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Increasing University Enrollment in Times of Declining Demand: Industrial-Organizational Psychology Program Exemplar

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Abstract

The specific examples are provided to demonstrate concrete ways in which a university without a renowned brand can adopt tactics which will increase its market for quality products which are in demand. The requirements are that the university renders its use of media advertising current in method and sufficient in amount. It may also be necessary to assume equilibrium and counter it by advertising in a manner for which the assumptions required for equilibrium are weak or not present. Finally, it is proposed that the exemplar graduate school program methods can be replicated, mutatis mutandis, in undergraduate programs and other types of graduate programs as well.

Keywords: Industrial psychology, organizational psychology, I/O, badges, stackable degrees, keyword advertising, higher education enrollment, enrollment, student recruitment,

1 Introduction

Five successive years of higher education enrollment decline was described in “College Enrollment Dips” (2016). The decline, down 1.6 million students from the 2011 peak, has been finely detailed in “Term Enrollment Report” (2016). The enrollment decline translates almost immediately into revenue decline, and it is this that threatens the university. Conjectures regarding the causes of the decline are many. Theories point to factors ranging from the general recession to higher education’s failure to adjust to the changing market. The single point that emerges clearly is that individual institutions will have to make changes or adapt to this reduction in demand. The decline in demand is, of course, experienced unevenly. Universities with high-end long established brands are less affected and can retain enrollments. If there is a slight reduction in applicants, minor relaxation of admissions requirements and increases of student financial aid can restore full enrollment, effectively raiding the market for the next lower tier colleges.

Universities with less established brands respond to the softening market by tweaking the usual controls, starting with increasing the budget for advertising and recruitment. If, as now, enrollment declines persist for multiple years, universities turn to fundraising from alumni, showcasing the attractiveness of campus and personnel, highlighting alumni achievements, etc. During this period expenses become worrisome. This generates a skein of cost cutting beginning with budget reductions and followed by tenured faculty buy-outs (and replacement with adjunct instructors), enrolling lower-overhead students (e.g. online students), and large retrenchments (e.g., closing branch campuses or extension centers). Eventually the demand cycle will reverse, and the individual university's goal is to survive until then. Taking advantage of the necessity of changing or adapting and using the opportunity to select changes that strengthen programs, add content which aligns better with current student interests, and improve the alignment of the institution with its mission is more rarely seen. When demand, and consequently enrollment and revenue decline, universities often view the problem, at least initially, as an advertising problem. Attention is directed to recovering the loss of students by employing the same methods traditionally used to fill a new program.

2 Typical responses to declining demand

2.1 Advertising

When print advertising flourished, recruiting students for a university department or program was straightforward. If 30 new students were desired for a new course for the fall semester, the display ad departments of the newspapers in the university's catchment area were contacted. The display sales people would consult their data tables for expected numbers of respondents for various ad sizes, placements and run dates. They would also check the conversion rate for universities, usually about 8-9%. Using these data, the print media agents would readily calculate that 30 students would enroll from 375 responses to the ads (at an 8% conversion rate). 375 responses could be achieved a number of ways, with ads of certain sizes being run a certain number of times. The university program purchased the size, number, and placements of the ads which, in aggregate, would attract 375 responses. The university then supplied the ad layout to the newspaper, and received the phone calls and mail from the readers. Usually the expected values were accurate: 350-450 responses would be received and 27-33 students were enrolled. Neither the creative quality of the artwork nor the message in the ad was critically important where the university's brand was known. So long as the announcement was clear, these factors did not explain a large portion of the variability in outcome. The newspapers were long established, their data changed little from year to year, and the expected values were accurate and stable. Nothing new or revolutionary had to be announced to attract inquiries either, for the same reasons.

Print advertising no longer flourishes, and advertising on internet media is quite different. Effective recruitment has changed dramatically as advertising shifted from print media to the internet. Advertisements are targeted both by keywords appearing in user searches on the internet and user profiles from data analyses of users' online behavior. The high cost of these targeted ads is justified by the high prices of educational offerings. But administrators long accustomed to relatively inexpensive print ads, short term effectiveness and 9% conversion rate can underestimate budgets and lead time when conversion rates are often nearer 1%. The internet providers (Google, Yahoo, and others) which carry the ads have structured the advertising process to allow the universities to bid against each other to have their ads delivered, and to appear in the most highly probable spots for conversions (Phillips, et al., 2013). The nature of this competition plus the providers' use of generalized second price auctions (Edelman et al., 2007) fosters rapid equilibrium formation (vanDamme, 1991). Once in equilibrium, increases in advertising expenditure do not result in a proportionate increase in conversions. Massive increases in advertising expenditure are often required to dislodge the next higher bidder; a typical spending increment will result in few conversions.

