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Strategic Business Intelligence for NGOs

Diego Arenas-Contreras

This article shows how to plan and apply a Business Intelligence (BI) strategy to a nonprofit organization starting from the understanding of Non-Governmental Organizations' (NGOs) nature and goals, their organizational processes and the identification of information needs, relevant available data, and proprietary information to meet the information requirements that an organization has. These ideas are developed through the study of an actual project carried out in a NGO in Chile. The main data entities identified were "lead", "contact", "company", "institution", "volunteer", "donation", "event", and "campaign". The interaction between these entities and the understanding gained from raw data enables us to obtain valuable information to make decisions in NGOs. The whole process will be described in order to implement a successful information strategy in these organizations.

Keywords: Business Intelligence, CRM, Data Analysis, KPI, MDM, NGO, Reports.

1 Introduction and Definitions

This paper describes how to implement a successful Business Intelligence (BI) strategy in a Non-Governmental Organization (NGO). We will understand a strategy as an action plan to gain a competitive advantage compared to an earlier stage of the organization or to a similar organization. Business Intelligence is defined as a set of tools, processes, techniques and algorithms which support the process of business decisions and bring the right information to the right person (decision maker) at the right time.

In every organization decisions are made at all levels. Decision support systems improve efficiency and help management make informed decisions, and provide a guide to an organization's continuity. Nonprofit organizations make decisions too, but their focus, goals, data and day-to-day operations are different and so their problems differ. However they can make decisions based on their specific data and can generate knowledge from their information.

Voluntarios de la Esperanza Global, Volunteers for Global Hope, a.k.a. VE Global, (VE from now on, <http://www.ve-global.org>) is the NGO where this knowledge was obtained. VE is an organization that recruits, trains and organizes volunteers to work with children at social risk in Chile, and this paper draws on VE's knowledge and experience. The lack of people specialized in information systems and the NGO's priority focus on social issues brought about the start of this project and the results commented on in this paper.

An NGO, like any other organization, interacts with people and other organizations, public and private. These interactions are constantly working to make better and more efficient decisions, but only a few are based on data.

Data generated by the organization itself is one of the most important organizational assets because no other organization has access to it. Data has to be identified in order to propose a strategy based on it. A proper information strategy for an NGO is significant not only at an organization level but also at a social level.

The first step is to identify the information needs and to discover the organization's strategic goals through meetings with the directors and by generating agreements to guide the information strategy. It is important to bear in mind that strategy information must much the actual organizational capabilities. At the beginning of the project and for this paper, it is imperative to unify semantics to facilitate communication between stakeholders and to speak a common language during the project; this will simplify communication issues and will bring agility to the project. At VE we used a shared document to write known definitions and to add terms which require definitions. Everyone could add a new column until we reached an agreement as to the definition. This task gives an active role to stakeholders and assures the knowledge obtained in the project to new participants. Wikis are recommendable for this purpose. Important examples of definitions for this paper are:

- *Lead*: Person or institution with a potential mutual relationship with VE.

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“In every organization decisions are made at all levels; nonprofit organizations make decisions too, but their focus, goals, data and day-to-day operations are different”

- *Contact*: Person with some relationship with VE; there are different types of relationships.
- *Organization*: Company and organization involved with VE; it allows contacts to be grouped within organizations.
- *Institution*: Household where VE works through volunteering programs.
- *Volunteer*: A person trained and led by VE who works in an institution and/or at a VE office.
- *Donation*: A monetary or in-kind donation to VE by contacts or other organizations.
- *Program*: A specific plan designed to support children in VE’s partner institutions with a specific purpose, i.e.: "Liga de deportes" is a sports programme that promotes the practice of sport in children; "Vamos a Leer" is a programme that encourages children to read.

As in VE, there are specific terms in every organization and it is necessary to define them to facilitate communication.

Some tools used during this project were collaborative and open source, thereby keeping project costs down. They were very useful for effective communication:

- Google Docs, to make documents, working collaboratively, <http://docs.google.com>.
- Dropbox, for file exchange, <http://www.dropbox.com>.
- GanttProject, an open source tool to manage the schedule of the project, <http://www.ganttproject.biz/>.
- FreeMind, to draw mind maps, to express and discuss ideas, <http://freemind.sourceforge.net/wiki/index.php/Main_Page>.
- Salesforce, a sandbox testing environment of "Salesforce", where we test changes in a system without affecting the production system.

