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Profit in a Nonprofit World: A Fundraising Event Guide for FRAXA

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Profit in a Nonprofit World: A Fundraising Event Guide for FRAXA

An Interactive Qualifying Project to be submitted to the faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science

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Abstract

The FRAXA Research Foundation’s annual fundraising depends heavily on event organization and effective volunteer management. In order to provide recommendations to improve FRAXA’s yearly fundraising from events, we surveyed a range of nonprofit organizations and collected information regarding the cost, revenue, and volunteer commitments of their major fundraisers. We also identified online video game streaming as a potentially lucrative event format that FRAXA has not yet implemented. In order to explore this option, we contacted Tiltify, a hosting site for charity streams, to request information regarding the platform’s user base, yearly fundraising, and involvement with other nonprofits. We also constructed a survey of game stream hosts to gauge the necessary time commitments, costs, and concerns associated with hosting a charity stream. Our data revealed that, within the observed spectra of budgets and time commitments, small-scale events such as FRAXA’s cornhole tournament tend to yield the greatest return on investment per hour of volunteer time required to organize. In addition, Tiltify proved to be an accessible platform for streamers to use to host their fundraisers, but the commitments required for game streaming require further investigation. Given this information, we recommended that FRAXA encourage community self-organization of small-scale events to increase annual revenue from fundraising. With regards to game streaming, we suggested that FRAXA recommend this format to community members as a fundraising option, while also collecting information about audience engagement and donations from online streaming to determine its potential value.
I. Executive Summary

Fragile X Syndrome (FXS) is a genetic disease that can result in intellectual disabilities and Autism Spectrum Disorder in affected individuals, and currently has no known cure. In the pursuit of a cure for Fragile X, the FRAXA Research Foundation (FRAXA) has worked to raise awareness, assist parents, and fund research grants and fellowships for the purpose of accelerating research for treatments. FRAXA’s continued contribution to Fragile X research depends upon successful fundraising through both public and private events hosted by FRAXA and its community members. Many of the individuals within FRAXA’s community are parents of children with Fragile X and dedicate much of their time to caring for their children. As a result, community fundraising can be difficult for FRAXA to execute because organizers may be restricted to a low budget and volunteers may have little spare time to give. The aim of our research was thus to identify event formats used by other nonprofit organizations that FRAXA could consider implementing based on the need for both high projected revenue and low volunteer time commitment events.

After reviewing FRAXA’s existing resources, we identified its online fundraising guides as a potential area for improvement. FRAXA’s general Event Guide provides suggestions, however it does not include information on event costs or volunteer commitments. While FRAXA’s Gala Guide does provide more detail about the elements organizers should consider for the event budget, gala format events may not be feasible for many members of the community to organize due to a gala’s large budget and high volunteer time commitment. We discovered that, although FRAXA’s guide encouraged organizers to consider volunteer requirements for events, budget concerns, and return on investment, the guide does not offer projections of these factors for particular event types. Donations at FRAXA’s fundraising events can account for a significant portion of the total raised funds each year, and 33% of FRAXA’s 2013 revenue was earned from fundraiser donations alone. Given the importance of FRAXA’s fundraising, we chose to determine which types of events would be feasible for FRAXA community members to independently coordinate, specifically including information about volunteer time commitments and event budgets in a new, web-based event guide for the FRAXA community.

In order to collect data regarding the cost, revenue, and volunteer commitments of various fundraising events, we contacted several nonprofit organizations to ask about the
performance of their fundraisers. We selected nonprofits based on their mission and their pool of fundraisers. Our selections were primarily health-related nonprofits that hosted both events that we could compare to FRAXA’s (such as a gala) and events that stood out as potential new events for FRAXA (such as a gaming marathon). We received information from five nonprofit organizations (FRAXA, Autism Speaks, Muscular Dystrophy Association, Turner Syndrome Society, and National Tay Sachs & Allied Diseases Association) containing data on eight events, which we further analyzed to develop our recommendations.

Our search for unique events with low startup costs led us to analyze online video game streaming as a potential fundraiser that FRAXA had not yet explored. To better examine game streaming, we gathered information from Tiltify – an online service designed to help gamers host a stream for charity – in order to collect data and conduct a survey of gamers who had hosted or participated in one of these types of events. The survey asked gamers to report how frequently they stream for charity and how long streams can last, in order to determine what format would be best suited to FRAXA supporters. We used the information gathered from Tiltify, as well as anecdotal evidence collected from a small pool of survey respondents, to inform our recommendations regarding how FRAXA might encourage friends of Fragile X families to get involved with fundraising by implementing a game streaming fundraiser campaign.

Our analysis of the collected data consisted of two key models, both of which were intended to measure an event’s efficiency. The first model – Return On Investment (ROI) – measures the ratio of an event’s profit and cost, and provided us with an overview of how each event performed monetarily. In order to include the impact of volunteer time in our analysis, we chose to normalize all ROI numbers by dividing each event’s ROI by the number of volunteer hours required to host it. Furthermore, we used this information to develop a cost-effectiveness analysis (CEA) – our second model – which provided both a qualitative approach to event inputs and outputs and a way to model the value of factors such as awareness and networking as part of an event’s yield. Inputs included costs or investments made to start an event, such as money for budgeting or time from volunteers. Outputs included the event’s revenue, awareness generated, and networking with large donors. The CEA required that we assign dollar values to all relevant inputs and outputs analyzed, model the cost-effectiveness of each event, and adjust our calculations to account for upper and lower ranges for all values in a sensitivity analysis. The net
result of employing these two models is a comprehensive look at the value of each event, from the current stakeholders in the program to the new donors brought in by each event.

Our cursory overview of ROI revealed that many small-scale event formats could yield a higher ROI than larger formats such as galas and walks. Among FRAXA’s Fragile X Balls, Golf Tournaments, and Cornhole Tournaments from 2014 to 2015, the Cornhole Tournament had an average ROI of 73.25 compared to 5.5 and 0.73 for the Fragile X Balls and the Golf Tournaments, respectively. Other high-scoring events included Lock-Ups hosted by the Muscular Dystrophy Association (ROI=32.33) and the Day of Hope fundraiser coordinated by the National Tay Sachs & Allied Diseases Association (ROI=13.28). Both of these formats involve numerous small events that members of the community independently coordinate to contribute to a larger overall event. Normalizing ROI to the number of volunteer hours required to host each event amplified the trend and showed that FRAXA Cornhole Tournaments (avg. ROI/Vhr=4.49) yield a high ROI while requiring minimal volunteer commitments.

Using the ROI and volunteer time information we had collected, we structured a CEA to analyze each event’s inputs and outputs and determine which events would generate the highest value relative to their volunteer time commitments when tangible and intangible factors were considered. To build our model, we had to estimate the value of an individual volunteer’s time, as well as the value of a new participant and potential donor. We set the value of volunteer time at $23.07 per hour, and set the value of an average new donor at $258.51 per year with an estimated 23% of new participants at each event who could potentially go on to donate. Our final cost-effectiveness model calculated a modified version of ROI, including volunteer time value and donor value as part of the costs or expenses where applicable, then divided the modified ROI by the volunteer time commitments, called Quantitative ROI. We found that the FRAXA Cornhole Tournament (QROI=1.35) outperformed the other events by at least two orders of magnitude under this model.

Gaming events such as Games Done Quick (GDQ) and streaming through Tiltify contributed over $1.2 million to Doctors Without Borders in 2015. Though Tiltify streams make up only $18,461 of this total, it allows members of the community to act as the event organizers. In contrast, GDQ is a high-profile and structured event with a large online following. Our survey of participating streamers returned seven responses and was therefore used only to inform suggestions rather than to make direct recommendations. Our current responses showed that
participants most often hosted charity streams annually and made use of a marathon (8-12 hour) format. Respondents cited prior involvement with the charity and personal or family interest in the cause as primary reasons for supporting their charity of choice through a stream.

Based on the trends we observed regarding event efficiency, we devised three core recommendations for FRAXA to implement in its fundraising approach:

1. host more small-scale events per year,
2. encourage community self-organization by providing event guide information tailored to budget and time constraints, and
3. promote game streaming fundraising among interested FRAXA followers while carefully monitoring its success and community engagement.

In order to model the potential of our recommendations, we initiated efforts to execute Recommendation #2 by assembling the data we analyzed during our research into a web-based “Event Picker” tool that volunteers can use to learn about events that fit within their schedules and proposed budgets. Each page includes an event description, a list of required materials and their costs, and some suggested best practices for hosting and publicizing the event. With this information, volunteers will be better equipped to host their own events and contribute to FRAXA’s efforts to expand fundraising and community engagement.
1. Introduction

Fragile X Syndrome (FXS) is the most commonly inherited cause of Autism Spectrum Disorders and results from a mutation in a single gene. Up until two decades ago there was only minimal interest in FXS research and cures, and no major organizations were involved in pushing research forward. The FRAXA Research Foundation (FRAXA), a nonprofit organization created in 1994, was founded by parents of FXS children who have made it their goal to fund research in hopes that one day a cure can be found. A large portion of the funds generated by FRAXA come from fundraising events that community members hold and participate in. Making these fundraising events as efficient as possible and providing an easy way for potential volunteer event hosts to get involved would result in greater financial income for FRAXA. These funds contribute to the FXS research landscape and help thousands of affected individuals by enabling researchers to develop new treatments and search for a cure for Fragile X Syndrome.

