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NGOs & DATA:
The Complete Beginners Guide

DATA VISIBILITY DRIVES BETTER DECISIONS - BECAUSE VISIBILITY BREEDS EFFICIENCY.

And efficiency? In the not-for-profit (NFP) sector, maximized efficiency provides you with maximized opportunities to service the causes you live and work to impact. And on an internal level, data helps you streamline your organization's internal operations - from managing and tracking trends in your quarterly budgets to analyzing fundraising demographics and opportunities for targeting and expansion.

Data-driven decisions have been the bread and butter of the for-profit sector for years. But for-profit organizations aren't the only ones sitting on mountains of data! They're just more likely to have access to the analysts and technology necessary to analyze and capture new sources of data.

But access to these costly resources doesn't have to be a barrier to leveraging the power of data in your NFP organization. Because NFP teams are bootstrappers at heart. And with the right introductory resources to guide you on your early data inroads, you'll be well-positioned to start leveraging your data to work FOR your organization - and the causes your organization serves. If your organization is committed to making an impact, even basic analytics can make an enormous difference.

Introducing NGOs & Data: The Complete Beginners Guide - a data bootcamp for NFP bootstrappers committed to toppling mountains of unused data to improve efficiency and maximize impact.

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TERMS TO KNOW

There are tons of words and phrases used to discuss data and analytics, and you don't need to master them all to get started. However, a few commonly used terms will guide you as you start diving into your data.

Ad-hoc Analysis:

Ad-hoc analysis is any report or data analysis curated and created by users, as and when they need it. An ad-hoc analysis lets the user determine which data sources to pull from and how that data will be presented. One key distinguishing factor of ad-hoc analysis is its ability to offer completely customized analytics.

Example in an NFP context:

Creating an Excel spreadsheet of monthly aid recipients per month and comparing the last 5 years side-by-side to identify recurring monthly/quarterly trends in demand.

Contextual Data:

Contextual data is information that provides context to an event, person, or item. This data is important for providing a broader understanding of specific pieces of information and placing them in a larger picture.

Example in an NFP context:

A local homeless shelter sees a regular spike in demand during the winter months, but for the past five years has seen that spike increase in a noticeable way when compared to the historical data. In this instance, data on extreme weather trends is provided in the report to contextualize the data.

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Data Mashup:

A data mashup is combines multiple datasets to create a new dataset, which can then be processed or analyzed.

Example in an NFP context:

One team member manages space and availability at the homeless shelter. Another team member manages resources allocated for cleaning supplies. Both have noticed an increased demand during the winter months for the past two years. To mashup the data, they incorporate their Excel spreadsheets. This allows them to examine the upward trends in their data side by side to determine the ultimate impact of weather-related demand for space on cleaning resources.

Data Modeling:

Data modeling is a way of mapping out and visualizing all the different places that a software, application, or manual spreadsheet stores information, and how these sources of data will fit together and flow into one another in your final spreadsheet.

Data modeling is purely about creating the conditions to make your intended analysis possible. It's about figuring out what types of data you'll bring together and how to get the answers you need.

Example in an NFP context:

Your goal is to ensure that the team responsible for sourcing food for your weekly soup kitchen is synced with the team that prepares and serves the food. The team responsible for sourcing keeps their own budget spreadsheet to inform weekly grocery shopping. The team that serves the food keeps a record of the amount of waste they accumulate each week. Proper data modeling ensures that data points relevant to both teams are incorporated into a single spreadsheet that both teams of access. This model then allows analysis of what portion of the weekly grocery budget results in waste and if that budget should be allocated to more popular dishes / food products to reduce that waste.

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Descriptive Analytics:

Descriptive analytics is a field of statistics that focuses on gathering and summarizing raw data to be easily interpreted. Generally, descriptive analytics concentrate on historical data, providing the context that is vital for understanding information and numbers.

The field is used across a variety of industries and needs, and can cover a diverse range of purposes, from inventory tracking to benchmarking yearly revenues and sales.

Example in an NFP context:

A local women's shelter has been operating for three years. On a general level, they understand which children's resources and services are in highest demand during the first three months of residence at the shelter, but they are interested in exploring the long-term impact of these services. Are the most in-demand services the ones that provide the most long-term benefits after a child leaves the shelter with their mother? Are some high-demand services less impactful in the long term compared to under-utilized services that may have a more far-reaching impact on the adjustment of the child as they move forward?

Embedded Analytics:

Embedded analytics is the integration of analytics and business intelligence (BI) software modules into another software application. Adding embedded analytics to software can help users of the software to better understand and act on the data in an application. With the right white-labeling, embedding can make the extra functionality look like a natural part of that application.

