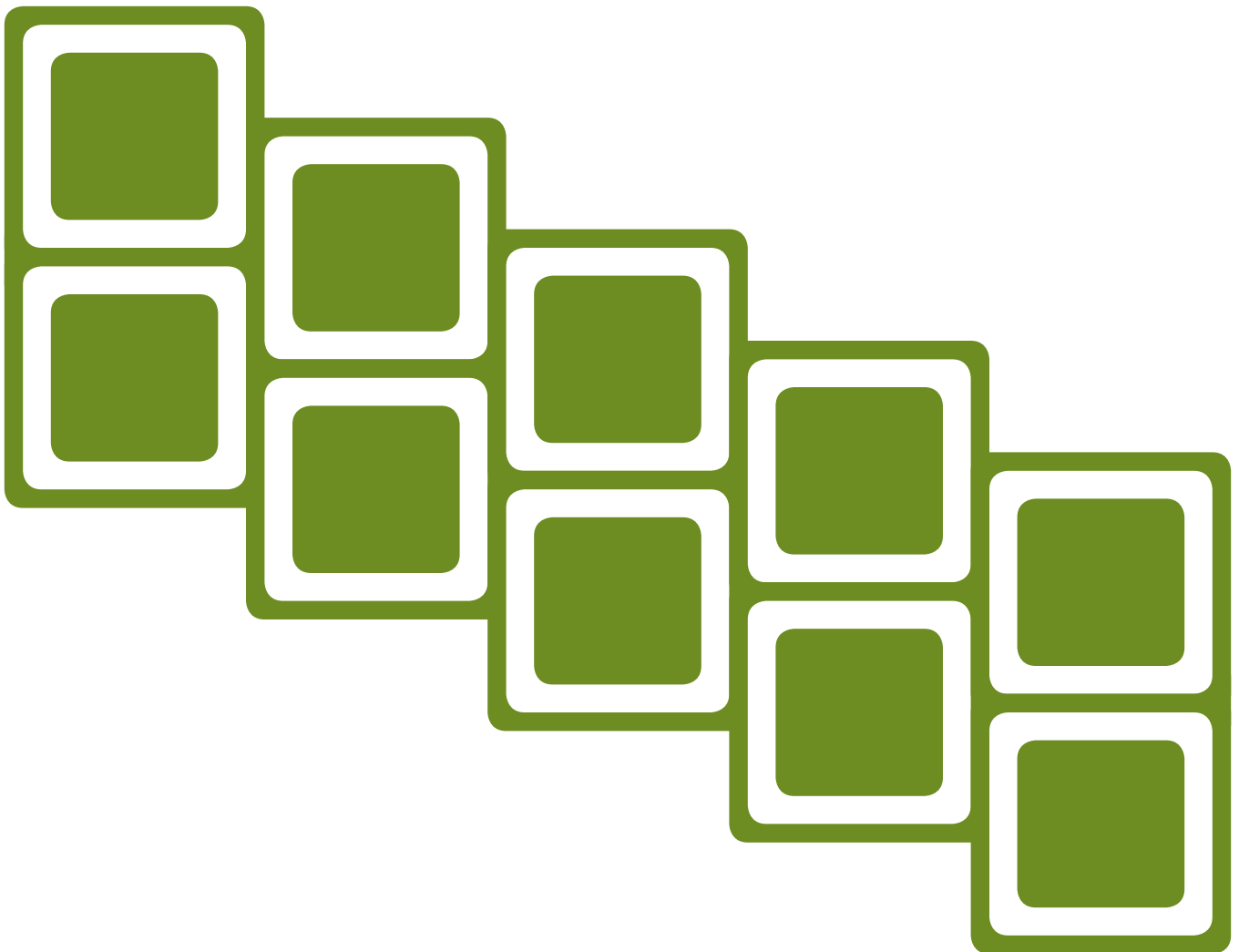


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Applying Data Mining and Google Analytics to Student Recruitment Marketing

