

Data Analytics and Nonprofits - A difficult relationship with boundless potential

¹ Abhishek, ² Manuj Jha

¹ Senior Consultant – Fundraising & Corporate Partnership, Diya Foundation, Bengaluru, India

² Rawls College of Business, Texas Tech University, Texas, United States

Abstract – Corporations around the world are using big data to predict the future and to find ways to improve profitability. But even when profits are not the main motive, as is the case with nonprofit organizations, data analytics can play a crucial role. The adoption of data analytics in the nonprofit sector is still in its infancy, with even the bigger organizations only at the start of their journey. Nonprofits can use big data and analytics to deliver on their missions. However, nonprofit leaders need to be aware of the data they have and how best to use it. In this context, an attempt is made in this paper to discuss some of the reasons why nonprofits are not able to efficiently leverage data and how analytics can help to improve various operational functions of nonprofits.

Keywords – Nonprofit, Big Data, Analytics, Operations

1. Introduction

Nonprofit organizations often must deal with limited resources. To make the most of those, they need to use the data at their disposal as effectively as possible. Nonprofits can utilize data analytics to scale up their impact. In any case, charitable pioneers and chiefs should know about the information they have and how best to use it [1]. There's an abundance of data coming from many sources, including the volunteer and donor relationship management systems, email interactions, website usage patterns, product purchases, and public information.

Nonprofits across the world are facing different problems which differ from organization to organization, region to region and from one beneficiary base to another. Based on the constant need for nonprofits to acquire new donors, the changes in what motivates donors to give, and the new opportunities created through technology, big data has the potential to not just revolutionize the operational models of these organizations but also increase their visibility through innovative channels.

2. Why nonprofits are unable to leverage data

Technology has given nonprofit organizations the ability to leverage data to engage donors in a way that wasn't possible 10 years ago. One buzz word that has really taken off in the past few years is "Big Data". But why have so many nonprofits struggled to leverage it in the same way our for-profit counterparts have [2].

2.1 Data are buried in administrative systems

Most organizations collect data to meet operational needs, and those data are often buried in the organization's administrative systems. To overcome this problem, organizations are trying to find ways to build large datasets that can be more widely used. Take the US health care industry, for example. The biggest problem in the healthcare industry is the sheer volume of health and insurance plans. Each health or insurance plan supports its own system of underwriting, claims administration, provider network contracting, and broker network management—leaving data stored in multiple formats in multiple places [3]. Inefficient management of big data costs the industry between \$100 billion and \$150 billion a year in administrative costs.

2.2 Data governance standards are lacking

Another challenge is the paucity of data governance standards that define how data are captured, stored, and curated for accountability. As a result, large inconsistencies exist and the data being captured are often not readily suitable for analysis. For instance, the US government's 2009 initiative, data.gov, to make its vast amounts of data readily available to organizations to foster innovation, has been hampered by the difficulty of ensuring that the data are in a usable format. Data quality differs heavily from agency to agency, with some agencies, such as the Environmental Protection Agency, releasing data regularly and in machine-readable formats, whereas other agencies publish data in difficult-to-manipulate forms such as PDFs or older file formats. Also, businesses and governments exploit big data without regard for issues of legality, data quality, disparate data

meanings, and process quality. This often results in poor decisions, with individuals bearing the greatest risk [4].

2.3 Data are often unreliable

Simply having a lot of data does not necessarily mean that the data are representative and reliable. For example, in 2011, the Obama Administration proposed the Keystone XL pipeline project to carry tar sands oil from Alberta, Canada, to Texas, raising concerns among landowners, farmers, ranchers, and environmentalists living in the vicinity of the proposed pipeline. Despite the concerns, the American Petroleum Institute and its oil lobby allies were able to manipulate social media sentiment by sending an inordinate number of tweets to show support for the project. It did not accurately represent the overall public sentiment. The Rainforest Action Network (RAN) later gathered evidence that most of the accounts were phony and the tweets were generated by an automated process.

3. Ways nonprofits can benefit from insights generated by Data Analytics

Nonprofits have long been relying on traditional ways of operations which often limit their abilities to reach out to a larger community for raising support and better serving the people in need. With the proliferation of mobile devices, cheaper computing and storage devices, nonprofit organizations have a whole new dimension of resources which they can use to reach out to potential donors and people who need help, optimize their operations and bring in transparency.

3.1 Fundraising

Nonprofit organizations often have incredible missions and a compelling story, but struggle with marketing their brands effectively to build a donor database that is effective and efficient. Moreover, they often have limited budgets, so making the most of every dollar is paramount. To the marketer or fundraiser, big data is the ability to see each consumer or prospect in a 360-degree view, and to personalize messages and interactions with that individual to create the ultimate purchasing or donating experience [5]. To succeed in marketing and raising funds, we think nonprofits need to create an inbound experience for donors starting with remarkable content to get people engaged. Blogging and social media should be a huge part of the fundraising plans: remarkable content and a plan to promote that content are the foundational building blocks of any great campaign [6].

The power of social media to further a cause was best illustrated by the ALS Ice Bucket Challenge - a philanthropic blockbuster that not just lured in hundreds of celebrities to increase awareness about the disease but also raised over a \$100 million in related donations, a 3,500% increase from the \$2.8 million that the ALS Association raised during the same time period in its previous year [7].

