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Mapping the Enrollment Process:

Implications of Setting Deadlines for Student Success and College Management

Abstract

The urban mission of two-year community colleges with open enrollment policies is to train, retain and graduate students from all walks of life, including the poor, displaced, under-employed, and unemployed. This mission can be undermined if management decisions are not informed by detailed enrollment data, especially on how the timing of student decisions affects their academic success. This paper explores enrollment flow at a large urban, community-based technical college to recommend and monitor enrollment decisions, while keeping the fiscal and student success implications for the institution in mind. Research findings were generated from analyses of program applications and registrations in the fall terms of the 2004–05 and 2005–06 academic years, giving special attention to when students applied and registered. Analyses highlight the issues involved in changing student behavior, while modifying institutional procedures affecting application processing. The creative challenge was to find the optimal balance among honoring the college mission; easing admission processing; providing retention efforts; and maximizing fiscal support.

Introduction

The importance of two-year community colleges in increasing heterogeneous urban populations' accessibility to higher education is well documented (Bailey, 2003; Cohen & Brawer, 1996; Nettles & Millett, 2002; Roueche & Roueche, 1993; Zuniga, 1997). It is ultimately tied to filling labor force needs (Ludeman, Barroilhet, Gehrke, Gleason, Grosso & Sachse, 2002). With 170 programs and 53,000 students yielding 13,000 annual FTEs (full-time equivalencies), Milwaukee Area Technical College (MATC) is one of the largest community-based technical colleges in the country. It serves a metropolitan area of 1.5 million with a bifurcated urban-suburban labor market, a large concentration of urban poor and one of America's youngest minority populations.¹ Program and non-program courses serve a largely part-time student body, many of them holding down jobs and raising families.

The lack of an application deadline creates difficulties for the Student Services Division in managing the heavy flow of enrollment processing, especially during the summer months, preceding fall terms. However, deadlines potentially jeopardize the accumulation of FTEs, which drive fiscal support for the institution. Additionally, administrators are concerned with the influence of late applications on student retention over time, which contributes to the college's ability to meet labor market needs through graduation. Financially-strapped, late submitting applicants also jeopardize their ability to receive financial aid in time to cover the cost of books and tuition. Given these interrelated challenges,

¹ Metropolitan Milwaukee has the youngest African-American population among the 100 largest U.S. metro areas. It also has the fourth youngest Asian population and ninth youngest Latino population (UWM Labor Market Planning Document, August 2003).

institutional research offices at large urban institutions can play an active role in critically examining enrollment procedures in the search of balanced solutions (Alfred, 2002; Pilarzyk & Wang, 2007).

Literature Review

Numerous factors affect the academic success of community college students and, to that end, educational researchers measure the effects of various student characteristics on success rates. Generally, those who attend part-time, are financially-challenged, and have weaker academic skills are at greater risk of not completing their education (see Bailey, Calcagno, Jenkins, Kienzl, & Leinbach, 2005). Initial student intent, integration into college life, lifestyle pressures and specific psycho-social characteristics also play important roles in persistence and completion rates (Bers & Smith, 1991; Napoli & Wortman, 1998). However, it is generally recognized that these characteristics are intertwined with the wider issues of race and class, which can be most effectively addressed only through comprehensive social, economic and educational policies.

Furthermore, institutional procedures and decisions concerning enrollment management influence student entry and eventual success. For example, research literature suggests that the “temporal aspects of college enrollments”—when applications are submitted and students register—are related to their academic standing (e.g., Freer-Weiss, 2004; DesJardins, 2005). Yet few studies address this issue among two-year colleges (see Smith, Street, & Olivarez, 2002 for an exception). The decision to set application and registration deadlines thereby affects who will gain entry into programs and when. This also relates directly to remaining true to the community college mission concerning open enrollment.

These two broad factors—individual and institutional contributors to college entry and persistence—interact since less academically-prepared and focused students appear to make decisions concerning college later than better prepared students. Their relationship is strongly influenced by the effects of class and race at institutions of higher education, especially community colleges (Bailey et al., 2005).

This research explores the interface of these two factors by analyzing patterns of application and registration among 12,878 program application submitters for the fall term of the 2004–05 academic year at a large community-based technical college in the Midwest. A profile of admission processing and flow is developed to map application submissions and registrations, and related financial aid application submissions and awards. Resulting analyses

Like many urban two-year institutions, Milwaukee Area Technical College (MATC) has multiple metro campuses to meet its mission of providing an accessible, cost-effective quality education to its district residents. Three-fifths of its students live within the city of Milwaukee and 44 percent are people of color (largely African-American and Hispanic students).

highlight issues in changing both student behavior and institutional procedures affecting application processing, FTE accumulation and academic success.

