# MAKERERE UNIVERSITY

# BANTU FUND E-PORTAL SYSTEM

By
BSE 17-35

WEB APPLICATION SYSTEM

DEPARTMENT OF NETWORKS

SCHOOL OF COMPUTING AND INFORMATICS TECHNOLOGY

A Project Report Submitted to the School of Computing and Informatics Technology

for the Study Leading to a Project in Partial Fulfillment of the

Requirements for the Award of the Degree of Bachelor of

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Supervisor
Mr. Kamulegeya Grace

Signature
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Department of Networks

School of Computing and Informatics Technology, Makerere University

kougas@gmail.com, +256-75-6100946

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# Table of Contents

# 1. Introduction

This document contains the system requirements for **BANTU FUND… A CROWD FUNDING E-PORTAL SYSTEM.** These requirements have been derived from several sources, including the websites; Kickstarter, Indiegogo and Start Up Valley.

## 1.1 Purpose of This Document

This document is intended to guide development of **BANTU FUND… A CROWD FUNDING E-PORTAL SYSTEM.** It will go through several stages during the course of the project:

1. **Draft:** The first version, or draft version, is compiled after requirements have been discovered, recorded, classified, and prioritized.
2. **Proposed:** The draft document is then proposed as a potential requirements specification for the project. The proposed document should be reviewed by several parties, who may comment on any requirements and any priorities, either to agree, to disagree, or to identify missing requirements. Readers include end-users, developers, project managers, and any other stakeholders. The document may be amended and re-proposed several times before moving to the next stage.
3. **Validated:** Once the various stakeholders have agreed to the requirements in the document, it is considered validated.
4. **Approved:** The validated document is accepted by representatives of each party of stakeholders as an appropriate statement of requirements for the project. The developers then use the requirements document as a guide to implementation and to check the progress of the project as it develops.

## 1.2 How to Use This Document

We expect that this document will be used by people with different skill sets. This section explains which parts of this document should be reviewed by various types of readers.

**Types of Reader**

The requirements specification document for the proposed BANTU FUND system will be read by graphics designers, project managers, programmers, System analysts, System designers, and end users who include the Governmental organizations, NGOs, individuals and philanthropists.

- **Programmers**

  Important sections

  Specific Requirements

  High Level Technology Architecture

  General Description

  Glossary

  Safely Skipped

  Customer Support

- **Graphics Designer**

  Important Sections

  Purpose of this document

  General Description

  User Interface Requirements

  Glossary

  Safely Skipped

  Customer Support

- **Project managers**

  The project manager is required to read all of the sections so as to get a proper grasp of the entire concept in order to properly plan and budget for the project.

- **End Users**

  Important Sections

  General description

  User characteristics

  Glossary

  Safely skipped

  High level technology

  Specific requirements

**Technical Background Required**

The basic knowledge required is English literacy, being able to read written English language and a bit of Computer literacy to be able to navigate the text editor in case one is using a computer.

Flash programmer. Skills in programming languages for example html. PHP, JavaScript, java and android.

Graphics designer. Equipped with skills in animations and graphics manipulation

Project managers. Should be able to set good tactical achievable goals and have good communication skills to interact with the project team and other stakeholders efficiently so as to manage the time and budget efficiently.

End users. Should be computer literate and have basic knowledge about the web and its operations.

**Overview Sections**

The sections that should be read by someone who only wishes to gain an overall understanding of the project, or which should be read first before technical requirements are reviewed include;

- Section 1 concerning the introduction
- Section 2 concerning the General description

- Section 6 concerning the Appendices
- Section 7 concerning the Glossary
- Section 9 concerning the Index.

**Reader-Specific Sections**

- Flash programmer. Section 1.5,3.1, 3.2, 3.3 and section 4
- Graphics designer. Section 3.5
- Project manager. Section 2
- End user. Sections 2.3 and 3.1

**Section Order Dependencies**

1. **Introduction**
   The following sections will need to be read in the order as listed below to enable the reader fully understand the document:
   Purpose of the document…….1.1
   How to use a document……1.2
   Scope of the product…….1.3
   Business case for the product……1.4
   Overview of the requirements document….1.5

   The other sections not listed may not require to be read in any order and still the document can be fully understood.

## 1.3 Scope of the Product

The boundaries of the system according to the research will show what the system will do and the limitations of the system according to the findings that were made during the research.

The stakeholders of the proposed system include NGOs, governmental organizations, Cooperate Social Responsibility funders, philanthropists, concerned members of the

society, individuals and System developers and Administrators. The boundaries of the system will be will be divided in different areas as follows;

### 1.3.1 System Scope

The system has two types of users. The Fund Contributors who are providing the funds and the Callers for Funds.

### 1.3.2 Geographical Scope

The current focus of the system is Uganda. We were focusing on behavior of these firms in areas of central Uganda that is Kampala, the capital. That is from which we got our sample as we are running our pilot from. We are picking our sample focusing on small business owners, startups and people needing funding around Kampala to pursue scholarships in education and sports plus those in need of medical funding for example to fly to India to do operations.

We are looking at covering that span first as a pilot and then expanding.

### 1.3.3 Functionality Scope

The following are the functional requirements;

- The system allows the administrator to approve and hence upload only the vetted requests for funding.
- The system integrates with pay pal enabling donations to be made.
- The system advertises fundraising campaigns to the donors who support those drives and are passionate about those causes.
- The system provides a platform that enables the posted drive campaigns to be seen by large group of potential donors enabling them to pitch their ideas improving their chances of getting funding.
- The system offers recognition for donors if they do not wish to be anonymous.

