

Big Data Development:
A Tool for Interpreting Institutional Impact

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A thesis
submitted in partial fulfillment of the
requirements of the degree of

Master of Arts

University of Washington

2016

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Program authorized to offer degree:

Museology

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Abstract

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The purpose of this research study is to understand how immediate and ongoing access to Big Data analytics, focused on museum visitors, influences the strategies used by development departments to communicate institutional value and impact. Through in-depth interviews, development professionals at the Dallas Museum of Art, the Grace Museum, and the Minneapolis Institute of Art, provided insight on the effect of Big Data on language and metrics, donor communication, and the donor relationship. Study results suggest that Big Data is providing development staff the means to collect behavioral data and interpret the engagement of visitors. Donor cultivation efforts are using this engagement data to target visitors more than ever before, through communications that focus on developing a lasting relationship rather than focusing on donor solicitations. The following results offer the field a baseline understanding of the impacts of Big Data while providing opportunities to explore further applications and understand long-term impact.

Acknowledgements

First, I would like to thank the institutions involved in this study: The Dallas Museum of Art, The Grace Museum, and The Minneapolis Institute of Art. The participation and support received by these institutions has been incredibly impactful and I couldn't be more grateful. Additionally, I would like to thank the four participants from these institutions that took the time to speak to me at length about Big Data and the Friends program. I was amazed at the depth in which you explored the subject matter and the enthusiasm you provided throughout our communications.

I would also like to thank my committee for providing support and encouragement: Wilson O'Donnell from University of Washington Museology, Kirk Laughlin from the Seattle Children's Museum, and finally my chair, Jessica J. Luke. This study would not have been possible without your support and expertise. I cannot thank you enough for the time and energy you put into this study, in addition to the support you showed me as I worked through each chapter.

Finally, I owe a large amount of gratitude to my family for supporting me through this endeavor. To my husband Jordan and my Mally, for the unconditional support you have given me and the countless hours of editing assistance. To my parents for their constant encouragement and for always listening to me on good days and bad.

Thank you as well to the University of Washington Museology department for providing this opportunity and to the Museology staff for constantly providing immeasurable assistance.

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Chapter 1: Introduction

Now more than ever before, museum donors want to see the impact of their contributions. As the millennial generation becomes the next generation of donors, non-profits are faced with a new donor motivation that demands more than they have previously been able to give: evidence (Stein, 2013). Known as effective altruism, this giving philosophy focuses on utilizing a donation for the greatest good, or the cause that will do the greatest good with it (Singer, 2015, pg. 3). Such a mindset has subsequently placed charities and institutions like museums in opposition, as charities continue to thrive using quantitative metrics that equate donations to positive social benefit, a strategy museums have had difficulty achieving.

Traditional Museum Fundraising Methods

Museums currently rely on admission and membership statistics as metrics of success, while supplementing qualitative data that speaks to institutional mission and programming (Stein, 2013). These statistics do not align with the educational and cultural impacts of the institution's mission, visitor experiences, learning impact, or overall institutional value. As Nicole Stutzman Forbes, the former Chair of Learning Initiatives and Director of Education at the Dallas Museum of Art stated,

“For many years, the standard measure for any museum's impact has been overall attendance, or total participation. A focus on repeat participation is a step towards a more meaningful measure of impact because it further fleshes out the story of visits and visitors, working to capture the nuances of engagement” (Stutzman Forbes, 2014).

In response to this conclusion, many museum professionals recognize the need for development strategies that address this growing trend in giving, and that permit more accurate institutional impact assessment. The methodology for this assessment has been debated in the

field, with the emergence of Big Data driven programs seen as a possible tool to begin evaluating and communicating the impact of museums.

Incorporating Big Data

Within museums, the notion of Big Data is fluid, representing “the computational analysis of any data,” rather than the common definition in the for-profit sector involving “data sets that are too large to store or process using widely available techniques at the current time” (Paquest Kinsley & Portenoy, 2015). Highlighted in the Center for the Future of Museums’ (CFM) 2014 report, initiated through the American Association of Museums (AAM), popular museum blogs, and AAM TrendsWatch, Big Data offers museums the opportunity to evaluate visitor engagement, traffic flow, and exhibit technologies.

While the use of Big Data in museums has been discussed at length, the application of Big Data has yet to be incorporated in more than a handful of museums. Recognized by the Institute of Museum and Library Services (IMLS) as a method of obtaining substantial insight into visitor engagement, Big Data was the primary focus of the 2013 National Leadership Grant award to the Dallas Museum of Art (DMA). The support of a this grant recognizes in Big Data the potential to advance the practice of the field by “creating a more effective system for compiling and analyzing data about visitor participation to increase the efficacy of museums in responding to the emergence of participatory culture and the desire for deeper engagement and long-term relationships with visitors” (Institute of Museum and Library Services, 2013, p. 1).

A Call for Action

For the Dallas Museum of Art, the IMLS grant provided an opportunity to explore how a large, visitor-based data set could be used to achieve long-term relevance. As the former Deputy Director of the DMA described, "...as the value and relevance of museums is increasingly being called into question, the challenges of how best to document museum impact are questions worth answering" (Stein, 2014, p. 3). While visitor data has been compiled in recent years, technology has finally made it possible to not only collect more, but to ascertain the significance of this data in every corner of the museum.

The DMA is modeling how Big Data focused on visitor participation can measure the impact of an institution through their interactive free membership program aimed to gather visitor engagement data through increased visitor participation. Utilizing the database storing this engagement data, development departments have access to behavioral data that is specifically generated by each visitor that has the potential to cultivate sustained engagement. These data can be used to communicate an institution's impact and value to current and potential donors, and thus have the potential to shift development practices. However, there is currently little information on the ways in which development staff use such data, and how it influences their practices.

Purpose and Research Questions

The goal of this research study is to understand how immediate and ongoing access to Big Data analytics, focused on museum visitors, influences the strategies used by development departments to communicate institutional value and impact. This study seeks to identify how Big Data is influencing development departments within the Dallas Museum of Art, the Grace

Museum, and the Minneapolis Institute of Art. The following research questions inform this study:

1. How does access to Big Data influence the ways in which development staff do their jobs?
2. How does Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?

Significance

Through the examination of three very different institutions, both in size, structure and resources, the impact of the DMA Friends program on development departments will be seen through the changing structure of their development processes, data interpretation, and communication with donors. From this study, the impact of Big Data specifically on development departments will yield quantifiable insight into the future of non-profit fundraising, specifically the nature of in-person interactions, communication of visitor engagement, and the understanding of institutional impact.

Chapter 2: Literature Review

The purpose of this research study is to understand how immediate and ongoing access to Big Data, focused on museum visitors, influences the strategies used by development departments to communicate institutional value and impact. This particular topic is situated between three differentiated bodies of literature: 1) the challenges currently associated with traditional development strategies; 2) measuring the success of museums through impact; and 3) the transition of Big Data from business to museums. The following chapter will position this study within the existing research while identifying current gaps that leave room for this study to contribute to further understanding.

Challenges Associated with Traditional Development Strategies

The Importance of Development for Museums

The community of donors that support the nonprofit sector do so for various reasons, as the Association of Fundraising Professions (AFP) describes:

The love of humankind, usually expressed by an effort to enhance the well-being of humanity through personal acts of practical kindness or by financial support of a cause of causes, such as a charity (e.g., the American Red Cross), mutual aid or assistance (e.g., service clubs and youth groups), quality of life (e.g., arts, education, and the environment), and religion (Ciconte & Jacob, 2008, p. 2).

For nonprofits, the importance of donor communities speaks to the larger importance of philanthropy. As Salvatore G. Cilella (2011), President and CEO of the Atlanta Historical Society, stated in “Fundraising for Small Museums,” in order to keep the mission on track and the doors open most nonprofits are in active fundraising mode. The American Alliance of Museums (2012) released a report entitled “Annual Conditions of Museums in the Economy” sharing results from online surveys conducted over one month with 347 institutions, representing

a cross-section of all disciplines. The study found several executive directors noting that despite growth since the recent recession “fundraising continues to be very difficult” as support becomes more difficult to predict. The same report details that while admissions have increased, support from all levels of government have decreased, with a total of 35% of museums reporting a decrease in government funding and only 14% reporting increases. To sum up the state of corporate and government donations, the report noted, “The reality is, the pie is shrinking and the competition for finite resources is increasing” (p. 14).

This competitive landscape has increased the importance of individual donors to the philanthropic process, as “the most important concept to remember about fundraising is that it is first and foremost a human endeavor” and “many people forget the human element and rely on modern technology, depersonalized mail solicitation, or an inordinate emphasis on the program or the project without the impact on the individual” (Cilella, 2011, p. 2). The human element is particularly important when considering that fundraising for an institution “is not a once-and-done endeavor but an ongoing, structured management function designed to create understanding and to gather support for the institution. It is about honest personal relationships, organizational and personal quality, and transparency” (Cilella, 2011, p. 2).

While transparency and quality have long been standards of successful philanthropic environments, donors have recently began demanding more from institutions, as Cilella points out “the donor calls the shots as never before” demanding accountability from institutions and increased communication about where their money is going and for what (Cilella, 2011, p. 4). With attention made to donors and the use of their funds more prevalent, philanthropic strategies must focus in on the questions that Cilella describes as the important issues, “What are the donor’s needs? Do we have a way of meeting those need in our museum? Is the donor interested

in our museum? And if not, how can we intersect him or her in our institution?” (Cilella, 2011, p. 5).

Fundraising Strategies Traditionally Used by Museums

In the literature, the marriage of an organization’s mission and the contributions made to society are considered fundamental in creating a philanthropic environment (Ciconte & Jacob, 2008). It is from the mission that all decisions and programs must develop, as a stronger case for philanthropic support can be made when the organization is clearly focused on the mission in all aspects of its operation (Ciconte & Jacob, 2008). In addition to assessing the institution’s revenue mix, Cilella notes that “the purpose or mission of your institution is the starting point for all fundraising” as “all fundraising must be mission driven” (Cilella, 2011, p. 28-29). To meet the needs of the institution it is important to have a cross between mission-driven programs and profit-driven programs that can then be communicated to potential and current donors. It is from this cross section that the human element of philanthropy can begin, with the cultivation of donors through “a sustained effort to inform and involve your prospects” (Cilella, 2011, p. 50).