Fragile X Syndrome is an inherited genetic disorder that negatively impacts brain development. Affected individuals with a full mutation exhibit complete suppression of the FMR1 gene and cannot manufacture the associated protein resulting in a wide range of symptoms, a few examples being: autistic behaviors, attention deficit and hyperactivity, anxiety, unstable mood, and seizures (Garber 2008). Prior to the mid-1990s, research for cures and therapies for FXS received limited funding from the public sector. In response to this lack of funding, the FRAXA Research Foundation was created. FRAXA is a nonprofit organization whose goal is to support research directed towards finding treatments and ultimately a cure for Fragile X Syndrome. FRAXA funds grants and fellowships for scientists at research universities, and it has disbursed more than $24 million since it began in 1994 (FRAXA website).

In order to raise money for grants and fellowships, FRAXA partners with fundraising organizers. As a result, one of the main sources of income for FRAXA is sponsored events. FRAXA has successfully organized and sponsored events that are large in scope, like its gala and a 3-on-3 basketball tournament named Patrick’s PALS. The majority of donors and volunteers are family members and caregivers of individuals with the syndrome. Thus, the pool of volunteers may have limited time for fundraising efforts due to their commitment of caring for an individual with FXS. Even with a full-time staff, organizing an event can be a daunting task and can have widely varying levels of success. And, resources for organizers are limited and
start-up may seem insurmountable. As such, it is in FRAXA’s interest to help potential fundraisers organize events by providing them with ideas and other resources. Using the internet as a tool will help FRAXA share new types of events that provide reach and opportunity to a much larger audience than existing, localized events. To better satisfy its mission’s goals, FRAXA needs more funds coming in. Thus, recommendations for new types of fundraising events – with a focus on ease-of-setup, return on investment, and wide audience reach – will aid FRAXA in achieving its fundraising objectives.

FRAXA currently provides basic informational resources for potential fundraisers. The FRAXA event guide gives suggestions on types of fundraising events, planning guidelines, templates and samples, and some background materials. The guide emphasizes planning practices for events similar to FRAXA’s large-scale events, namely the gala and the Patrick’s PALS 3-on-3 basketball tournament. However, very few suggestions are made for smaller, easy-to-manage, and cost-effective events. Because the majority of interest in organizing these events is generated by family members and caregivers who must also dedicate time to care for FXS individuals, we considered time and start-up cost as likely to be important factors for the participation of these individuals. We hypothesized that if recommendations were created for events with smaller time and monetary investments and the potential for larger returns, these recommendations would appeal to people who would not otherwise take on the task of event organization.

The goal of this project was to determine new ways to boost fundraising through analyzing the efficiency and optimization of events, in addition to creating an event resource guide for time-restricted volunteers. We performed cost-effectiveness analyses on different events organized by FRAXA, as well as on other events similar in size and scope that have been hosted by other health-related, nonprofit organizations. Next, we identified relevant metrics and best practices for fundraising events. We then developed these metrics and practices into recommendations and deliverables, presented as a comprehensive event-planning guide that could be implemented by event planning novices who are looking to volunteer for FRAXA. The long-term goal of this project is to facilitate an increase in the amount of funds raised by FRAXA through events.
2. Background

In this chapter, we discuss the symptoms and frequency of Fragile X Syndrome, as well as examine the personal impact on families and caregivers of FXS individuals. Next, we describe FRAXA’s formation, involvement with FXS families, and search for a cure. Lastly, we provide an overview of FRAXA’s current and past fundraising efforts and a description of its current event guide.

2.1 Fragile X Syndrome

Fragile X Syndrome is a genetic disease that is caused by a mutation in the FMR1 gene on the X chromosome. This mutation results in misregulated protein synthesis that causes problems during brain development. Common symptoms of FXS include “difficulties in learning, social shyness, hyperactivity, increased susceptibility to seizures, hypersensitivity to sensory stimuli, macroorchidism, motor incoordination, sleep disturbances, and autistic behavior” (Chen 2015), all of which make FXS one of the few known and targetable causes of Autism Spectrum Disorders. The mutation is caused when excessive repeated DNA sequences accumulate in the FMR1 gene (Chen 2015). The healthy gene typically contains fewer than 55 of these repeats. However, FXS premutations occur when the gene is erroneously extended to contain between 55 and 200 repeats (Chen 2015). Premutations can easily develop into full FXS mutations, which contain over 200 repeat sequences (Chen 2015). Because the FMR1 gene is located on the X chromosome, any woman carrying an FMR1 mutation has a 50% chance to pass a premutation to her children; these children may remain carriers or they may be fully affected (FRAXA 2014).

The first sign of FXS in children is often delayed realization of developmental milestones (Maes 2000). FXS can affect both males and females, however males are more often affected and present with more severe symptoms (Wattendorf 2005). The vast majority of affected males and about one third of affected females have varying levels of mental retardation (Maes 2000). This presents as a particular arrangement of deficiencies in sequential processing, abstract reasoning, and math skills (Wattendorf 2005). FXS children exhibit behaviors of attention deficit, hand flapping, hand biting, and gaze aversion, and may be on the autism spectrum due to these challenges (Parker 2005).
Treatment requires a team of doctors and includes anxiety-reducing methods, behavior modification, and medications to manage accompanying psychiatric disorders (Wattendorf 2005). School-age children require special considerations developed through individual education plans (Wattendorf 2005). There is no cure yet for Fragile X Syndrome, and no treatments are specifically approved to treat FXS (FRAXA 2014). Thus, there is a need for research targeted for FXS, and FRAXA is working towards that goal.

2.2 The FRAXA Research Foundation

The FRAXA Research Foundation was founded in 1994 by three parents of FXS children with the goal of supporting research and finding a cure for FXS. As stated on its website, FRAXA runs scientific meetings where researchers can share discoveries and ideas. The researchers discuss potential collaboration, offer guidance to pharmaceutical companies, provide education and information to the public about the causes of FXS, and describe the research currently being done. They also provide information on where FRAXA’s donations are going with information on the specific scientists who are currently funded and on the scientists’ research.

FRAXA has had a tremendous impact on the research being done on FXS. When FRAXA first started, grants and fellowships for the disease by the U.S. government were under $2 million, and only $30,000 were going to treatment studies. FRAXA has changed this and, over the course of its existence, the organization has raised over $24 million, which has provided dozens of research grants each year. FRAXA is able to accomplish this with limited person-hours. The organization has only two full time staff members; as a result, less than 4% of their funds go to management expenses while the rest goes to research (FRAXA 2014). The progress that has been made and the funding that has been generated are largely the result of volunteers within the FRAXA community. The nonprofit has received media attention for its strong and effective work in funding groundbreaking research from news organizations such as NPR, The New York Times, and the Boston Globe. FRAXA has received praise for the significance of its contributions and its ability to do tremendous work with such a small staff and limited resources.

The FRAXA community is active, and members raise a substantial amount of money by holding fundraising events. This includes events such as sports competitions, bowl-a-thons, raffles, and auctions. The organization highlights success stories from volunteer work and
encourages the community to set up their own fundraising events. Based on these characteristics, we believe that FRAXA understands the value of its community and volunteers, and it is driven by the motivation of the individuals within FRAXA’s family.

2.3 FRAXA Events and Fundraising

FRAXA hosts and sponsors a variety of fundraising events that are held regularly. The two most popular annual events are the yearly gala and the Patrick’s PALS basketball tournament. The gala is a large event that takes a significant amount of time, energy, and coordination to execute each year. On its website, FRAXA provides information on how members of the community might coordinate their own gala-style event. Within this information FRAXA provides objectives that should be met a set number of months or days before the event. This includes checklist elements such as having a photographer booked, as well as methods on how to select guest speakers, budget the event, and create publicity. This gala has been a tremendous success in raising awareness, and has hosted several celebrities including famous philanthropist Doris Buffett, author Mary Higgins Clark, and various well-known researchers (FRAXA Honorary Board).

The other large-scale event held to raise money is the annual Patrick’s PALS 3-on-3 basketball tournament. The tournament was created by the parents of Patrick Vershbow, for whom the event is named, in 1997. The event has grown to involve a total of 32 teams in 2015. At the event, a silent auction is also held featuring items such as signed jerseys and sports tickets. The Patrick’s PALS event, which raises a large amount of money yearly ($160,000 in 2015), also raises awareness by involving local celebrities. This includes local radio hosts, news anchors, and even local professional athletes.