2.2 Reducing tuition

Reducing tuition for students by reducing price or by increasing student aid in order to compete more effectively with other institutions in the catchment area is a seductive tactic, but again, it is well modeled by an equilibrium which creates winners and losers and resists change. Under any discount model which does not assume equilibrium, the numbers of the students in each college may vary, but the revenue will likely remain the same or be disadvantageously disproportionate to the cost of the discount. The university ending up with more students will have the lower net revenue, both because of the reduced price and because of the increased expenses of serving more students.

2.3 Enrolling less-qualified students

Diminishing admission requirements will permit less-qualified students to be enrolled in greater numbers, but net revenues will show little change. Again, equilibrium is likely encountered, and increases in the number of students enrolled do not result in improved finances. The reduced aggregate revenue from less-qualified students (who are less likely to complete programs and more likely to discontinue study after taking fewer courses) together with the increased costs of having more students in the facilities offset increases in gross revenues. Admittedly, equilibrium in the university market place may not be intuitive, and is not readily observed *in vivo.* The stubborn persistence of enrollment numbers and revenue decline in spite of increased ad spending, more generous grants, improved campus facilities, and other efforts by the universities which have been successful in the past may finally incline administrators to take a look at equilibrium models and the proposals which flow from them for improving recruitment, and thereby revenue.

2.4 Reducing expenses

This is done in several established ways.

2.4.1 Online courses

Massive open online courses (MOOCs), have helped with university expenses while giving students a taste of free, or nearly free quality education. Expectations flared, but providers have been unable, in the view of the instant authors, to equal the performance of the landmark MOOC offered by Sebastian Thrun and Peter Norvig in artificial intelligence (AI) in 2011(Lewin, 2012). The enrollment was over 160,000 students, and the cost was free. Very few students took the final exam and completed the course, which was unsurprising at the time because so many enrollees were participating to experience the new delivery system conducted by uniquely qualified teachers, rather than to learn AI.

Online courses with standard enrollment numbers have now been in use within the typical degree curriculum for almost three decades. Course methods vary widely, and best practices remain far from settled. Several features have become clear. One is that the cost to the institution is far lower for online courses, yielding a greater gross margin. Another is that the professor's workload is substantially increased for effective instruction, even after allowing time saved for the professor's not having to commute to the campus. In sum, although it has not been established that student achievement outcome in online courses is at least equal to classroom results, these offerings are popular with many students and improve the institution's EBITDA because cost savings are not typically shared with the students.

2.4.2 Faculty buy-outs

Faculty costs are a major fixed expense for any university, and the tenured faculty tends to be the most highly paid. They also have the highest rank, and contribute to the university and the general community with research and publications. In addition, they support the structure of the programs and provide academic and guidance assistance to the students. In times of economic stress, expenses are significantly reduced by retiring these faculty members early by giving them the incentive of a year or two extra salary. They are then replaced by adjunct instructors who typically have fewer credentials, are less experienced, and have no time to work with students. Since the national average adjunct faculty member's salary is just over 42,000 USD per year (Adjunct professor salaries, 2017), these faculty members have to work at multiple universities to achieve a sufficient personal income. Piecing schedules together and serial commuting absorb time which could otherwise be used for student needs and academic work.

2.4.3 Retrenchments

When the economic stress is not sufficiently abated by the methods above, the university will discontinue peripheral parts of the business, such as branch campuses and extension centers. These closings streamline the operation and can result in significant expense reductions. The student populations which the discontinued branches served can be expected to complete their current degrees or programs at remaining locations, but the local community presence is lost along with future local enrollment.

3 Adapting responses to reduced demand

Let us examine the tactics for combatting enrollment decline within a context, and let the context be the following constructed example: A graduate school of Psychology opened a new program in Industrial/Organizational (I/O) psychology. The program administration planned to use the advertising budget to announce the program in the traditional media and (slightly) in the social media.

Linkages were to be forged with businesses, attractive and user-friendly web pages were to be deployed, and the support staff was to be prepared to respond quickly and accurately to inquiries and contacts. This work having been done, some applications would be received, and it was expected that, although the program would operate at a loss initially, it would grow over a few years as it found its market share of the local I/O demand.