The data analyses suggest that late registrations, spurred by late submission of applications, influence admission processing and rates of student success, placing retention efforts squarely in the context of enrollment flow and management’s streamlining of admission processing. This paper includes a discussion of balancing admission processing, student retention and fiscal implications in making enrollment management decisions. The active role of the Strategic Planning and Research Department (SPRD) in enrollment management meetings guarantees that procedural recommendations affecting admission and retention result from data analyses.

Research Problem

Like many urban two-year institutions, Milwaukee Area Technical College (MATC) has multiple metro campuses to meet its mission of providing an accessible, cost-effective quality education to its district residents. Three-fifths of its students live within the city of Milwaukee and 44 percent are people of color (largely African-American and Hispanic students). MATC is increasingly addressing the needs of academically and economically disadvantaged students with changes in its feeder schools, with many students in need of a remedial and developmental pre-college education. During the 2004–05 academic year, 37 percent were academically disadvantaged while 31 percent were economically disadvantaged. Fulfilling the needs of these and other at-risk students is part of the college’s institutional

mission to train the poor, displaced, under-employed, and unemployed members of the community to increase their labor force participation.

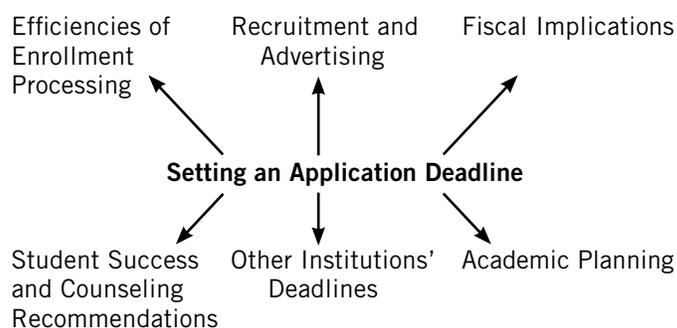
Meeting its open enrollment mission goes hand-in-hand with the need to effectively manage 28,000 fall term enrollees, including over 12,000 new program applicants. Between fall terms of the 2000–01 and 2004–05 academic years, application submissions counted by the fourth week of classes had increased 70 percent as a stagnant economy, coupled with an increasing number of “Baby-boom Echo” high school graduates, swelled the number of applicants. This massive processing job is complicated by the large proportion of prospective students who apply during the two months immediately prior to the beginning of the term. The pressures placed on staff in a very short period include assistance in completion and review of applications, guidance of applicants through financial aid procedures, and orientation and counseling of applicants to registration. The stressfulness of this management process led to questioning the role of application deadlines in increasing efficiencies and minimizing those applicants who need to be processed within a few weeks or even a few days prior to the beginning of day classes.

Additionally, enrollment management experts hypothesized that late-applying students were at greater risk of not succeeding. Therefore, the Student Services Division, with oversight of the student enrollment process, recommended use of a strict cutoff date or deadline for application submissions for the fall term of 2005–06 academic year, while continuing to allow late applicants to register (but not as fall term program students) and to consider more proactive recommendations in placing them in college preparatory coursework.

The issues involved in these recommendations were discussed at meetings of the Enrollment Funnel Team and the Strategic Enrollment Management Committee, both with broad college representation. A series of internal and external factors related to setting an application deadline were identified (see Figure 1). These included the fiscal implications of losing FTEs; the academic performance of students who apply and enroll late—just before or after the beginning of the term; the pressures placed on enrollment processing by the volume of late applications; the appropriateness of mass media advertising and recruitment information regarding a deadline; its relationship to those set by area four-year institutions (which affect the number who consider applying to the college); and the role of academic planning in managing course capacities affected by deadline cutoffs and retention-focused coursework.

Between fall terms of 2000–01 and 2004–05 academic years, application submissions counted by the fourth week of classes had increased 70 percent as a stagnant economy coupled with an increasing number of “Baby-boom Echo” high school graduates, swelled the number of applicants. This massive processing job is complicated by the historically large proportion of prospective students who apply during the two months immediately prior to the beginning of the term.