The process of gaining support from the community, donors included, for the institution rely on the “management of cultivation efforts” or the strategies employed by an organization to not only attract donors but retain them over time (Cilella, 2011). Beyond gift solicitation, fundraising should be “preceded by a healthy dose of cultivation and followed by an equally robust serving of recognition” (Cilella, 2011, p. 24). Cilella goes on to describe cultivation as the combination of two components: identification of “suspects from a large pool of individuals who are suspected of having the financial means and inclination to make a major gift to your organization” and education or “alerting and indoctrinating prospective donors about your mission, your relevance, and your goals” (Cilella, 2011, p. 24). Traditionally the methods

utilized to educate identified suspects ranged from “parties, receptions, openings, educational programs, and lectures” all designed to convey enthusiasm for the institution’s mission (Cilella, 2011, p. 25). These activities encapsulate the traditional methods employed in museum development to seek out potential donors as well as communicate about mission.

Giving of this nature has been described in the literature as one focused on trust in an organization’s mission or their good intentions to pursue the best possible strategies for achieving their objectives (Merritt, 2013). According to Bhagat, Loeb & Rovner (2010), this form of giving is most popular with the “Boomers” and “Matures” generations. These authors surveyed 1,526 self-reported donors in 2010 on their giving behavior and attitude. They found that both generations, Boomers at 61% and Matures at 71%, indicated direct mail and direct donations as their first form of engagement with an organization (Bhagat, Loeb, & Rovner, 2010). This pattern is absent when looking at Generation X and Generation Y participants who indicated direct donations accounted for only 51% and 42% respectively as their first form of engagement. These numbers are significant because they highlight the variety of engagement channels experienced by Generation X and Y, such as e-commerce, online giving, volunteering, and event fundraising. The study suggests that because of these channels, Generation X and Y donors “more often go through one or more cultivation steps prior to making their first donation” (p. 16). These findings suggest that the traditional strategies used to attract donors need to evolve with each generation, mirroring the trend in donors to engage in multiple engagement channels and become more actively involved in the organization.

Effective Altruism

The literature on nonprofit philanthropy suggests a field of donor motivations that range from emotional attachments to external influences. Cilella (2011) highlights some common

motivations such as: “ego” or the need to attach the family name to a gallery, building, or major gift; “altruism” or the belief that any one person can make a difference with the contribution of money or support; “tranquility” often experienced by donors unconnected to the institution who only give to make the institution and the ask go away; “peer pressure” or the pressure from other members or friends of the campaign or institution; “guilt” often associated with social issues and personal experiences and associations; and finally “fear” a motive related to a donors desire to see change before the issue effects them personally.

While these traditional motivations still represent the majority of donors, there is “an exciting new movement” emerging in philanthropy: effective altruism (Singer, 2015, p. 2). Derived from the foundation of the “altruism” motivation described by Cilella, effective altruism relies on “a very simple idea: we should do the most good we can do” (Singer, 2015, p. 2). This motivation has over the years become a giving philosophy and “social movement which applies evidence and reason to working out the ways to improve the world” (Singer, 2015, p. 3). Specifically, effective altruism aims to encourage “charities to demonstrate their effectiveness” (Singer, 2015, p. 3). Rather than obtaining donations through “emotional responses to images of the people, animals, or forests that the charity is helping,” effective altruism “seeks to change that by providing incentives for charities to demonstrate their effectiveness” (Singer, 2015, p. 2). Perpetuated by Princeton Ethicist Peter Singer since the 1970’s, effective altruism has now been described as a movement most active with millennials, poised to be the next generation of donors (Singer, 2015). Singer (2013) relates the effective altruism movement to the culture of giving to nonprofit institutions. In his article “Good Charity, Bad Charity”, he provides a thought experiment in which a wealthy donor could either donate a new wing to an art gallery or give to an organization focused on reducing an infectious eye disease. Singer proceeds to “compare the

benefits” between both donations by breaking down the art museum wing into the number of visitors your donation would impact, roughly 100,000 visitors. Singer then calculates that a donation to fight blindness would save 10 people at a time, curing their blindness for the rest of their life, an impact Singer declares lasts far longer than that of an art museum visit. He determines in the end that a donation that could help reduce an infectious eye disease “would be better value” than a new art museum wing. It is from the literature produced by Peter Singer, and other effective altruists like Microsoft founder Bill Gates, that a new standard for donors has emerged.

The Center for the Future of Museums explored the impact of effective altruism in their 2014 TrendsWatch Report stating “there is already a growing split between the way policy makers and donors regard nonprofits that perform social service functions such as feeding the hungry...and their attitude towards cultural nonprofits” (Merritt, 2014, p. 11). The report suggests that museums could find competition in for-profit organizations and other social enterprises that achieve the same ends. The comparison currently being made between museums and these social enterprises highlights the capability of social enterprises to “scale up” how they document meeting essential social goals and leaves donors expecting the same from nonprofits, namely museums (Merritt, 2014). This is described in what the report calls “impact investing,” focusing on “people wanting to do good with their money not through charity, but through investing in companies that give a return both in cash and in mission-driven results” (Merritt, 2014, p.13). Now funders, and more specifically younger donors, are funding “according to measurable impact, rather than a fuzzy desire to ‘support the arts’ or help their community” (p. 13). The report highlighted that nonprofits are now being criticized “for not having a big enough impact on the problems they are trying to solve – for being good, but not good enough” (p. 14).

With the economic realities and values of the millennial generation fueling this trend, the field is left to wonder “If social entrepreneurs show they can be better than non-profits at making real inroads on truly ‘necessary’ social goals, will that leave museums undisputed only in the areas that are ‘nice?’ Will it change the way museums measure success and the argument we make for support?” (p.14).

The Millennial Donors Report (2015) from the Case Foundation offers further insight as two-thirds of respondents, aged roughly 20-35 years old, stated that they would want specific data on how their donated dollars would “make a difference” or result in “measurable, quantifiable outcomes” (p. 3). The findings in this report were based on 2,953 responses to online surveys of Millennials aged 20 – 35, a sample that “mirrors the next generation of givers” (p. 3). In this study, 78% of respondents stated they were likely or very likely to stop donating if they did not know how their donation was making an impact, sending the message that organizations “must work to make their messages as compelling as possible...[as] Millennials may not always have a lot to give, so they want to make sure they use it wisely” (Case Foundation, 2015, p. 11).

Such claims for evidence and impact metrics in museum philanthropy have been met with mixed reactions from the museum community. Robert Stein, the Deputy Director of the Dallas Museum of Art, responded famously to Peter Singer’s thought experiment with a call to action for the field. In his rebuttal piece, *Museums...So What?* Stein (2014) poses the question, what if Peter Singer is right? Stein probes this further by stating that the most common metric currently utilized by museums to make their case is economic impact. It is believed in the field that if museums “pull their weight financially” then the public will embrace them along with their mission. It is here where Stein begins his call to action stating, “despite how true the

supporting evidence may be about the economic impact of the cultural sector, the economic contribution of culture to a city does not reflect the true reasons why such a vibrant cultural community is important” (Stein, 2014, p. 2).

Stein goes on to focus on the evaluation tools available to the field and the current lack of partnerships between museum philanthropy and evaluation efforts, stating “wouldn’t it make more sense to spend more time (and money) studying how museums can generate more, better, faster, and deeper change? The time has come for museums to get very serious about a clinical examination of their effectiveness at generating value” (Stein, 2014, p. 3). Finally, Stein offers motivation for cultural institutions to consider data as the next step in analyzing their value, as “we can no longer accept raw attendance alone as a valuable indicator of ‘making an impact’” but rather the field must understand that “financial performance without social impact does not make a museum good” (Stein, 2014, p. 5).

Measuring Impact Through Outcomes

The literature suggests a growing concern in the museum field to address the success of organizations through the evaluation of impact and outcomes. This concern stems from mounting external pressures from donors, other industries, and the nonprofit sectors’ own limitations.

Harvard Business School issued a paper in 2010 exploring these pressures:

The world of nonprofit organizations, philanthropy, and social enterprise has been preoccupied with two powerful mantras in recent years. Since the early 1990s, the refrain of ‘accountability’ has been ascendant, with demands from funders, taxpayers, and concerned citizens and clients for nonprofits to be more transparent about their fundraising and spending, how they are governed, and what they have achieved with the resources entrusted to them (Ebrahim & Weisband, 2007; Gibelman & Gelman, 2001; 2008; Kearns, 1996 Panel on the Nonprofit Sector, 2005, 2007; Young, Bania & Bailey, 1996). A more recent manifestation of this discourse has centered on the mantra of ‘impact’ or demonstrating results in addressing complex social problems such as poverty and inequality (Brest &

Harvey, 2008; Crutchfield & Grant, 2008; Monitor Institute, 2009; Paton, 2003). (Ebrahim & Rangan, 2010, p. 2).

This conclusion echoes that of Stephen Weil's book "Making Museums Matter", in which he discusses that museums need to be concerned with, "articulating the potential outcomes that museums can achieve. We must be able to sort out – with far greater facility and somewhat more systematically than we generally do now – the full range of public-service roles that museums have the capacity to play" (Weil, 2002, p. 56). To articulate these outcomes, Weil analyzes the potential attributes of a good museum based on the premise that it is unrealistic to assume that a consensus as to what makes a good museum is achievable. Rather, he argues that merit should be decided on an institution-by-institution basis so as to "begin to provide ourselves with some meaningful ways of comparing the actual performance of any particular museum with its aspirations...to reach some reasonably objective conclusions concerning their relative merit and their relative worthiness to receive ongoing support" (Weil, 2002, p. 59).

Weil proposes that the attributes of a good museum are leadership, feedback, purpose, and resources necessary to achieve that purpose. However, Weil clarifies that while attributes can be identified, the museum field should think about impact based on the nature of museums, "the impact of museums on their visitors is not of the one-shot or 'Eureka!' kind but something far more subtle, cumulative over repeated visits, and quite possibly ascertainable only after many years" (Weil, 2002, p. 62). Thus, a call to action exists in Weil's book, for the field to focus on outcomes as means to interpret impact, which in turn establishes the "need for such feedback mechanisms" (p. 62).

Celebrated museum researchers Falk and Dierking (2013) share this perspective in their book, "The Museum Experience Revisited" in which they list programs,

exhibitions, websites, and films as experiences used with the intention of creating value for the public. Strategic impact is identified to be “for and with their [museum’s] communities” with museum value focused on “ensuring that the work of the museum is fully and meaningfully connected to the fabric and true needs of the community in which it resides” (p. 309). They conclude that there are “many types of value a museum can provide” and “regardless of the type of value or change an institution seek hopes to create foster, it is no longer sufficient to merely assert that value exists; increasingly, institutions must document that value exists” (p. 314).

Several initiatives have been created to develop mechanisms that can generate metrics for nonprofits. One well-known initiative is DataArts, formally the Cultural Data Project, an “online financial management, data collection, and research tool designed to strengthen the arts and cultural sector” (DataArts, 2016, p. 1). The field recognized the need for data resources that were easily accessible and promoted an infrastructure for the sector as “a trusted source of high-quality data that advances cultural initiatives” (p. 1). This initiative focuses on “the two most important questions ever to face the sector: how to define the value of all the work we are doing, and how to measure that value...[in pursuit] of how to identify high-performing nonprofits and how to better direct donors’ contributions to them” (Berger, Penna & Goldberg, 2010, p. 2). DataArts has offered the field a collaborative virtual space for cultural institutions to locate and discuss new information with the hopes of “making the case that, indeed, culture counts” (“Cultural Data Project,” 2016, p. 1).