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Abstract

With higher education administrators facing strained budgets, summer administrators continually seek new, innovative, practical, and cost-effective means by which to efficiently manage their limited allocated resources. Applying the techniques and methodology of marketing analytics can provide summer session administrators with the ability to gain a better understanding of the effectiveness of their advertising campaigns and quantitatively identify which media are delivering better results, higher yield, and more conversions. These findings can then be applied when negotiating ad buys, developing a marketing plan, and allocating budgets for the right media mix. Data mining and data analysis are key tools for data-driven decision making. By applying data mining and analytical tools and techniques, administrators can be more successful in raising their enrollment or, at the very least, maximizing the impact of their marketing message and the return on investment of their marketing dollars. One key tool is Google Analytics. This article provides a practical examination of this approach, utilizing data mining techniques coupled with Google Analytics in student recruitment marketing for summer and winter sessions.

Introduction

Administrators of summer session (also called continuing education or extended learning) are faced with the challenging task of increasing student recruitment and enrollment levels with resources that often pale in comparison with those of other university operations, despite the fact that “off-term” initiatives reduce time to degree and provide financial benefits to students and institutions. However, thin budgets need not be seen as a limitation. By applying data mining and analytical tools and techniques, administrators can be successful in raising their enrollment or, at the very least, maximizing the impact and return of their marketing message.

Summer administrators continually seek new, innovative, practical, and cost-effective means to efficiently manage the resources they are allotted. In many ways, they find themselves playing an academic version of Moneyball. In Michael Lewis’s best-selling book of that name, which became a feature film, readers came to learn and perhaps appreciate much about the Oakland A’s baseball team and its analytical approach to achieving goals. The A’s are a team that consistently has the second-lowest salary ranking of all 30 teams in major-league baseball, with an opening day payroll of \$55.3 million for the 2012 season. On the other hand, their East Coast rivals the New York Yankees are the highest salary-ranked team, with an opening day payroll of \$197.9 million for the 2012 season (CBSSports.com, 2012). Despite having a fraction of the Yankees’ financial resources at their disposal, the A’s produced 99% as many wins as the Yankees (94 versus 95) during the 2012 regular season (MLB.com, 2012). From a payroll perspective, it cost the Yankees just under \$2.1 million per win, versus the A’s cost of just under \$590 thousand per win for the 2012 season.

Beginning with the 2002 season, the Oakland A’s had altered their approach to the game by applying data mining and statistical analysis to drive decisions, especially those related to player recruitment. The lessons the A’s demonstrate can be applied to higher education, especially with respect to enrollment management and more specifically to summer session marketing and recruitment.

By utilizing data and various available analytic tools, administrators can better understand whether their message is reaching their intended audience, evaluate media consumption, and objectively analyze the performance of their ads. Additionally, they can more efficiently marshal their resources, calculate return on investment for various campaigns or specific webpages, increase campaign reach, drive enrollment, and increase awareness of their universities among the defined target audience. Analytics provides the ability to quantify traffic and to dimension conversions.

What Are Data?

Although higher education is a field devoted to research and intellectual pursuits, when it comes to decision making, it has a tendency to base decisions on the qualitative rather than the quantitative, on the political and social rather than on hard facts. Data analysis and learner analytics cut through this habit.

Before diving into data analysis, we need to understand first that data present a picture in time of what is happening, and administrators need to be able to see this picture and accurately interpret

the image. It is important to ask whether the data tie to the institution's business processes and to its definitions for those data fields or elements. Do the data intuitively make sense in the context of the organization? While many definitions exist for data mining, for the purposes of this article, it is defined as a step in technical analysis leading toward knowledge discovery. Or, simply put, data mining is the process of discovering ideas in data.

Marketing

In structuring a marketing campaign, one must define the objective. Is the objective of the campaign to increase awareness, to drive the audience to action, to build engagement, or all three? While the overarching goal is to drive student enrollment, these other objectives need to be considered for execution and for assessment against defined key performance indicators. Questions and data points to consider include the following:

- What percentage of the department's operating budget is allocated to marketing/advertising?
- What percentage of gross revenue generated is allocated to marketing/advertising?
- How do/will you measure yield?
- Is the campaign worth the investment?
- What is the downside?

