acceptance Rate	83%	75%
Enrolled	465	
Yield	28%	30%
Discount Rate	41%	38%

The funnel begins with the inquiries that an institution receives. The first thing an institution will do is look at how many prospective students inquire about the institution and then work to convert the inquiries into applicants. It is important for an institution to ensure that it quickly discern which of the inquiries that it receives are serious so that the institution does not invest too many resources in pursuing students who have no intention of attending the institution.

An institution will often compare its conversion rate of inquiries to applicants with that of its peer institutions to assess its efficiency. In this example, this college received 28,500 student inquiries which resulted in 2,000 applicants. The conversion rate is the number of inquiries which actually applied; for this institution the conversion rate is 7%. By comparison, its peer institutions were able to convert 9% of inquiries into applicants. It is often more cost-effective to reduce the number of inquiries and increase the conversion rate. This requires an analysis of where the most productive inquiries come from and to stop advertising or recruiting in areas that generate inquiries but no applicants.

One can see that this institution accepted 1,650 of the 2,000 applicants for an acceptance rate of 83%. This means that most of the students who applied to this institution were acceptable to it, i.e., met the criteria for admission. By comparison, its peer institution accepted

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only 75% of its applicants. As institutions become more selective, the acceptance rate usually falls.

Of the 1,650 students who were accepted, 465 enrolled giving the college a yield rate of 28%. By comparison at the peer institutions, 30% of the accepted students enrolled.

There is one additional piece of information on this table and that is the discount rate. As one can see in this example, the discount rate for the enrolled students at the institution is 41% compared with 38% at the peer institutions.

Discount Rate Defined

The discount rate is defined as the financial aid that an institution awards from its own funds divided by the gross tuition revenue, as follows:

$$\text{Discount rate} = \frac{\text{Institutional Financial Aid}}{\text{Gross Tuition Revenue}}$$

The tuition discount rate for an institution can also be calculated in the following way:

$$\text{Discount rate} = \frac{\text{Percentage of students receiving aid}}{\text{Average grant as percent of tuition fees}}$$

For the purposes of this article, the tuition discount is calculated using all institutional grant aid; the source of the money is not relevant. The aid may come from the general revenues of the college or university, from restricted endowment funds, and/or from gifts. In addition, the discount rate is calculated using only gross tuition revenues, not room and board revenues. This is done because the data that will be presented later are based on this definition. The rationale for collecting data this way is that the percentage of students who live in college/university housing can vary substantially among institutions, and therefore using room and board in the denominator decreases the comparability of the data.

Applicant Pool Assessment

All colleges and universities rate students from most desirable to least desirable. The characteristics that make a student "most desirable" versus "least desirable" to an institution will differ from institution to institution, but all institutions will have such a definition. Institutions will rate students on some sort of scale according to their desirability to the college. The factors going in to the rating and the rating structure may be quite simple or extraordinarily complex. In our example, we have used a scale with four rankings: A,B,C, and D with A being most desirable and D being least desirable. (See Table 2.)

Table 2
Assessment of Applicant Pool by Reader Rating

Read Rate	*A*	*B*	*C*	*D*	*Total*
Applications	300	600	600	500	2,000
Admits	300	600	550	200	1,650
Acceptance Rate (%)	100	100	92	40	83
Enrolled Yield (%)	45	20	24	40	28
Discount Rate (%)	75	38	15	30	41

At this institution one can see how the 2,000 applicants are categorized from A to D. All of the applicants in categories A and B are accepted while 92% of those with a C rating are accepted, and 40% of those with a D rating are accepted. This makes up the overall college acceptance rate of 83%.

Among the students with an A rating, 135, or 45%, enrolled while only 20% of those with a B rating enrolled. Among those rated C, 24% enrolled and 40% of those rated D enrolled. This gives the college its overall yield rate of 28%. This result by itself seems somewhat strange. One would have predicted a lower yield rate among the A students and higher yield rates among the less highly rated students as they are likely to have fewer institutions interested in them.

The discount rate is thought to explain a good part of the yield rate although there certainly are other factors that can impact the yield rate. For example, an institution may have a special honors program that is very attractive to the highest ability students; or there may be other special programs that are only available to certain categories of students, which would make this school stand out for these students.

In this example, the discount rate for the A-rated students is 75%. This means that these students only pay 25% of the tuition. The discount rate for the B rated students is 38% while it is 15% for the C rated students and 30% for the D rated students. It is curious that the discount rate for the D students would be higher than the rate for the C students. This anomalous result may occur due to the awarding of institutional aid based on both merit and need. The higher-rated students are likely to be getting merit-based aid whereas the lower rated students are likely to be getting need-based aid.