Figure 1. Factors Associated With Setting Application Deadlines



Hypotheses

Three major assumptions that underlie discussions among planning teams and committees needed to be tested. First, a firm application deadline set one week before the onset of day classes will guarantee that almost all applications can be received in time for admission processing. The intended consequence of such a deadline would be to influence late applicants to apply for program admission and financial aid earlier, hence to also register for courses earlier. Hypothetically, there is a positive correlation between the dates for program application, financial aid application, financial aid award, and course registration.

Second, late application submissions are assumed to be counter-productive for the academic success of program students. Students who apply for program admission late

In sum, the setting of an application deadline was considered a procedure that would honor the college mission, ease admission processing, demand greater counseling support for retention efforts and protect fiscal health. Examining the flow of applications and registrations would seek to optimize these goals by identifying an optimal balance between these objectives.

will have a lower average term GPA, credit completion rate and term-to-term retention rate. Therefore, late applicants and registrants need to be targeted at the onset of their college career for student success and/or retention initiatives.

Third, the lack of a registration deadline would continue to reinforce the open enrollment mission of the institution so that residents can take classes any time prior to the beginning of a term, provided course capacities have not been reached. While late applicants' applications could be deferred to the following semester, they can be invited to register for the current term as non-program (and aid-ineligible) students. Providing such a possibility would assure that FTEs are not appreciably lost; hence, state fiscal support based on FTE counts would not be greatly affected by the application deadline decision. Therefore, it is assumed that FTE losses will not be substantial due to an application deadline.

In sum, setting an application deadline was considered a procedure that would honor the college mission, ease admission processing, demand greater counseling support for retention efforts and protect fiscal health. Examining the flow of applications and registrations would help to affirm these goals. Institutional research's work on enrollment management teams and committees was instrumental in questioning and testing the above assumptions, guaranteeing that recommendations affecting admission and retention resulted from data analyses and assuring they were widely

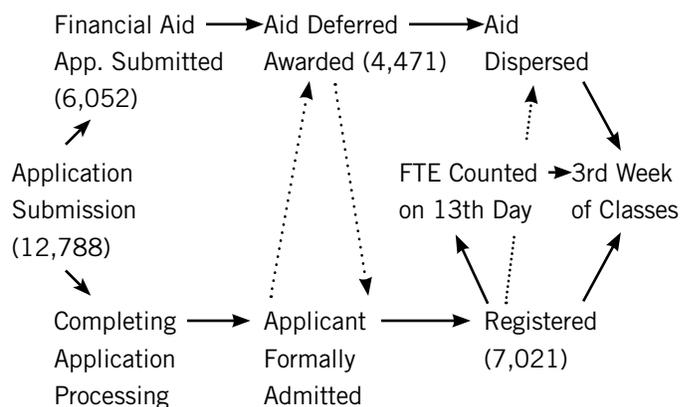
discussed (see Pilarzyk & Wang, 2007 for a discussion of the institutional action research paradigm).

Methodology

A research design was developed in consultation with members of the Enrollment Funnel Team and Strategic Enrollment Management Committee to (1) map the application process for the fall term of the 2004–05 academic year, and (2) replicate the analysis for the fall term of the 2005–06 academic year in order to provide data estimates on a deadline's fiscal impact.

Figure 2 below depicts the application process for the fall term of the 2004–05 academic year, with numbers associated with key processing functions. Program applicants are a minority of all those registered since more than 28,000 students register for coursework for a fall term. However, the roughly 12,800 program applicants are the most information-intensive cases and the ones influenced by an application deadline.

Figure 2. Steps in Program Application Processing



Two important points in the admission and registration process were identified for the subsequent analysis. First, one week prior to the beginning of day classes is a critical point for the Student Services Division since it differentiates on-time applicants from late applicants. For the fall term of the 2004–05 academic year, this deadline is less strict and more haphazardly-followed; however, for the fall term of the 2005–06 academic year it is more widely advertised and firmly held. For both years, students who apply before the deadline are considered early applicants while those students applying later are deemed late applicants. Second, the thirteenth day of the term is another important point in time since it is the date when official counts are reported to the state's technical college system office which determines the amount of fiscal support received by the college. Only students registered on this date are considered in the analysis of academic performance in this study.

Longitudinal data on program applications, course registrations and financial aid applications and awards were extracted from the Student Services Data Warehouse (SSDW), which houses historical student records. These data were structured into SPSS through which statistical analyses were conducted. Spearman correlation coefficients, t-tests and χ^2 tests were used to examine the hypotheses. The definitions of the variables used in this study are found in Table 1.