FRAXA has other small events that its community also holds. These include bowl-a-thons, a strongest man and woman weightlifting competition, an annual cornhole tournament, and family marathons. The FRAXA community’s involvement in events provides a significant portion of the fundraising revenue each year. Of total contributions to FRAXA, fundraising events accounted for 18% in 2012, 50% in 2013, and 17% in 2014 (FRAXA IRS Form 990, 2012/2013/2014). From this data, we have concluded that the strong involvement, determination, and activity of FRAXA supporters have greatly increased the awareness and funding for Fragile X Syndrome research in the hope of finding a cure. In 1994 when FRAXA was created,
by the U.S. government for FXS research totaled to $2 million; today FRAXA alone generates nearly half of this amount in annual revenue. Signs that awareness of the disease – and research attention to it – have increased can be seen by the National Institute of Health’s decision to award $35 million in 2014 to labs working on FXS research (Jacob 2015).
3. Literature Review

Our research into Fragile X Syndrome, FRAXA, and fundraising events draws from a plethora of sources, including information provided by nonprofit organizations online, science journals, and textbook-style publications. In this section, we also take an in-depth look at volunteerism while focusing on finding ways to encourage volunteers to create and manage events. By examining effective methods and best practices of fundraising, combined with literature on performing cost-benefit analysis, we establish the methodology employed to develop an effective event guide with essential recommendations for FRAXA fundraisers.

3.1 FRAXA’s Fundraising Guides

FRAXA provides two short, fundraising “how-to” guides to inform the community of existing event options and strategies that help make fundraisers successful. The first one – the Event Guide – highlights various event ideas including galas, walks, sports tournaments, formal lunches, and sales events and provides brief overviews for each event type. This guide also encourages volunteers to consider creating event plans and thinking about event costs and return on investment, and it provides tips for publicizing community events (FRAXA Event Guides). The second one – “How to Run a Gala” – provides information on how community members may coordinate a large-scale gala for high-profile donors. This guide covers the prerequisites and strategies for planning a gala in significantly more detail than the general event guide, by providing suggestions for every aspect of the event from table prices, hotel reservations, and speakers to menus, invitations, and photographers (FRAXA Event Guides). Although FRAXA’s event guides provide a solid list of event types and ideas, they do not extensively discuss the importance of return on investment or existing best practices for hosting smaller community events. This perceived barrier to entry may leave many FRAXA members without the information they need in order to start their own small fundraisers.

3.2 FRAXA’s Volunteers

Volunteer behavior is an essential consideration for a nonprofit organization like FRAXA, which has only two full-time staff members. In order for events to be created and managed on a larger and broader scale, volunteers are needed to fulfill the role of leader and organizer. The volunteer pool of a health-related nonprofit like FRAXA is largely composed of
members of families of individuals who have the related disorder (Al-Jenaibi 2014). These family members may have very limited resources in terms of time and money as a result of caring for a child with disabilities (Anderson 2007). For example, research shows that greater family demands correlate with restrictions on an individual’s ability to participate in volunteer activities (Sundeen 1990). In addition, volunteer interest in a task is related to the potential volunteer’s expectations for the difficulty of that task; thus, “easy” tasks generate greater interest among potential volunteers than “hard” ones (Hom 1983). As a result, based on this research, our recommendations consider the time demands of the FRAXA community, as well as highlight the time commitments (from greatest to least) that volunteer tasks require.

### 3.3 Existing Best Practices for Fundraising

Fundraising best practices can help event organizers plan their events effectively, and they help to ensure that organizers will see a return on investment through charitable donations. Best practices may vary depending on the type of fundraiser and the goals of the organization, as what is “best” in one scenario might not be for another. In the context of nonprofit organizations, some best practices for community events may include charging a registration fee, allowing participants to enter the events in different ways (email, social media, website), reaching out to prior donors for participation, and providing event participants with the tools they need to promote the event on their own and communicate with potential donors (Bodell 2011). Best practices serve as recommendations and can be implemented by event organizers as needed to increase return on investment.

Effective fundraising requires that event planners and hosts be aware of many factors that can affect return on investment as well as donors’ willingness to donate large sums. Donors may be influenced by the perceived need for donations, the degree to which they are solicited for donation, their altruistic interest in the organization, their reputation, and a host of other factors (Bekkers 2010). Empirical studies have shown that these factors can have varying effects on potential contributors and their propensity to donate. For example, empirical studies have found that increased frequency of solicitations yield an increase in donations, although other studies have indicated that many people may be reluctant to donate because they expect to be repeatedly solicited again post-contribution (Bekkers 2010). Donors will also be more likely to donate when
they are presented with success stories resulting from prior fundraisers, and if they consider the organization’s mission to be in line with their personal values (Bekkers 2010).
4. Methodology

The goal of our project was to analyze metrics and best practices of fundraising events of non-profit organizations and make recommendations for the development of more profitable events, with the long-term goal of helping to facilitate an increase in funds raised by FRAXA through fundraising events. The following research objectives were established in order to achieve this goal:

1. Identify relevant metrics for fundraising events and pinpoint target organizations;
2. Collect event metrics from targeted nonprofits and perform a cost-effectiveness analysis; and
3. Analyze the video game streaming fundraiser format by surveying organizers and identifying platforms and tools.

4.1 Identify Relevant Metrics for Fundraising Events and Pinpoint Target Organizations

In order to collect the data for our analysis, we identified the metrics that would be most valuable in focusing on our objective of maximizing event efficiency. For our purpose, efficient is defined as “achieving maximum productivity with minimum effort or expense” (Oxford American College Dictionary 2002). In order to evaluate efficiency, we used the measurement of return on investment (ROI). ROI was then used to compare the efficiency of a number of different events, providing the basis for comparison in our second objective: the cost-effectiveness analysis. ROI can be calculated by subtracting the event’s costs (for our purposes, investment capital and volunteer time) from the revenue generated by the event through donations and gifts, then divided by the cost of the event (Figure 2). For our investigation, we also considered the required volunteer time for event planning and execution as part of the cost of an event. Given the time constraints of the FRAXA staff and community, it was necessary to target our recommendations to events that are not only monetarily efficient, but time-efficient as well. Therefore, we chose to investigate the income, expenses, and volunteer commitments of the events we selected.
Ideally, the events that FRAXA and the community host should yield a high return on investment such that the donations and gifts effectively cover the event’s expenses in addition to raising funds for FRAXA’s goal of funding research. Looking for these metrics for any particular fundraising event inform us with regard to its ultimate benefit to FRAXA’s mission. Achieving high ROI might make smaller, low-cost events enticing for organizers within the FRAXA community. If the event is inexpensive to run, but the organizers anticipate high attendance and high donations, they can be more confident that their event will generate high ROI value.

We decided to target specific events within organizations that would give us a balance of event type and organizational size and scope. We first gathered data for these metrics through publicly available financial information (IRS Form 990), which every nonprofit organization must submit on a yearly basis. We found that the information on the form varied greatly in the level of detail provided. As a result, we decided to contact most organizations directly for the metrics we sought. Because of the direct nature of our information gathering, we chose organizations based on their accessibility. Some organizations publicly list the contact information of their community/event directors or provide a form for direct communication. Rather than spend time finding contact information or contacting the wrong people, it was more time effective to choose organizations that we could directly contact. When contacting an organization, we chose to ask about various event types including galas, walks, marathons, cycling events, lock-ups,¹ and various small events.

¹ For a lock-up event, a participant chooses to be “jailed” or “locked up” and the group solicits donations with the goal of “bailing them out”.
4.2 Collect Event Metrics from Targeted Nonprofits and Perform a Cost-Effectiveness Analysis

We collected event metrics in order to perform a cost-effectiveness analysis of different event types and practices, which we in turn used to ascertain the desirability of one event over another. Before we were able to provide adequate recommendations on strategies for FRAXA’s possible event types and practices, a comprehensive investigation of the numerous aspects of these events was required. Cost-effectiveness is a deeper analysis than ROI because it incorporates more variables into the analysis, such as awareness generated. Thus, it provided us with a process by which we could offer the most accurate recommendations.

We derived our data collection of event metrics primarily from two sources: publicly available financial information from IRS Form 990 and direct solicitation of specific event metrics from nonprofit organizations. We analyzed financial information from organizations of interest, using these sources to obtain numerical information about event income, expenses, and volunteer time. Appendix A.1 is the financial information request email template that we used in contacting our targeted nonprofit organizations. Appendix B is a follow up email we sent a few days before the request deadline. The requests were emailed to thirteen nonprofits, and we were fortunate to receive responses from five organizations with data for eight events total, including FRAXA and its events.