- The system provides a provision for the Seeker to cancel a drive that is not yet fully funded and get the money needed.
- The Seeker can request for withdrawal of their money before it has reached 100% and before the time for the drive campaign has gotten done.
- The system enables accountability reports to be uploaded to the system by Seekers and displayed next to their drives so as to show transparency.
- The system generates reports for each donation showing the donors, time, donation amount, percentage increased and does statistics using this data displaying using a line graph.

The following are the constraints (non-functional requirements);

- The Seekers for funds do not post directly to the system. Their drive campaigns are first vetted and then approved by the administrator before posting takes place.
- There is an evaluation algorithm used to calculate the criticality index of drives so that the most important drives appear first. It is based on qualitative and quantitative analysis.
- There is a time limit as for how long the campaigns can be up for.
- The system displays the amount of money needed for the funding.
- It also shows the percentages remaining to completion using a progress bar.

The following are the user requirements;

- A system user needs a basic understanding of the English language and basic I.T skills to know how to get around a computer and a mobile phone.
- To register the user's data requirements are simply their name, national ID number, email address, telephone number, password and user name.

### 1.3.4 Methodology scope

The information for the requirements will be gathered using hard copy interview guides, questionnaires, reviewing documentation, internet research and reviewing existing systems. The focus will be around central Kampala due to costs of travelling and convenience. We shall follow through with object oriented analysis and design and implement using Model View Controller (MVC) design pattern to separate concerns and enable simultaneous development of different models by the team models. System testing and validation on the three levels, unit testing of individual components of the modules, then integration testing to ensure that all the unit modules work together as a system to produce the required functionalities and validation testing and maintenance.

### 1.3.5 Sample size scope

The information will be gathered from a number of people but there will be criteria from which the people selected for the information will be chosen. Those criteria will be in that they need to be stakeholders from all the different subsets of our stakeholders. We shall mainly deal with a few from the subsets entrepreneurs and small business owners, students and sportsmen wanting scholarships, medical patients with illness requiring funding, NGOs and donors in Kampala.

Below are the lists of the resources that will be used when determining the requirements for the system?

- We shall use the published magazines and articles that have been published both in hard copy and soft copy that are online
- We shall also analyze the reports from NGOs.
- We shall look into and analyze the existing systems.
- Not forgetting, last but not least, the people.

## 1.4 Business Case for the Product

There is need for a transparent platform where people can express and support genuine causes and where through supervision and running background checks on the people requesting for their causes to be published only legitimate claims can be handled.

First and foremost, the system will provide a platform for people with genuine problems to call for and receive aid from donors who have interest in those areas and want to make a difference with their money by helping make the world a better place like philanthropists, individuals and NGOs. This is to help the poor children, the sickly in need of medical assistance on the verge of death, those facing natural disasters such as landslides and aide in community developmental projects.

The project will enable people (startup business owners) to pursue their entrepreneurship dreams that were only being hindered by lack of enough capital through providing them that platform.

The project will help women business owners with minor issues or challenges faced to raise appropriate funding for smooth running of operations.

The project will provide donor satisfaction by giving donors a platform to support their passionate drives that they believe in, putting their money to good use.

The project will provide donors with accountability for the use of their money providing them with reports and updates of the drives they are funding.

The project will improve on transparency in the crowd funding business, fighting corruption.

## 1.5 Overview of the Requirements Document

The following are the functional requirements;

- The system allows the administrator to approve and hence upload only the vetted requests for funding.
- The system integrates with pay pal enabling donations to be made.
- The system advertises fundraising campaigns to the donors who support those drives and are passionate about those causes.
- The system provides a platform that enables the posted drive campaigns to be seen by large group of potential donors enabling them to pitch their ideas improving their chances of getting funding.
- The system offers recognition for donors if they do not wish to be anonymous.

- The Seeker can request for withdrawal of their money before it has reached 100% and before the time for the drive campaign has gotten done.

- The system enables accountability reports to be uploaded to the system by Seekers and displayed next to their drives so as to show transparency.

- The system generates reports for each donation showing the donors, time, donation amount, percentage increased and does statistics using this data displaying using a line graph.

The following are the constraints (non-functional requirements);

- The Seekers for funds do not post directly to the system. Their drive campaigns are first vetted and then approved by the administrator before posting takes place.
- There is an evaluation algorithm used to calculate the criticality index of drives so that the most important drives appear first. It is based on qualitative and quantitative analysis.
- There is a time limit as for how long the campaigns can be up for.
- The system displays the amount of money needed for the funding.
- It also shows the percentages remaining to completion using a progress bar.

The following are the user requirements;

- A system user needs a basic understanding of the English language and basic I.T skills to know how to get around a computer and a mobile phone.
- To register the user's data requirements are simply their name, email address, location and telephone number.

# 2. General Description

This section will give the reader an overview of the project, including why it was conceived, what it will do when complete, and the types of people we expect will use it. We also list constraints that were faced during development and assumptions we made about how we would proceed.

Bantu Fund… A Crowd-Funding E-Portal System is a platform that acts as a matchmaker between donors and likely recipients that enables probable donors to fund projects, ventures or causes they believe in by raising monetary contributions from their large number.

It provides a perfect medium because it allows a Caller for Funds to reach a massive audience that they may not have had access to before.

## 2.1 Product Perspective

We have chosen to develop this product to provide people a platform to get help and to give help in a clear legitimate way, transparent in a sense and free of con artists looking to make a quick buck. It enhances and simplifies interaction and communication between the donors and those seeking donations.

The primary stakeholders include NGOs, the governmental organizations, philanthropists, Cooperate Social Responsibility Funders, administrators, system developers and analysts, the project manager, concerned members of the society, entrepreneurs, inventors, small business owners, students and medical patients.