Table 1. Variable Definitions

<p>Program Applications: Total application counts for two-year associate degree programs and six month and one-year technical diploma programs, submitted for the weeks before and after the beginning of fall term day classes.</p>
<p>Course Registrations: Total registration counts on the 13th day among program applicants, for the weeks before and after the beginning of the fall term day classes.</p>
<p>Registration Rate: Proportion of total program applicants registered by the 13th day of the fall term.</p>
<p>Thirteenth Day FTE Estimate: The total amount of program FTEs accumulated by the college on the 13th day of the fall term.</p>
<p>Financial Aid Applications: Total application counts for financial aid support submitted to cover 2004–05 classes.</p>
<p>Financial Aid Awards: Total award counts in the fall term for financial aid applications submitted to cover 2004–05 classes and dispersed during the third week of class.</p>
<p>Credit Completion Rate: Percentage of all registered credits by the 13th day of the term that are earned by the end of the term.</p>
<p>Term GPA: Total grade point average for the term as related to registrants.</p>

Findings

Demographic Profile of Program Applicants

Analyses of demographic information found that early and late applicants are not statistically different on gender or ethnicity, as shown in Table 2. However, these two groups of students are statistically different in their age, with the late applicant group ($M = 27.77$, $N = 752$) older than the early applicant group ($M = 26.51$, $N = 12099$), $t(12849) = 3.289$, $p = 0.000$. Also shown in Table 2, there are significant differences between the two groups regarding whether applicants come directly from high school ($\chi^2(1, N = 12878) = 19.808$, $p = 0.000$) or whether the program applicants had applied for financial aid ($\chi^2(1, N = 12878) = 14.798$, $p = 0.000$). Those who apply for program admission earlier than the deadline have a higher percentage of students directly from high school, and students who applied for program admission later than the deadline have a higher percentage of students who applied for financial aid.

Table 2. Demographic Information of FA05 Program Applicants by Application Date

Variables	Program Application Date			
	After Deadline (n = 757)		Before Deadline (n = 12,121)	
	N	%	N	%
Gender				
Male	308	41%	4734	39%
Female	444	59%	7284	60%
Unknown	5	1%	103	1%
Ethnicity				
White	330	44%	5906	49%
Black	295	39%	4126	34%
Hispanic	70	9%	1025	8%
Asian American	27	4%	436	4%
American Indian/ Alaskan Native	11	1%	171	1%
Native Hawaiian/ Pacific Island	1	0%	9	0%
Unknown	23	3%	448	4%
Direct from High School				
Yes	86	11%	2151	18%
No	671	89%	9970	82%
Financial Aid Applicant				
Yes	407	54%	5645	47%
No	350	46%	6476	53%

Enrollment statuses were examined for applicants who were still registered on the 13th day of the semester. As shown in Table 3, students who applied late tend to be part-time students ($\chi^2(1, N = 6193) = 19.423, p = 0.000$).

Table 3. Enrollment Statuses of Registered Applicants by Program Application Date

	Program Application Date			
	After Deadline (n = 499)		Before Deadline (n = 5694)	
Variables	N	%	N	%
Enrollment Status				
Full-time	172	34%	2544	45%
Part-time	327	66%	3150	55%

Enrollment Flow

A Spearman correlation analysis was conducted to test whether there was a correlation between dates for program applications, financial aid applications, financial aid awards, and course registrations. As shown in Table 4, there are statistically significant correlations among these dates. The earlier students apply to a program, the earlier they apply for financial aid. The earlier students apply for financial aid, the earlier it is awarded. The earlier financial aid is awarded, the earlier students register. Enrollment processing closer to the beginning of classes means that increased volume creates more bottlenecks and slows processing of program and financial aid applications which influences registrations. If financial aid for a student is uncertain, FTEs are less likely to be generated by the 13th day.

Table 4. Spearman's Correlations between Dates for Program Application, Course Registration, Financial Aid Application and Award (ρ)

		Program Application Date	Course Registration Date	Financial Aid Application Date	Financial Aid Award Date
Program Application Date	ρ	—	.483(**)	.323(**)	.249(**)
	P		.000	.000	.000
	N		7093	6052	4471
Course Registration Date	ρ		—	.463(**)	.434(**)
	P			.000	.000
	N			4449	3954
Financial Aid Application Date	ρ			—	.535(**)
	P				.000
	N				4431

** Correlation is significant at the 0.01 level (2-tailed).

Relationship Between Program Application Date and Academic Performance

To test whether late program applications place students at greater risk for poorer academic standing, t tests were performed for GPAs and credit completion rates. As shown in Table 5, students who applied earlier than the application deadline had significantly higher term GPAs and credit completion rates than students who applied later. For term GPA, the difference was 0.26 on a four-point GPA scale, $t(6191) = 3.78, p = 0.000$; for credit completion rate, the difference was five percent, $t(6191) = 2.93, p = 0.003$.