We analyzed our data in order to provide an examination of both the social and financial considerations required for determining the type of event to host. To this end, we employed a cost-effectiveness analysis that aimed to organize and evaluate the commitments necessary for an event and the monetary yield and awareness generated from that event. The function of a cost-effectiveness analysis is to facilitate decision making on the distribution of resources (Boardman 2010). The basic outline of a cost-effectiveness analysis is described in the following nine steps from Cellini and Kee’s “Cost-Effectiveness Analysis” (2010):

1. Set the framework for the analysis
2. Decide whose costs and benefits should be recognized
3. Identify and categorize costs and benefits
4. Monetize (place a dollar value on) costs (inputs and outputs)
5. Quantify benefits in terms of units of effectiveness
6. Discount costs and benefits to obtain present values
7. Compute a cost - effectiveness ratio
8. Perform sensitivity analysis
9. Make a recommendation where appropriate

We chose this method because completing the cost-effectiveness analysis assisted us in measuring an event’s efficiency (Wholey 2010). This analysis involved quite a few assumptions, calculations, and careful judgment on the part of the analysts. The major challenge with a cost-benefit analysis is the difficulty in determining dollar values for various intangible costs and benefits, such as raising awareness (Wholey 2010). However, by simply attempting to identify, measure, and evaluate these benefits and costs, we were able to provide important information and a framework for potential event planners (Wholey 2010). Each type of event was identified and analyzed, giving us a complete picture of the fundraising event landscape.

4.3 Analyze the Video Game Streaming Fundraiser Format by Surveying Organizers and Identifying Platforms and Tools

Video game streaming became an event type of great interest to us due to its high predicted ROI. This event takes the internet trend of playing video games live on the web for an audience and combines it with raising awareness and collecting donations for a charity of the player’s choice. The process of “streaming” a video feed for these events requires a computer with common hardware and a handful of specific software applications to capture video and upload it to a website in real-time. The reasoning behind the predicted high ROI of these events is based on the assumption that the upfront costs of holding such an event are near zero. Most interested participants would already possess all the equipment that is required to hold such an event, including: a computer with internet access, a webcam, a microphone, and a few video games. Newcomers to video game streaming may need to spend time learning how to use streaming programs and performing initial setup, but there are typically no significant costs associated with amateur streaming.

In order to make effective recommendations regarding game streaming, we developed a survey for the hosts of these events to gauge their time commitments and motivations for supporting the charities they selected (Appendix D). We identified ten game streamers who had done charity game streaming in the past, and we sent them the survey through either Twitter or
email. We asked the streamers to answer questions regarding the frequency of their charity stream events, the length of individual streams, and how they interacted with the viewers and donors. Participants were also asked to forward the survey to other streamers of friends who host charity streams. Their responses helped us to formulate our recommendations regarding the volunteer’s approach to game streaming.

We also identified and reviewed web-based platforms that streamers and charities use to connect with their audience and host fundraisers, as well as software- or web-based tools that individuals within the FRAXA community may use to start hosting their own game streaming events. To collect this information, we initially contacted the managers of each platform by email using a similar template to the financial request letter. We made adjustments to the letter, however, to ask questions related to the platform’s user base, revenue of all fundraisers hosted on the platform, and how nonprofits can become involved and begin promoting their causes on these platforms (see Appendix A.2). We analyzed the information received to make recommendations for the implementation of a game-streaming “branch” of fundraising backed by gamers within the FRAXA community.
5. Analysis

Our analysis of the collected data offers a clear picture of the requirements of event organizers and nonprofit organizations when planning and executing a fundraising event. This section opens with an overview of the analyzed events and the presentation of the return on investment analysis. Next, we provide an in-depth analysis of the factors that go into a decision to hold one particular event over another. We fully detail our assumptions and make a clear presentation of the costs and subsequent effectiveness of a decision in terms of fundraising. This section finishes with a review of our survey of people who have held or participated in a video game streaming charity event, which can be employed easily and effectively by anyone with an interest in nonprofit event fundraising and video games. Our findings show that planning and executing a fundraising event is a complex procedure that demands a considerable amount of thought and effort to execute effectively. Providing nonprofit organizations and their fundraising event planners with these findings will aid them in their desire to benefit society by donating time and raising money for a good cause.

5.1 FRAXA’s Income from Fundraising

In order to better understand the fundraising events that FRAXA and its community hold, we investigated FRAXA’s publicly available tax information. FRAXA’s 2013 contributions (including fundraisers as well as grants and individual donations) totaled $1,327,626. However, FRAXA’s total income from fundraising events – $389,130 in 2013 – was up from 2012’s fundraising income of $249,168. Fundraising events in 2013 accounted for approximately 33% of FRAXA’s earnings, while the rest of FRAXA’s income consisted of individual donations and grants apart from their fundraising events. FRAXA received $132,649 in donations and gifts from their 2013 Fall Expo, $91,910 from their Spring Cocktail Party, and $197,653 from other, smaller events (see Figure 1 below). These events had operating expenses of $17,980, $6,000, and $9,102 respectively (FRAXA IRS Form 990, 2013).

Event-hosting has become an increasingly important part of FRAXA’s fundraising efforts. In 2014, FRAXA’s two largest fundraising events were Patrick’s PALS, which raised $77,549, and the Fragile X Ball, which raised $27,445 (FRAXA IRS Form 990, 2014). The

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2 FRAXA hosted its Spring Cocktail party at the Stella Restaurant in Boston on March 24, 2013.
3 The “small events” category is the sum total of earnings from any other FRAXA events from 2013, as the 990 Form calls for only the two highest-grossing events to be reported individually.
largest single event of 2013 was the Fall Expo, accounting for 34% of the total income from fundraisers in 2013. All small events combined accounted for 50.7% of the total earnings from all 2013 fundraisers. FRAXA’s combined costs for small events in 2013 totaled $9,102 and brought in a total of $197,653 in donations. Small events in total made over 20 times their expense costs through funds raised, which indicates that these smaller events have the potential to make a consistent and healthy contribution to a nonprofit’s revenue in the long-term if hosted regularly and budgeted appropriately.

Figure 1. Dollar values for event cost and profit of FRAXA’s major events in 2013 and 2014 based on revenue and expenses reported in FRAXA 2013 and 2014 990.

5.2 Event Revenue and ROI

In total, five organizations responded to our letter writing campaign with information corresponding to eight, unique fundraising events. These events included two walks, a lock-up event, a gala, and an event in which organizers all around the country hosted small fundraisers on the same day and at the same time. We also contacted FRAXA about the events that they and their community members have hosted and received information about a gala, golf tournament, and cornhole tournament from years 2014 and 2015. We found that all events reviewed have positive ROI values, meaning they were successful in making more money than they spent.

In order to study ROI in a way which would be meaningful to event organizers, we chose to consider only the direct expenses and revenue of each event. From the perspective of the
organizations, volunteer time is not a monetary cost and any expenses related to volunteers such as food or promotional items are covered as part of the event’s budget. To preserve this approach without obscuring the importance of volunteer numbers and time commitment, we further analyzed the relationship between the ROI of each event, the number of volunteers, and the average hours spent volunteering for each event.

FRAXA’s gala-style event is the Watkins’ Fall X Ball. Like all galas, this event requires a significant amount of time to plan, including such logistics as location reservation, decorations, music, and meals. In Table 1, we see a breakdown of the elements required to host the event as well as the calculated ROI and ROI/#Hours. Both years included in this review individually required 125 hours of planning and preparation. Additionally, in both years there was a significant sponsorship donation of $60,000, which made up a large percentage of the total money raised. The 2014 event had a significantly larger amount of revenue with a total of $101,721 compared to $73,265 in 2015; however, the 2014 event cost more than twice as much. This larger cost in 2014 results in a lower ROI of 4.033 versus an ROI of 7.157 for the 2015 event.

<table>
<thead>
<tr>
<th>FRAXA Watkins Fall X Ball</th>
<th>Volunteer Hours</th>
<th>Expenses</th>
<th>Revenue</th>
<th>ROI</th>
<th>ROI/Vhr</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>125</td>
<td>$20,222</td>
<td>$101,781</td>
<td>4.033</td>
<td>0.0322</td>
</tr>
<tr>
<td>2015</td>
<td>125</td>
<td>$8,982</td>
<td>$73,265</td>
<td>7.157</td>
<td>0.057</td>
</tr>
</tbody>
</table>

*Table 1. FRAXA Watkins Fall X Ball event data*

The second event about which we received information from FRAXA was a cornhole tournament. Table 2 shows that the tournament had a cost of only $81 each year, and required volunteer time of 18 hours in 2015 and 15 hours in 2014.

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4 Cornhole is a simple game in which two teams try to toss small bags of corn into a hole on a raised platform on the opposing team's side.
The final event for which FRAXA provided information was the Hall Golf tournament, also held in 2014 and 2015. The golf tournament required reservation of a golf course, thus resulting in large, upfront monetary expenses (exact values documented in Table 3). The event cost $22,141 in 2014 and $17,141 in 2015. The amount of volunteer time was quite low for both years, with only 50 hours per event. In comparison to all events reviewed, the 2014 golf tournament was the fourth most expensive event; the 2015 tournament was more expensive, ranking second for costs among analyzed events. Because the hosting expenses for the golf tournaments are high, the result is the lowest ROI: 0.867 for 2014 and 0.58 in 2015. Even with the low volunteer numbers required, the ROI per volunteer hour remains a small return per hour for both years.