Like many organizations, VE maintains several different repositories of information. Their aim is to put these sources of information into their CRM system and to start using it as a single and reliable source of information in order to maximize the potential of their CRM system.

The first step of a BI strategy must be aligned with the organization’s strategic goals. Then we must work in collaboration with the people responsible for the information with an effective communication system and transmit project goals to the stakeholders. The next step is to analyse the available data; the main processes must be documented and the data flows identified from the perspective of strategic goals. Then, we must work on the quality of the information through data quality assurance and then apply the strategy based on the organization’s capabilities and anticipate future information requirements based on current data. Finally, we need to monitor system use and evaluate improvements.

2 Data, Information and Processes

Meetings with the directors of VE were arranged in order to discover the strategic goals and information needs of each area of the organization. At the first meeting, interviews were conducted to know the organization’s vision and the data that they manage, then brainstorming sessions were organized in which directors were asked to imagine the available information and the reports to produce and the decisions they could make if the project was successfully implemented. This process allowed us to identify the entities and their interactions. From these activities, you can obtain two artefacts; the high level of entities, their relationships, and the required reports document. After the first brainstorming sessions, thirty minute meetings were scheduled to report on progress and to set achievable weekly goals. Stakeholders and project staff took part in these meetings. If there was something that could not be defined during a meeting, an extra meeting was scheduled during the week with the people involved in that specific task.

During the first stage, we need to find out about the organization’s information needs, organizational culture, the unique data that belongs to the organization, the main information processes and actors, and the data flows. In this way we can discover what data is relevant to the organization. A BI expert’s role is to show the benefits of a BI solution, to recommend the right solution according to the needs, and to define a strategy to achieve it.

Once processes are well known and the information needed is sufficient to plan a BI strategy, we need to share that knowledge with the stakeholders. We need to define a common language which is going to be the basis of the project, then we will deliver an artefact called "organizational definitions". Each term in the document has a unique and homogenous semantic. We need everyone in the project and in the organization to understand the same thing when they hear the term *volunteer* or *institution*, for example. We are assuring understanding between stakeholders and the

“The first step is to identify the information needs and to discover the organization’s strategic goals”

" Some tools used during this project were collaborative and open source, thereby keeping project costs down "

definition of the vocabulary for an effective communication and a favourable development of the strategy. If we all speak the same language we can avoid any misunderstanding.

Another artefact is the "required reports" document. It is a shared document in VE where we state the owner of the report, the report's name, a summary, the reasons or the justification for writing the report, the consultancy frequency, the required data fields, and observations or indications. We have collected over forty-five required reports since the beginning of the project and we have turned the reports into a mind map in which the first level of nodes show the entities such as "Lead, Contact, Organization, Donation, Event, Campaign and Program" and, within these entities, we group required custom fields to meet reporting needs, i.e.: we put "contact data" under "information data", "lead", "entity" and so on. We also add metadata fields to know how people come to VE and other types of information. In the mind map, created with FreeMind, we can find the entities and their custom fields to complete the reports; we need to input these custom fields into the database with their correct values. We also gather reports according to their topics; by doing so we can identify VE's three main areas of interest; *Contacts*, *Donations* and *Performance*. "*Contacts"* includes reports which are used to reach people and organizations according to a number of criteria. Meanwhile "Donations" contains correct information about monetary or in-kind donations, for example: Where are they? How are we using them? What are they used for and by whom? etc. "Performance", a recurrent topic in every organization, contains reports to optimize resources, to focalize efforts, to reduce costs, and to make decisions based on data. All the above is shown in Figure 1.

A BI strategy is not a specific project with a limited outcome such as a special report or a dashboard; it is a plan to execute and to take into account information needs and to deliver the right actions to satisfy these needs according to current organizational capabilities.

Every organization generates specific data specific to the institution's activities and day-to-day operation. No other organization has access to this data so it is important to consider it as an important asset of the organization and a unique source of information to improve performance and to acquire knowledge. This *unique data* is inherent to the organization and can be surveyed by means of interviews and by looking at existing reports and the data quality of the data model. It is also possible to identify potential data which is not being kept and which is unique to the organization. This step is necessary to ensure that this information is recorded in the BI strategy.