The faculty, realizing the psychology program would be subject to business scrutiny, was unhappy about the prospect of initial losses. They desired to make the program significantly, if not disruptively innovative among I/O programs, in terms of effectiveness for their students. But disruptive innovation has boundary conditions, and one important one is dramatic economic success, often to the displacement of the previous product or service. With guidance from a higher education consultant hired by the university administration to assist in the planned university-wide expansion of the student body (and resultant increase in revenue), they took initial steps to modify the content and delivery of the new program. The program modifications, which follow, became the content of the advertising, and the anticipated real advantages were made apparent to prospective students in the advertising.

3.1 Creation of new educational products: Stackable credentials, 'badges' and programs which directly prepare the student for work.

The faculty identified and created sub-specialties or concentration areas to be offered as 'badges' within the I/O program. These were optional add-ons for the students, who were aware that they would be practicing psychology, but in business environments. Broader and deeper business knowledge together with more advanced skills, they readily expected, would make them more competitive when being hired and more valuable to the businesses that hired them. Areas of concentration were identified and diagrammed. These were easily added to the curriculum and quickly gained state education department and accreditor approval, in part because I/O psychologists are not typically licensed professionals with a completely prescribed course of study. One of these areas was in mergers and acquisitions (M&A). The connection to psychology was obvious: mergers and acquisitions rarely create value for the acquiring firm, yet they happen with increasing frequency. Since these deals rarely work well financially for the acquiring firms even two years out, and since that fact is well known (Haleblian et al., 2009; King, et al., 2004; Singh & Montgomery, 1987), there are clearly psychological factors involved. The prepared I/O psychologist would be able to identify and engage CEOs or other enabled corporate officials of a bidder firm which might be seeking to acquire a target firm although not financially beneficial. Depending upon whether the psychologist worked for the bidding or the target firm, he/she could facilitate the process of minimizing the costs for the bidding firm or gaining a large premium for the target firm.

Another 'badge' consisted of only two courses in psychophysical measurement and better enabled I/O psychologists to bridge the gap between company executives and company scientists developing new products (e.g. Moskowitz & Gofman, 2007).Yet another badge concentrated instruction on disruptive innovation (Christensen, 2003) and screening for disruptive innovators; another, in planning, teaches the new I/O psychologists the elements of data mining, an area of established usefulness for businesses and for which courses already present in the I/O psychology training, e.g., Psychometrics, give the students a foundation.

A badge for executive communications is anticipated, to ensure that the I/O psychologists interested in the executive suite would embody their comprehensiveness of view and breadth of applicable skills in their presentations and meetings. For example, a business seeking a buyer so that the owner/founder can harvest cash for her next enterprise might be advised by an I/O psychologist trained in M&A and Exit strategies. The initial meeting, if the psychologist's training also included executive communications, would confirm the consultant's value. A possible snippet of the initial meeting dialog follows:

> **Consultant:** …now, when choosing a buyer, we need to focus on two major issues, which I can help you navigate: what direction to take the company, and how to ease you away from center stage while maintaining stability after the sale.
>
> **Owner/founder:** You mentioned a direction for the company. What do you mean? We're doing everything right- our numbers are growing exponentially.
>
> **Consultant:** That's true, but your growth is coming from new customers. Eventually, that growth will stop- there are a limited number of insurance companies in the world. Also, at this point your company offers a service that nobody else does, so you have the market cornered, but it could be replicated by somebody else with a similar plan. To avoid becoming stagnant or getting copied, I would suggest getting patent-pending status right away, and selecting a buyer who intends to create some new services. I could help you evaluate your company's strengths and weaknesses, and run research that will point us in the right direction.
>
> **Owner/founder:** Fair point. You mentioned easing me away from center stage?
>
> **Consultant:** Yes. This company is your brainchild, you built it with your blood, sweat and tears, and you've been at its helm for several years now. Anyone who has been working with you looks up to you

for guidance. If you are to effectively allow the company to grow, but still remain on the sidelines, you need to make sure that the company isn't looking to you for approval every time a decision needs to be made, or you will be stuck with the same responsibility as before with less money to show for it.

Owner/founder: How do you propose I do this?

