

# **Increasing the Effectiveness of the Non-Profit Sector Through Virtualization A Case Study of Furniture Banks**

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## **Abstract**

This paper explores the requirements for a virtual organization (VO) that integrates nonprofits into a more efficient organization for supplying products and services to those in need. Though Canadian disbursement quota requires charities to spend less than 20% of their revenues on overhead costs, the majority exceed this amount. Part of the problem is that half of all Ontario non-profits have less than 10 employees and 40% of organizations have a budget between \$500,000 and \$1,000,000. The sheer number of non-profits providing overlapping goods and services, combined with the overhead burden, indicates there is an opportunity for greatly increasing the efficiency of this sector as a whole. Our approach involves examining a subset of nonprofits, namely furniture banks, in order to ascertain the requirements and constraints on integration within that sector.

**Keywords:** Virtual Organization, Food Banks.

## **1. Introduction**

The province of Ontario has roughly 60,000 non-profits (Blumberg, 2014), providing a vast array of goods and services. These services overlap in what they provide, the types of clients they serve, and their geographic locations. The size of a non-profit can be measured by number of employees or budget. Half of all Ontario non-profits have less than 10 employees and 40% of organizations have a budget between \$500,000 and \$1,000,000 (Kislenko, 2012). Non-profits experience high levels of pressure to keep administrative costs to a minimum. The Canadian disbursement quota requires charities to spend less than 20% of the amount receipted by the charity to be spending on overhead costs (Blumberg, 2008). The sheer number of non-profits providing overlapping goods and services, combined with the overhead burden, indicates there is an opportunity for greatly increasing the efficiency of this sector as a whole. A second issue is accessibility. With the large number of non-profits, those who are in need of their services have difficulty finding them. Consequently, organizations such as 211 exist as a single point of access for people to find the goods and services they need. Never the less, 211 call centre representatives face the same problem of knowing what non-profits are able to provide the goods or services their callers need.

This paper explores the requirements for a virtual organization (VO) that integrates nonprofits into a more efficient organization for supplying products and services to those in need. Our approach involves examining a subset of nonprofits, namely furniture banks, in order to ascertain the requirements and constraints on integration within that sector. Furniture banks operate under a number of restrictions that limit their operations from both the person who wishes to donate furniture, and the person seeking furniture. For example, they may restrict the:

- Geographic locations they serve,
- Types and size of furniture they carry,
- Types of clients they serve,
- Mode of pickup and delivery,
- Hours of operation, and
- Visibility of their inventory.

All of which pose challenges for virtualization.

In the remainder of the paper, section 2 reviews the virtual organization literature. Section 3 provides a definition for a virtual organization and an overview of furniture banks in Ontario. Section 4 describes the current process for donating and receiving furniture from furniture banks in Ontario. Section 5 defines the requirements for a virtual organization for the furniture bank sector.

## **2. Background**

### **2.1 Literature Review**

Mowshowitz (1997) coined the term Virtual Organization (VO) in the late 1970s. His definition highlights an approach that requires management activities to be performed simultaneously, but independently of one another in order to satisfy a set of requirements. He identifies core managerial activities that would be carried out by a VO which include formulating abstract requirements, tracking and analyzing concrete satisfiers, the dynamic assignment of concrete satisfiers to abstract requirements and lastly exploring the analysis criteria. This definition provides a preliminary and broad understanding of the capabilities required of a VO.

Definitions of VOs continue to evolve, for example, the concept of geographical dispersion. Using information and communication technologies (ICT), organizational teams and partners are able to work across geographical boundaries (Rachman & Bhattachryya, 2001). ICTs form the backbone of the virtual organization (Mislán, 2016) (Chung et al., 2015) (Stillman, 2009), enabling the VO to act as a single body (Bedük, 2005). The product or service is not built/provided by a single location or a single corporation (Grenier & Metes, 1995). Travica (1997) states that a “VO refers to a new organizational form which manifests itself as a temporary or permanent collection of geographically dispersed individuals, groups, organizational units – either belonging or not belonging to the same organization -- or entire organizations that depend on electronic links in order to complete the production process”. It is worth pointing out that it is not necessary for a central office to exist and manage this collection of organizations, but as the VO grows and becomes more complex, it would be recommended to have a governing type of body to manage the flow of information.

Knowledge is an important component of the VO (Economist, 2009). The sharing of knowledge is facilitated here and it is a fundamental component that contributes to the VO's success. . As virtual organizations continue to grow in both popularity and individual size, a growing importance is placed on how to effectively and accurately exchange knowledge between individuals, teams and other organizations.