NGOs often lack information management specialists which results in processes and data flows being made on demand, depending on the person in charge (the rotation of volunteers makes the integration process more complex). A recurrent issue is the poor utilization of systems such as CRMs, because of the low level of customization and adaptation to the specific needs of the organizational. In NGOs communication with their network of contacts means continuity. It is important to provide information about the work being carried out and to measure these contacts. To acquire available information, the NGO has to organize events in collaboration with many of its contacts. To obtain accurate statistics, the NGO should monitor volunteers' working hours, know how many people it is working with, and have the capacity to share the work done with accurate figures for a better communication within the NGO's community. Hence, the organization has a more efficient and guided information.

From the beginning of the implementation you should focus on the relevant information of all the data and processes surveyed, rank the information in terms of its importance and impact on the organization, and focus your efforts on meeting the organization's information requirements in accordance with this ranking.

3 Design and Implementation of a Strategy

A successful key factor is to have executive support from the directors and the stakeholders of the project at every stage of the implementation. They must focus on information which is relevant to the organization and assure that important issues are covered according to the ranking of that information. The aim should be to cover the most important information needs, both current and future, revealed by the survey, and also the most important processes and their impact.

A Business Intelligence strategy is independent of the tools, software, and actors involved; it is about covering

" NGOs often lack information management specialists which results in processes and data flows being made on demand, depending on the person in charge "