When it comes to interpreting impact there is an avenue that is discussed frequently in the literature, social impact. As Silverman (2010), a frequent speaker and consultant for cultural institutions, stated in her highly celebrated work “The Social Work of Museums:”

On display is a growing belief among practitioners, policymakers, and the public alike in the power of museums to inspire hope and healing, improve lives, and better the world. Museums have long been considered institutions that benefit society, most familiarly through the activities of collecting, preserving, and educating about valuable artifacts and art (p. 22).

The emphasis within the field for museums to take on “bolder roles as agents of well-being and as vehicles for social change” has been called a “transformation” in the way museums provide the most good in society and continue to stay relevant (Silverman, 2010, p. 23). The field has embraced this transformation as professional organizations and agencies increasingly promote grant-funded projects focused on social services, as well as the creation and increased popularity of conferences and journals focused on museums, society and social issues.

The significance of this transformation lies in museums “translating their potential into effective action” by surveying the needs of their communities and effectively providing the needed services (Silverman, 2010, p. 23). What has been defined as “a theoretically grounded needs-based approach to museum practice” has yet to be synthesized into “an appropriate framework” leaving museums without “an understanding of the collective significance of their evolving social service efforts” (Silverman, 2010, p. 23). This lack of understanding has been supported at large within the literature in the field, focusing on tools that can help museums quantify impact, social or not, as efficiently as possible.

The Transition of Big Data From Business to Museums

Big Data in the Business World

The third major body of literature in this chapter looks to Big Data, notably how it can be useful to the museum field as a tool to measure visitor participation and engagement. *Big Data* has been the phrase used most often to describe “data sets that are too large to store or process using widely available techniques” used most frequently across social sectors from business, government and policy, to science and the arts (Paquest Kinsley & Portenoy, 2015, p. 3). Much of the literature in these fields see the beginning of Big Data rooted in the engineering and medical fields as the simple analysis of large amounts of data used mostly for research (Ohlhorst, 2012). With advances in technology, the analysis of Big Data was able to incorporate real-time data, cementing a process that remains relevant and present given the speed with which it operates (Ohlhorst, 2012). In fact, it is now understood across all fields that Big Data should be viewed as time-sensitive if it is going to maximize its value. This approach has been highly successful for organizations and businesses that have leveraged Big Data to service their customers while also understanding them. Examples include Facebook, Amazon, and Google. These businesses use Big Data for all it is worth, to predict customer trends, traffic-flows and search results, all the while attempting to maintain a connection to their customers through quick analysis and subsequently, service (Ohlhorst, 2012). In his 2013 book, *Big Data Analytics: Turning Big Data into Big Money*, technology journalist and industry consultant Frank J, Ohlhorst observes that:

“A number of industries – including healthcare, the public sector, retail, and manufacturing – can obviously benefit from analyzing their rapidly growing mounds of data. Collecting and analyzing transactional data gives organizations more insight into their customers’ preferences, so the data can then be used as a basis for the creation of products and services” (p. 22).

The literature in the field attributes the growth of Big Data to the combination of several factors that spell trouble for museums if they cannot adapt. The Center for the Future of Museums recognizes that more data has been collected in the last two years than ever before, with society creating a total of 2.8 zettabytes¹ this year alone, a number expected to double after another year (Merritt, 2014). This data is a combination of information derived from Internet collecting and monitoring devices, similar to the algorithms used by popular search engines and product suppliers like Google, Amazon, and Facebook. The scale of this data has eliminated the “traditional” forms of data collection that have been used for data analysis and interpretation including the U.S. Census, in-person surveys, and some low-capacity software (Merritt, 2014, p. 2). It is in combination with the advances in computer and database technology that systems have been created to analyze this Big Data for patterns while constantly evolving for the inclusion of new data (Merritt, 2014).

The Application of Big Data in Museums

There is a consensus in the field that for-profit business remains at the helm of Big Data application, however museums are now creating their own data sets and analysis tools such as the Americans for the Arts’ Arts & Economic Prosperity Calculator and the University of Pennsylvania’s Social Impact of the Arts Project (Merritt, 2014). The Americans for the Arts’ Arts & Economic Prosperity Calculator was created to serve as “the most comprehensive study of the arts and culture industry ever” by using data from the Americans for the Arts’ & Economic survey that focused on surveying 189 communities and regions in all 50 states (Americans For The Arts, 2011, p. 4). Produced yearly, the study seeks to inform the field as well as the Prosperity Calculator that offers non-profit professionals “a simple tool that makes it

¹ A zettabyte is 2 to the 70th power.

possible for you to estimate the economic impact of your non-profit arts and culture organization” (p. 4). Similarly, the University of Pennsylvania’s Social Impact of the Arts Project began in 1994 with the aim of conducting project-based inquiry in metropolitan Philadelphia and other U.S. cities with support primarily by external private and public funders to provide linked open data to the public. The Center for the Future of Museums in their 2014 TrendsWatch explores what Big Data means for museums stating:

Data analytics give museums tools that enable them to hone their business practices and become more efficient in operations like food service, sales, pricing, marketing campaigns, retail, development and exhibit design...It has the ability to transcend “traditional” market research information (age, household income, etc.) to create and target demographic and psychographic profiles, delve deeper into understanding human behaviors and reach desired audiences (Merritt, 2014, p. 28).

Big Data offers museums the opportunity to document their long-term impact through the collective analysis of attendance and engagement data with records about satisfaction, health, and educational attainment (Merritt, 2014). Currently there are limited examples of museums experimenting with Big Data to yield insight into their long-term impact. History Colorado and the Point Defiance Zoo & Aquarium are working with partner IBM to capture data from admissions, on-site stores, and food services to analyze, in real time, data that informs staffing, space, pricing, and membership decisions (Merritt, 2014). Using Big Data to target gift shop purchases, the Norman Rockwell Museum is leveraging Big Data to harness second-time purchases, which was now increased by 150%. Similarly, several well-known institutions like the Metropolitan Museum of Art and the Museum of Modern Art in New York are beginning to explore the applications of Big Data, as well as the Solomon R. Guggenheim Museum which has started installing beacons in order to collect data on their visitors.

According to the 2013 report by Nesta entitled “Counting What Counts: What Big Data Can Do For the Cultural Sector,” three distinct stages are identified within the Data Maturity Spectrum, a model created for organizations beginning to explore Big Data. The first stage, Data 1.0, recognizes that for most museums the only data that exists is focused on “core operations” or ticket sales (Lilley, 2013; Moore, 2013). These data are used solely for marketing and sales decisions, as they contain little detail and opportunity for inference. The second stage, Data 2.0, begins the integration of data that is specifically digital, such as web traffic. The final stage, Data 3.0, is defined by the integrated “customer-centered” approach to the data collected both physically through surveys and digitally through software and web applications (Lilley, 2013; Moore, 2013). It is in this stage that “measures of impact begin to supplement and even replace measures of activity and output” creating an environment conducive to decision-making and management focused on using data for the purpose of defining value and impact (Lilley, 2013; Moore, 2013, p. 2). This report recognizes that traditional models of impact measurement have been focused on money as the measurement best equipped to define the value of museums rather than the visitor themselves.

Potential to Interpret Visitor Engagement

Recent literature in the field has jumped on the use of Big Data specifically as a method of inferring visitor engagement during a museum visit. Two works, written by the same authors, have attempted to explore this topic, offering the field potential standards for approaching visitor engagement using Big Data. The first work, “Nurturing Engagement: How Technology and Business Model Alignment can Transform Visitor Participation in the Museum” by Robert Stein from the Dallas Museum of Art and Bruce Wyman from USD Design| MACH Consulting. Stein

and Wyman (2013) argue that in order to measure the value of museums we must understand their participatory culture and more specifically, the relationship between learning and participation in museums. Drawing on work from Falk and Dierking, as well as Samis, the Curator of Interpretation at the San Francisco Museum of Modern Art, Stein and Wyman infer that museum engagement can provide “hooks” for informal learning outcomes. Understanding that engagement has the potential to communicate outcomes that have been incredibly difficult to quantify is the premise they continue to explore. This topic is explored further in “Seeing the Forest and the Trees: How Engagement Analytics Can Help Museums Connect to Audiences at Scale” also written by Stein and Wyman (2014). They reiterate that museums are “facing financial challenges, many are being asked to justify and quantify their impact to the communities they serve while knowing relatively little about their visitors” (p. 2). The lack of understanding of visitor behavior described by Stein and Wyman is stated as failing to highlight how museums can best achieve the mission imperatives of the field as a whole (Stein & Wyman, 2014).

In both papers, the authors end with a discussion of the Dallas Museum of Art’s DMA Friends Program. This program, overseen by Stein after receiving a National Leadership Grant from the Institute of Museum and Library Services (IMLS), was designed as a platform for measuring and documenting engaged participation of visitors. The free membership model prompts visitors, through their mobile device, to engage in specialized activities designed by the DMA Education Team focused on specific art pieces, entire exhibits, and even lectures. The data derived from this platform establish a dataset of engagement and participation that can “yield clues about the strengths and weaknesses of museum programming and the degree to which the DMA succeeds or fails at connecting with an audience of some half a million visitors”(Stein &

Wyman, 2014, p. 2). This system design is what makes this case unique as Stein and Wyman state “the engagement platform proposed by this project is designed [to pair] the best features of qualitative analysis with a systematic and iterative approach to measuring engagement” (Stein & Wyman, 2014, p. 1).

Summary

There is a growing amount of literature in the field focused on Big Data, museums, and the need to create strategies to represent and communicate institutional impact with the public. While this literature is present in the field, it is by no means exhaustive, offering few examples of strategies in practice and far less information on the impact of Big Data once strategies are employed. Thus the field is currently lacking comprehensive literature discussing the impacts of Big Data on museums that occur over time. This extends to the specific impacts of Big Data on departments that might be a step removed from the initial application like education, visitor services, and membership. How are the effects of Big Data radiating throughout the museum, in particular the development department? Are the impacts positive or are they negatively affecting staff? What are the realities for museums using Big Data over time? It is these gaps in the literature that this research study attempted to address.

Chapter 3: Methods

Research Purpose

The purpose of this study is to understand how immediate and ongoing access to Big Data, focused on museum visitors, influences the strategies used by development departments to communicate institutional value and impact. Three research questions guided the study:

1. How does access to Big Data influence the ways in which development staff do their jobs?
2. How does Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?