The project is being developed by Cyber solutions, a team of young highly motivated and dedicated Software Developers under the direct guidance of Mr. Kamulegeya Grace and the Supervision of Mr. Alex Mwotil.

We, the developers will get a lot of valuable experience and pleasure from creating something we hope to add value to the world making it a little bit better, knowing we have helped some people breath more easily. People from all walks and different levels of life will benefit from this product.

## 2.2 Product Functions

Our product provides a platform for people with need for donations to share their causes and have interested donors support them financially.

Donors can choose areas of interest among categories such that they see drives they have interest in, avoiding clutter. Donors can monitor the progress of the drives they are supporting and choose whether to be anonymous or recognized. Users can upload pictures.

The following are the main functions to be built into the product;

- ✓ The system will allow the administrator to approve and hence upload the vetted requests for funding.
- ✓ The system will work with financial means to enable payments like PayPal, and mobile money.
- ✓ The system will advertise fundraising campaigns to the donors who support those drives and are passionate about those causes.
- ✓ The system will provide a platform that acts as a matchmaker for people seeking funds and a large group of potential donors.
- ✓ The system offers recognition for donors if they do not wish to be anonymous.
- ✓ The system will provide customized drives the donors can support so as to only see requests that they are passionate about.

## 2.3 User Characteristics

### 2.3.1 Types of users

People from all walks of life. A user can choose either to donate or to seek donations on any given day a click of a button away. There are two types of users; Fund Contributors (Philanthropists, CSR funders and NGOs) and Callers for Funds (Individuals and Governments). The system should be open such that users are not only local (based in Uganda) but are also international.

### 2.3.2 Technical Background required

They need to be literate, able to read written English language and also have some basic computer literacy knowledge.

### 2.3.3 Motivation for using the product

The fund contributors need a transparent platform where they feel their money is being put to good use to help people where there is social accountability for donations. The callers for funds need a pavilion from which they can share their needs to a wide audience of probable donors.

### 2.3.4 Obstacles the users may encounter

There is an obstacle of a strict timeline. To some, a 30 to 40-day campaign sounds like a long time but when you think about how much goes into the campaign, there is little margin for error. A delay in updates, a lack of press hits or not driving enough traffic to the campaign can lead to less backers. [1]

Sometimes people need more time to either seek donations or be sure that they approve of the drives.

Some users fail the background checks done.

No inventory. Many times, creators turn to crowd funding sites in order to bring their product to fruition because without crowd support they do not have any means to bring it to market.

## 2.4 General Constraints

We are working with PHP, CSS and HTML. Java for database connectivity.

We will use java programming language and android technologies so our product is tailored to suite Android phones.

We are working with and have to integrate with financial systems such as mobile money, PayPal, MPESA and the like to deal with the Escrow holding account.

## 2.5 Assumptions and Dependencies

The finished product will integrate a financial payment mechanism such as PayPal, MPESA or mobile money, consisting of a financial module to cater for financial transactions.

The finished product would need to be delivered over the internet.

The potential stakeholders will read the manuals and be able to navigate the BANTU FUND system.

# 3. Specific Requirements

This section of the document lists specific requirements for ***BANTU FUND… A CROWD FUNDING E-PORTAL*** Requirements are divided into the following sections:

1. User requirements. These are requirements written from the point of view of end users, usually expressed in narrative form.
2. Reporting requirements.
3. System and Integration requirements. These are detailed specifications describing the functions the system must be capable of doing.
4. Security Requirements
5. User Interface requirements. These are requirements about the user interface, which may be expressed as a list, as a narrative, or as images of screen mock-ups.

## 3.1 User Requirements

There are three types of users; the administrator, the Caller for Funds and the Financial Contributors.

### 3.1.1 The callers for Funds

The first-time user registers entering user information such as name, national ID number, telephone number, email address and physical address.

The system creates a fund account for them basing on the registered information.

The system enables them to make calls for financial help, stating the category of the cause/drive using written text, photographs and video taking. However, the system Administrator has to verify them first before sharing on the site for all to see.

### 3.1.2 The Administrators

The system allows the administrator to verify and validate the call or cause for financial help through background checks.

The system enables the administrator to publicize the genuine calls or causes on the e-portal so as to share them on the E-Portal.

The system integrates with popular social media accounts like Facebook, twitter and Instagram and allow the administrator to run campaigns for the financial calls publicized on the e-portal as a means of social media advertising.

### 3.1.3 The financial contributors

The financial contributor searches for a cause/drive that they are interested in. A suitable cause to fund such as Education and Sports, Social Community Development Projects, Health, Disaster recovery and Entrepreneurship.

The Financial Contributors pay for the financial drive chosen that they support through platforms like Visa, Mobile money or PayPal. The donor makes a choice whether to give his/ her details on remain an anonymous contributor.

A statement of contribution and success stories about similar funded drives are provided to the donor after he/ she has founded a certain cause.

The donor receives notifications as to the project updates as they hit their milestones and expected targets.

A wall of fame for each drive is displayed showing those who have contributed.

## 3.2 Reporting Requirements

Notifications pushed to recipients whenever a donation target milestone has been achieved for example 25%, 50%, 75% and 100%.

Project updates of drives reaching milestones being pushed as notifications to the donors who supported those drives.

The system shall notify the donors and financial seekers about the duration/ timeline of the cause being funded

The system shall notify how far the project/ financial call has been funded in percentage on the progress bar.

The system shall provide a payment code to identify the money being paid the donor on the virtual fund account.

The system shall issue a statement of contribution to the financial contributor after the donation.