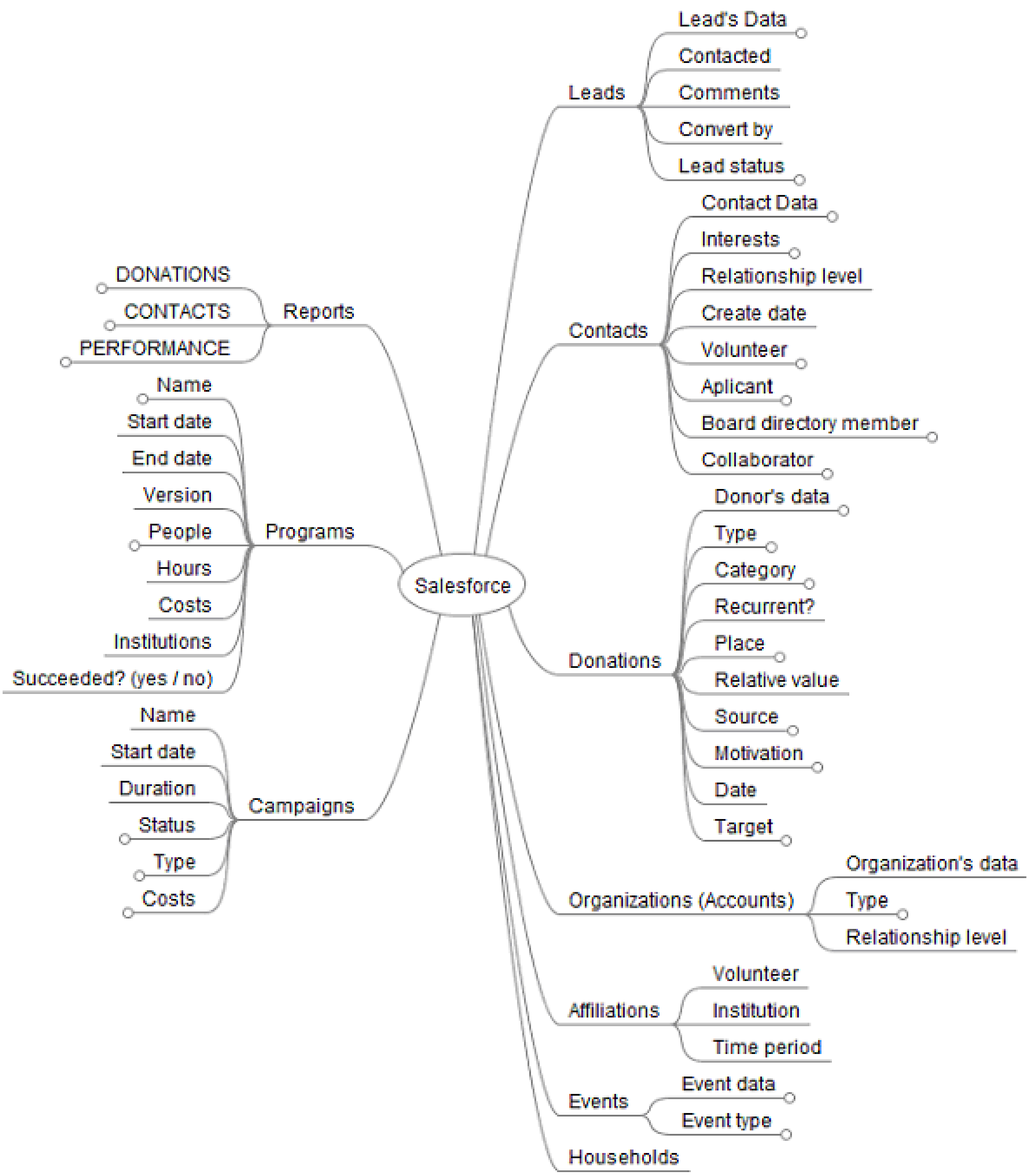

Figure 1: First Level of Mind Map showing Minimum Fields and Subjects of the Reports.

needs at every level of the organization. Information is the oxygen that allows the organization to breathe. The architecture is dependent on the information needs and is defined after the initial survey of information needs and processes of the organization. It is important for NGOs to use flexible and agile processes in order to rapidly align constant changes in information needs and to ensure the alignment of new strategic goals. The NGO has to evaluate new requirements in a short time. For example, during the first stage we evaluated and implemented new features in the system that we had not scheduled at the beginning. The flexibility of the development allowed us to do this and thereby incorporate improvements that were aligned to the goals of the project.

Data owners and information owners must be clearly defined. You must evaluate current data quality and make a plan to continue the improvement of data quality and information quality. It is also necessary to define standards for the security of data and information access because there will be sensitive data in the system. The design of the strat-

> “It is important for NGOs to use flexible and agile processes in order to rapidly align constant changes in information needs and to ensure the alignment of new strategic goals”

egy must consider a series of reports, performance indicators and measurements of the main processes.

At VE we obtained relevant data and main processes through interviews and brainstorming meetings with the directors. We ensured that this knowledge was reported in shared documents. In the mind map, we classified the reports and entities in the data model so we could ensure the minimum data to meet information needs. This data becomes a custom field in the CRM. We then evaluated the possible values and interactions with other entities before inputting these custom fields into the system. We then gave the possible values to complete the minimized open input data in the system, amending data quality such as a country list, questions with alternatives, etc. Next, we analysed the reports according to the area of interest, reducing them and maximizing their information.

The reports were given to the reports' owner so that every issue found in the reports could be dealt with directly by the owner. Opportunities for improvement and optimized processes were detected during the project such as the direct use of web forms in the CRM database. It is possible to collect data automatically, which reduces the time of the process and the duplication of the information source. The update of data allows decision makers to know the organization better and to make informed decisions, which also allows clear and segmented communication be sent to the to the network.

It is advisable to unify data sources, to select a unique repository of information, and to manage every information request from there, as was the case at VE, which chose to input data and processes into their CRM system. By identifying processes we facilitate ongoing improvement while the optimization of processes facilitates access to information and the inputting of data into the system. It is necessary to have the user's support and commitment to use the system properly. You must know the benefits of the proper use of the information which is being entered into the system and to know how much data quality and information quality depends on the user. Users will have to be trained in inputting data and reporting features. For this reason the early involvement of users is recommended.

Finally the strategy intends to give the right information to the right users. It is necessary to have traceability of data sources in reports with performance indicators. A BI strategy improves the relationship with organizations' partners and general contacts and establishes a social link thanks to their own data and information.

4 Conclusions and Future Work

The guidelines in this paper aim to show how to plan and implement a BI strategy in an NGO and how to customize it according to the organization's specific needs.

The idea is to measure program performance and campaign effectiveness so as to replicate this knowledge to similar organizations with similar objectives and to share in the success of this formula. Here on in there are many opportunities to manage by using information, such as identifying the profiles of the people and organizations in your support network, profiling donors, volunteers and contacts... It is also necessary to analyse past donation data to build a predictive data mining model for donations. Knowledge and data or information such as volunteers' working hours, missions that have been completed, the number of people in each partner institution, how the organization was led in the past and its status today, must be shared within the NGO's community.

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