Data mining and data analysis can help answer these questions. Analysis allows for identification of who the message is reaching and insight into what is working or not working, as well as other opportunities to consider. By understanding web analytic tools and applying them to institutional or departmental websites, administrators can make data-driven decisions that more accurately and more efficiently target their message.

Web Analytics

This article will provide examples related to Google Analytics. However, it is important to note that other tools exist, and many have features and capabilities beyond the standard version of Google Analytics. Among these are Adobe Site Catalyst (formerly Omniture) and IBM Coremetrics.

At a minimum, by utilizing the data derived from reports within Google Analytics, you can determine whether your marketing is driving visitors to your website. Once visitor traffic is quantified, you can then delve further and determine if these are the expected visitors and identify how they arrived at your site, their geographic location, the duration and time of day of their visits, how many pages they viewed per visit, and what operating system and device type they have, among other variables. These analytics can be effective tools in measuring and analyzing the response to a specific ad or an entire campaign.

They are also useful to

- identify target areas for exposure and spot low-hanging fruit ripe for conversion,
- provide insights into impressions and yield,
- identify drop-offs in visitor traffic flow, and
- optimize web content and page flow.

Understanding these important factors can help you make the user's visit to your website more efficient. Is the content that visitors are seeking readily available? Are they exiting your site before they find the content they need? From what region, state, or city are visitors coming? Did you advertise in that area? What operating system, browser, or mobile device are visitors using? This last piece is useful to pass on to your web development team as you work together to develop content and determine how best to display that content to your visitors. For example, we can determine how many visitors may be utilizing a browser that does not display Flash content. If that is a large percentage of the audience visiting your site, then the developers need to work on an alternative design. Similarly, knowing the predominant browser version your audience is using is also helpful, since not all content displays the same way on each browser or each version of a given browser, and this can be taken into consideration during testing.

Driving people to your website is not enough, however. Once users are there, the interaction must easily and intuitively provide them with the content they seek. Little is accomplished by successfully driving visitors to your site only to have them quickly exit because they could not find the content they sought. Google Analytics provides a mechanism for assessing bounce rates, visit duration, and which pages within your site lead to conversion.

By understanding and applying a web analytics tool such as Google Analytics, an academic administrator has the ability to identify and quantify the results of a given recruitment activity, be it an outreach event such as homecoming, a career fair, an advertisement, or something as simple as an email blast. Reviewing the content detail and traffic volume within Google Analytics and then comparing this with the dates of those recruitment activities, you can see if there is a correlation between the activity or advertising and the volume of web traffic; you may even see an impact on registration or applications.

As we have applied these techniques over time, our experience has shown a dramatic and relevant increase in web traffic specifically on the date an email blast is sent to students. We have tested this several times, and each time we see a strong increase, day over day, in our traffic on the days the message was sent. This has been tested for summer session and winter session messages over multiple terms with similar results. Without the facility to analyze these data through a reporting tool like Google Analytics, we would have had to base any such assertion on anecdotal rather than empirical evidence.

Another technique that provides for further analysis and additional data points is the use of extended web addresses (URLs) or tagging. Applying link-tagging parameters to a URL provides the capability to further define and later identify the campaign, source, medium, and term that relate to that particular link. Coupling the use of these tags with Google Analytics

provides powerful insights for further analysis about the referring site, the ad campaign, and even which piece of creative content generated those visitors. This technique provides for deeper understanding of which content or images are resonating more with the audience and leading to clicks (or not!) and ultimately conversion. It also adds value for those performing A/B testing. Incorporating tagging into our page links has provided insight into a variety of data, including how many students have clicked on our course schedule button from our website and what cities they are from; it has even helped to corroborate referral site information from social media sources.