Table 3 shows the net tuition paid by students with different quality ratings. The published tuition at this institution is $12,000; that is the full price or the price paid by "full pay" students. A "full pay" student is one who does not receive any institutional financial aid. None of the students rated A or B pay full price. The average price paid by the A rated students is $3,000. The average price paid by B rated students is $7,440 while it is $10,200 for C rated students and $8,400 for the D rated students. Overall, the average tuition paid by students at this institution is $7,080. The last column of this table shows that only 9% of the students at this institution pay the published price of $12,000; thus 91% of the students are receiving some institutional aid.

Table 3
Analysis of Freshman Class Quality by Net Tuition

	Quality Rating				*Total*	
Net Tuition	A	B	C	D	No.	%
$12,000 (full pay)	0	0	20	22	42	9.0
$10,000–$11,999	0	0	71	19	90	19.4
$8,000–$9,999	0	42	24	9	75	16.1
$6,000–$7,999	0	68	10	7	85	18.3
$4,000–$5,999	23	5	3	8	39	8.4
$2,000–$3,999	90	4	1	7	102	21.9
$1–$1,999	20	1	1	8	30	6.5
$0	2	0	0	0	2	0.4
Total	135	120	130	80	465	100.0
Average Net Tuition	$3,000	7,400	10.200	8,400		

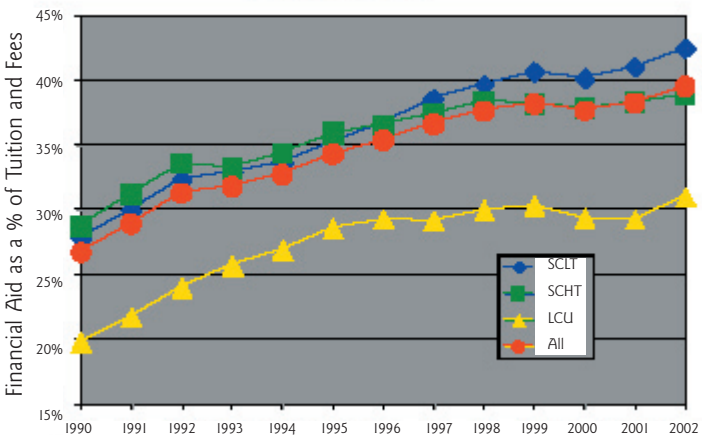
Recent Trends in Discounting

For the last several years, we have been questioning where the higher education industry is moving in terms of its pricing and financial aid strategies. Is tuition going to continue to increase? Are schools going to continue their practice of providing scholarships to significant numbers of students? Will the published price continue to lose meaning and if "yes," what will the consequence of this be? What impact do pricing and discounting strategies have on access to higher education?

There now exist 13 years of tuition, financial aid and enrollment data from a large sample of independent institutions which has been collected by the National Association of College and University Business Officers (NACUBO). The data show that on average, and for an overwhelming majority of the individual institutions, decisions have been made to increase financial aid faster than stated tuition rates, resulting in real revenue (net tuition) growth which has been decidedly lackluster if not, in many instances, negative. (See Figure 1.) The data are divided among three types of institutions, based upon the size of the institution's freshman enrollment and tuition, as follows:

	Freshman Enrollment	***Tuition***
Small Colleges Low Tuition (SCLT)	<850	<$21,000
Small Colleges High Tuition (SCHT)	<850	>$21,000
Large Colleges and Univer (LCU)	≥850	

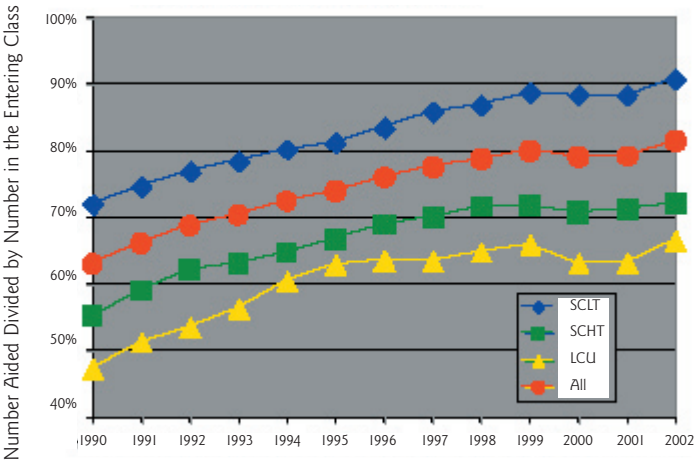
Figure 1
Freshman Tuition Discount



In fall 2002 the average discount rate across participating institutions was 39.4%. Tuition discounting on average has increased from 26% in fall 1990 to a 2002 level in excess of 39%. The discount is made up of two components, the percentage of students receiving financial aid and the average size of the grant as a percentage of the institution's tuition.

