

Executive Summary

Nonprofits increasingly rely on statistical modeling to help them target their best prospects and strengthen their fundraising programs. Although there are different types of models available — generic, prescriptive and custom — only custom modeling provides fundraisers with information about a prospect’s likelihood not only to give, but also to give to the organizations they represent. Equipped with the results of a custom model, nonprofits can quickly identify their best potential donors, effectively targeting outreach campaigns and raising more money.

Using Statistical Modeling to Increase Donations

Success begins with choosing the right model for your organization

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Statistical Modeling Works

There has been a lot of interest lately among nonprofits about statistical modeling. The right model can help you better identify the prospects who will make a charitable donation to your organization. Among the three different types of predictive models — generic, prescriptive and custom — only custom modeling offers the most targeted and actionable results.

A well-designed predictive statistical model can help you to analyze every person in your database — not just those whose wealth profiles or giving histories suggest they are good prospects. This will enable your nonprofit to get a more complete picture of who is most likely to give, their ultimate gift potential and what kind of appeal you should use. With this information in hand, you could save valuable time and money by focusing appeals on those most likely to contribute to your organization.

Almost any nonprofit can use predictive statistical modeling to optimally target fundraising efforts. In fact, nonprofits are generally in a good position to use this tool because most already have electronic databases of potential prospects. Whether you are preparing for a capital campaign, looking for planned gifts or seeking contributions to an annual fund, you can use a model to identify your best prospects and build a broad base of support.

Success Stories

A number of nonprofits, both large and small, have used predictive statistical modeling to improve their fundraising results:

- ◆ Jacksonville University used custom statistical modeling to identify its best donor prospects before launching a capital campaign. The model identified about 50 previously-untapped prospects with a high propensity to make major gifts, paving the way for a special appeal.

- ◆ The Texas A&M Foundation used a combination of prescriptive and custom statistical modeling to better target its charitable gift annuities appeal. It screened 62,000 prospects, identified one-third as good candidates, sent a targeted appeal and will soon close a new seven-figure gift.
- ◆ The Regional Parks Foundation applied the results of its custom model to effectively triple both the response rate from, and total contributions to, its holiday appeal — while reducing its mailing by one-third. By custom-tailoring its appeal based on individual prospect criteria, the organization boosted its annual contribution rate from approximately \$20,000 to \$62,000 by mid-year.

Three Types of Models

There are three principal types of predictive statistical models: generic, prescriptive and custom. Each offers a different approach to presenting information on individuals in your database, yet all are designed to help you better understand which potential donors are your best prospects. The usefulness of information gleaned depends on which approach you use.

To illustrate, let us select three sample organizations — a local hospital, a private college and a small museum — and compare how two sample donors with different interests and lifestyles would be scored on propensity to give using different methodologies.

- ◆ Sarah is a 56-year-old New Yorker who donates generously to a number of charities each year. She is a cancer survivor who was treated at the local hospital and attends their annual Survivor’s Gala each year. She goes to sporting events at the local private college but did not donate when the school was raising funds to build a new stadium.
- ◆ Andrew is a 23-year-old graduate of the private college where Sarah attends sporting events and is enjoying his first job at a boutique Wall Street research firm. He is a strong believer in limited government regulation and generally votes against publicly-funded healthcare reform. During his college years, he volunteered at several nonprofits, and he has been a member of the Metropolitan Museum of Art for six years.

Generic Modeling

With a generic model, you can build a profile to describe charitable giving in the United States. They tend to use aggregate data, often based on the past giving history of a number of organizations, plus some demographic data about age, income and family status. Although it never hurts to understand the characteristics of a typical donor, a generic model will not provide information about who is more likely to donate to a specific type of nonprofit, let alone your organization.

How would Sarah and Andrew score using a generic model? Given their New York City ZIP Codes, education levels, median incomes and quality of life indices, both would be rated as good prospects for all three charities.

“You don’t have to be a Fortune 500 nonprofit to do statistical modeling. You can do it very effectively on a small budget.”