Research Design

This research takes the form of a phenomenological study. The researcher focused on an inquiry-based design that draws from both psychology and philosophy to “describe the lived experiences of individuals about a phenomenon as described by participants” (Creswell, 2013, p. 14). Grounded in understanding the meaning of the lived experience, results will focus on the “essential, invariant structure (or essence) of the experience” (Creswell, 1997, p. 55) Utilizing a phenomenological design, data were collected from working museum development professionals through in-depth semi-structured interviews. Interviews were focused on personal experience as well as first-hand knowledge based on the respondents’ involvement with Big Data and the Friends program at their institution.

Sampling: Participating Institutions

Participating sites were chosen based on the following criteria: they were funded through the Institute of Museum and Library Sciences National Leadership Grants for Museums program and they are currently planning for or have recently completed pilot testing the DMA Friends program model. Specifically, 3 sites were sampled including: Dallas Museum of Art, The Grace Museum, and the Minneapolis Institute of Art. The Dallas Museum of Art was selected due to their role as the anchor institution for the DMA Friends program and the 2013 National Leadership Grant principal institution. The Grace Museum was selected given their position as a partner organization with the Dallas Museum of Art, currently utilizing the DMA Friends program in a smaller capacity. Finally, the Minneapolis Museum of Art was selected as the Friends program is still in the planning stage and has not yet been pilot tested with the public.

Sampling: Professional Participants

After participatory institutions were determined, individuals were identified through correspondence with the development department at each institution to determine which staff members reflected the sampling criteria. Individuals were approached based on their involvement in the museum's development department as well as their familiarity with the DMA Friends program. Participants received an initial email with a brief description of the purpose of this study, the interview process, and an explanation that their involvement would be completely voluntary and could end at any time. Participants were all working for the participating institution at the time of the interview, and had to be a member of the museum's development department. Additionally, they had to be aware of and/or involved in the DMA Friends program as it is currently being used at their museum.

Data Collection: In-Depth Interviews

Interviews with participants were conducted over a one-month period between February and March 2016. Four professionals participated in the study: one senior development staff member at the Dallas Museum of Art, one communications staff member and one administrative staff member at the Grace Museum as no development staff members are currently employed (given the small size of the institution), and one senior development staff member at the Minneapolis Institute of Art. Interviews focused on the eighteen-question interview guide that highlighted the topics of access to data, use of data, and a reflection on lessons learned given each participating institutions' current status with the Friends program (see Appendix A for the interview guide). This played a role in the length of each interview as well, with all four ranging in time from 30 minutes to 50 minutes.

Data Analysis: Transcription Analysis

Interviews with participants were recorded, with the participants' permission, and transferred to the researcher's computer. Using the transcription software NVIVO, the researcher transcribed each interview in verbatim. A coding matrix was developed using the study's 3 research questions as a guide. Themes and sub-themes were identified in accordance to those research questions and as the respondents' statements dictated (see Appendix B for the coding matrix).

Limitations

Given the scope of this study, focused on institutions currently engaged in the Institute of Museum and Library Sciences National Leadership Grants for Museums program, only a subset

of five institutions were available to sample. As such, a possible limitation for this study may be the lack of diversity showcased in selecting a single grant funded program, rather than incorporating additional programs across the country utilizing Big Data in different ways. Thus, the results from this study offer insight to one specific application of Big Data in museums.

A second potential limitation stems from the small sample size of participants for this study. Focusing on institutions currently engaged in the Institute of Museum and Library Sciences National Leadership Grants for Museums program limited the pool of development professionals capable of participating. Additionally, many institutions only had one individual employee with the qualifications needed to participate, as outlined above. As a result, the lack of interest by the other two institutions engaged in the grant and numerous development staff involved in the Friends program at each institution led to a small sample size of four total participants.

Finally, the definition of “impact” is broad and can be defined differently for each participating institution. This study did not attempt to define impact, but rather allowed participants to characterize the context of impact for their visitors and for their institution. Examples were primarily used to portray impact as aspects of Big Data were being discussed.

Chapter 4: Results and Discussion

The following chapter describes the results of this research study. First, each participating institution is described with specific detail focused on the manifestation of the Friends program in each case. These three institutions vary in several accounts: each institution is on a different timeline with the Friends program, there are contrasting differences as to the purpose of the Friends program, and finally each participant is involved differently with the Friends program and the data derived from it. The results of this research are organized according to the research questions of the study, followed then by the themes and sub-themes that emerged through data analysis. The research offers instances of difference between the three participating institutions but focuses largely on identifying themes and sub-themes that are shared across sites.

Case Descriptions

The Dallas Museum of Art

The Dallas Museum of Art (DMA) is located in downtown Dallas, TX, the largest art district in the country. The Dallas Museum of Art, working in partnership with the Los Angeles County Museum of Art, and the Minneapolis Institute of Art applied for the 2013 National Leadership Grant offered through the Institute of Museum and Library Sciences (IMLS). The grant was requested to fund a two-year “replicable model of visitor engagement inspired by the DMA’s new Friends program” for each of the partnering institutions, as well as to “document the critical factors impacting the participation of museum audiences based on the analysis of this data”.

Launched in October 2013, the DMA Friends program had the goal to “create long-term relationship with visitors while offering value and benefits tailored to their experience and

engagement” (grant). Known as a free loyalty program, the DMA Friends program aims to promote participating and engagement with DMA members and visitors through the promotion of activities, earning of points, and redemption of rewards. Since its inception, the DMA Friends program has transitioned under the development department “in order to strategically align the DMA Friends program with the membership model”. After two years, the DMA is now re-evaluating the program to better understand how it can serve the public while continuing to provide useful data to the institution.

The Grace Museum

The second institution participating in this study, the Grace Museum, is a small county museum located in Abilene, a small town in Texas about 2 hours West of Dallas. Interested in the work of the DMA and the audiences targeted through the Friends program, the Grace Museum contacted the DMA about the program, resulting in their partnership. The DMA provided the Grace Museum the resources to launch their own Friends program with the desire to understand how the program could function in a smaller museum. The Grace Museum launched the Grace Friends program last year and has since gone into an update along with the DMA to develop the charts and mapping analytics within the program itself. This partnership has allowed the Grace Museum to adopt changes to the program at the same time as the DMA.

The Minneapolis Institute of Art

The final site participating in this study is the Minneapolis Institute of Art (MIA), located in Minneapolis, Minnesota is one of the largest providers of art education in the state. As a full collaborative partner on the 2013 National Leadership Grant offered through the Institute of Museum and Library Sciences (IMLS), the MIA was determined to “help make audience tracking and communication more effective”. Involvement in the grant was seen as a way to

address concerning membership trends in the institution as well as identify the visitors walking through the door.

Currently, the MIA is still planning the launch of their Friends program, as the institution decided to also initiate a complete overhaul of the membership model and database system. The MIA is now working internally to develop strategies for executing the Friends program and communicating its purpose to the public.

Findings

Research Question 1: How does access to Big Data influence the ways in which development staff do their jobs?

To speak to this question, the researcher asked participants how development staff members are involved in the Friends program, what kind of access they have to Big Data from the Friends program and how they use it, as well as the impact access to Big Data has had on the way the institution practices development. This line of questioning attempted to understand how access to Big Data impacts the daily operations of development departments, staff, and use of resources. Additionally, this line of questioning attempted to understand if Big Data can become overwhelming for an institution and detract from development staff's goals.

The participants at the Dallas Museum of Art and the Grace Museum indicated that their access to data from the Friends program was in the form of engagement data, what one respondent at the Grace Museum called "engagement points" housed in separate databases from the traditional donor database. Similarly, the respondent at the Minneapolis Institute of Art noted that while they have yet to launch the Friends program, they are working with their technology staff to develop a database that was easily accessible. In that database the respondent stated there

would be access to individualized data on each visitor noting what they favorited, left in their online shopping cart, purchases, event attendances, and footpath through the institution. Big Data has changed the information development staff have access to, now focused on visitor behaviors and engagement within the specific institution, as well as access to this information within a specific database different from the traditional donor database.

Through the discussion of access, two themes emerged in terms of how access to Big Data impacted staff and institutions: 1) institutional evaluation and decision-making and 2) development staff expectations and experiences.

a) Institutional Decision-Making

The first theme focuses on institutional evaluation and decision-making. Across all sites, attention was placed on acknowledging the impact Big Data has had on decision-making for the institution as a whole. This included the intention of each institution to develop a clear understanding of Big Data, what it can offer all departments, and how it can be leveraged as a tool for evaluating current conditions and trends. All three sites indicated that Big Data functioned as an evaluative tool for all departments of the institution but in particular those that dealt directly with visitors like education and membership. As development staff are tasked with funding these departments, Big Data from the Friends program was thus incredibly useful as an informative tool to describe the impact of these specific programs and the institution as a whole. As such, respondents described this mindset as one that also encompassed understanding how further application of Big Data in the institution could lead to increased capacity to describe institutional success.

Institutional Decisions.

All three sites noted that Big Data was a contributing factor to many institutional decisions made for programming, membership and development. The respondent at the Dallas Museum of Art stated, “It’s really been about trying to understand, you know, all this information we've collected and what we can do with it and really kind of put metrics behind those decisions that we're making. So for us we're really focused on making data driven, we're using data driven intelligence to help inform our decisions.” Big Data is seen here as a supporting qualitative component that can be relied upon for decisions that have the capability to impact visitors. As the data is derived from visitors, the institution is bridging the gap between what they think visitors want and what visitors actually do want.

A respondent at the Grace Museum reiterated this relationship between Big Data and large-scale decision-making: “I think we’re able to make smarter decisions because of the data we have, that’s collected within our own building, with our visitors.” Another respondent at the Grace Museum went on to describe the opportunity the Friends program created for the Grace to transform programming, a specific institutional decision made in accordance with the Friends program: “I think its important to know that at the same time we that we launched Friends we also launched really expanded programming for adults and children. We at the same time launched our kids club, at the same time launched really expansive program on Thursday nights, up until that point we had really just had an ever so often exhibit related program but ever so often would be the key words... So several things happened at the same time, what you pay to come here, we brought it down and we made it easier to understand, six-three-and free, free to children and free to military.” The Friends program for the Grace Museum provided a catalyst to discuss and enact institutional decisions that would complement the Friends program, as the respondent later said, “we stepped it up on every level.” The respondent cited the nature of the

Friends program as the driving force behind these decisions, “the Friends program is just very open door and so it translates to other parts of who you are as an institution.”