The language, which is outside the scope of Human Resources' activities, allows the psychologist's resources to become apparent to the CEO. Currently, I/O psychologists are thought of only as overseeing the well-being of the people in the workplace. This articulates into assessment, selection, training, management, program development, appraisal, research and organizational development tasks and projects. But those who would like to move their skills into the executive suite may want badge skills in areas like those in the above examples, areas which are handled directly by top executives. This will serve to connect them to the C-level executives in a separate way from the usual less direct connections through Human Resource departments' channels. Outside graduate schools, the redesign of higher education offerings to include "stackable" credentials and concentrations along with badges provide other examples. Studying outside a degree structure, taking only a small number of courses which directly address the student's desired skills needed for employment provide the student with precisely what is needed and no more. While educators may well object to business-driven higher education and to providing a concentrated curriculum in one topic area only without a broad context of skills and understandings, there seems to be no intrinsic reason *not* to provide them, even if it means separate course sections for students pursuing only the courses they wished instead of a prescribed degree. Making these specializations "stackable" into a degree some day at some college or university may motivate the students to complete a full course of study for a traditional degree after his/her urgently felt need for income had been relieved. Meanwhile, these stackable credentials will be subject to immediate testing for value: they either will or will not gain jobs, success and better pay for students. Higher education institutions are even now beginning to have their coursework externally validated like other commercially offered services.

3.2 Using keyword advertising

Developing a complete list of keywords is useful for all businesses, even those which will not purchase advertising primarily keyed to them. Trend analysis based on the keywords is free, readily available, and up to date for examining trends to locate demand. Although keyword advertising is too expensive for most products, there are useful keyword-related alternatives, further establishing the value of knowledge of keyword indexed advertising. Additionally, keyword advertising is easily learned, possibly saving a smaller business the cost of hiring an ad agency. This may be facilitative for introducing an organization to effective keyword advertising; at a later point, when its effectiveness has been experienced, further optimization is indicated (e.g. Wang, et al., n.d.). Keyword information was familiar to the I/O psychologists on the faculty, and would later be incorporated in another 'badge' area in the program. The I/O program redirected the entire advertising budget allowance to keyword web-based advertising, and highlighted the badges in the ad layouts. The keywords were pre-tested for demand, and managed on a daily basis in a method detailed elsewhere (Sullivan et al., 2016). The now-important content was optimized for ad position in both the paid and organic search return pages (Jansen, & Liu, Z., 2013). Full descriptions of each add-on were connected by links to the ad, a design which, in itself, currently improves the score that determines the ad's placement. The click and conversion rates were low, but known and expected. The desired class size was reached and exceeded, leaving the university department plenty of lead time to appoint faculty for the courses, initially borrowing some faculty from the school of business. Students interested in the add-ons where the numbers were still insufficient to open class sections were wait-listed and periodically contacted as their desired add-ons filled more slowly. Note that the university staffed the program only *after* sufficient enrollment had been achieved, a recruitment technique sometimes called "dry marketing," discussed next.

3.3 Dry marketing

The I/O program adopted a recruitment approach sometimes referred to as "dry marketing," not because dry goods were being sold, but because the product or service is offered before it is created. Dry market advertising creates a pool of clients as orders are received in response to the advertising. Customers are not told that the product or service does not yet exist, although sophisticated buyers recognize phrases like "allow 6-8 weeks for delivery" as indicating that products or services will be acquired only after demand has been established.

If the orders do not reach a prescribed level for profitability, the deposits are returned or the credit cards used for the orders are not processed. In the higher education context, if a sufficient number of students enroll in the program, it is then designed and staffed. If sufficient students do not enroll, the enrolled students are notified and offered wait-list status, but the course does not run until it is sufficiently enrolled. Accreditor full approval or approval on a trial basis for courses where enrollment is sufficient is typically quickly acquired, so long as degrees were not impacted: no new degree is created nor an existing degree significantly modified. So now, ad content is more than an announcement to a waiting market, and it does matter. Ads which show that a program provides a compelling solution to at least one problem can expect to gain market share. In addition, the speed and targeting of ads and responses permit use of the dry market approach to try even solutions which are new and untested. Since the institution merely describes the new offering, identifies resources and advertises it, but does not implement or staff it unless and until the desired number of students is enrolled, the only resources at risk are the advertising charges and some support staff time.

3.4 Discovering new markets

During the process of registering the new students for badges, the university discovered that many applicants had already completed their I/O degree elsewhere, and just wanted one or more of the add-ons. Having already-degreed students in the classrooms improves the educational experience for all the students, so the keyword ads were adjusted to welcome I/O degree holders from the home university and well as other universities to the add-on instruction.

3.5 Exporting the product to captive markets

By the following year the faculty was exporting the badges outside the campus classrooms. An agreement was made with one business to provide instruction onsite at the business beginning when the workday ended. Employees found this useful, as they could avoid traveling during rush hour and complete coursework which would be useful on the job and paid for by the company. It was later extended to lunch-hour instruction.

Presently an agreement is being negotiated with the operator of a ferryboat commuter line which runs a 1-hour commuter trip during rush hours on business days. If an agreement is reached, the ferryboat operator will provide a room aboard the boat where instruction can take place during the trip.