Table 5. Term GPA and Credit Completion Rate of Registered Applicants who by Program Application Date

	Program Application Date			
	After Deadline (n = 499)		Before Deadline (n = 5694)	
Variables	M	SD	M	SD
Term GPA	2.16	1.41	2.40	1.35
Credit Completion Rate	69%	41%	74%	38%

Since a term GPA of 2.0 and a credit completion rate of 67 percent are the standards for good academic standing, percentages of students who passed the standards were examined using χ^2 test. As shown in Table 6, the percentage of late applicants who met the standard for good academic standing on term GPA was nine percent lower than for early applicants, $\chi^2(1, N = 6193) = 15.624, p = 0.000$; and five percent lower on credit completion rate, $\chi^2(1, N = 6193) = 5.925, p = 0.015$.

Table 6. Percentage of Registered Applicants Passing Standards for Good Academic Standing and Returning in the Following Semester

	Program Application Date			
	After Deadline (n = 499)		Before Deadline (n = 5694)	
Variables	N	%	N	%
Term GPA	306	61%	3977	70%
Credit Completion Rate	327	66%	4027	71%
SP05 Retention	303	61%	3951	69%

Table 6 also depicts the percentage of students who returned the following term: the retention rate for late applicants was eight percent lower than for early applicants, $\chi^2(1, N = 6193) = 16.026, p = 0.000$. The act of applying

Applicants to associate and diploma programs represent an important segment of all program students for the fiscal well-being of the institution.

In general, application-submitting students yield a higher average FTE than non-program groups at the college (e.g., those taking Pre-College coursework and those taking single courses without a declared program area).

later for programs is likely to reflect less career preparedness and focus, as well as the role of extraneous factors influencing access to financial and other resources. On the one hand, the above findings support the assumptions of Student Services personnel. It appears that an application deadline will deter students from running late on everything—program applications, financial aid applications, financial aid awards, and course registrations. Accordingly, it may prevent them from falling under the standard for good academic standing which makes them unable to return for the following term and wastes both student and institutional investments, undermining the college's mission to address community workforce needs.

On the other hand, this interpretation makes it appear as if an institutional decision to uphold a deadline is the primary contributor to academically-related problems or successes for students. It can equally be argued and perhaps empirically substantiated that the student predisposition to act late is part of a larger constellation of environmental, psychological, and/or biographical issues that interfere with or derail their preferred academic and employment-related

outcomes. Since this argument transcends the purpose of this study, these factors are a subject for future analysis and their impact is not reported in this paper.

Relationship Between Application Deadlines and FTE Generation

The above analyses have shown that later applicants and registrants are less likely to have completed coursework and their GPAs tend to be lower than those submitting applications and registering earlier. The next step in the analysis calls for determining the potential impact of lost FTEs.

As noted, applicants to associate and diploma programs represent an important segment of all program students and are essential to the fiscal well-being of the institution. In general, application-submitting students yield a higher average FTEs than non-program groups at the college (e.g., those taking pre-College coursework and those taking single courses without a declared program area). Program applicants yield 40 percent of all post-secondary FTEs and 35 percent of all FTEs by the 13th day of the term when FTEs are officially counted for state-determined fiscal purposes. (Some classes start later with FTEs accumulated after that date).

Among program applicants for fall term of the 2004–05 academic year, the earlier that students apply, the greater the credits registered by the 13th day and counted toward FTEs ($r = .06$, $p \leq .01$). However, the six percent applying after the informal application deadline set by Student Services (a week before the beginning of classes) yields seven percent of all FTEs generated by program applicants for the fall term of the 2004–05 academic year.

During that fall term, 757 students submitted their applications after the informal deadline and 499 of them registered by the 13th day. These registrants generated an estimated 148 postsecondary FTEs, which accounted for over a quarter of a million dollars in revenue. However, it was not certain if a strict deadline would influence

It is clear that later applicants and registrants were less likely to have completed coursework and their GPAs tended to be lower than those submitting applications and registering earlier.

students to not apply at all or to register for classes as a non-program student while deferring official program enrollment until the following spring term.