The respondent at the Minneapolis Institute of Art choose to focus on the planning and implementation decisions impacted by Big Data and the Friends program stating:

“For us what we were particularly interested in was engagement of the audience so, if we can get, you know, 800,000 people here, 850,000 people every year our problem was we only knew only a very small percentage of who those people were... you can just walk in and be free and anonymous and that felt really good for a while until we figured out that we have no idea who these people are and perhaps there were here everyday and they were our biggest fans we didn't know it. So here come big data. We decided that this IMLS grant and the Friends platform would allow us to do something along the lines of a rewards point and rewards system.”

The Minneapolis Institute of Art used Big Data as method to collect visitor engagement information that could then inform decisions for the institution on how to proceed with membership and programming.

Applications of Big Data

As was demonstrated previously, the use of Big Data in these institutions yielded decisions meant to impact the institution as a whole. Similarly, the applications of Big Data were addressed as a result of thinking large-scale about the impact of Big Data on an institution over time. One respondent at the Grace Museum noted, “We have always collected data in the traditional sense or maybe even looked at other research materials but we haven't been the source to collect data as we have been with the Friends program.”

The Dallas Museum of Art expressed a very different experience as the interviewee described an ongoing relationship with data that existed before the conception of the Friends program. This is a unique perspective and different from the other two sites in both the time dedicated to Big Data and the commitment to continuing it:

“I think data collection in general is something that the museum has been invested in for some time, I think expanding the types of information we collect is, is definitely a more...strategic focus for us. I think what might be, you know more new but, maybe not new, but maybe not as developed is really the strategic implementation of it. So, its not just about collecting the data but also analyzing it to kind of put the data to practice within the museum, using data collectively.”

While the Dallas Museum of Art has been committed to using Big Data in daily operations for some time, a clear distinction from the other two sites, it does share a similar perspective on using data in the future as well as the institutional attitude of using data: “I think ultimately its just being able to move and organization to the direction of more, you know, being comfortable with data and metrics, reporting and all that fun stuff.” The respondent at the Minneapolis Institute of Art made the connection, experienced by the other two sites as well, that as Big Data and the Friends program began to evolve the decision was made to house the visitor engagement database and Friends program within the development department. This decision was strategic as it was recognized by the institution that the Big Data supplied through the Friends program was in fact visitor specific and contained characteristics that would be informative to future development efforts.

b) Development Staff Expectations and Experiences

Across all three sites, the expectations staff members had of Big Data and the Friends program were addressed to varying degrees. The respondent at the Minneapolis Institute of Art talked about the necessary internal stakeholders needed to ensure the Friends program would function successfully. In addition to development staff working on the Friends program, the team consists of the media technology unit specializing in the web development and database connection along with learning and innovation currently in charge on institutional programming. The respondent stated, “We understood that it couldn't just be a development thing and that

marketing has an interesting perspective here and a good skill set for "how do you talk about this" so we need their help, we need design's help to make all the materials, we need the techies to make sure it all runs." The respondent recognized the need for the entire institution and its resources to be involved in the Friends program. It was critical to involve other departments like Marketing because they had over time developed a strategy to target visitor groups from different generations. Given the success of those programs, the marketing team was seen as an asset for the Friends program, particularly in targeting younger generations with information on the Friends program.

Similarly at the Grace Museum, the communication department has been critically involved in the program but for different reasons. At the Grace Museum there is a staff of no more than 15, so staff expectations had to shift to accommodate that, with the communication department taking a larger role. After fully adopting the program, the respondent said, "We brought all the staff into the fold."

Staff expectations were difficult to manage for the Minneapolis Institute of Art, as the respondent expressed concerns about the specific expectations of development staff once they had access to large amounts of visitor data through the program. Part of the process was clearly articulating the numerical targets for donations and for members, a process that was difficult for the Minneapolis Institute of Art because at the time, the impacts of the Friends program were still unknown. With the Dallas Museum of Art serving as the only example, it was easy for staff to compare the institutions, which in turn led to unrealistic expectations. The respondent offered advice for other development staff in the same situation: "Set realistic expectations...I would be careful about the expectation because that's something that we're fighting right now. We had to name like dollars and numbers and members that we expected and projected and we of course

used every asterisk, every overarching caveat disclaimer, we had no roadmap for that. We have no idea where it's going to land but you know people see a number and they get really attached to a number." The Grace Museum described this situation as "group-think-thought" in which other museums have a thought that something should be done a certain way or a certain goal should be reached. However, the Grace Museum reacted differently to this, instead they have used their data to make "smarter decisions" for their institution rather than following the "consensus that they ought to do something". Finally, for the Dallas Museum of Art, expectations on reflection, noting that it helps "being able to move an organization to the direction of more, you know, being comfortable with data and metrics, you know, reporting". Given that this is something the Dallas Museum of Art has experience with, exclusively in comparison with the other two participating institutions, this reads as advice for approaching the use of data.

Research Question 2: How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?

The researcher asked how the metrics now available through the Friends program are the same or different from what had been used to communicate impact and value as well as the language used now to communicate with stakeholders. Trends were seen across all three case studies relative to shifts in language and metrics used by development staff as a result of their access to big data focused on visitor engagement.

All three institutions indicated a shift from focusing on traditional metrics, like the number of visitors through the door, to more engagement-focused metrics. Participants found that Big Data highlighted visitor interests by observing their behaviors, information that could in

turn be used to dictate the subject of communications and future solicitations. The data describing visitor behavior and subsequently visitor interests is being used by development staff to target the visitor using language that focuses on their own behavior and interests. Participants indicated that this information has translated to metrics that accurately reflect the visiting population of their specific institution.

Through the discussion of language and metrics, two themes emerged detailing how Big Data is influencing language and metrics used by development staff to communicate value and institutional impact to potential donors: 1) information now targets the visitor and 2) data accurately reflects the visiting population of the institution.

a) Language

Across all three sites there was consensus that access to Big Data changed the language used by development staff in two major ways. First, development staff found themselves talking less about general solicitation requests, both for general donations and memberships, and more about ways visitors could be more engaged with the museum itself in order to build relationships with visitors. Second, development staff were able to make targeted asks to visitors based on their particular interests, and patterns of engagement in the museum.

Articulating Visitor Engagement.

In general, all three sites said that through their use Big Data, development staff were able to identify the characteristics of individual visitor engagement behaviors, previously unknown to the institution. The articulation of these characteristics was deemed critical by all three institutions because they serve as a foundation to establish future communication and understanding of specific visitors and donors. For instance, the interviewee at the Dallas

Museum of Art said, “We definitely are able to have a better understanding of engagement...they’re [visitors] interested...are there events or programs that they would be interested in so we can actually push messages back out to them. Say ‘Hey we know you’ve done this, would you be interested in that?’” Focusing on messaging was a way for development staff at the Dallas Museum of Art to bridge the current gap between the Friends program and their membership initiative. The alignment of these programs through messaging is meant to provide the visitor with a clear path to not only increased involvement but also giving, either through the form of membership or donations.

Similarly, at the Grace Museum the team behind the Friends program reportedly use language to highlight visitor engagement in conversations with stakeholders as well as inform future institutional decisions, in ways they did not before the Friends program. As the interviewee explained:

“I would say, the change is in the language, like you said, only because a lot of museums, maybe mentioned, especially in their grants, that they’re offering engaging programs and things like that...I think the Friends program allows us to have that conversation with donors to really reinforce what methods are we introducing to provide a more enhanced engagement with our museum visitors.”

The Grace Museum has found that Big Data offers stakeholders the how and what when it comes to describing programs and events. Stakeholders are given specific information on programs based on engagement data including the process of obtaining it that is focused specifically on the visitor. This specificity has allowed the Grace Museum to change the language used in stakeholder conversations to focus on solely on that stakeholder, “I think that we perhaps take a less conservative approach in our language and its more just open ended and reflective of wanting to know what they [visitors] want us to do as opposed to ‘Here’s what a museum provides’.”

For the Minneapolis Institute of Art, the Friends program was in the planning stage for two years, providing the opportunity to focus on language specifically. Their interviewee stated,

“[Now, we focus] less on the philanthropy and more on just signing up. Just give us your name. Tell us who you are and we promise we love you no matter what you do. That is very different than how we talked before, it was always like ‘Please give us \$70 or whatever the lowest amount was’ and then we targeted people where we felt they would be able to land in these eight levels [eight membership levels available at the time] but it was always really dollar focused but now the script flips and we need to just have them say, ‘Yes I like you.’”

The respondent compared this perspective to that of dating, to “get to some of the commitment phobias we are hypothesizing exist in the millennial group and just in general people just don’t have their membership cards to things, that’s just not how this goes anymore.” Engagement is now a viable way to learn more about visitors without forcing them into a commitment they aren’t ready or predisposed to accept. The Minneapolis Institute of Art recognizes that “to be a member is a different construct right now, it’s a little more loose and a little more ambiguous” which calls for a drastically different approach.

Targeting the Visitor

When speaking about language, all three institutions specifically focused on tailoring their language to fit the specific visitor rather than applying generalizations. Through the use of Big Data, all three sites have been able to personalize communication with visitors by focusing on visitors’ specific engagement in particular programs and exhibit spaces. For the Dallas Museum of Art, the interviewee called the approach “tailoring for specific groups of visitors and members.”

Similarly, the Minneapolis Institute of Art used Big Data from the Friends program to focus attention on the visitors’ specific behaviors. The interviewee offered a scenario that would demonstrate the institution’s method and rationale for targeting visitors: “Once we figure out

they like certain things, instead of fundraising being all about the annual dollars and saying you need to renew your annual membership...of course we're going to do that, it's not going away... but we're understood in saying, "Oh man, they love Chinese art. They've been in that gallery 100,000 times and they always talk about it on social media or they buy all of the books or whatever. We have scholars coming and would you consider giving \$25 to help the Chinese gallery?" Big Data is allowing the Minneapolis Institute of Art to appeal to the specific interests of visitors as they have been displayed through past engagement with the institution's programs and exhibits. In this case, development staff now have access to data that has focused their language on specific and measurable behaviors that can then be used in future conversations and appeals.

b) Metrics

Two key themes emerged from conversations with study participants about how access to Big Data may have shifted the metrics used by development staff to communicate with donors. First, the accuracy of metrics were described as heightened through the use Big Data as the visitor is now supplying the engagement behaviors behind the data. Second, a focus on defining what visitor behavior and engagement metrics should be for each institution has increased.

Accuracy.

All three institutions consistently indicated the improved accuracy of the metrics used in stakeholder communication as a result of access to the Big Data within the Friends program. The importance of improved accuracy is in its characterization, as Big Data is now derived from individual visitors rather than generalized membership and admission statistics. For instance, one

interviewee at the Grace Museum stated, “We have our regular clicker numbers, you know, numbers in the door that come in and whether or not how they are used, you know how many are children, how many are adults, how many are attending programming, so we have those traditional ways of gathering data. But this has been a more...it’s definitely a prettier way to get data and its definitely more accurate because we have the user supplying the data.”