The system shall publish the names of donors and their details on the wall of fame in case the wish to appearing in chronological order for each cause.
The donor shall receive a report at the end of the project timeline, whether it is successful or not.

## 3.3 System and Integration Requirements

The system requirements define what the system is required to do and the constraints under which it is required to operate.

### 3.3.1 The functional requirements

- The system will provide a platform that acts as a matchmaker for a meeting point for entrepreneurs and other people seeking funds and a large group of potential donors enabling them to pitch their ideas improving their chances of getting funding.
- The system will integrate with mobile money and pay way enabling donations to be made.
- The system will advertise fundraising campaigns to the donors who support those drives and are passionate about those causes.
- The system will allow the administrator to approve and hence upload the vetted requests for funding.
- The system offers recognition for donors if they do not wish to be anonymous.
- The system provides customized drives the donors can support so as to only see requests that they are passionate about.

### 3.3.2 The non-functional requirements (constraints)

- There will be a time limit as for how long the campaigns can be up for. A time lines

- The recipients or donors seeking funds will not be able to post on their own. They will first have to be vetted to confirm that their claims are legitimate, background checks will be done. This is to prevent fraud.
- The system will not display the amount of money needed for the funding. It will only show the percentages remaining to completion.
- The system will provide a financial ceiling for the donations to prevent people from receiving more money than they asked for hence providing accountability by preventing misallocation of funds.

### 3.3.3 System Requirements for the Architecture

The use of the Unix Operating System could be considered as an alternative to the use of Windows NT. Unix can be run on high end workstations and servers built by Sun Microsystems, or on low-end systems such as Intel based PC's. Unix excels in environments where there are very high transaction rates or where system throughput is a critical factor. Use of Unix in the Bantu Fund system may be a factor in support of a common operating system.

The use of Unix for this system has few advantages over the use of Windows NT because this system does not have a high transaction rate or a large system throughput requirement. The use of Windows NT allows a greater flexibility in the choice of Commercial Off-The-Shelf (COTS) software. Windows NT also has a simpler user interface than do most Unix implementations. This also simplifies the support of Laptop equipment as the server and clients will be based on the same software suite.

The use of Windows NT also has the advantage over Unix in an Intel deployment because the PC manufactures can pre-install NT and provide end-to-end support of the system. To receive the same level of support for a Unix system requires the purchase of a commercially supported Unix package (such as SCO Unix) with substantial additional maintenance costs. [3]

### 3.3.4 Integration with other systems

The system will have many virtual accounts per causes that are worked on daily to update the Escrow Holding account that is linked with a bank account where mobile money, checks, VISA, PayPal and Direct Deposits can be made.

Each cause will have a unique code attached to it as its primary key. Whenever contributions are made to it, it is treated as a slice off of the virtual account.

The system will integrate with other finance handling systems as a means to enable payments like PayPal, MPESA and mobile money.

## 3.4 Security Requirements

The system will have reasonable controls with permission practices. **Confidentiality, integrity and availability**, also known as the **CIA triad**, is a model designed to guide policies for information security within an organization. [2]

### 3.4.1 Availability

Availability is best ensured by rigorously maintaining all hardware, performing hardware repairs immediately when needed and maintaining a correctly functioning operating system environment that is free of software conflicts.

### 3.4.2 Confidentiality

Confidentiality security requirements describe the need to protect the data approximately. The system will use the user classes to define boundaries of information sharing to ensure confidentiality as appropriate. Any data that should be viewed by a restricted customer must be protected with appropriate measures.

Confidentiality is roughly equivalent to privacy. Measures undertaken to ensure confidentiality are designed to prevent sensitive information from reaching the wrong people, while making sure that the right people can in fact get it: Access must be restricted to those authorized to view the data in question.

### 3.4.3 Data Integrity

Integrity involves maintaining the consistency, accuracy, and trustworthiness of data over its entire life cycle. Data must not be changed in transit, and steps must be taken to ensure that data cannot be altered by unauthorized people

The integrity of the system data will be critical to its success as a product. Therefore, extensive data validation and review will be performed both before data are uploaded to the system and as part of the upload process for example through performing background checks on the callers for funds before the administrators decide to share the causes on the system website.

The system will need policy and procedures protecting the data from intentional or unintentional modifications and to ensure accurate data are made available for example even after log in, the administrator should not be able to alter the details of payments made and other transactions to retain data integrity.

## 3.5 User Interface Requirements

The system will use commonly understood vocabulary; the system shall be using terminologies commonly understood by the intended users of the system without much training.

The system shall be complete and all the users can perform all functions from the user interface.

The system interface shall contain a search button which may help give the users assistance when need arises.

The interface shall contain a navigation menu clearly seen to every member but controlled access that will enable the users to navigate to the desired pages on interest.

The home page shall contain a brief summary of the contents of the system, it will also show some of the existing projects being worked on.

The login and register forms shall be visible to the public even when they have not logged in as an administrator preferably on a specific button or on the home page menu.

The home page shall have a slide show which will give and introduction to the viewers of the system about the existing projects and purpose of the system.

The system shall show the progress of the existing project and preferably how much money has been contributed for the project at that specific time.
The system shall have a button or a link on a specific page which will display all the previous contributions and the individual that contributed to the cause. (report)
There will also be reports showing the accountability for the previous projects regardless if they were a success or not.
The system will show a time limit to the specific causes that are being funded on the system to give room for others to get funded as well.
The bantu crowd funding e – portal will always show the amount required for the project/cause and will show the amount contributed so far at that specific time to avoid over contribution and also give chance to other projects to get funded.
The system shall allow the administrators to upload images that can add a more detailed description about the causes/existing projects.
The home page shall have a logo of the company running the crowd funding e – portal.
Branding shall be consistent on all pages including color, footers and headers to show
Responsive font sizes and color styling that remains the same in all browsers and all devices.
The e-portal will be Ultra Responsive meaning it will be fully responsive on different resolutions such as tablet, smart phones, desktops and laptops resolution and provides a good responsive behavior in responsive mode.