Based on this analysis, the cornhole tournament had the least amount of expenses and required the least amount of volunteer time. However, the tournament was on the lower end of the spectrum in terms of revenue generated: $6,300 in 2014 and $5,730 in 2015. Nevertheless, due to the very low monetary expenses, the tournaments have the greatest ROI values of all the events evaluated: 2014 has the greatest with a ROI of 76.778, and 2015 comes in second with a value of 69.741. Figures 3 and 4 display a comparison of the ROI and ROI/Vhr values of cornhole to all other events and highlights the efficiency of this event relative to the other events. Figures 3 and 4 reveal important trends and facts of all the events that were analyzed and how

Table 2. FRAXA 2014 Cornhole Tournament event data

<table>
<thead>
<tr>
<th>FRAXA Cornhole</th>
<th>Volunteer Hours</th>
<th>Expenses</th>
<th>Revenue</th>
<th>ROI</th>
<th>ROI/Vhr</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>15</td>
<td>$81</td>
<td>$6,300</td>
<td>76.78</td>
<td>5.11867</td>
</tr>
<tr>
<td>2015</td>
<td>18</td>
<td>$81</td>
<td>$5,730</td>
<td>69.741</td>
<td>3.8745</td>
</tr>
</tbody>
</table>

Table 3. FRAXA 2015 Hall Golf Tournament event data

<table>
<thead>
<tr>
<th>FRAXA Hall Golf Tournament</th>
<th>Volunteer Hours</th>
<th>Expenses</th>
<th>Revenue</th>
<th>ROI</th>
<th>ROI/Vhr</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>50</td>
<td>$17,141</td>
<td>$32,000</td>
<td>0.867</td>
<td>0.01734</td>
</tr>
<tr>
<td>2015</td>
<td>50</td>
<td>$22,141</td>
<td>$35,000</td>
<td>0.58</td>
<td>0.0116</td>
</tr>
</tbody>
</table>
they perform when compared to one another. The two figures reveal how an event may perform well in comparison to others in terms of ROI but lag behind when looking at ROI/Vhr.
Figure 3. Event ROI for our five events of interest. This metric indicates the efficiency of an event based purely on the difference between the costs and the revenue generated.

Figure 4. Event ROI normalized per volunteer hour spent. This metric provides a comparison of event efficiency based on how much time volunteers need to dedicate to planning, coordinating, and hosting the event.
In addition to the fundraising information we got from FRAXA, we also received information from the Boston chapter of Autism Speaks. This was the first nonprofit to respond to our request for event information, and the organization provided extensive information about the 2015 Walk Now for Autism Speaks (Table 4). This event is very large in size and scope; thousands of people participate each year to raise money and awareness for autism. Autism Speaks provided information about the preparation of the event in which multiple levels of volunteers participate. Some volunteers work months in advance to book professional entertainers such as face painters and balloon artists, and to handle emergency personnel requests, other attractions, and logistics for the walk. Another group of 10-15 volunteers is tasked with event setup – typically a few days in advance – and about 175 additional volunteers are involved on the day of the walk to finish last-minute set up, help with registration, and sell merchandise. In total, 230 volunteers make the walk possible for a combined total of 1332.5 hours of volunteer time.

In 2015, the event cost $80,000 and generated $721,223 in total revenue, which yields an ROI of 8.015 (Figure 3, Table 4). When assessing it by ROI alone, the Autism Speaks Walk performs very well; however, the number of volunteer hours required to host the event was greater than all other events for which data was collected. When this ROI is divided by the number of volunteer hours to normalize the value with respect to those two metrics, it has the lowest score compared to the other events (ROI/Vhr of 0.006, seen in Figure 4). This ROI/Vhr value indicates that the high revenue generated by the walk is only possible with a comparatively large amount of volunteer hours.

<table>
<thead>
<tr>
<th>Autism Speaks 2015 Boston Walk</th>
<th># Volunteers</th>
<th>Volunteer Hours</th>
<th>Expenses</th>
<th>Revenue</th>
<th>ROI</th>
<th>ROI/Vhr</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>1332.50</td>
<td>$80,000</td>
<td>$721,223</td>
<td>8.015</td>
<td>0.006</td>
<td></td>
</tr>
</tbody>
</table>

*Table 4. Autism Speaks 2015 Boston Walk Now for Autism Speaks event data*

The Turner Syndrome Society of the United States responded to our request with information about its Chasing Butterflies walks (Table 5). Each year, different chapters hold several walks across the United States. The scale of the walks varies between chapters; however, they all are much smaller than the Autism Speaks Boston Walk. Some of the walks may involve
fewer than 100 participants, and the listed data represents the “average walk” based on the participants and revenue from all chapters. With an average cost of $556 and average revenue of $4,432, a typical Chasing Butterflies walk has an ROI of 6.830 (Figure 3, Table 5). As a result of the small number of volunteer hours required to hold the chasing butterfly walks, when ROI is normalized for volunteer hours and compared to that of the Autism Speaks, as seen in Figure 4 and Table 8, it performs much better in terms of efficiency.

<table>
<thead>
<tr>
<th>Turner Syndrome Society 2015 Chasing Butterflies walks (average)</th>
<th># Volunteers</th>
<th>Volunteer Hours</th>
<th>Expenses</th>
<th>Revenue</th>
<th>ROI</th>
<th>ROI/Vhr</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>70</td>
<td>$566</td>
<td>$4,432</td>
<td>6.830</td>
<td>0.098</td>
<td></td>
</tr>
</tbody>
</table>

*Table 5. Turner Syndrome Society of the United States Chasing Butterflies walks average event data*

Next, we review the data we received from the Muscular Dystrophy Association (MDA) regarding its Lock-Up events in 2015 (Table 6). MDA coordinates numerous Lock-Ups throughout the year, so we analyzed the cost and earnings of a single, average Lock-Up. When the ROI is normalized, as with the other events, the MDA Lock-Ups have a high ROI per volunteer hour (Figure 4). With the low startup cost of $750, and only 10 volunteers contributing 6 hours each, this event format is highly profitable and generates an average $25,000 in revenue.

<table>
<thead>
<tr>
<th>Muscular Dystrophy Association 2015 Lock Ups (average)</th>
<th># Volunteers</th>
<th>Volunteer Hours</th>
<th>Expenses</th>
<th>Revenue</th>
<th>ROI</th>
<th>ROI/Vhr</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>60</td>
<td>$750</td>
<td>$25,000</td>
<td>32.333</td>
<td>0.539</td>
<td></td>
</tr>
</tbody>
</table>

*Table 6. Muscular Dystrophy Association average 2015 event data*

The fourth organization to provide data about its fundraising events for the ROI analysis was the National Tay-Sachs and Associated Diseases Association (NTSAD). It provided data for two events: 1) the 2015 Imagine and Believe Gala and 2) the 2015 Day of Hope event. The first event, Imagine and Believe, is a gala that consisted of a silent auction and a raffle. To coordinate the event, two staff members spent 20 weeks planning (Table 7). One staff member spent 10 hours per week and the other one spent 15 hours per week, for a total of 500 hours on a letter
writing campaign in which they attempted to find people to come participate and support the event. During the event, an additional 15 volunteers were needed for a total of 560 hours. The expenses for the Imagine and Believe Gala totaled to $20,000, and the event produced $90,000 in revenue. The comparison of ROI per volunteer hour indicates that the Imagine and Believe Gala – similarly to the Autism Speaks walk – performs poorly on this metric because less revenue is earned and a large amount of time is required from each volunteer (Figure 4, Table 7).

<table>
<thead>
<tr>
<th>NTSAD 2015 Imagine and Believe</th>
<th># Volunteers</th>
<th>Volunteer Hours</th>
<th>Expenses</th>
<th>Revenue</th>
<th>ROI</th>
<th>ROI/Vhr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17</td>
<td>560</td>
<td>$20,000</td>
<td>$90,000</td>
<td>3.500</td>
<td>0.006</td>
</tr>
</tbody>
</table>

*Table 7. NTSAD 2015 Imagine and Believe event data*

NTSAD also provided information about its Day of Hope, which is scheduled on one day every year when different communities simultaneously host small events and fundraisers (such as yard sales, lemonade stands, and small live music events) across the United States. The proceeds from these events are donated to NTSAD, and the Day of Hope helps to create a sense of community for the NTSAD members. In 2015, there were a total of about 20 simultaneous, small events. Because this style of fundraiser shifts event-planning responsibilities to the individuals hosting them, NTSAD only required two volunteers contributing a combined 35 hours to make a flyer and publicize the event. In 2015, NTSAD spent $3,500 on the Day of Hope and the community brought in a total of $50,000 in revenue, making Day of Hope the second most profitable event that we analyzed in terms of ROI (Figure 3, Table 8). When this ROI is compared to the number of volunteers and time initially required by NTSAD, the Day of Hope again has significantly high ROI per volunteer hour, but this analysis excludes the number of volunteers participating in the “micro-events”, as well as their time commitments to the events that they organized (Figure 4, Table 8).