The Strategic Enrollment Management Committee met to discuss these findings, at which time the data were also discussed with staff members in the Student Services Division. The general consensus was that a firm application deadline should be set for a week before courses begin, should be widely-shared with incoming students and more firmly held without exceptions. Despite the long history of not having formal deadlines, leadership felt that prospective students and other community residents would eventually adhere to the deadline over time, once they realize the implications of applying late.

Comparable enrollment data for the fall term of 2005–06 academic year were used to replicate the FTE impact. With a more formal, widely-advertised and strictly enforced deadline in place, the number of late applicants fell by 53 percent to 354 and corresponding registrations declined 51 percent to 247, with the estimated postsecondary FTEs affected by the stricter deadline also falling 51 percent to 72 as summarized in Table 7. Therefore, not all the FTEs generated by late applicants were lost due to a firmer application deadline because students were allowed to register late as non-program students, deferring their program admittance until the following term.

Table 7. Comparison of Late Applicants for Fall Term between 2004–05 and 2005–06 Academic Year

	FA05	FA06	Difference	% Change
Late Applicants	757	354	-403	-53%
Registrants	499	247	-252	-51%
Estimated FTE	148	72	-76	-51%

While there is still concern over the potential loss of FTEs and corresponding state aid, the benefit of providing students with a higher quality of services while reinforcing their long-term academic success outweighed the financial considerations. Working to influence student initiation of the enrollment process and assuring better preparation at entry of those identified as academically at-risk are likely to affect retention and degree completion in the long run. Hence, any financial loss to the institution in the short-term may be eventually recovered while the college will be in a better position to serve its students and meet its mission. Further tracking of these outcomes will be necessary to see if this optimal result is ultimately realized.

Findings from this study suggest that students who apply late for program admission tend to be older students more likely to “stop-out” after high school, and are more likely to need financial aid and be part-timers. Consistent with other studies, these students fit into the profile of at-risk students. They are not only late in their program applications, they are also late in financial aid applications, financial aid awards and course registrations.

Implications and Conclusions

The setting of a strict application deadline was proposed in order to ease enrollment processing and to create better overall management of enrollment flow at the college. Other important issues were potentially tied to such a decision, including student success and the institution’s fiscal health. Findings from this study suggest that students who apply late for program admission tend to be older students, more likely to “stop-out” after high school, and are more likely to need financial aid and be part-timers. Consistent with other studies, these students fit the profile of at-risk students (e.g., Freer-Weiss, 2004). They are not only late in their program applications, they are also late in financial aid applications, financial aid awards and course registrations. All these delays make them even less prepared for academic work and it places their success in even greater jeopardy as reflected in low GPAs, credit completion and retention rates. Since less FTEs appear to be sacrificed with greater adherence to (and prospective student awareness of) the deadline over time, the findings from this study support the application deadline proposed by Student Services administrators.

In addition, the findings from this study have led to further committee discussions concerning required or recommended student retention coursework and the potential targeting of late appliers and registrants with at-risk factors in their backgrounds. While adding a required course to program curricula would necessitate far-reaching

decisions demanding state-system support, the Strategic Planning and Research Department (SPRD) shared data on the effects of retention efforts with counselors. These include an empirically-substantiated positive impact on the GPAs of those completing a three-credit college success course that is an elective for all students. As a result, counselors have begun to voluntarily suggest such coursework to targeted students as part of their caseloads.

In conclusion, SPRD's active role in strategic enrollment management has been key to questioning and testing

assumptions underlying recommended changes to admission procedures. Further analyses on admission deadlines assure that this institutional issue will continue to be widely discussed among college representatives. For example, a comparable deadline for the spring term of the 2005-06 academic year was moved up and SPRD is monitoring its implications for FTE generation and student academic success. In this way, procedural improvements continue to draw from relevant data analyses that balance institutional mission, fiscal health and student needs.

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13. Publication Title Journal of College Admission	14. Issue Date for Circulation Data Fall 2007	
15. Extent and Nature of Circulation		
	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies (Net press run)		
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b. Paid Circulation (By Mail and Outside the Mail)		
(1) Mailed Outside-County Paid Subscriptions Stated on PS Form 3541 (Include paid distribution above normal rate, advertiser's proof copies, and exchange copies)	10,170	10,170
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g. Copies not Distributed (See Instructions to Publishers #4 (page #3))	10	5
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i. Percent Paid (15c divided by 15f times 100)	100%	99%
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<input checked="" type="checkbox"/> If the publication is a general publication, publication of this statement is required. Will be printed in the Fall 2007 issue of this publication. <input type="checkbox"/> Publication not required.		
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Sarah S. Cox		August 24, 2007
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