Another aspect of a VO is the supplier network that it forms. As companies direct themselves towards a more virtualized platform, they redirect their focus to core competencies and outsource other requirements to partner organizations whose task is their respective core competency. This network may either be permanent or temporary, but it must aim towards a purpose of solving a specific problem (Ferraggine, Doorn & Rivero, 2009).

### **2.2 Ontario's Furniture Bank Landscape**

The traditional definition depicts a Furniture Bank as a not-for-profit organization, and registered charity, that provides furniture to those in need at little to no cost for the consumer (Furniture Bank, 2016). A furniture resale store is one that accepts donated furniture with the intent to re-sell the items at 50-80% of the retail price. Different from second-hand stores, these are still run by non-profit organizations that take the earned income and invest it into other social services projects. For the purposes of this paper and analyzing the overall lifecycle of furniture, we will discuss the traditional furniture bank model and also briefly highlight furniture resale stores, as they are currently direct competitors in terms of resources. There are two steps to the Furniture Bank process. First, there is the donation process, where individuals provide gently used furniture, which they no longer need. Secondly, there is the process of providing furniture to people in need.

There are two main chains of Furniture Resale Stores in Ontario; Habitat for Humanity ReStore and the Salvation Army Thrift Store. Habitat for Humanity ReStore has 46 locations in the province and the Salvation Army Thrift Store has 35 locations. In both cases, their individual locations run independently, yet they receive oversight from the National Headquarters of the company while receiving support where need be.

In terms of receiving donations, both organizations strive to receive as many high-quality donations as possible. This involves receiving donations from individuals but also partner organizations in which an arrangement has been made to receive new items. These partners include (and are not limited to) retailers; lighting stores, show homes and suppliers who have not have had paid items picked up by the customer after an extended time frame. For the

Salvation Army, all items are donation based and can be made at various drop bins or in-person at warehouses. Habitat for Humanity offers an extended service where the donor can choose to drop off items in person, or, they can choose to have it picked up or even dismantled at no charge.

The importance of high quality items is due to the target customer for these locations. The customer treats these restores as another shopping experience. These customers are far different from that of traditional Furniture Banks, which will be discussed more in depth in the following section. At Furniture ReStores, the targeted customer is one looking for a discount. They can range from young families and students to antique and bargain hunters. Both of these furniture restores have a strong presence on search engines.

### **3. Furniture Bank Operations**

This section is based on an analysis of the following furniture banks:

- The Furniture Bank ([www.furniturebank.org](http://www.furniturebank.org))
- Mississauga Furniture Bank ([www.mississaugafurniturebank.org](http://www.mississaugafurniturebank.org))
- iCare ([www.immanuelcrc.ca/icare.html](http://www.immanuelcrc.ca/icare.html))
- Niagara Furniture Bank ([www.furniturebankcanada.org](http://www.furniturebankcanada.org))
- Mathew House ([www.matthewhouse.ca/matthewhouse/index.php](http://www.matthewhouse.ca/matthewhouse/index.php))
- Scarborough Centre for Health Communities ([www.schcontario.ca](http://www.schcontario.ca))
- Jewish-Russian Community Centre Furniture Depot ([www.jrccfurnituredepot.org](http://www.jrccfurnituredepot.org))

#### **3.1 Donation Process**

Once an individual has heard of a furniture bank and has decided to donate furniture, they must first check whether or not their items meet the furniture bank's requirements. Each furniture bank operates differently in regards to what they will and will not accept. The only exception would be that most furniture banks reject baby items and unassembled furniture. Ideally, this individual has spoken to a representative from the organization about these rules prior to coming in to drop off items. There are circumstances where furniture is rejected due to policies the donor is unaware of. The alternative to dropping off furniture is having it picked up. Furniture banks vary in their capacity to pick up items. Some own their own trucks and have designated drivers to pick up the furniture from the donor for a fee. Other organizations have partnered with a trucking company who will arrange these services for them. In some instances, for example Furniture Bank, the organization will use a combination of both. Once furniture is accepted by the organization, the donor is issued a tax receipt.

#### **3.2 Recipient Process**

All traditional furniture banks require an individual to be referred by a social service agency prior to using their services. If individuals contact the furniture bank directly without a referral, they are given the contact information for partner agencies. This includes, but is not exclusive to, individuals who have been recently housed after leaving a shelter, are new immigrants to the country, individuals who do not have furniture, single parent families who have left an abusive situation and those working in Public Health after having bed bugs.