<table>
<thead>
<tr>
<th>NTSAD 2015 Day Of Hope</th>
<th># Volunteers</th>
<th>Volunteer Hours</th>
<th>Expenses</th>
<th>Revenue</th>
<th>ROI</th>
<th>ROI/Vhr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>35</td>
<td>$3,500</td>
<td>$50,000</td>
<td>13.286</td>
<td>0.380</td>
</tr>
</tbody>
</table>

*Table 8. NTSAD 2015 Day of Hope event data*
Although ROI is a helpful metric for determining how efficient an event was based on costs and revenues, it does not provide the most in-depth understanding about the event and the consequences of holding that event because it is difficult to include intangible elements (volunteer effort, increased awareness, etc.). In order to provide a full analysis of the work that the event organizers put in and the results of their work, a more comprehensive analysis is required. For this reason, we performed a cost-effectiveness analysis to study and understand each event in a more holistic way.

5.3 Cost-Effectiveness Analysis

A cost-effectiveness analysis (CEA) is a useful technique that compares the costs of a decision to its important outputs or benefits. We decided to employ this method because an analysis of nonprofit fundraising events requires a more comprehensive examination than what analyzing only dollar values can provide. This is established through a series of steps we outline in this section.

Our underlying assumption for employing a CEA was that nonprofit organizations may hold events that do not achieve the maximum ROI possible with the least amount of time commitment. This would lead to wasted resources, time, and less money being directed towards achieving the objectives of the nonprofit organization. Our goal was thus to provide recommendations for fundraising decision makers that would allow them to choose events and practices that maximize event ROI within the time constraints of their volunteers.

In performing a CEA, every input or output has an impact on an individual or group of people. To address this, we established a list of stakeholders as part of our CEA: event organizers, volunteers, nonprofit organizations, and donors. We focused on the event organizers and nonprofit organizations because they are the decision makers for the type of fundraising events selected. Next, we identified and categorized the inputs and outputs, both negative and positive, of various nonprofit fundraising event decisions. In Table 9, we provide the inputs and outputs of the various events we are using for this analysis. These inputs and outputs can be further categorized as tangible and intangible. Tangible inputs and outputs are those which are easily identifiable in terms of dollars or units, such as revenue, cost to organize, and volunteer time commitment. Intangible inputs and outputs are things which are difficult to put a dollar or
unit value on, such as awareness generated and opportunity for networking with high-profile donors.

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism Speaks (2015 Walk Now for Autism Speaks)</td>
<td>Large cost to organize</td>
<td>Large revenue</td>
</tr>
<tr>
<td></td>
<td>Large volunteer time commitment</td>
<td>Generates awareness</td>
</tr>
<tr>
<td></td>
<td>Volunteer coordination</td>
<td>Networking with high-profile donors</td>
</tr>
<tr>
<td>Muscular Dystrophy Association (2015 Lockups)</td>
<td>Low cost to organize</td>
<td>Large revenue</td>
</tr>
<tr>
<td></td>
<td>Volunteer coordination</td>
<td>Generates awareness as a unique event</td>
</tr>
<tr>
<td></td>
<td>Volunteer time commitments</td>
<td>Involves many participants</td>
</tr>
<tr>
<td>National Tay-Sachs and Allied Diseases Association (Day of Hope)</td>
<td>Low cost to organize</td>
<td>Large combined revenue from all &quot;micro-events&quot;</td>
</tr>
<tr>
<td></td>
<td>Volunteer coordination</td>
<td>Generates awareness across the U.S.</td>
</tr>
<tr>
<td></td>
<td>Many individual volunteers</td>
<td>Involves local communities</td>
</tr>
<tr>
<td></td>
<td>Volunteers must plan and coordinate their own &quot;micro-events&quot; events</td>
<td></td>
</tr>
<tr>
<td>National Tay-Sachs and Allied Diseases Association (Imagine and Believe Gala)</td>
<td>Large cost to organize</td>
<td>Large revenue, poor return on investment</td>
</tr>
<tr>
<td></td>
<td>Large volunteer time commitment</td>
<td></td>
</tr>
<tr>
<td>Turner Syndrome Society of the United States (2015 Chasing Butterflies Walks)</td>
<td>Low cost to organize</td>
<td>Large combined revenue from all &quot;micro-walks&quot;</td>
</tr>
<tr>
<td></td>
<td>Small groups of volunteers must plan their own &quot;micro-walks&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small volunteer time commitments</td>
<td></td>
</tr>
<tr>
<td>FRAXA (Watkins Fall X Ball 2015/2014)</td>
<td>Large cost to organize</td>
<td>Large revenue</td>
</tr>
<tr>
<td></td>
<td>Large volunteer time commitment</td>
<td>Networking with high-profile donors</td>
</tr>
<tr>
<td>FRAXA (Cornhole Event 2015/2014)</td>
<td>Extremely low cost to organize</td>
<td>Small revenue</td>
</tr>
<tr>
<td></td>
<td>Small volunteer time commitments</td>
<td>Extremely high return on investment</td>
</tr>
<tr>
<td>FRAXA (Hall Golf Tournament 2015/2014)</td>
<td>High cost to organize</td>
<td>Networking with high-profile donors</td>
</tr>
<tr>
<td></td>
<td>Small volunteer time commitments</td>
<td>Small revenue</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Poor return on investment</td>
</tr>
</tbody>
</table>

Table 9. Inputs and Outputs of all events
In the next step of our analysis, we assigned dollar values to the costs of the program. The desire here was to set a common measure (dollar value) as a basis of comparison. The event costs to organize are already presented in dollar values. The value of volunteer time has been determined on average as $23.07 per hour (Independent Sector 2015). In order to put a value on intangible inputs and outputs, we determined a unit of effectiveness to which we could compare them. For this analysis, we chose ROI per volunteer hour as our unit of effectiveness because volunteer time is an important decision for event organizers and volunteers. ROI per volunteer hour best takes into consideration the time commitment required to hold the event and best relates it to the efficiency in terms of total expenses and total revenue.

In order to fully quantify the outputs of an event, the monetary value of awareness is also determined. In order to determine how many people are made “aware” by an event and how much money a newly “aware” donor is likely to contribute, we first made estimates of the numbers of participants attending each 2015 event (Table 10). Using the number of participants, we then calculated a dollar value for the awareness potential of each event. This awareness potential is the percentage of participants who are potential new donors, 23.5% (Hope Consulting 2010), multiplied by the average donation per year made by individual donors in the United States of $258.51 (Giving USA 2015).

Because we assumed that all potential new donors will donate and will donate the average amount, the result is a best case estimate of how much money the organization will earn based on the number of participants at a single event, compounded over the course of one full year. To further distinguish events by their relative size, we chose to create categories based on volunteer time commitments, which are shown to be correlated with participant count in Figure 5. We separated events into the categories “Small” (under 100 volunteer hours), “Medium” (between 100 and 1000 volunteer hours), and “Large” (over 1000 volunteer hours) in order to aid our sensitivity analysis and further recommendations.
Table 10. Estimated new participants and donors for each event. The trend between participants and volunteer hours is mapped in Figure 5.

<table>
<thead>
<tr>
<th>Event Name</th>
<th>Total Participants</th>
<th>Est. New Participants</th>
<th>Est. New Donations</th>
<th>Total Volunteer Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism Speaks 2015 Boston Walk</td>
<td>10000</td>
<td>2340</td>
<td>$604,913</td>
<td>1332</td>
</tr>
<tr>
<td>MDA 2015 Lock Ups</td>
<td>18</td>
<td>4</td>
<td>$1,089</td>
<td>60</td>
</tr>
<tr>
<td>Tay Sachs 2015 Day Of Hope</td>
<td>400</td>
<td>94</td>
<td>$24,197</td>
<td>700</td>
</tr>
<tr>
<td>Tay Sachs 2015 Imagine and Believe Gala</td>
<td>300</td>
<td>70</td>
<td>$18,147</td>
<td>560</td>
</tr>
<tr>
<td>Turner Syndrome Society 2015 Chasing Butterflies Walks</td>
<td>69</td>
<td>16</td>
<td>$4,174</td>
<td>70</td>
</tr>
<tr>
<td>FRAXA(Watkins Fall Xball 2015)</td>
<td>200</td>
<td>47</td>
<td>$12,098</td>
<td>125</td>
</tr>
<tr>
<td>FRAXA(Cornhole 2015)</td>
<td>100</td>
<td>23</td>
<td>$6,049</td>
<td>18</td>
</tr>
<tr>
<td>FRAXA(Hall Golf Tournament 2015)</td>
<td>128</td>
<td>30</td>
<td>$7,743</td>
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Figure 5. Log Scaled in x and y; total event participants modeled as a function of volunteer hours. The Autism Speaks Boston Walk is excluded from this curve calculation because it does not appear to correlate with the rest of the data set. The trend is best modeled by an exponential function.
To further the analysis, we compared the events by framing the costs of inputs and outputs relative to the total volunteer time required to organize the event. This analysis allows any event’s raw value to be compared to its other quantifiable attributes such as revenue, volunteer time, or expenses. This metric is a cost-effectiveness ratio (CER), which is where the total inputs of the event, including expenses and volunteer time, as well as the outputs, revenue and awareness generation, can be compared to the units of effectiveness in order calculate a single measure for the efficiency of each event. The CER equation is illustrated in Figure 6. NPV stands for Net Present Value and is the sum of the total revenue and the total awareness value minus the expenses and the total volunteer cost. This can be considered the “profit” from outputs.

\[
CER = \frac{NPV}{\text{Units of Effectiveness}}
\]

*Figure 6. Cost-Effectiveness Ratio Equation*

Our calculation for CER is ROI per volunteer hours for each event. Unlike the calculation in Section 5.1, which only accounts for the event’s immediate expenses and revenue, the CER includes all quantified inputs and outputs when determining a new ROI. Because this measurement includes quantitative values for previously unquantifiable inputs or outputs, we chose to call this metric the Quantitative ROI, or QROI. We calculated a QROI for each event and divided these values by the number of volunteer hours needed to organize the event. (Table 12, Figure 7).