— Nancy Baglietto,
Development Officer,
Regional Parks Foundation

Prescriptive modeling is often used when a nonprofit does not have enough unique data about the activity it is trying to predict. Say, for example, your organization wants to generate more planned gifts. You have only secured a few planned gifts over the past two years and do not have enough data to build a custom model. A well-designed prescriptive model for planned giving will incorporate industry data about the typical profile of a planned giver and specific lifestyle variables — such as age, income and giving history — to supplement the information in your database and help identify your best planned giving prospects.

	Generic Modeling Likelihood to Give	
	Andrew	Sarah
Local Hospital	Good	Good
Private College	Good	Good
Small Museum	Good	Good

Prescriptive Modeling

Prescriptive modeling incorporates both industry data and variables about your own donors to better quantify your most likely prospects. However, because of its heavy reliance on industry data, in most cases a prescriptive model will only predict who is likely to give to an organization like yours.

Unlike generic models, most prescriptive models incorporate an important personal variable — affinity to the organization — which helps to characterize a prospect’s tendency to support your nonprofit’s mission based on his or her past giving history. Turning to Sarah and Andrew, a prescriptive model would suggest that although it is likely that Sarah would give to a hospital, it is not clear that Andrew would. Likewise, Andrew is far more likely than Sarah to give to both a college and a museum — and his score reflects this. In other words, although the prescriptive model is not comprehensive, it does provide a better snapshot of Sarah and Andrew’s likelihood to give to each organization.

	Generic Modeling Likelihood to Give		Prescriptive Modeling Likelihood to Give	
	Andrew	Sarah	Andrew	Sarah
Local Hospital	Good	Good	Fair	Excellent
Private College	Good	Good	Excellent	Fair
Small Museum	Good	Good	Excellent	Poor

Custom Modeling

A custom model is similar to a prescriptive model, but it constructs a profile of giving behavior unique to your organization. A custom model examines the people in your database who have done what you are trying to predict, such as contributing to your capital campaign or making a planned gift, as well as the people who have not donated to your organization but who have been solicited.

Using your own data, a custom model will factor in the age, income, giving history and other lifestyle variables of your prospects. The custom model will also factor in the strength of each individual’s relationship with your organization, such as whether they volunteer regularly, purchase season tickets every year or sit on your board of directors. A custom model will identify and rank the best prospects in your database, whether or not they have already given to your organization. This will enable you to better understand your donors’ and non-donors’ relationships with your organization — and then turn that knowledge into fundraising results.

The custom model built for each of our three sample nonprofits would incorporate the variables

“The results of custom modeling have helped us to communicate more with the right people, saving us time and money as we secure new planned gifts.”

— Glenn Pittsford,

Director of Planned Giving,
Texas A&M Foundation

that are unique to that organization. The custom model for the hospital might weigh several factors, including whether a prospect attends events and is a consistent donor, as well as estimated income and other lifestyle variables. The model for the college probably weighs different factors, including perhaps gender, the person’s alumnus status and median rent. The key factors in scoring individual prospects under the museum’s custom model might include volunteerism, the size of the donor’s largest gift and the type of museum membership he or she holds.

What does this mean for Sarah and Andrew? A look at the table below reveals that their scores — representing their “propensities” to give — are better aligned with what we know about them. Although both are excellent prospects for the small museum’s fundraising campaign, the custom models reveal that Sarah is no more likely to give to the college than Andrew is to give to the hospital.

	Generic Modeling Likelihood to Give		Prescriptive Modeling Likelihood to Give		Custom Modeling Likelihood to Give	
	Andrew	Sarah	Andrew	Sarah	Andrew	Sarah
Local Hospital	Good	Good	Fair	Excellent	Poor	Excellent
Private College	Good	Good	Excellent	Fair	Excellent	Poor
Small Museum	Good	Good	Excellent	Poor	Excellent	Excellent



Lawrence Henze, managing director of Target Analytics, has extensive experience in fundraising, market research and the application of predictive modeling services to the nonprofit marketplace.