3.2 Transparency in operations

It is the matter of fact that some unscrupulous elements have made fortunes by floating NGOs for their personal gains and managing grants from the government [8]. As tax-exempt "public charities," charitable nonprofits need to embrace the values of accountability and transparency as a matter of ethical leadership, as well as legal compliance. Data encourages institutional transparency, a fundamental principle of most nonprofits and many companies, and can be used to inform key questions—who's funding what, and where [9].

Nonprofits are required to disclose certain financial information to the public upon request; board members have access to financial information in order to fulfill their fiduciary duty to the nonprofit [10]. Tax-exempt nonprofits are required, upon request, to provide copies of the three most recently filed annual information returns (IRS Form 990) and the organization's application for tax-exemption (which includes correspondence between the organization and the IRS related to the application).

With the advancements in data handling, storage and various platforms capable of analyzing the data, nonprofits can easily capture and share data regarding their funding, expenditures, volunteers and tax returns. They can bring in high levels of transparency which would ultimately allow them to present a clean image and make it easier for donors to trust them. To demonstrate a commitment to transparency and to make it easier for those seeking financial information to view these documents, many charitable nonprofits post these documents from a link on their websites.

3.3 Operations optimization

When nonprofits take full advantage of innovative technology solutions, their impact increases greatly, as they can both improve their business operations and also how they deliver aid. With technologies such as mobile, tracking, mapping, data analytics, and the cloud, NGOs can zero in on the needs of the people they serve more efficiently – and even help prevent crises and find underlying causes. And they can collaborate with other organizations to further these efforts as well. For instance, with the wealth of data

that NGOs collect, they can work with governments and other organizations to direct programmatic changes after uncovering insights from crowd-sourced, transactional, and other non-structured data points [11]. In France, Dons Solidaires is dedicated to helping over 300 charities order basic necessities for the nearly 600,000 people they serve through the donation of excess non-food goods. Dons Solidaires offers this service through an automated, online catalog and inventory system. This technology has helped them increase their efforts threefold while maintaining a minimum number of employees and volunteers [11].

4. Conclusion

Nonprofits can't continue to do business as usual if they're going to tackle the world's major social problems. By gathering data on what's not working and adopting approaches proven to solve underlying problems, these organizations can use their enormous scale and long tradition of service to innovate and change the world.

As Big Data technology matures, and government adoption increases, we can expect greater productivity and efficiency, better services, more cost savings, better transparency and significant public metrics improvements. Organizations have been created to help make better use of big data for social problems. DataKind, for example, matches scientists and statisticians with nonprofits for pro bono data work to help overcome the shortage of personnel capable of handling big data projects. Business leaders across the world are making efforts to use open data and big data to develop solutions to social problems in innovative and collaborative ways. Progress is being made, but the chasm must still be crossed. It is a challenge worth overcoming.

References

- [1] Goldstein, P., Nonprofits Can Leverage Big Data to Further Their Missions, in BizTech. 2017.
- [2] Chandler, J. The "Big Problem" Nonprofits have with "Big Data". 2014 August 27; Available from: <https://www.pursuant.com/blog/nonprofit-big-data/>.
- [3] Kevin C. Desouza, K.L.S., Big Data for Social Innovation. Stanford Social Innovation Review, 2014.
- [4] Marcus R. Wigen, R.C., Big Data's Big Unintended Consequences. 2013(06): p. 8.
- [5] Unknown. Using Big Data for Marketing and Fundraising Relevance. 2016; Available from: WealthEngine.
- [6] Bluemner, A. 13 Expert Ideas on Using Technology to Improve Fundraising. 2014 April 25; Available from: <https://softwareconnect.com/fundraising/13-expert-ideas-on-using-technology-to-improve-fundraising/>.
- [7] Diamond, D. The ALS Ice Bucket Challenge Has Raised \$100 Million -- And Counting. 2014 Aug 29; Available from:

<https://www.forbes.com/sites/dandiamond/2014/08/29/the-als-ice-bucket-challenge-has-raised-100m-but-its-finally-cooling-off/#7f5bc2f35cfb>.

- [8] Kakumani Lavanya Latha, K.P., Non-Government Organizations: Problems & Remedies in India. Serbian Journal of Management 2011: p. 13.
- [9] Patterson, D. How nonprofits use big data to change the world. 2017 February 8; Available from: <https://www.techrepublic.com/article/how-nonprofits-use-big-data-to-change-the-world/>.
- [10] Nonprofits, N.C.o. Financial Transparency. Available from: <https://www.councilofnonprofits.org/tools-resources/financial-transparency>.
- [11] Ricci, D., NGOs And Technology: A New Powerhouse For Humanity. 2016.

Authors –

1] Abhishek received his BE in Electronics & Communication from R.V. College of Engineering, Bengaluru, India. After graduation, he worked as a Senior Software Developer for a telecommunications giant, OnMobile Global Limited, for two years. He is currently leading the fundraising efforts and corporate partnerships of Diya Foundation, a vocational training center for intellectually challenged adults.

2] Manuj received his BE in Telecommunication from R.V. College of Engineering, Bengaluru, India. He worked as a Trainee Decision Scientist at Mu Sigma Business Solutions Pvt. Ltd., Bengaluru, India after graduation. Currently, he is pursuing Master's in Data Science at Texas Tech University. His interests include torturing data, NLP, machine learning and descriptive analytics.