---

5 NPVs can be used to account for inflation when analyzing events from past years. Because inflation in the United States was less than 1% between 2014 and 2015, we excluded this step from the calculations of CERs.
<table>
<thead>
<tr>
<th>Event</th>
<th>QROI</th>
<th>Total Volunteer Hours</th>
<th>QROI/V. hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism Speaks 2015 Boston Walk</td>
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<td>1332</td>
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*Table 11. QROI, Volunteer Hours, and Cost-Effectiveness Ratios for each 2015 event.*
Figure 7. (top) QROI per Volunteer Hour of the 2015 events. (bottom) QROI per Volunteer Hour, excluding FRAXA 2015 Cornhole.
In order to provide a more thorough examination of the data, we performed a sensitivity analysis of the metrics and assumptions we used. For this, we looked at the cost of a volunteer in the state of Massachusetts, which is 17% higher than the United States average cost of a volunteer. This was done because FRAXA is based in Massachusetts and many of the events that have been hosted for them occur in Massachusetts. We also used +/- 10% tolerances for the average amount of a donation, which ranges from $232.66 to $284.36, and the percentage of possible “non-aware” donors, which ranges from 21.25% to 25.8%. This was done to create a range of QROI values for each event. The average values for a donation and “non-aware” donors will vary from year to year and will most likely never actually be equal to exactly the average. For this reason these 10% tolerances were used to represent years in which both these variables may be slightly smaller or greater than the average.

The full results of the sensitivity analysis can be found in Appendix E. In sum, the findings of our sensitivity analysis follow the same trend as our original analysis of QROI. Thus, the sensitivity analysis did not reveal any new trends in the data; it only created ranges for QROI and QROI per volunteer hour. Consequently, while the analysis did not reveal any new trends, it did give us more information about how these events may perform in terms of efficiency from year to year.

5.4 Game Streaming Analysis

We contacted Tiltify and communicated directly with the CEO, Michael Wasserman, who provided us with detailed information about the website’s volunteers and funds raised throughout 2015. Tiltify is a website that enables video game streamers to set up their own fundraisers for any official, legal charity. Streamers can set the monetary goals, streaming schedule, and donation window for their event. The Tiltify platform allows streamers to create a web page for the event that includes a video link to their stream once the event is live, as well as a donation link and a progress tracker graphic for the raised funds.

Many gaming-related charities and a handful of health-related nonprofit organizations use Tiltify, and the site hosted approximately 300 game streaming fundraisers in 2015 with a total of 500 participating streamers involved throughout the year. Across the entire platform, streamers raised a total of $1.3 million in 2015. Out of all the organizations we contacted, Doctors Without Borders (Médecins Sans Frontières, MSF) was the only one operating on Tiltify. Streamers have
raised $15,288 towards MSF’s cause since the start of its Tiltify campaign in 2015, and the 2016 year-long fundraising campaign raised over $6,700 within its first two months. The goal is to reach $10,000 by the end of 2016.

MSF is also involved with the streaming organization Games Done Quick (GDQ). GDQ hosts high-viewership, game-streaming marathons twice per year, and each event can last up to a full week. These events are watched on-site by the participants, and a live feed is streamed to Twitch.tv for the online audience to watch in real-time. The gameplay format consists of “speedrunning,” in which a player selects a game of his/her choice and attempts to complete it as fast as possible while competing for a record time. Many popular players sign up to participate along with lesser-known players trying to make their names known among the speedrunner community. Both the participants and the online viewers can make donations online and bid on auction prizes contributed by the community. The funds raised during each GDQ event are donated to a different nonprofit organization each year. In 2015, MSF was the recipient of the Summer Games Done Quick donations which totaled to approximately $1.2 million. Viewers and attendees donated an average of $40 each – either in person or online – for a total of 28,529 unique donations.

Our survey of video game streamers returned a poor response rate (n=7), and the results could not be used to strongly support our final recommendations. Nevertheless, they provide anecdotal information regarding stream formats and host motivation. The survey results, as shown in Figure 8 and Figure 9, revealed that streamers prefer a “marathon” format for their events, and host them infrequently as a result. While 14% of respondents claimed to host charity-focused streams for one to four hours once per month, the remaining 86% of respondents stated that they participate in 8-12 hour streams once or twice per year. With respect to rewards being offered to those watching the stream, Figure 10 reveals that this is a less popular practice as 71% of respondents did not offer any prizes or rewards for donors during their stream. Finally, Figure 11 reveals that 83% of participants were previously involved with the charity they chose to represent on their stream, with all respondents citing the charity’s cause as being personally relevant to themselves, or a family member, or a friend.
Figure 8. Distribution of n=7 responses to charity stream frequency. Majority of respondents host infrequent events.

Figure 9. Distribution of n=7 responses to charity stream preparation time and duration. Majority of respondents host "marathon" streams.
Figure 10. Distribution of n=7 responses to charity stream donor rewards. Most respondents do not provide donation rewards.

Figure 11. Distribution of responses to motivation for streaming. All respondents were previously involved with the charity they chose to represent.
6. Recommendations and Conclusion

In this section, we summarize our important findings and deliver recommendations for organizing efficient nonprofit fundraising events. Through our analysis of event revenue, ROI, and our CEA, we have discovered clear trends in organizing fundraising events, which we have synthesized into a comprehensive overview for organizers to achieve their fundraising event goals. Our recommendations focus on aiding volunteer organizers in their decisions when they begin the process of choosing a fundraising event to hold. To aid in the dissemination of our recommendations, we created an online decision tool for fundraising event organizers with a clear way of determining which event is best for them. This section also includes some anecdotal suggestions for event organizers who wish to host an online streaming fundraising event.

Based on the data gathered and the results calculated, we see a trend that small events that require little volunteer time and have small expenses have the highest ROIs and ROI per volunteer hour. These types of events could be a perfect fit for FRAXA community members, who may be strapped for time. We recommend that FRAXA encourage its community to host as many small events as possible. FRAXA can do this by providing the community with information on the types of events that work best as small fundraisers, as well as information on how to host these events. As part of our recommendations, we compiled event information into both a pamphlet and a website that FRAXA can share, in order to assist community volunteers and event organizers with event selection.

Initially, we had sought to analyze FRAXA’s event data along with other nonprofits to determine where negative event profits could be solved using best practices. Our cursory overview of the data indicated that FRAXA’s events are all profitable. As a result, we shifted our focus to increasing event efficiency with respect to both costs and volunteer time commitments. We found that determining event efficiency based only on expenses (using ROI) provided clear information regarding which events were the most profitable, but this model ignored the value of volunteer time commitments. By normalizing our ROI data based on the volunteer time required to host each event, we were able to find event formats that required minimal volunteer commitments to attain high monetary efficiency. We thus have chosen to recommend events which conform to these criteria because FRAXA could shift the coordination of these events into the hands of volunteers without compromising existing major events such as the annual Gala. Because small-scale events are generally easier to plan and execute, members of the community
could feasibly organize and host these events while the FRAXA staff focuses on existing commitments, such as networking with donors and researchers as well as coordinating major fundraising events.

6.1 Increase Revenue by Hosting Small Events

We recommend that FRAXA seek to bolster its lineup of community-organized, small-scale events in order to improve yearly revenue from fundraising. Analysis of the event data revealed that events with smaller volunteer requirements and smaller budgets tended to yield high ROI relative to large-scale events such as the Autism Speaks Boston Walk. The measurement of ROI per Volunteer Hour provided us with an initial list of events to recommend to FRAXA, including cornhole tournaments, local walk events, and other small community fundraisers. This model serves as an effective method for filtering out events that may be sub-optimal for FRAXA’s volunteers to coordinate, such as those that require either many volunteers or many hours of commitment.

FRAXA’s cornhole events (2015: ROI=67.9; ROI/Vhr=3.874) exceed other events under this model by orders of magnitude, which suggests that these events engage the community effectively and serve to bring in many donations despite the event’s low budget and minimal volunteer commitments. Converting existing small-scale annual events such as cornhole tournaments into a template for frequent community-organized fundraisers could increase the total number of events held within a year to increase revenue. Additionally, to maximize engagement, organizers could coordinate with each other to ensure that the fundraisers do not compete with each other for participant interest due to timing or proximity.