Here are some of the screen layouts for the Bantu crowd funding E – Portal.
The image below shows some of the possible layouts we are thinking of using for the Bantu crowd funding.

The layout to use for the E- portal

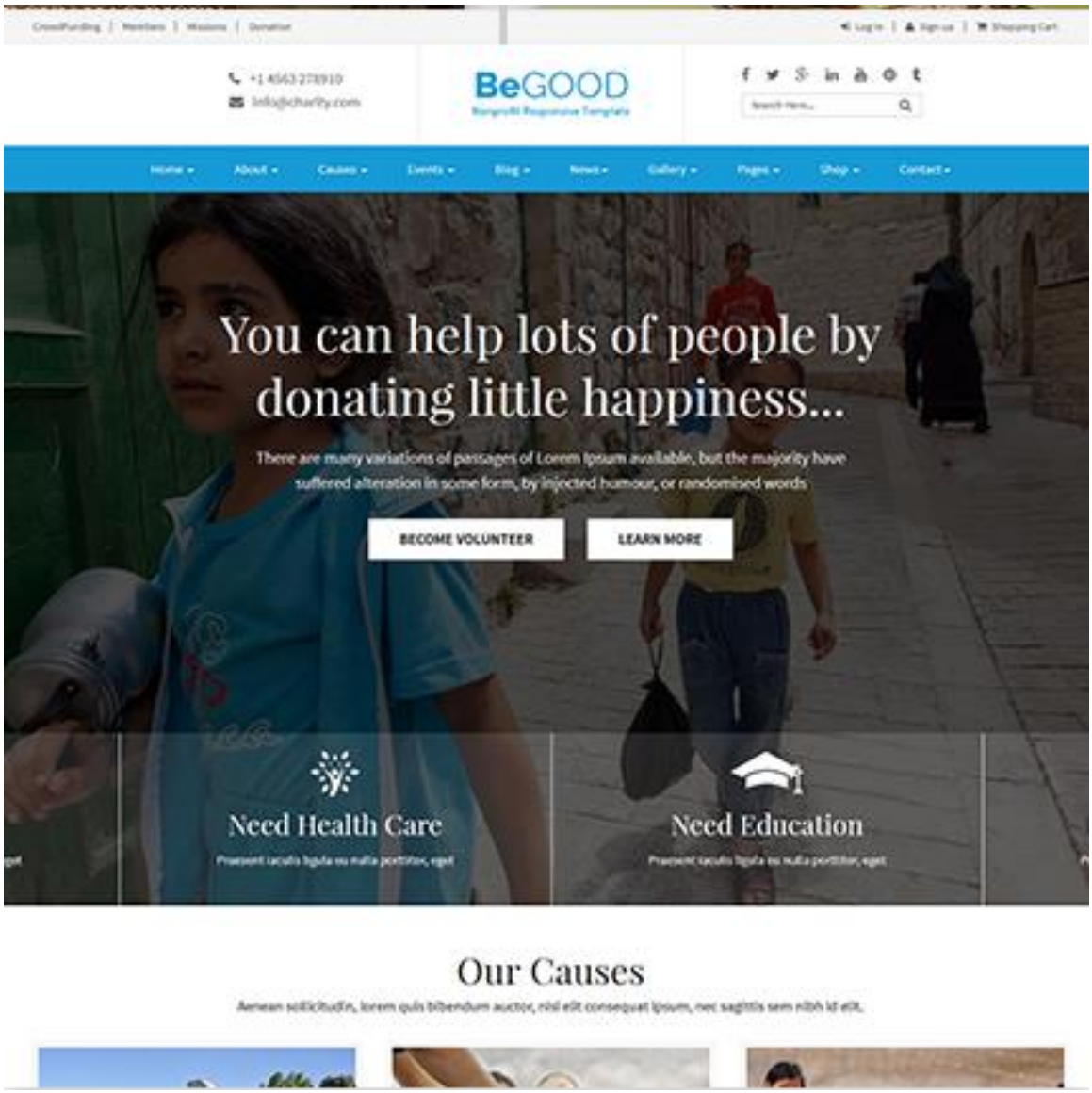


*Figure 1 Layout of use of E-Portal courtesy of wwwthemes.crunchpress.com.*

The layout for the causes section of the Bantu- E portal showing the amount pledged and the percentages and the amount remaining to go.