Once a request is placed from the social service agency to the furniture bank, a time is arranged for when this individual can come into the warehouse and select the furniture they need. These appointments are typically one hour in length and furniture banks often encounter the issue of individuals not arriving for their appointment. For many of the furniture banks previously mentioned, this is one of the main problems they face. This becomes of particular importance when their services have waitlists; a missed appointment is a missed opportunity for another family to benefit from these services. Attempts to remind individuals through e-mails and phone calls have been made but have not proven effective. Each furniture bank varies in regards to how many items are permitted per family. A maximum number of items per meeting are set by each furniture bank, however, depending on the opinion of the social service agent, this number may be flexible.

#### **3.3 Operation Constraints**

In this section we identify the operational constraints that the virtualization of furniture banks should account for.

**Product Constraint.** Furniture banks limit the types of products they are willing to accept. Constraints can be on size, type of furniture, and quality. With respect to type of furniture, there are common items that are not accepted across most furniture banks including king sized beds, hospital beds and young children's furniture. Any furniture

items must also be pre-assembled. Quality is another constraint. It is measured visually by the state of the items themselves. Due to its subjectivity, standards may vary, however the bottom line is that overly used or damaged goods will not be accepted. Product constraints can be a source of inefficiency. Individuals who want to donate furniture often do not check the restrictions on what can and cannot be accepted. This is more a problem for furniture drop-off where donors are not required to speak with a representative prior to the donation itself. If the donation does not meet said requirements of the organization, it must be rejected on site. However, if the donor arranged a pick up, this requires working alongside an employee of the organization itself, they will be more informed of the donation constraints and wasted time, on both the donor and the nonprofits side, would be saved.

**Client Constraints.** A FB may limit their recipients to:

- a geographic area, such as Ottawa.
- referrals from specific social service agencies, or
- other characteristics, such as being recent immigrants.

**Transportation Constraint.** A number of constraints exist with respect to transporting furniture from the donor or to the recipient:

- *Availability:* Some agencies do not provide transportation. They either rely on the donor or a third party.
- *Location:* Some agencies may restrict the geographic locations they service.
- *Capacity:* Some agencies have demand that exceeds the capacity of their transportation resources.
- *Size:* The size of furniture may be too large for the transport.
- *Coordination:* The time that the donor or recipient is available may not coincide with transport availability.

**Servicing Constraint.** Furniture banks are constrained by the time available to “service” their clients. For example, a recipient is limited to one hour appointments to select their furniture. Hence, the furniture bank is then limited in the number of people it is able to service, leading to waitlists of individuals who require their services.

**Supply/Inventory Constraint.** Forecasting supply is a difficult task unless you have a consistent stream of inventory incoming from partner production or retail agencies. Forecasting individual donations must consider awareness growth, seasonality and determining the stages in life where one would ‘purge’ their furniture. However, there are methods being used to predict situations in which one will require furniture to be donated. Furniture bank capitalizes on Google Ad Words by targeting consumers who search “furniture donations” but also related buzzwords including “downsizing”, “moving companies” and “junk removal”. They tap into an audience that may not have otherwise considered furniture donation as an option when removing unwanted furniture. Inventory levels vary across agencies. More populated urban areas, such as the Greater Toronto Area, have higher donation volumes than rural regions. While particular locations may receive more of one type of product than another, especially when factoring seasonal effects, furniture banks located in rural areas are considerably more limited. This has been observed at the Habitat for Humanity ReStores and the Salvation Army Thrift Shops. This is also a likely cause for why Ontario’s Furniture Banks are all located in cities with larger populations.

**Marketing Constraint.** Smaller agencies have limited amounts of money they can allocate towards marketing budgets, often having to rely on word-of-mouth as a means of finding new donors. There exists a wide gap between these smaller agencies and larger ones that have the means to use alternative and more costly methods of acquiring new donors.

#### **4. Virtual Organization for Furniture Banks**

The goal of this project is to define the requirements for a virtual furniture bank (VFB) that provides a single point of contact for both the donor and the recipient (both referred to as user herein). As each of Ontario’s furniture banks has an individual set of constraints that they operate under, the VFB must consider each of these when accessed by a user. From the point of view of the user, the system should appear as a single “store” rather than a collection of different furniture banks that are accessed separately - it should not be the equivalent of an online mall. The contents of the VFB changes dynamically based on the user’s requirements and the participating Furniture Banks’ constraints. From a donor perspective, constraints on drop-off locations or types or items accepted would restrict which furniture banks will appear as viable options from the system. For recipients (who are required to work through a social service agency), only items from furniture banks that partner with the respective social service agency will be displayed on the system as available options to shop. For employees of the furniture bank, the VFB enables a more equal distribution of products, depending on the need from particular communities. As more

recipients are able to search for furniture online, more time is freed up for the organization to focus on marketing initiatives or servicing those who need to visit the furniture bank in person.