For the Grace Museum, these more accurate data informed the overhaul of the institution’s programming initiative, allowing staff to focus on increasing opportunities for engagement. In turn, staff members involved in development efforts have been able to use this accurate data to articulate the methodology behind institutional improvements like the programming initiative as Big Data was used as visitor engagement feedback. Another Grace Museum interviewee stated, “We have always collected data in the traditional sense or maybe even looked at other research materials but we haven't been the source to collect data as we have been with the Friends program.” Specificity is the focus here as traditional “clicker numbers” describe quantity that could be mirrored in other institutions; the accuracy of Big Data provides clear descriptions of visitors for a specific institution rather than a generalized group.

A participant from The Minneapolis Institute of Art, though unable to collect data with their launch not yet completed, added, “I know I'm going to be able to have analytics in one form or another, have access to how many times people were here, what days they were here, what tickets they purchased, when they were here. We have that part now, the ticketing. But we're going to have better numbers on all of that.” These points of engagement are important because Big Data that accurately describes them can be used in the donor cultivation process. Viewing their donor cultivation process as just that, the Minneapolis Institute of Art emphasized the importance of accurate visitor engagement data as it informs all decisions made through the

pipeline of any donor, member, or visitor cultivation. The interviewee focused on the current planning process to determine what accurate information is needed for communications in the future, “we're talking about what information carries into the database, how much is too much information, I don't need to know every click through on every web visit but you know, do I need to know some of the stuff, do I want to know they abandoned their shopping cart and left some things in there, yeah I do want to know that.”

Focus on Behavior and Engagement.

All three institutions identified a shift that occurred as a result of access to Big Data, a shift from focusing on traditional metrics like the number of visitors in the door to more behavior- and engagement-focused metrics such as a visitor’s engagement in a specific gallery or the kinds of lectures a visitor enjoys attending. The Dallas Museum of Art interviewee stated,

“The best way to sort of think about the data is because the DMA Friends program is really about engagement so the information we collect is really about, it’s engagement focused. Its about you know, when they come to the museum what do they do when they get here...compared to typically, you know, for most museums, you know, the donor database is really about you know giving history, communication history, and facilitation history.”

Here the respondent notes that while development staff have traditionally relied on past donation and solicitation metrics, the new database housing Big Data focused on visitor engagement offers detailed information on visitors before they donate. This is valuable as it provides opportunity for targeted communication and solicitation that focuses more on what the visitor wants, as all constituents in this database have the potential to become donors. The interviewee went on to describe the difference between the donor database and the Friends database:

“They're kind of looking at two different things I'd say, I mean obviously biographical stuff is all similar, but in terms of...I think that might sort of be where it stops. I think for Friends its about when they come here, how often do

they come here, what are they doing which is a little bit different than from a donor perspective where we're more interested in about what is that donor's history with us, with the institution.”

Here the respondent makes a distinction between the two databases, with the Friends database representing representing both new behavioral data but also data that could lead to the creation of a new donor relationship. For the Dallas Museum of Art, the Friends database is a companion, offering supplemental behavioral data for current and potential donors.

Research Question 3: How do Big Data influence the way in which development staff think about donor communication and the donor relationships?

The third research question of this study regards the impact of Big Data on how development staff think about the donor relationship and donor communication. Trends were seen across all three case studies suggesting that development staff are reframing how they think about the donor relationship, in turn, changing the goals and content of donor communications.

Participants across all sites indicated that access to Big Data established the relationship is paramount. Big Data allows increased focus on the donor relationship by making the donor cultivation process highly individualized, targeting the visitor with specific information on their behaviors and interests. Development staff at all three institutions noted that donor communication has been impacted by this reframing as the donor becomes the focus rather than the ask. Participants found that a visitor-focused approach supported by Big Data provides increased attention and quantifiable results that increase their ability to develop relationships with younger generations or donors.

Three themes emerged from the study, including a) communication strategies; b) donor cultivation; and c) making the donor relationship more personal.

a) Donor Communication Strategies

Participants at all three institutions described various ways they felt that access to Big Data through the Friends program has impacted their development department's communication strategies. The major theme that was most salient here involves the development of ongoing dialogue with visitors that draws from consistently up-to-date data on visitor engagement.

Impact on the Visitor

The idea of crafting targeted communications for individual visitors was discussed by participants at all three institutions. As the respondent at the Dallas Museum of Art stated, "I think people appreciate that we're able to craft you know, more targeted communications with them...so they don't always feel like 'Why are you speaking to me in language I don't...or giving me offers that I already have?' I think they feel that it's a better experience for all." As the respondent went on to describe, "Tailoring for specific groups of visitors and members" is how the organization characterizes their approach to improved visitor communications as it is focused on the engagement experiences of individual visitors.

The word "target" was used by the Minneapolis Institute of Art to describe the attention paid to engagement by individual visitors, as it now informs the messaging they receive in the future. The participant stated, "Targeting that ask more because they said they like us and they raised their hand, they told us a little bit about themselves." Here communications are focusing on impacting the visitor with communications in a positive way by allowing Big Data to drive what communications focus on rather than following generic solicitations sent to every visitor.

Similarly, the respondents at the Grace Museum described this same phenomena in their institution as “responsive” with one of the interviewees stating, “its a little less traditional and more responsive to just people.” In this case, communications are considered responsive as they are first informed by the engagement of the individual and then drafted to fit that individual’s specific interests and engagement with the institution. When speaking to the through process behind this strategy go communication another Grace Museum respondent added, “I think we’re speaking more to the impact of how it’s important that our visitors have a very engaging and meaningful experience and what does that look like.”

b) Donor Cultivation

Participants from all three case study sites talked about how detailed visitor data in their institutions has changed the ways in which they think about communicating with donors, and in particular how they make “asks.” In the words of a Minneapolis Institute of Art interviewee, “...what would happen to philanthropy if we could ask them really targeted questions about what they want to give to, instead of this annual generalized bucket and then we go away for a year and then come back again? A big flash, that’s how the old construct was, and I think the future is a little more micro-grant, micro-lending focused.” All three institutions have discovered that access to Big Data focused on visitor engagement has allowed them to focus on donor cultivation as a process that can be dictated by the actual engagement of the visitor rather than generic solicitations. As the Minneapolis Institute of Art respondent inferred, Big Data has allowed development staff to view donor cultivation as a process that has the potential to lead to a donation rather than demand it.

A participant from the Dallas Museum of Art said, “If you can increase your attendance and visitation, that tends to drive acquisition and retention as a whole so it’s kind of like we’ve increased, you know, our possible pool of interest.” The same participant went on to say,

“We wanted to create a clear path for them [visitors] so that if they wanted to have a deeper relationship with the museum, they could, so that they could follow the path of becoming a paid member. And so it was clear to them there wasn’t so much separate between Friends and members, that this is all one program. We have a tag line here at the museum where we say, ‘Sign up with DMA Friends, Join as a DMA Member’ so making those connections a little bit more clear.”

For the Dallas Museum of Art, the process of donor cultivation mirrors that of their membership model where DMA Friends serves as an introduction to the institution and provides visitors the opportunity to engage. Through increased engagement by both the visitor and communications from development staff, donor cultivation is integrated into the process of encouraging visitors to become members.

Similarly, one interviewee at the Grace Museum highlighted the progression they see with donor cultivation. Big Data allows the tracking of visitor engagement that in turn leads to improved experiences that encourage repeat visitation and ultimately a larger donor base primed to give. The interviewee stated:

“There’s a deeper sense to it that development more is an end result of... well you know, it’s a process, and all pieces on that process are equally important and if done well you raise more money and you have more donors. But that’s one reason you do it. The other reason you do it is in a genuine way to increase the number of people and the kind of people that frequent your museum, and so I think it goes to motive and the desire to, to build a place that people will enjoy coming to and then people want to, they want to support it, and you also grow a younger donor base, you know, and I think that we have definitely done that.”

A participant from the Minneapolis Institute of Art reinforced this approach to donor cultivation stating,

“We wanted more members so that when we have people raising their hands in a way they weren't before, we can capture them in the system. We can get good data on them, and start learning their behaviors - what they like - and then ultimately either incentivize them to participate more, purchase more, you know come to things, talk about us on social media, bring their friends all the way through increased levels of giving.”

c) Donor Relationship

Study participants all talked about how access to Big Data changed the way they now think about their relationships with donors. Two themes emerged in this discussion, including shifts in the goals set for donors by development staff and the kinds of stakeholders development staff have access to.

Emphasizing Goals

Participants at all three institutions indicated a shift in development focus to setting goals that highlight the formation of a relationship rather than a strategic focus on obtaining a donation. The Minneapolis Institute of Art was the only participant to indicate that this focus was in fact a shift from typical development foci for the institution: “We could use that to get people to raise their hand and tell us who they are just at a first pass we would get them into our database and you know be able to track things that they were doing that they are interested in and then be able to do good fundraising after that.” Here the goal is described as the obtainment and analysis of engagement data rather than immediate facilitation of a donation ask.

One respondent at the Grace Museum shared similar feelings, noting that the donor relationship is a process of steps that have equal importance:

“There's a deeper sense to it, that development more is an end result of... well its a process, you know, and all pieces in that process are equally important and if done well you raise more money and you have more donors. But that's one reason you do it [development], the other reason you do it is in a genuine way to increase the number of people and the kind of people that frequent your museum, and so I

think it goes to motive and the desire to, to build a place that people will enjoy coming and then people want to, they want to support it.”

The respondent at the Dallas Museum of Art highlighted the current process in place to set goals for specific visitors, “We'll look at data a lot more, we'll look at history, we'll look at trends, we'll look to benchmark.” As all three institutions demonstrated, the donor relationship has a strategic focus on goal-setting steps that lay outside of the “ask” that was always been so common and deliberate.

Stakeholder Groups

The topic of stakeholders was prominent across all three sites when discussing the donor relationship as all three institutions made the case that specific donors and stakeholder groups defined by interest or generation were being impacted by the use of Big Data in the Friends program. The topic of younger donors was mentioned across all sites as a stakeholder group that was either showing more interest in the institution because of the use of Big Data in the Friends program or Big Data was allowing development staff to specifically target younger donors. All three sites acknowledged that younger donors, the millennial generation, historically failed to have a substantial representation in each institution’s donor or visitor base. Now, as the one of the Grace Museum respondents stated, “we have a better sense of the people were drawing in through a different avenue, you know a younger demographic has been predominately involved in the Friends program.” Another participant at the Grace Museum pointed out that one of the appeals of Big Data for development is that it offers an opportunity to connect to a younger generation: “I was watching the DMA and thinking you know, they had really through the Friends program created a conduit to a different generation in relation to the museum world you know, I think that they opened the door in a warm way through that program.”