Another important piece of Google Analytics is segments. With the growing integration and utilization of mobile devices, knowing how many visits or impressions originated from mobile devices is useful. Mobile search now accounts for 24% of all searches, and according to a report by BIA/Kelsey (2012), mobile search will surpass desktop search by 2015 and will generate 27.8 billion more queries than desktop search by 2016. To put these figures in perspective, “in 2011, desktop local search totaled 54.9 billion queries” (Johnson, 2012), compared with mobile local search, which accounted for 19.7 billion queries. As indicated earlier, understanding visitor behavior and knowing more about who is visiting your site and how they are interacting can inform more efficient development efforts and yield a more productive experience for the user.

As adoption of mobile devices continues to grow, the appropriate use of QR (quick response) codes is also important. Just as we can utilize link-tagging parameters within a URL, we can also embed that URL within a QR code. QR codes contain more information than a conventional one-dimensional UPC barcode. QR codes provide content such as web address, text, contact information, geo-location, calendar events, and more to users who simply scan the code. As a result, QR codes are becoming as ubiquitous as the devices that can read them. According to a 2011 study by comScore (Peterson, 2011), 14.5 million consumers scanned QR codes in June 2011. While an article in *Forbes* (Pozin, 2012) called into question the usefulness of QR codes, there is no doubt that as adoption rates of smart phones and mobile devices continue to climb, QR codes are an important element to drive audience engagement and data analysis. The key is in how the QR code is applied to the creative. Context and relevant content are paramount. The placement of the QR code has to make sense, and it has to add value to the user’s experience. It is important for adopters to test a QR code’s location and size, and to do so on devices used by the target audience. Variation in the scannability of QR codes is also a consideration and can limit usability, which is another reason why testing is so important. For instance, one QR reader may read a smaller code more readily than another. Testing the QR code on a variety of devices and apps provides quality assurance that your user will be directed as expected.

Understanding data mining and Google Analytics is also essential for search engine optimization and for managing search engine marketing campaigns. Thorough review of the data within Google Analytics allows for more efficient and accurate managing of both these channels and for estimates of yield, conversion, and ultimately return on investment. Further analysis is also possible on social media referrals and related pay-per-click and pay-per-impression campaigns. Here again, the use of analytics is key to campaign management.

Conclusion

By embracing the use of analytics, summer session administrators can gain a better understanding of the effectiveness of their advertising campaigns and identify which media are giving better results, delivering higher yield, and creating conversions. These findings can then be employed when negotiating ad buys, as well as when allocating ads by channel mix. Data mining and data analysis are key tools for data-driven decision making. Beyond a marketing and advertising context, data mining techniques can be used to analyze enrollments through data modeling and ultimately predictive modeling. Through the use of data modeling, correlation, and cluster analysis, it is feasible to build a model that identifies which courses students have a tendency to take together.

As we strive to provide the resources necessary for our students to graduate on time, understanding which courses they tend to take in the same term helps administrators to provide a more student-centered schedule that makes complementary courses available without conflict. This not only benefits the student but provides for additional student semester hours during nontraditional terms, since students are able to enroll in multiple courses.

In pursuing a data mining approach, it is imperative to bear in mind the following traditional predicates, even with new technologies:

- You need good data (garbage in, garbage out).
- You need to understand data fields within your institutional context: do these fields actually mean what you intuitively think they mean?
- You need access to the data warehouse or the ability to run operational reports on demand or through a management dashboard.

By adopting a data-driven approach that incorporates web analytics, summer administrators are able to more clearly demonstrate the value proposition of summer session marketing efforts. Equipped with the tools to present quantitative results, administrators can make fact-based adjustments to marketing plans, creative development, and media placement that demonstrate responsible management and fiscal stewardship. Lastly, this approach not only allows for calculating a return on investment but provides the mechanisms by which to increase that return by more clearly identifying the sources for traffic and conversion, which can ultimately increase summer student enrollment, boost departmental operating efficiency, and reduce students' time to degree.

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Biography

Jamieson Bilella is associate dean of extended learning and special academic programs at Montclair State University, where he has responsibility for online degree programs, summer and winter sessions, and the university's Academically Gifted and Talented Youth Program. He is also the president of the North American Association of Summer Sessions.