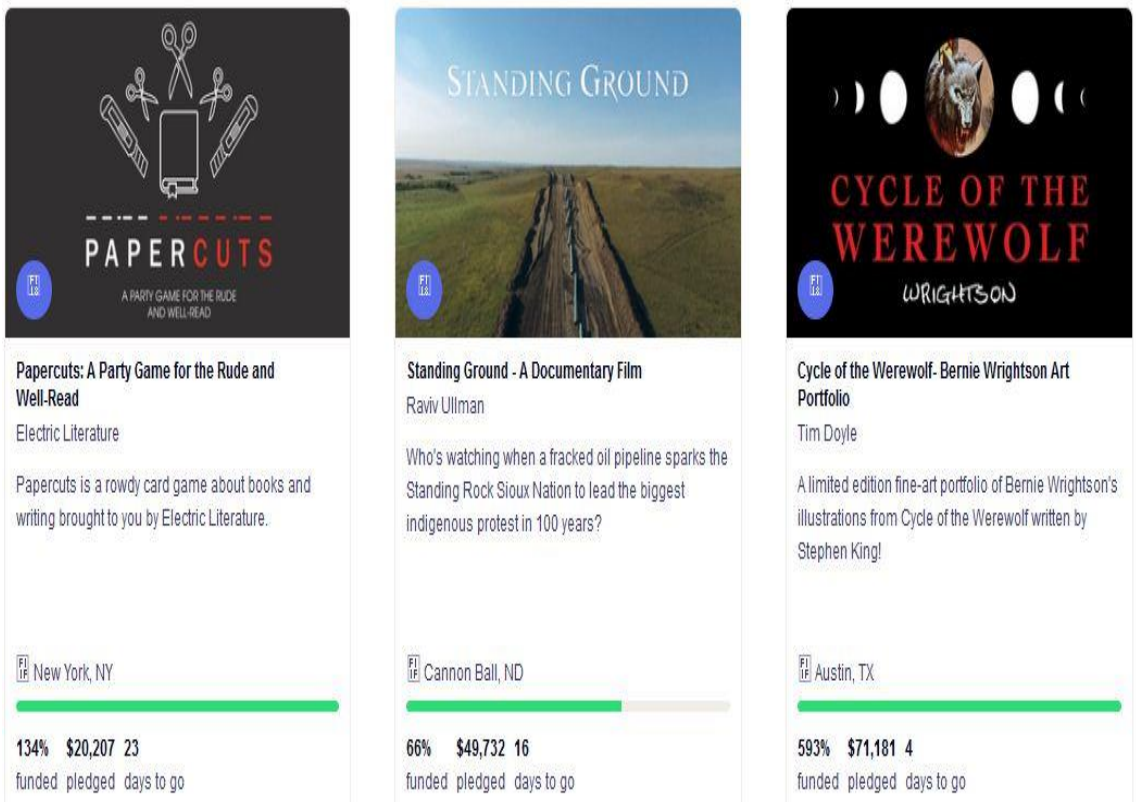


*Figure 2 Causes layout courtesy of www.indiegogo.com*

Below is a more detailed focus on the contents of a specific causes/ project as assumed on the system.

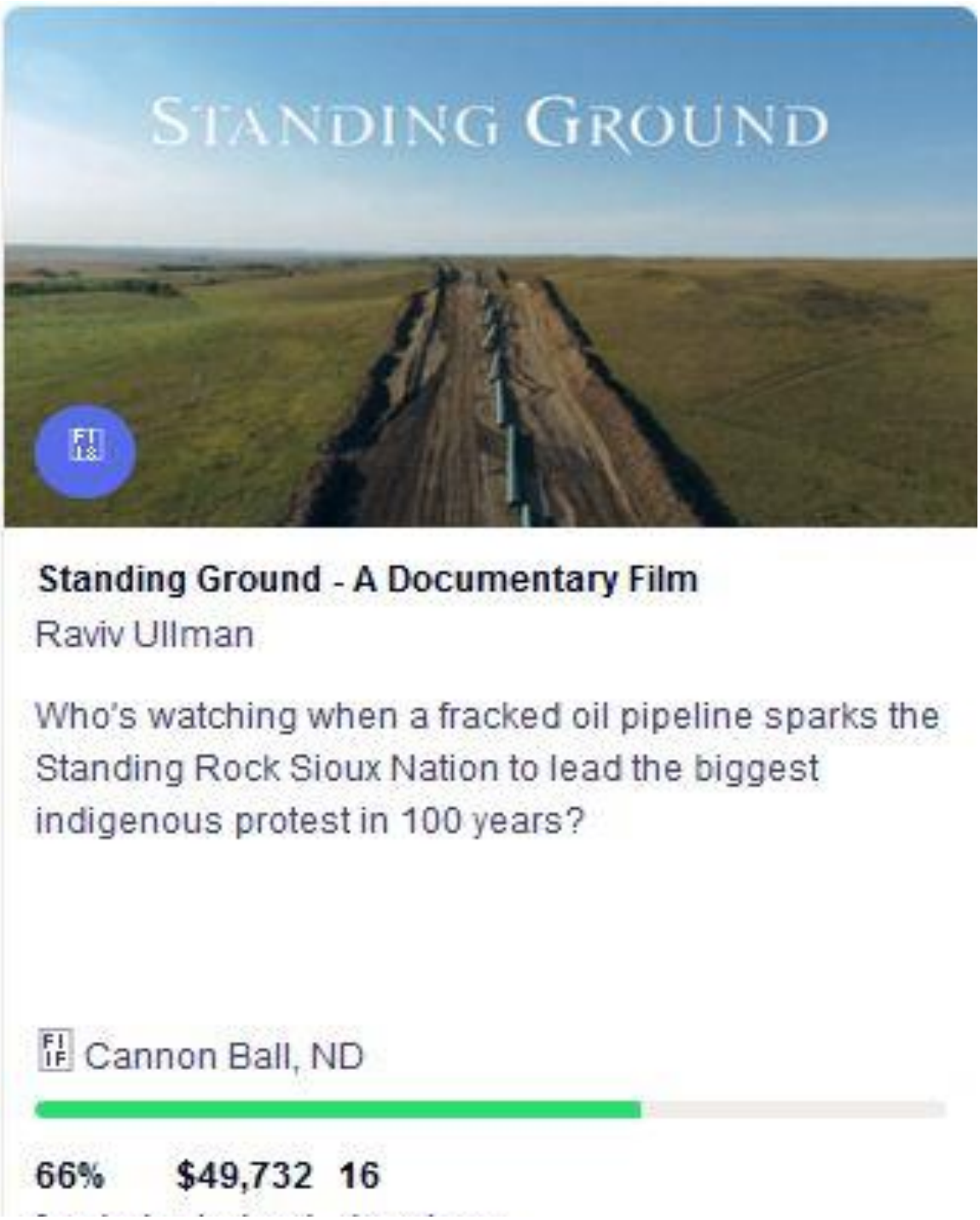


*Figure 3 Detailed focus courtesy of www.indiegogo.com*

# 4. High-Level Technology Architecture

The software construction for the Bantu Fund system will be built on a three-layered architecture to provide a separation of the client, business objects, and data store. This separation is enabled by the use of well-defined interfaces between the layers. This type of architecture is the key enabler of the "Thin" client architecture. In this architecture, the Client Layer is responsible for data collection and data presentation but does not control the business rules or data storage. [3]