Similarly, the respondent at the Minneapolis Institute of Art noted that while the program has yet to launch for them, the team behind the Friends program is using programming and events to catch the attention of younger donors in preparation for the program to launch. The respondent stated the trouble has been to “get younger people to see themselves here because we all struggle with that. [But] they’ve [marketing and events team] laid the ground work bringing people in the door.” This realization has led them to incorporate the targeting of younger donors into the planning process of the program, as Big Data will provide accessibility and rewards to them previously unavailable.

Chapter 5: Conclusions and Implications

The purpose of this study was to understand how immediate and ongoing access to Big Data, focused on museum visitors, influences the strategies used by development departments to communicate institutional impact and value. Data were derived from in-depth interviews with development staff involved in the Dallas Museum of Art's Friends program at their institutions. This chapter describes conclusions from the study, and suggests implications for both practitioners and researchers.

Conclusions

How does access to Big Data influence the ways in which development staff do their jobs?

The results of this study suggest access to Big Data has the potential to influence an entire institution and then filter down to individual employees in the Development Department. All sites provided examples of Big Data supplying metrics that allowed the institution as a whole to better understand current success and plan for future success. For individual employees, it was a matter of putting in the work to define that success through data collection and planning. This was discussed as an effect of Big Data that could theoretically be taken too far, in which case employees would rely too heavily on and contribute too much time to Big Data such that it could become inefficient.

There is little discussion in the literature about the actual influence of Big Data on entire institutions once it has been incorporated. Rather, the literature discusses the potential for impact in sales, food service, exhibit design, and development (Merritt, 2014). The results of this study offer the field initial examples of this in practice with the Dallas Museum of Art and the Grace Museum. In the case of the Minneapolis Institute of Art, the forethought currently in place for

the institution proves the influence of Big Data is having the desired effect discussed in the literature.

How does Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?

Through in-depth interviews with development staff at three museums participating in the DMA Friends program, the researcher sought to understand how data provided by this program could result in strategic examples of measurable impact. Study results suggest that development staff members are focusing their language on targeting the visitor specifically rather than applying generalizations. Access to Big Data has provided engagement and behavioral information that in turn is being used to generate language that is specific to each visitor. While participants noted that this change was in fact occurring, examples focused more on describing strategies to change language in the future rather than examples of this changed language in use. In many ways, the respondents focused on a new approach to thinking about language and metrics, through a focus on behavior rather than a focus on the donation itself. All three sites noted that the inclusion of Big Data in development efforts has produced a shift from donation-focused language to visitor-specific language supported by engagement metrics.

The literature suggests that traditional metrics used by development staff have focused too heavily on membership and attendance numbers in belief that they alone represent the impact of an institution. Robert Stein, the former Deputy Director of the Dallas Museum of Art noted in his call to action for the field, “we can no longer accept raw attendance alone as a valuable indicator of ‘making an impact’” (Stein, 2014, p. 2). Results from this study show the potential for Big Data to provide metrics that are focused more on the behaviors that the field has equated

with impact. This speaks to the demand by donors, as the findings in the Millennial Impact Report suggest, for organizations to approach potential donors with “measurable, quantifiable outcomes” (“Millennial Impact Report,” 2013, pg. 1).

How does Big Data influence the ways in which development staff think about donor communication and the donor relationship?

Results from in-depth interviews with development staff suggest that with the inclusion of Big Data, donor cultivation is viewed as a progressive process. In this case, the ‘ask’ is not the goal and rather relationship development is considered more important. All three sites noted a comfort with and acceptance of the donor cultivation timeline extending in both detail and time. It was explained by all three sites that this process is one that begins with simple interactions, joining the Friends program for example, then through each additional visit the institution gathers data that can be used in the future. The point here is to not rush the process and recognize that each individual visitor is deserving of a customizable solicitation process. The timeline is dictated in part to the Big Data available on that individual, as all sites noted the importance of layering the data to form a complete picture of a visitor’s interests. Results indicated that this mindset is mirrored in the approach sites are taking when it comes to donor communications. Time is appreciated as it provides the opportunity to gather more data on visitors that in turn leads to communications that further target individualized interests.

The literature suggests that the communication of institutional value occurs throughout the donor cultivation process (Ciconte & Jacob, 2008) The literature recognizes that the historical methods utilized to educate stakeholders are now becoming obsolete as younger generations of donors “more often go through one or more cultivation steps prior to making their

first donation” (Bhagat, Loeb, & Rovner, 2010;). As donors continue to demand more time and interaction from the institution, development departments are seeing the effects, as now more than ever before, the donor is dictating the standards and accountability required of institutions in order to solicit future donations (Cilella, 2011). The results from this study support this transition, providing examples and strategies to provide multiple donor cultivation steps that generate value for the visitor but also additional data for the institution. With the field in the midst of this transition, the results of this study suggest that development staff are attempting to create mechanisms that will provide a focus on presenting each visitor with evidence relevant to their interests.

Implications

The three case studies examined here offer the field an example of Big Data in practice, describing visitor engagement through a specific membership program. As was mentioned by the Minneapolis Institute of Art, the nature of membership is changing, as is the audience poised to use it. This study has explored how the incorporation of Big Data in a membership program can match this change. With further study on these institutions in particular, the field would have a clear understand of the long-term impacts of Big Data on membership programs as well as yield insight in using Big Data to modify other programs as well.

The findings from this study offer development practitioners an alternative approach to donor communication and cultivation. However, this approach still remains untested across a wide range of institutions with insufficient data available on the long-term impacts on visitors as well as the institution. The Friends program offers the field an initial look at the potential for Big Data to target the visitor in ways never done before. That being said, the Friends program

incorporates resources that are not feasible for all institutions, and thus cannot fully represent the capability of Big Data in Museums. In order to accurately infer the ways Big Data could positively contribute to institutions with various resources, more study must be done amidst various applications.

While this study has shown that the use of Big Data in development can yield innovative insight into the future of development, it has also presented some challenges to the field. Currently, Big Data only has the potential to impact employees negatively through over use but that remains to be seen in the example provided by the three participating institutions. Research has yet to be conducted documenting this phenomenon or the line in which Big Data shifts from an asset to a hindrance. This is a necessary line to identify as it can inform future decisions made with Big Data in mind.

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Appendix A: Interview Guide

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Interview Guide

I am asking you to participate in a research study that is part of my Master's Thesis work at the University of Washington. The purpose of this research is to understand how immediate and ongoing access to large amounts of data focused on museum visitors influences the strategies used by development departments to communicate institutional value and impact.

Your participation is voluntary. Refusal to participate will involve no penalty or loss of benefits, and you may discontinue participation at any time. As a reminder, the identity of your museum will be revealed in the final results of this study. This interview will be recorded, and I may quote you in my final paper. If you have any questions now or in the future, you may contact me or my advisor.

Do you have any questions? Do you agree to participate in this interview?

Let's begin.

General/Background

- 1) How would you describe the DMA Friends program to someone who knew nothing about it?
- 2) What is the purpose of the DMA Friends program at your museum?

Access to data

- 3) How is the development staff involved in the DMA Friends program?
- 4) What kinds of data does development staff have access to through the DMA Friends program?
- 5) How exactly do you access those data?
- 6) How are the data produced from the DMA Friends program the same as the data that development staff typically use in their jobs?
- 7) How are the data produced from the DMA Friends program different from the data that development staff typically use in their jobs?

Use of Data

- 8) How do development staff use the data produced from the DMA Friends program?
- 9) Do you think the large-scale data in the Friends program has changed the way your museum practices development?
- 10) Do you think the DMA Friends program has had any influence, positive or negative, on the way in which development staff do their jobs? If yes, how? If no, why not?

11) Do you think the DMA Friends program has had any influence on...

- The language that development staff use to talk about the museum's value and impact? (If yes, how? If not, why not?)
- The metrics that development staff use to make the case for the museum's value and impact? (If yes, how? If not, why not?)
- The type of donors that development staff are talking to? (If yes, how? If not, why not?)
- The way development staff think about the donor relationship? (If yes, how? If not, why not?)
- The way visitors and donors respond to and view the institution's development efforts?

Lessons Learned

11. What do you see as the advantages to using large-scale data from the Friends program for development purposes?
12. What do you see as the institutional disadvantages of addressing institutional impact using big data?
13. Have you encountered resistance from donors or staff to using Big Data in communication about [insert name of institution]?
14. What can other museums learn from your institution, in terms of using big data in development?

Appendix B: Interview Coding Matrix

Research Question	Theme	Sub-Theme	Institution	Quote/Example
1. How does access to Big Data influence the ways in which development staff do their jobs?	Institutional Decision-Making	Institutional Decisions	DMA	It's really been about trying to understand, you know, all this information we've collected and what we can do with it and really kind of put metrics behind those decisions that we're making. So for us we're really focused on making data driven, we're using data driven intelligence to help inform our decisions.
1. How does access to Big Data influence the ways in which development staff do their jobs?	Institutional Decision-Making	Institutional Decisions	GM	I think we're able to make smarter decisions because of the data we have. That's collected within our own building, with our visitors.
1. How does access to Big Data influence the ways in which development staff do their jobs?	Institutional Decision-Making	Institutional Decisions	DMA	The more information the better, I don't think there can be too much information. But I think strategically it's about what you do with that information that's important so a lot of it is about, you know, using what information in terms of either making better decisions or how do you craft more specific communication messaging or offers.
1. How does access to Big Data influence the ways in which development staff	Institutional Decision-Making	Institutional Decisions	GM	I think it's important to know that at the same time we that we launched Friends we also launched really expanded programming for adults and children. We at the same time launched our

<p>do their jobs?</p>				<p>kids club, at the same time launched really expansive program on Thursday nights, up until that point we had really just had an ever so often exhibit related program but ever so often would be the key words... So several things happened at the same time, what you pay to come here, we brought it down and we made it easier to understand, six-three-and free, free to children and free to military</p>
<p>1. How does access to Big Data influence the ways in which development staff do their jobs?</p>	<p>Institutional Decision-Making</p>	<p>Institutional Decisions</p>	<p>GM</p>	<p>We stepped it up on every level.</p>
<p>1. How does access to Big Data influence the ways in which development staff do their jobs?</p>	<p>Institutional Decision-Making</p>	<p>Institutional Decisions</p>	<p>GM</p>	<p>The Friends program is just very open door and so it translates to other parts of who you are as an institution</p>
<p>1. How does access to Big Data influence the ways in which development staff do their jobs?</p>	<p>Institutional Decision-Making</p>	<p>Institutional Decisions</p>	<p>MIA</p>	<p>For us what we were particularly interested in was engagement of the audience so, if we can get, you know, 800,000 people here, 850,000 people every year our problem was we only knew only a</p>