The percentage of freshmen receiving institutional aid continues to grow and now more than 80% of all students at private institutions receive institutional aid. (See Figure 2.) At SCLTs, more than 90% of the students receive aid. This represents significant increases in the percentage of students aided since 1990, when on average less than 65% of the students received institutional financial aid; this represents an increase of almost 30% in the share of students receiving aid. On the other hand, the average grant as a percentage of tuition has remained relatively constant. It has increased only 12% over this period from 43.9% of tuition to 49.3% of tuition.

Figure 2
Percent of Freshmen Receiving Institutional Aid

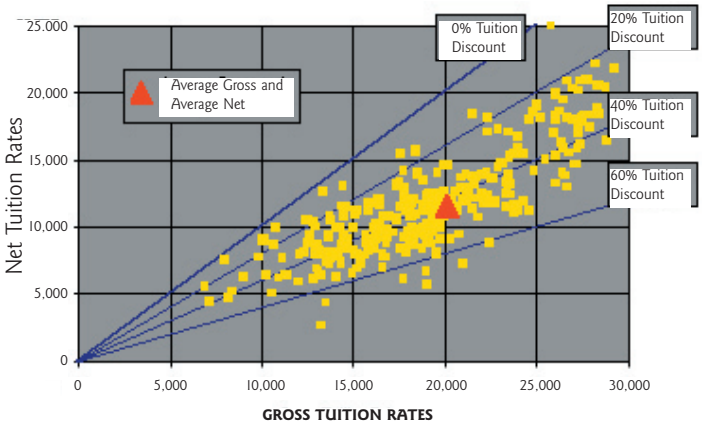


Institutional aid used to be granted primarily to students to enhance access to higher education for those without the financial resources to attend. This is still true at the most elite institutions in the country, but most institutions are providing institutional grants to shape their classes. Today many, if not most, institutions employ financial aid as a necessary tool to recruit and retain students.

What Is Happening to Gross and Net Tuition?

Between 1990 and 2002, the published tuition price at the independent colleges in this data base has increased from $10,253 to $20,085, an increase of 95.9%. (See Figure 3.) Net tuition has grown from $7,481 in 1990 to $12,235 in 2002, an increase of 63.5%. Less and less of the stated price of attending a college or university is ultimately reflected in real income available to purchase educational services. In 1990, the average net tuition was 73% of the average gross tuition; while in 2002, the average net tuition rate represents only 61% of the gross tuition.

Figure 3
Gross and Net Tuition Rates
Full-Time Freshmen, Fall 2002



Discussing averages masks the significant differences in the way institutions operate. Figure 3 shows different combinations of net and gross tuition. The vertical axis has the net tuition on it and the horizontal axis has the gross or published tuition price on it. The 90 degree line represents those places where net and gross tuition are the same; institutions on this line are not providing any institutional aid. There are no institutions on this line. Each square represents an institution. Thus if one draws a line up from $15,000 on the horizontal axis, one can see the various net tuition charges at different institutions. The net tuitions range from about $6,000 to about $13,000; thus, the discount rates range from 15% to 60%. Thus, knowledge of the published price is not a particularly good indicator of what the average student will pay at the institution.

To complicate the issue further, institutions can use various combinations of average grants and aid a different percentage of the freshman class and still have the same discount rate. In Figure 4, the vertical axis represents the average grant as a percentage of tuition, and the horizontal axis represents the percentage of students receiving grants. The three curved lines going from the axis out represent different discount rates: 20%, 40% and 60%. The squares represent fall 1990 and the dots represent fall 2002.