## 4.1 Data Layer

The Data Layer is responsible for the storage of data into a persistent store. The Data Layer provides a Persistence Service that gives the Middle Layer necessary data manipulation functions while shielding it from the specific implementation details of the persistent store. The Oracle RDBMS will be used to support a highly available, robust persistent storage for the system.

The Persistence Service will be implemented by a Persistence Manager software component. This component provides transparent access to the physical data store, and implements database connection pooling to improve system performance.

Exhibit 3.3: Three Layered Software Architecture

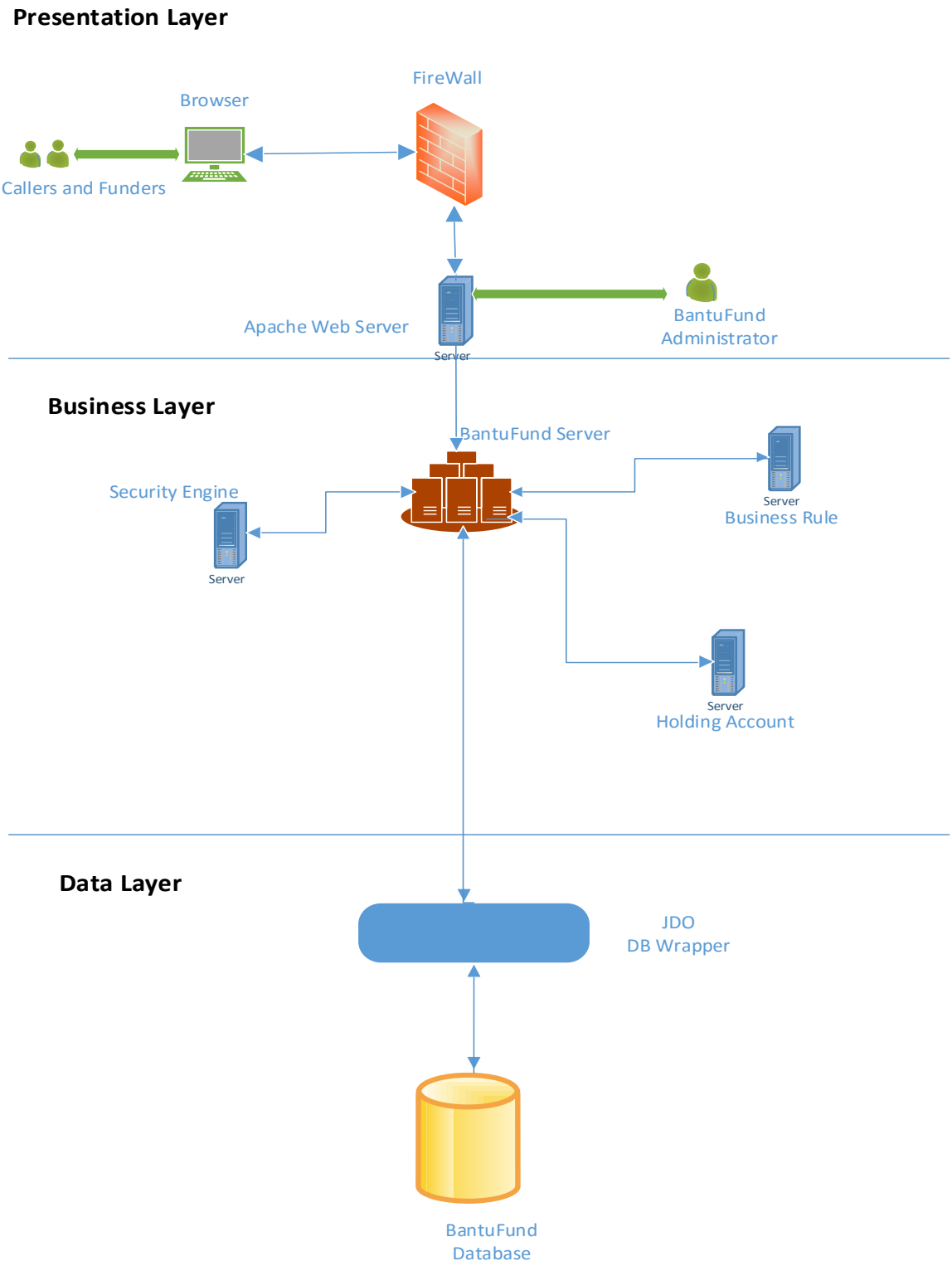


*Figure 4 3-layer architecture*

## 4.2 Middle Layer

The Middle Layer is responsible for the implementation of the Business Rules of the system. This layer is used to manage the system objects and their interactions with the Data Layer. The Middle layer will be supported by a set of software components that provide object access, security, and event delivery to the Client Tier.