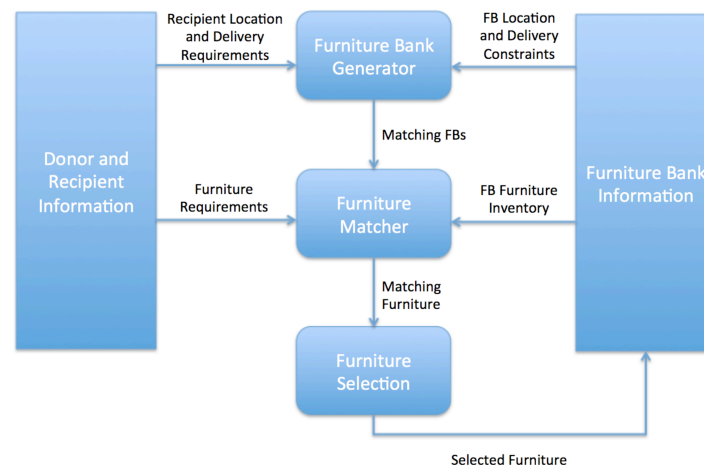
#### 4.1 Usage Scenarios

*Recipients.* Once one is approved to use the VFB system, users are able to search and browse furniture via a web interface. The furniture displayed is a collection of the inventories found at furniture banks that satisfy the client and FB constraints, e.g., have partnered with the respective social service agency. From the user's perspective, items are separated by category of furniture rather than where the furniture is coming from. Also, although furniture banks already partner with local social service agencies, the VFB must filter the search results to only include items that can be delivered to the recipient's location. For example, if a family is looking for a new couch and their social service agency is partnered with furniture banks A, B and C, all couches from each of these furniture banks will be displayed if they are within the delivery radius. The family may then add the couch to their cart and proceed with the checkout process.

*Donors.* Donors must first register via the web site, providing personal information including address. They then specify one or more furniture items they wish to donate, and if they want them to be picked up, they have to specify a set of time windows they are available to have the items picked up. The VFB then matches the to-be donated items to the requirements of individual furniture banks. For example, once the user uploads all relevant details of the item into the VFB, including the type and dimensions, the system can then determine which furniture banks would have their constraints satisfied. Once feasibility is determined, the item can be matched to furniture banks based on a combination of proximity and need. If the furniture is to be delivered by the donor, the VFB returns a ranked set of FBs they may deliver the furniture to, along with the times that they can delivered. The ranking is based on the inventory needs of the FBs. If the furniture is to be picked up, the donor is presented with a set of time slots that the FB can be picked up. They choose the slot that best suits them.

*FB Staff.* A staff member will be able to perform a number of tasks via the VFB. The first set of tasks revolve around inventory. They will be able to search what is in their inventory, see what has been reserved by the VFB and manually reserve furniture, edit inventory, and generate a number of reports such as aged inventory, high turn inventory, and inventory by category. Finally they will be able to do data mining such as identifying the characteristics of who donates each category of furniture, and the characteristics of recipients for each category of furniture. The second set of tasks they can perform is approval, such as approving potential donations, approving allocation of inventory to recipients, and approving registered agencies and recipients.

#### 4.2 Information Architecture



The information architecture processes client requests by successive filtering based on client and FB requirements and constraints. The set of FBs is first filtered based on location information of the FB and the client, i.e., is the client within the catchment area of the FB. It also filters based on the delivery constraints of the FB and the delivery requirements of the client. The next step is to filter the furniture inventory of the subset of FBs based on client

requirements. Finally the client chooses from the filtered list of furniture that is then used to update the FB's inventory.

## 5.0 Conclusion

This paper applies the concept of virtual organizations to the non-profit sector. In particular, we examined the furniture bank sector in order to ascertain their donor and recipient requirements and the food bank operating constraints. We then identified a set of use cases and proposed an information architecture and set of business processes that satisfy these requirements and constraints.

We believe the application of virtual organization concepts to nonprofits would contribute to a wide range of benefits for both the organizations themselves and the recipients of the services. Benefits include reducing the time and increasing the success of clients finding the furniture they need. Secondly, it will enable furniture banks to share inventory across the network, enabling effective re-allocation to where the need exists. Thirdly, it will enable the analysis of demand patterns both in terms of types of furniture and location.

Although this has only analyzed a single category of organizations, this paper is intended to serve as a model that can be replicated for other industries, eventually resulting in a widely ranging social needs marketplace assimilating all nonprofits on the province.

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