				<p>very small percentage of who those people were... you can just walk in and be free and anonymous and that felt really good for a while until we figured out that we have no idea who these people are and perhaps there were here every day and they were our biggest fans we didn't know it. So here come big data. We decided that this IMLS grant and the Friends platform would allow us to do something along the lines of a rewards point and rewards system.</p>
<p>1. How does access to Big Data influence the ways in which development staff do their jobs?</p>	<p>Institutional Decision-Making</p>	<p>Applications of Big Data</p>	<p>GM</p>	<p>We have always collected data in the traditional sense or maybe even looked at other research materials but we haven't been the source to collect data as we have been with the Friends program</p>
<p>1. How does access to Big Data influence the ways in which development staff do their jobs?</p>	<p>Institutional Decision-Making</p>	<p>Applications of Big Data</p>	<p>DMA</p>	<p>I think data collection in general is something that the museum has been invested in for some time, I think expanding the types of information we collect is, is definitely a more...strategic focus for us. I think what might be, you know more new but, maybe not new, but maybe not as developed is really the strategic implementation of it. So, it's not just about collecting the data but also analyzing it to kind of put the data to practice within the museum, using</p>

				data collectively
1. How does access to Big Data influence the ways in which development staff do their jobs?	Institutional Decision-Making	Applications of Big Data	DMA	I think ultimately it's just being able to move and organization to the direction of more, you know, being comfortable with data and metrics, reporting and all that fun stuff.
1. How does access to Big Data influence the ways in which development staff do their jobs?	Staff Expectations and Experiences		MIA	We understood that it couldn't just be a development thing and that marketing has an interesting perspective here and a good skill set for "how do you talk about this
1. How does access to Big Data influence the ways in which development staff do their jobs?	Staff Expectations and Experiences		MIA	Set realistic expectations...I would be careful about the expectation because that's something that we're fighting right now. We had to name like dollars and numbers and members that we expected and projected and we of course used every asterisk, every overarching caveat disclaimer, we had no roadmap for that. We have no idea where it's going to land but you know people see a number and they get really attached to a number
2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential	Language	Articulating Visitor Engagement	DMA	We definitely are able to have a better understanding of engagement...they're [visitors] interested given all the activities that they've participated in, are there events or programs that they would be

donors?				interested in so we can actually push messages back out to them. Say 'Hey we know you've done this, would you be interested in that'
2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?	Language	Articulating Visitor Engagement	GM	I would say, the change is in the language, like you said, only because a lot of museums, maybe mentioned, especially in their grants that they're offering engaging programs and things like that... I think the Friends program allows us to have that conversation with donors to really reinforce what methods are we introducing to provide a more enhanced engagement with our museum visitors."
2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?	Language	Articulating Visitor Engagement	GM	I think that we perhaps take a less conservative approach in our language and its more just open ended and reflective of wanting to know what they [visitors] want us to do as opposed to 'Here's what a museum provides'.
2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?	Language	Articulating Visitor Engagement	MIA	Less on the philanthropy and more on just signing up. Just give us your name. Tell us who you are and we promise we love you no matter what you do. That is very different than how we talked before, it was always like 'please give us \$70 or whatever the lowest amount was' and then targeted people where we

				felt they would be able to land in these eight levels [eight membership levels available at the time] but it was always really dollar focused but now the script flips and we need to just have them say yes I like you.”
2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?	Language	Targeting The Visitor	DMA	Tailoring for specific groups of visitors and members
2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?	Language	Targeting The Visitor	MIA	Once we figure out they like certain things, instead of fundraising being all about the annual dollars and saying you need to renew your annual membership...of course we're going to do that, its not going away... but we're understood in saying, “Oh man, they love Chinese art. They've been in that gallery 100,000 times and they always talk about it on social media or they buy all of the books or whatever,, we have scholars coming and would you consider giving \$25 to help the Chinese gallery.
2. How do Big Data influence the language and metrics used by development staff	Metrics	Accuracy	GM	We have our regular clicker numbers, you know, numbers in the door that come in and whether or not how they

<p>to communicate value and institutional impact to potential donors?</p>				<p>are used, you know how many are children, how many are adults, how many are attending programming, so we have those traditional ways of gathering data. But this has been a more...it's definitely a prettier way to get data and its definitely more accurate because we have the user supplying the data.</p>
<p>2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?</p>	<p>Metrics</p>	<p>Accuracy</p>	<p>GM</p>	<p>We have always collected data in the traditional sense or maybe even looked at other research materials but we haven't been the source to collect data as we have been with the Friends program.</p>
<p>2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?</p>	<p>Metrics</p>	<p>Accuracy</p>	<p>DMA</p>	<p>I think it provides a more well-rounded argument you know, no matter what conversation you're in</p>
<p>2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?</p>	<p>Metrics</p>	<p>Accuracy</p>	<p>MIA</p>	<p>I know I'm going to be able to have analytics in one form or another, have access to how many times people were here, what days they were here, what tickets they purchased, when they were here. We have that part now, the ticketing. But we're going to have better numbers on all of that.</p>
<p>2. How do Big</p>	<p>Metrics</p>	<p>Accuracy</p>	<p>MIA</p>	<p>We're talking about what</p>

<p>Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?</p>				<p>information carries into the database, how much is too much information, I don't need to know every click through on every web visit but you know, do I need to know some of the stuff, do I want to know they abandoned their shopping cart and left some things in there, yeah I do want to know that</p>
<p>2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?</p>	<p>Metrics</p>	<p>Focus on Behavior and Engagement</p>	<p>DMA</p>	<p>The best way to sort of think about the data is because the DMA Friends program is really about engagement so the information we collect is really about, it's engagement focused. Its about you know, when they come to the museum what do they do when they get here...compared to typically, you know, for most museums, you know, the donor database is really about you know giving history, communication history, and facilitation history.</p>
<p>2. How do Big Data influence the language and metrics used by development staff to communicate value and institutional impact to potential donors?</p>	<p>Metrics</p>	<p>Focus on Behavior and Engagement</p>	<p>DMA</p>	<p>They're kind of looking at two different things I'd say, I mean obviously biographical stuff is all similar, but in terms of...I think that might sort of be where it stops. I think for Friends its about when they come here, how often do they come here, what are they doing which is a little bit different than from a donor perspective where we're more</p>

				interested in about what is that donor's history with us, with the institution
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?	Donor Communication Strategies	Impact on the Visitor	DMA	I think people appreciate that we're able to craft you know, more targeted communications with them...so they don't always feel like 'Why are you speaking to me in language I don't... or like giving me offers that I....already have'...you know, I think they feel that it's a better experience for all.
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?	Donor Communication Strategies	Impact on the Visitor	DMA	Tailoring for specific groups of visitors and members
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?	Donor Communication Strategies	Impact on the Visitor	MIA	Targeting that ask more because they said they like us and they raise their hand they told us a little bit about themselves.”
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?	Donor Communication Strategies	Impact on the Visitor	GM	It's a little less traditional and more responsive to just people.
3. How do Big Data influence the way in which development staff think about donor communication	Donor Communication Strategies	Impact on the Visitor	GM	I think we're speaking more to the impact of how it's important that our visitors have a very engaging and meaningful experience and what does

and the donor relationships?				that look like
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?	Donor Cultivation		MIA	...what would happen to philanthropy if we could ask them really targeted questions about what they want to give to, instead of this annual generalized bucket and then we go away for a year and then come back again? A big flash, that's how the old construct was, and I think the future is a little more micro-grant, micro-lending focused.
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?	Donor Cultivation		DMA	If you can increase your attendance and visitation, that tends to drive acquisition and retention as whole so it's kind of like we've increased, you know, our possible pool of interest.
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?	Donor Cultivation		DMA	We wanted to create a clear path for them [visitors] so that if they wanted to have a deeper relationship with the museum, they could, so that they could follow the path of becoming a paid member. And so it was clear to them there wasn't so much separate between Friends and members, that this is all one program. We have a tag line here at the museum where we say, "Sign up with DMA Friends, Join as a DMA Member" so making those connections a little bit more clear.
3. How do Big Data influence the	Donor Cultivation		GM	There's a deeper sense to it that development more

<p>way in which development staff think about donor communication and the donor relationships?</p>				<p>is an end result of... well you know, it's a process, and all pieces on that process are equally important and if done well you raise more money and you have more donors. But that's one reason you do it. The other reason you do it is in a genuine way to increase the number of people and the kind of people that frequent your museum, and so I think it goes to motive and the desire to, to build a place that people will enjoy coming to and then people want to, they want to support it, and you also grow a younger donor base, you know, and I think that we have definitely done that</p>
<p>3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?</p>	<p>Donor Cultivation</p>		<p>MIA</p>	<p>We wanted more members so that when we have people raising their hands in a way they weren't before, we can capture them in the system. We can get good data on them, and start learning their behaviors - what they like - and then ultimately either incentivize them to participate more, purchase more, you know come to things, talk about us on social media, bring their friends all the way through increased levels of giving</p>
<p>3. How do Big Data influence the way in which</p>	<p>Donor Relationship</p>	<p>Emphasizing Goals</p>	<p>MIA</p>	<p>We could use that to get people to raise their hand and tell us who they are</p>

<p>development staff think about donor communication and the donor relationships?</p>				<p>just at a first pass we would get them into our database and you know be able to track things that they were doing that they are interested in and then be able to do good fundraising after that</p>
<p>3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?</p>	<p>Donor Relationship</p>	<p>Emphasizing Goals</p>	<p>GM</p>	<p>There's a deeper sense to it, that development more is an end result of... well its a process, you know, and all pieces in that process are equally important and if done well you raise more money and you have more donors. But that's one reason you do it [development], the other reason you do it is in a genuine way to increase the number of people and the kind of people that frequent your museum, and so I think it goes to motive and the desire to, to build a place that people will enjoy coming and then people want to, they want to support it.</p>
<p>3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?</p>	<p>Donor Relationship</p>	<p>Emphasizing Goals</p>	<p>DMA</p>	<p>We'll look at data a lot more, we'll look at history, we'll look at trends, we'll look to benchmark.</p>
<p>3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?</p>	<p>Donor Relationship</p>	<p>Stakeholder Groups</p>	<p>GM</p>	<p>We have a better sense of the people were drawing in through a different avenue, you know a younger demographic has been predominately involved in the Friends program.</p>

3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?	Donor Relationship	Stakeholder Groups	GM	I was watching the DMA and thinking you know, they had really through the Friends program created a conduit to a different generation in relation to the museum world you know, I think that they opened the door in a warm way through that program.
3. How do Big Data influence the way in which development staff think about donor communication and the donor relationships?	Donor Relationship	Stakeholder Groups	MIA	Get younger people to see themselves here because we all struggle with that. [But] they've [marketing and events team] laid the ground work bringing people in the door.