6.2 Encourage Volunteer Self-Organization by Creating an Event Planning Guide

In order to make effective use of FRAXA’s time and volunteer resources, we recommend that FRAXA encourage volunteers to self-organize to plan and host small-scale events. If the community is able to effectively host small-scale events and increase the number held each year, FRAXA’s staff can remain focused on coordinating the year’s major events while still seeing increased revenue from fundraising.

In FRAXA’s case, the staff may not be capable of managing the coordination of both the annual large events and an increased number of smaller fundraisers, so we recommend that FRAXA
provide volunteers from the community with the information they need to make decisions about organizing and budgeting events on their own. To that end, we developed a web-based tool to help volunteers decide which fundraising event formats will work within their time and budgetary constraints. Users can select how much volunteer time they have available and how much money they are willing to spend on the fundraiser by selecting small, medium, or large commitments of time and money. We defined the time commitments for each category in our CEA as being under 100 hours (small), up to 1,000 hours (medium), and over 1,000 hours (large). These time commitments reflect the total across the volunteer pool rather than per individual. We defined budget categories as under $1,000 (small), up to $20,000 (medium), and over $20,000 (large). When users select the various combinations of time commitments and potential budgets, they are presented with event formats that fit within the chosen categories based on the data analyzed in this study. Each event format has its own web page with a description and information regarding materials, costs, volunteer commitments, and potential best practices for hosting and publicizing the fundraiser (see Appendix F for Website Flowchart).

6.3 Recommend Video Game Streaming to Interested Members

Though our survey failed to capture a sufficient sample size to make adequate recommendations regarding the volunteer commitments of game streaming fundraisers, this format may still be of interest to FRAXA. Video games have become a medium that engages people of all ages, but is particularly popular with younger audiences, and could be an effective way of getting siblings and other young relatives of FXS individuals involved. As a result of its popularity, many fundraising success stories have emerged from the gaming community following the advent of online video streaming. Our analysis of Tiltify’s stream hosting platform revealed that many gamers are interested in supporting small nonprofit organizations by hosting a charity stream. FRAXA should begin encouraging members of the community to try this fundraiser format based on the suggestions we put forward in our fundraising guide, which also points to resources for getting started.

Hosting a charity stream requires a PC audio and video experience as well as extensive setup time for the first stream, as hosts must configure their computer with the appropriate software and run connection tests to ensure that they can broadcast effectively. After these configurations have been established, subsequent streams have a dramatically reduced setup time and become much easier to organize. And, as computers have become ubiquitous in our society,
the startup costs for online game streaming are minimal, as the largest cost, the computer hardware, has already been purchased.

Once FRAXA community members have tried streaming, future research groups can then analyze the efficiency of these streams based on donations raised and the size of the audience. Research groups may be interested in developing a more complete analysis of the game streaming fundraiser format and synthesizing a plan for FRAXA to implement it to a greater degree, so the design of our survey could serve as a starting point for data collection. Gathering information regarding typical stream length, hardware requirements, setup costs, and participant motivation will be critical elements of any recommendation.

6.4 Future Research

The work we have laid out can serve as a template for future analysis of event formats and can be expanded to include new data as FRAXA tries different types of fundraising events. Over time, some formats may decline in popularity while others grow. FRAXA should encourage research groups to continue to analyze additional event formats and develop more recommendations to implement these events as self-organized efforts within the community. The list of small events should be expanded such that organizers have more options for community engagement, which can also be adapted later to match changes in community interests. Game streaming in particular should be a high research priority, as this format is community-driven by nature and could result in significant fundraising and awareness raising without the need of FRAXA’s staff to become directly involved in event planning.
References


Appendix A:

A.1 Request for Financial Information Letter

Dear [Insert Title/ Name here.,]

I am writing on behalf of a student group conducting research at Worcester Polytechnic Institute (WPI) as part of our junior year project. Our group is conducting research on the efficiency of fundraising events at nonprofit organizations. Specifically, we are gathering information so that we can better understand how nonprofits successfully plan and execute fundraising events to reach their goals.

We have already conducted a cursory review of 15 nonprofit organizations, including information on mission, scope, and contributors. We are reaching out to you because our research project would benefit from additional information about event expenses and income. To that end, we are seeking information on [fill in event names and year]:

1. [Expenses, target categories]
2. [Income, target categories]
3. [Volunteer hours, target event]
4. [Additional metrics, target event]

Any information you can provide us will allow us to perform a fuller analysis of fundraising events to determine best practices. If possible, please respond by [Date/Time] or if you'd prefer we can establish a time to speak by phone. We appreciate your consideration and look forward to hearing back from you.

Sincerely,

[signature]
Dear [Insert Title/Name here],

I am writing on behalf of a student group conducting research at Worcester Polytechnic Institute (WPI) as part of our junior year project. Our group is analyzing nonprofit organizations and their fundraising methods with the hope of recommending new and emerging fundraising platforms such as online game streaming.

Our investigation lead us to [Platform Name], and we believe that it would be beneficial for us to recommend [Platform Name] to other nonprofits as a powerful tool for engaging their community. To that end, we are seeking some information regarding [Platform Name]’s user base and fundraising tools. If possible, please provide us with any of the following information:

1. [Number of involved streamers]
2. [Number of fundraisers]
3. [% of events reaching fundraising goals]
4. [Average funds raised per participating organization]
5. [Total funds raised on the platform]
6. [How charities contact or get involved]

Any information you can provide us will greatly help our research and bolster our recommendations for nonprofits. If possible, please respond by [Date/Time], or arrange a time to speak by phone if you prefer. We appreciate your consideration and look forward to hearing back from you.

Sincerely,

[signature]
Appendix B: Follow-up Financial Request Letter

Dear [Insert Title/ Name here,]

We are writing to follow up with you on the request that we made on November 23rd for information regarding your fundraising events. Our initial request asked for this information by this Wednesday, December 9th. We understand it is a busy time of year and if you need more time to complete our request or need additional information from us, please let us know. If you would prefer, we can arrange a time to speak on the phone. We would really appreciate any information that you could provide as it will help to further our research and better our recommendations. These recommendations will be publicly available and advance our goal of increasing the fundraising capacity of nonprofit organizations. Once again, thank you for your consideration and we look forward to hearing from you.

Sincerely,

[signature]
Appendix C: Video Game Streamer Survey Request Letter

Dear [Insert Title/ Name here,]

We are soliciting information to make recommendations to nonprofit organizations about streaming charity fundraisers as part of a research project at Worcester Polytechnic Institute. The survey is voluntary, confidential and anonymous. We are looking for information regarding the amount of time investment, cost, and practices employed during your successful charity streams. We are also looking for insight on how nonprofit charities might attract successful streamers such as yourself. We would really appreciate any information that you could provide as it will help to further our research and better our recommendations. These recommendations will be publicly available and advance our goal of increasing the fundraising capacity of nonprofit organizations. Please forward this message to anyone you think may be able to provide us with this information. If possible, please respond by [Date]. We appreciate your consideration and look forward to hearing back from you. The survey can be found at this link:

[Insert Qualtrics Link for Survey Here]

Sincerely,

[signature]
Appendix D: Video Game Streamer Survey Questions

1. How often do you host a charity stream? (weekly, monthly, 3-4/1-2 times per year)
2. What is your time commitment to a single charity stream (including setup time)? (1-4/4-8/8-12/ over 12 hours)
3. Did you provide any rewards for donors? (Yes/No)
   a. [If yes, optional] Please provide an example of a popular donation reward you have used on your stream. (free response)
4. Were there any costs associated with the charity stream excluding your usual setup? [Free response]
5. How did you decide which charity to support? (Check all that apply)
   a. I was previously involved with the charity.
   b. The cause is personally important to me.
   c. The cause is relevant to a friend or family member.
   d. I was solicited by the charity.
   e. Other (free response)
Appendix E: Sensitivity Analysis Tables

<table>
<thead>
<tr>
<th>Event</th>
<th>QROI</th>
<th>Total Volunteer Hours</th>
<th>QROI/Vhr</th>
</tr>
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<tbody>
<tr>
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<td>9.781</td>
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Adjustment of QROI based on Massachusetts volunteer value.

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<th>QROI/Vhr</th>
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<td>1.20 - 1.33</td>
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<td>FRAXA(Hall Golf Tournament 2015)</td>
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Adjustment to QROI based on +/- 10% tolerance of average amount of a donation in the United States.
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<td>FRAXA(Hall Golf Tournament 2015)</td>
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<td>0.016 - 0.17</td>
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Adjustment to QROI based on +/-10% new participants at each event
Appendix F: Website Flowchart

Home

Question 1

Question 2

Gala

Marathon

Question 3

Day of Hope

Golf Tournament

Cornhole

Local Walk

Game Stream