The Middle Layer services will be implemented by using Web or Application Server technology to provide a robust and highly available set of middleware services. The Web Server will provide the implementation of the Security Service (HyperText Transfer Protocol [HTTP] Basic Authentication and Secure Socket Layer [SSL] for encryption) and the interface for Object Services through standard Servlet Application Program Interfaces [APIs]. The Object Services will be implemented by the following components: ControlServlet, CacheManager and UserManager. The Event Service will be implemented by the EventServer component.

The ControlServlet is implemented by using the standard Java Servlet API. This component is loaded and managed by the Web or Application Server and will only be accessed by authorized users. The ControlServlet provides clients with the functions necessary to configure and maintain the system. The ControlServlet implements and executes the business rules as required by the system. The ControlServlet is responsible for providing access to required system reports.

The CacheManager provides a mechanism for the ControlServlet to maintain current information in a managed cache. The CacheManager will be used to improve overall system performance by reducing the frequency by which system objects are built from the Data Layer.

The UserManager is responsible for collecting information about each user and the actions that a particular user is performing on the system. The UserManager can be configured to low levels of access control for each user and will insure that only authorized users have

the ability to execute specific control functions. The UserManager will insure that only authorized users can gain access to required system data.

The EventServer is responsible for client notification of system events. The notifications can be used by clients to update displays, notify users of critical information or to initiate specific client-side functions.

## 4.3 Client Layer

The Client Layer is responsible for the presentation of system information objects to the user or to software components within the system. The Client Layer is supported by a set of services that provide data collection and presentation of system information to the user. The Client Layer is made up of a collection of GUI applications. These applications are responsible for presentation of information to the user in the form of integrated map based views, high level (or rollup) data views, and lower level (drill down) data views. The Client Layer is also responsible for providing applications to interface with 2070 controllers.

# 5. Customer Support

The background checks for the financial seekers will be conducted by the team that runs the system.

The team running the system shall also vet the individuals who are seeking financial assistance.

The vetted individuals shall be approved after the team investigates the authenticity of cause, documents and any essential information about the cause.

The individual who wants to get some assistance by using our system can first subscribe and then review the help page or post their queries, comments or complements to our customer support with the email address listed and support telephone number to contact us and give their ratings telling us what to improve to better satisfy their needs while adding value.

The posted information on the subscription page will be put in a database and categorized.

The administrators will view the information of the posted individuals in order of subscription to enable vetting and approval of the individuals.

Documentation and user manuals will be provided plus use case models and storyboards to help users learn how to work with the system.

The home page of the system will have contacts on the top left which can be used to give assistance to the customers and users of the system.

The system is going to have a comment section which will help the customers to comment and give their opinion towards certain issues.

The system shall have a newsletter which will enable customers and users of the system to subscribe and end up getting updates about the existing information of interest on their emails.

# 6.Appendices

The following are similar products in existence and how they differ from our Bantu Fund.

## A: Indiegogo

Indiegogo has a mission to empower people to unite around ideas that matter to them and together make those ideas come to life. With the help of Indiegogo community, entrepreneurship is redefined shifting it from being a privilege to a right. Because every inventive idea should have its shot, and every creative entrepreneur should have their moment. Together, we can do anything. [4]

This system is different from ours since it doesn't create any report about how the causes where funded which our system will do.

## B: Kickstarter

Kickstarter is one of the fastest crowd funding websites in the world. It has fundraised hundreds of millions for its clients who get funded through donations on the website. Each and every Kickstarter project is the independent creation of someone like you. Want to know more about how projects happen or start your own. [5] This website is one of the prominent names in the crowd funding websites business and has solved its client's finance issues for a while.

However just like Indiegogo, Kickstarter doesn't provide accountability for the finances collected by the donors and also doesn't create a report that shows the specific donors and their contributions.

# 7. Glossary

## A: List of acronyms

| | |
|---|---|
| IT | Information Technology |
| HTTP | Hyper Text Transfer Protocol |
| CSS | Cascading Styling Sheets |
| UML | Unified Modeling Language |
| CMS | Content Management System |
| NGO | Non-Governmental Organization |
| PHP | Hyper Text Preprocessor |
| HTML | Hyper Text Markup Language |
| JDBC | Java Database Connectivity |
| JDO | Java Development Office |
| UG | Uganda |
| LTD | Limited |
| CSR | Cooperate Social Responsibility |
| SSL | Secure Socket Layer |
| API | Application Programming Interface |
| RDBMS | Relational Database Management Systems |

## B: Definition of terms

BANTU: The word ‘ntu’ means people. A member of any of a large number of linguistically related peoples of Central and Southern Africa. [6]. It literally means our people. Bantu Fund is aimed at being the platform to provide for our people, all people on planet earth in general.

Callers for Funds: The people seeking financial assistance for example students requesting money for school fees in form of scholarships, medical patients in need of assistance to fly to India for surgery and project managers in need of funding to carry out social community development projects.

Fund Contributors: Those willing to offer financial aid for example Non-Governmental Organizations, Philanthropists, Cooperate Social Responsibility funders and individuals

Philanthropist: One who makes an active effort to promote human welfare. [7] It means people who love mankind in general; a very generous person or institution. For example, the rich millionaires of Hollywood that give millions of dollars to charity.

Cooperate Social Responsibility: It refers to business practices involving initiatives that benefit society. A business's CSR can encompass a wide variety of tactics, from giving away a portion of a company's proceeds to charity, to implementing "greener" business operations. For example, through Environmental Efforts, Philanthropy, Ethical labor practices and volunteering. [8]

Escrow: The Escrow holding account is a contractual arrangement in which a third party receives and disburses money or documents for the primary transacting parties, with the disbursement dependent on conditions agreed to by the transacting parties. [9]

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# 9. Index

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