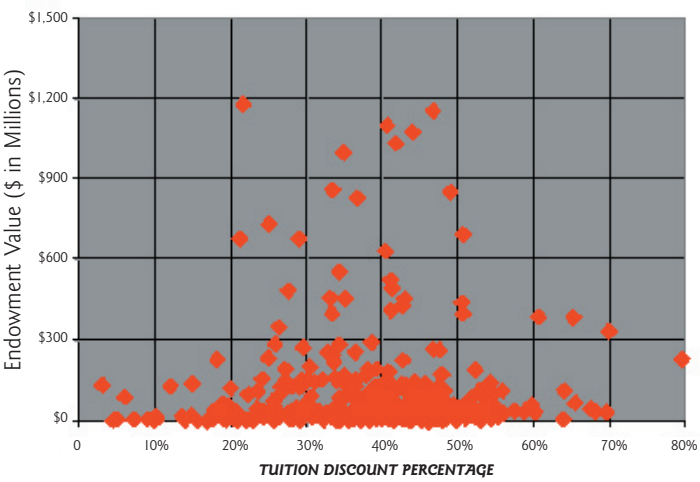
Figure 4
Relationship Between Grants as a Percentage of Tuition and Fees and the Percentage of Students Receiving Grants

If one travels along the 20% discount curve, one can find an institution which aids almost 100% of its students with an average award of 20% to each student. One also can find institutions which award 25% of their students with grants that equal 80% of the tuition. Both sets of institutions will have average discount rates of 20%, but they will be using very different strategies to arrive at this discount rate.

This graph very clearly demonstrates how the discount rate has risen over the last 13 years and how most of the increase is attributable to an increase in the percentage of students receiving aid rather than increases in the average award.

Finally, Figure 5 demonstrates that there is no significant relationship between endowment size and the tuition discount. Put more simply, relative institutional wealth or poverty does not sharply affect the level of financial aid. Institutional aid is an enrollment management tool. The granting of aid to a significant percentage of the class is a necessary tool to fill the class with the number and quality of students that are necessary. Most institutions today are unable to enroll an adequate number of qualified students at their published price. We must continue to ask if we are on a pricing merry-go-round or is the pricing strategy which is being employed a rational method for most appropriately attracting the best mix of students to each institution?

Figure 5
Relationship Between Endowment Size and Tuition Discount



Historically, the wealthiest colleges and universities in the country espoused "need blind" admissions policies and promised to meet the full need of all accepted applicants. "Need blind" admissions policies meant that a student's ability to pay was not considered in the admissions process. Today at many institutions the new term is "need aware" admissions policies, meaning that an applicant's financial need is a consideration in the admissions process.

Meeting full need meant that an institution would provide all aid that one of the accepted formulas for calculating need stated was required by that student to attend the institution. Today, most institutions engage in what is called "strategic packaging." This means that an institution will consider both the financial need of the student and the attractiveness of that student to the institution in meeting its enrollment goals in developing the package of aid which will be offered to that student. Students with similar financial need but different academic or other characteristics are likely to get different aid packages; the student who is more desirable to that institution will be awarded significantly more grant aid than the other student who may be offered much more of his package as a loan.

Some institutions take the concept of strategic packaging beyond a sorting for academic credentials to attempt to explicitly measure willingness to pay and to adjust aid up or down on the basis of probability of enrollment. A strategic use of discounting is often referred to as "financial aid leveraging." Leveraging, as it is practiced in colleges and universities, seeks to award just the right amount of aid or discount in order to enroll a particular student and in the aggregate, just the right amount of aid to enroll a class of a planned size with specific characteristics.

There are many systems, from simple to complex, to do this. At the most arithmetically sophisticated level, regression formulas which combine data on groups of students from previous years are used to predict the enrollment behavior of prospective students based, in part,

on variations of grant (or discount) awarded. The use of strategic packaging/ financial aid leveraging has spawned a whole industry of sophisticated consultants who are helping institutions attract the class they want and maximize their net revenue.

The discounting strategies used in higher education raise many questions and the jury is still out. Is it a zero sum game? Has it increased total revenue in higher education by increasing the number of students attending college? Has it diverted needed revenues from programmatic expenditures to unnecessary financial aid expenditures? Has it spread around the brightest students to more institutions and thus helped raise the quality of these institutions?

These are just the beginning of an endless number of questions that can be raised about the enrollment management and tuition discounting practices that institutions of higher education are engaged in today. It should be noted that these strategies are being widely adopted in the public sector especially by the public flagship institutions.

Footnotes

[1] Data for this article were collected as part of the National Association of College and University Business Officers (NACUBO) tuition discounting survey.

[2] See, for example, reports in the *Chronicle of Higher Education*, http://www.chronicle.com.

[3] The College Board. *Trends in College Pricing 2002*, http://www.collegeboard.com.