Example in an NFP context:

A connected medical device company that works in low resource settings may decide to embed analytics in their online platform for clinicians. By embedding analytics, it will allow clinicians to see different statistics about their usage. For example, how many patients they've seen, how long a procedure lasts, and what diagnoses they make most commonly following the procedure.

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ETL (Extract, Transform, Load):

This is a crucial stage in the data preparation process as it ensures you are working with clean and accurate data and that there is a single source of truth for every piece of information that appears in your spreadsheets. It consists of three stages:

Extracting the data stored in various systems (Excel sheets, CRM, inventory database, bank statements) into a centralized data repository.

Transforming the data according to a unified schema, which could include filtering out certain fields / columns or modifying data from different tables to make sure all the data sources speak the same language.

Loading the newly-transformed data into a centralized spreadsheet.

Example in an NFP context:

Within your organization, you update CRM recipient records each week to note the date and aid type received (in this case, let's say it's a box that contains 20 cans of soup).

In your CRM, the date structure is "12/22/2018" and the aid type is "Chicken soup - 20 pc." But in your inventory database, the date structure is "December 12, 2018" and the aid type is named "Chicken soup - 12 cans."

In order to use this data to extract insights and trends, you must first extract the data from both your CRM and inventory database, transform the data by deciding on a uniform naming convention for dates and aid types, and then load the data into a new spreadsheet that can be queried thanks to this new, uniform language.

KPIs:

Key Performance Indicators (KPIs) are the most important business metrics for your particular organization. They're your chief way of establishing what your organization needs to achieve, and measuring whether you're on track to achieve it.

Example in an NFP context:

As an NFP organization, your ultimate measure of success is impact. Think back on the women's shelter example. How do you measure your impact? The percentage of families you are able to accomodate per year vs. the number of families who request your services? The successful allocation of support services? The number of children who don't fall behind in school during this traumatizing transition with the help of your organization's tutoring services?

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Predictive Analytics:

Predictive analytics uses current and past data to let you make predictions about the future or other unknowns. You can see the likelihood of a coming event or a specific situation, given the data being analyzed.

Example in an NFP context:

Let's think back on the homeless shelter example. It's been established that demand for space has increased over the past five years due to a spike in extreme winter weather. It's been established that an expanded need for cleaning supplies correlates to this upward trend in demand for space. What predictions can you make based on these trends in your data? That you will need to budget for more cleaning supplies from November - March in the years to come.

Prescriptive Analytics:

Prescriptive Analytics is the area of data analytics that focuses on finding the best course of action in a scenario given the available data. It's related to both descriptive analytics and predictive analytics but emphasizes actionable insights instead of data monitoring.

Example in an NFP context:

Back to our women's shelter example. Once you mashup the data, you discover that most families take advantage of counseling services during their first three months at the shelter. Far fewer take advantage of your tutoring services. But based on your research, you notice that the few who take advantage of tutoring services are 50% more likely to see children enroll in university at the age of 18. If university enrollment is a KPI you value, an initiative to ensure higher rates of enrollment in tutoring services is your prescription.

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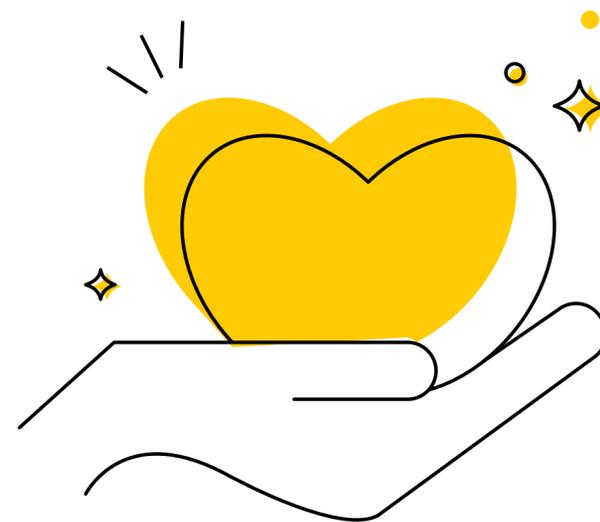
HOW TO START DOING BUSINESS INTELLIGENCE

Business intelligence encompasses all the tools and methods organizations use to prepare data, analyze data, and securely govern who has access to the data. This includes a variety of tools that focus on statistical analysis, but also provide a broader range of interpretations and insights.

But you don't need access to cutting-edge tools and tech to "do" business intelligence. Ad-hoc analysis in an Excel spreadsheet or basic data modeling from your CRM is still business intelligence - and it's better than no business intelligence!

The process of business intelligence is employed mostly by organizations that are looking to add insights to their decision-making processes alongside exploring strategies to optimize performance in key areas of their operations.

Using simple Excel spreadsheets and the most basic Excel functions, your NFP organization can start analyzing your data to make the kinds of decisions that change the lives of those you serve - and make your organization more operationally efficient.