3.6 Recruiting from existing untapped markets

A program had been designed by the same I/O consultant psychologists working with the faculty several years prior for a graduate school of education. The school operated in a state where K-12 teachers were required to complete credentialing and to hold a Master’s degree within a few years of being hired. The consultants arranged an agreement between the university and a school district to hold the needed classes at the end of the teachers’ workday, by sending an instructor to one of the school buildings in the district where the teachers could conveniently assemble. The program used the school district’s facility and had little overhead apart from the instructor’s salary. The program was then extended by the university to other school districts in its catchment areas. The graduate psychology school in the instant example is currently working on a parallel program to qualify unlicensed hospital workers for mental health counselor licenses, if they desire it. In this case, a third party has been found that is willing to underwrite the cost, but this is not viewed as essential.

4 Conclusion

The specific examples provided have been intended to demonstrate concrete ways in which a university without a renowned brand can adopt tactics which will increase their market for quality products which are in demand. The requirements are that the university may need to render its use of media advertising current in method and sufficient in amount. It may also be necessary to assume equilibrium and advertise in a manner and for a market segment in which the assumptions required for equilibrium are weak or not present. Finally, it is proposed that the above graduate school professional psychology program example can be replicated in its essence, *mutatis mutandis*, in various undergraduate programs and other types of graduate programs as well. Delivery of degrees assembled from stackable certifications and replacing some classroom courses with inexpensive but well-designed MOOCs would be a good start. Rapidly improving the design, effectiveness and convenience of online learning would further relieve student concerns while stabilizing market demand.

5 References

Adjunct Professor Salaries (2017). Retrieved from https://www.glassdoor.com/Salaries/adjunct-professor-salary-SRCH_KO0,17_SDAS.htm

Christensen, C. M. (2003). The innovator's dilemma: the revolutionary national bestseller that changed the way we do business. New York: *Harper-Collins Publishers*.

College Enrollment Dips as More Adults Ditch Degrees for Jobs (2016, December 19). Retrieved from http://fortune.com/2016/12/19/college-enrollment-decline/

Edelman, B., Ostrovsky, M. & Schwarz, M. (2007). Internet advertising and the generalized second-price auction: selling billions of dollars' worth of keywords. *The American Economic Review*, 97(1), 242-259.

Haleblian, J., Devers, C., McNamara, G., Carpenter, M., & Davison, R. (2009). Taking stock of what we know about mergers and acquisitions: A review and research agenda. *J. Management*, **35**(3), 469-502.

Jansen, J. J. & Liu, Z. (2013).The effect of ad rank on the performance of keyword advertising campaigns. *Journal of the American Society for Information Science and Technology*, 64(10), 2215-2132.

King, D. R.; Dalton, D. R.; Daily, C. M.; Covin, J. G. (2004). Meta-analyses of Post-acquisition Performance: Indications of Unidentified Moderators. *Strategic Management Journal*, *25*(2), 187-200. doi:10.1002/smj.371.

Lewin, T. (2012, March 5). Instruction for masses knocks down campus walls. *The New York Times*, p. A11.

Moskowitz, H. & Gofman, A. (2007). Selling blue elephants: How to make great products that people want BEFORE they even know they want them. Upper Saddle River, NJ: Prentice Hall.

Phillips, A. H., Yang, R., &Djamasbi, S. (2013, January). Do ads matter? An exploration of web search behavior, visual hierarchy, and search engine results pages. In *System Sciences (HICSS), 2013 46th Hawaii International Conference of IEEE,* (pp. 1563-1568)

Singh, H. & Montgomery, C. (1987). Corporate acquisition strategies and economic performance. *Strategic Management Journal*, **8**, 377-386.

vanDamme, E. (1991). *Stability and perfection of Nash equilibria*. Berlin: Springer-Verlag.

Sullivan, A. P., Sullivan, G.W. & Sullivan, J. A. (August, 2016). Translating the Research: Keyword Advertising for Lean Start-ups. International Journal of Business and Social Science, 7(8), 1-7.

Term Enrollment Report (2016, Fall). Retrieved from https://nscresearchcenter.org/wp-content/uploads/CurrentTermEnrollment-Fall2016.pdf

Wang, D., Li, Z., Kaafar, M., Salmatian, K. & Xie, G. (n.d.) From Social Trends to Profit: An Optimisation Model for Search Engine AdWords Management. Retrieved from https://research.csiro.au/ng/wp-content/uploads/sites/106/2016/08/adwords.pdf