The founder of Core Data Services, which Blackbaud acquired in 2001, he has also served as vice president of predictive modeling services at USA Group Noel Levitz and president of The Philanthropic Division of Econometrics, Inc.

Mr. Henze has 15 years of experience in development, raising more than \$125 million, primarily for higher education institutions. He holds a BA in political science from Carroll College in Wisconsin, and an MA in public policy and administration and a law degree from the University of Wisconsin at Madison.

One note about custom modeling: it can be undermined by something statisticians call endogeneity. Simply put, misleading or endogenous variables can dramatically dilute the effectiveness of your custom model.

For example, you may have collected email addresses from many of your donors, but simply having an individual’s email address is not predictive of whether he or she will donate to your organization. Therefore, that variable should be stripped from your custom model. Other examples of endogenous variables include a business address or a middle initial. (When you are looking to work with a company that provides modeling services, ensure that they are fully equipped to address this key issue.)

Tips to Getting Started:

If you are interested in using statistical modeling to grow donations at your organization, here are some tips to help you get started.

1. Pick the right model.

Custom modeling is a powerful tool to help you identify and rank the best prospects in your organization’s database. Whenever possible, you should choose to develop a custom model. If you do not have enough giving history to build a custom model, then you can develop a prescriptive model to segment your database and better understand who is likely to give to an organization like yours. You should never waste time and money on a generic model; it will not tell you anything useful about whether the people in your database are inclined to give to your organization.

about Blackbaud

Blackbaud is the leading global provider of software and services designed specifically for nonprofit organizations, enabling them to improve operational efficiency, build strong relationships, and raise more money to support their missions. Approximately 19,000 organizations use one or more of Blackbaud products and services for fundraising, constituent relationship management, financial management, direct marketing, school administration, ticketing, business intelligence, website management, prospect research, consulting, and analytics. Since 1981, Blackbaud's sole focus and expertise has been partnering with nonprofits and providing them the solutions they need to make a difference in their local communities and worldwide. Headquartered in the United States, Blackbaud also has operations in Canada, the United Kingdom, and Australia. For more information, visit www.blackbaud.com.

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2. Select the right vendor.

The ideal vendor will understand modeling, fundraising and the nonprofit community. At a minimum, they will need to understand the fundamentals of fundraising in order to create a solid model to predict the charitable giving behavior of your potential donors.

In selecting a vendor, you must make sure that the company you choose understands — and actually can build you — a custom model.

- ◆ Will your vendor explain the contents of the model? With a custom model, your vendor should be willing to share detailed information about what is in your model. If not, it is likely the vendor incorporated proprietary information that they do not want to give away — and it is not a custom model.
- ◆ There are a number of tests you can perform on custom models to see if they work. Has your vendor tested the model? If a vendor is not willing to show you what they have done to test the effectiveness of the model, it is probably because they have used a prescriptive or generic model instead.

It is also very useful if your vendor has former practitioners on staff who can assist in the delivery of results once your custom model has been built and tested. This means that the person should be familiar with both fundraising and nonprofits and can discuss with you his or her findings and recommendations for using the data to maximize your fundraising success.

Finally, the right vendor will provide follow-up support. Custom modeling works only if nonprofits apply the results. How does your vendor follow up? A good vendor will check back with you to make sure your organization understands how to use the results and is, in fact, applying them.

3. Prepare your data.

Getting started is easy. Because most nonprofits have their data stored in some form of electronic database, it is just a matter of pulling together three-to-six years of historical data. A good vendor should be able to accept most electronic database formats. The vendor will then go through the files and clean them, perhaps appending other data if required, such as prospects' age or the value of their homes. Then the vendor will start to build your custom model. Once the model is complete, the vendor should place the results into a software format that you can use.

Conclusion

Nonprofits that use modeling have discovered that applying statistical methodology to help identify their best giving prospects is an effective way to jumpstart a new fundraising campaign or to strengthen existing programs. Although there are different types of models — generic, prescriptive and custom — that offer differing levels of specificity and usefulness, custom modeling alone uses your own data to identify your best donors and help you raise more money.