But before you can get started, the NFP Data Prep Checklist will help you and your team determine a clear plan of action for compiling data that will provide the most strategically valuable insights for your organization.

✓ Reconn   ✓ Connect

✓ Define   ✓ Wrangle

✓ Identify   ✓ Verify

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YOUR NFP DATA PREP CHECKLIST

Reconn	1. Who are the stakeholders in the organization who need access to the data and the actionable insights it provides? 2. What is the need for dataset accessibility across departments? Which datasets should be shared organization-wide, only accessed by leadership, or shared between departments? 3. Where do stakeholder roles overlap in your organization? What are the main points of collaboration between departments?	⊗
Define	1. What are the main questions I want to answer? 2. What are the KPIs I want to measure? 3. Who needs access to the data and why? 4. Where will the data live? (Excel, CRM, etc.)	⊗
Identify	1. Where does the data currently live? (Excel, text docs, CSV files, databases, CRM) 2. To what level of detail can each data source be analyzed? 3. Is cleanup necessary before the data can be analyzed? Who will do this?	⊗

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Connect	1. How does each data source relate to other sources you're analyzing? (Which sources are dependent on other sources or need to be updated when other sources change?) 2. How does each data point relate to each of the other data points you want to analyze? (Ex. If the number of parties requesting aid increases by 4% this quarter - which fields in your spreadsheet need to automatically increase by 4%? Quarterly budget, fundraising targets, etc?)	⊗
Wrangle	1. Which data fields need to be combined? 2. Which data formats need to be standardized? 3. Are there any many-to-many relationships that need troubleshooting? (learn more about many-to-many)	⊗
Verify	1. Who is responsible for spot checking the results of your Excel functions? 2. Start by examining the results of a function you know the general answer to: is the result expected or within reason? 3. Continue by spot checking a few results for each of your KPIs: do the result make sense?	⊗

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WHEN THE TIME IS RIGHT: SCALING YOUR BUSINESS INTELLIGENCE

As you begin to master your data and get comfortable with drawing insights from data for internal use, you may be ready to dabble in embedded analytics - data and insights provided to those outside of your organization such as external suppliers or donors.

For instance, imagine you're an NGO that has partnered with a medical device company to improve healthcare in clinics that service low-income communities. You start by supplying clinics with the technology. But the data collected by these devices is a wealth of information - number of patients per month, rates of diagnosis, rates of incorrect diagnosis, rates of returning patients within a defined time period, etc. These embedded analytics contain insights that you can supply back to clinicians in an effort to improve their level of care.

Or maybe you're interested in providing your donors with more than just a quarterly report on how their funds are being used to achieve your stated goals. Embedded analytics provides them with a platform to access at any time to check in on the status of projects, clearly identify holes in funding, and keep them actively engaged in the mission they're contributing to.

> " Embedded analytics can provide streamlined data and insights to people outside your organization such as external suppliers and donors.

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FREQUENTLY ASKED QUESTIONS

1. "But I'm not an analyst - can I do this?"

Yes! All you need to get started is:

1. A basic intro to the role of data and BI in the NFP sector (hey, you're already here!)
2. A roundtable with your organization's key players to complete the **NFP Data Prep Checklist**
3. An hour of trial and error practicing your Excel functions
4. The desire to gain game-changing insights that will maximize your organization's efficiency and impact

2. "I don't know how to access my data. Where do I start?"

If you work for an organization that isn't currently analyzing it's data in any way, these are the first key places to start:

1. Inventory databases - for data on supply of resources and services
2. CRM - for data on demand for resources and services
3. Bank statements - for data on historical budget allocations
4. Your colleagues - chances are, there are large amounts of data already being analyzed by your colleagues, siloed by department, ready for some data mashup magic

3. "How do I know which data sets and KPIs will provide the most valuable insights for my organization?"

Every NFP organization has a unique mission, but the most critical measure of success across the sector tends to be the same: impact. But which data sets and KPIs will help you track the impact your organization is making over time?

1. Donation and fundraising data
2. Legislative influence
3. Research progress
4. Media impact
5. Thought leadership impact and influencer marketing
6. Reach and engagement

Source: Klipfolio

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4. "How can I help other key players in my organization understand the importance of data and business intelligence?"

The most common phenomena when an NFP finally commits to diving into their data are what we like to call the **"Eureka! moments"** - the moments when what you thought was the truth about a trend in your organization is revealed to be completely the opposite in the face of the data. You thought that the source of a systemic issue as A. But when you drill down into the data - you discover that the source of the problem is actually B. Or it's A, with a little bit of B and C.

These Eureka! moments can be watershed moments for converting key players in your organization into data evangelists. So make sure you're disseminating each and every one of them organization-wide!

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