

# **Quarantivity Requirements Specification**

**Version 1.0**

**April 22, 2020**

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## **1. Executive Summary**

### ***1.1 Project Overview***

Companies are always trying to make their work easier and more efficient. Considering that distribution companies can face some difficulties in dealing with their job in their working daily life, an online distribution management system would be a solution. What the distribution management system would do is that it would give the business a more clear sight when it comes to inventories, monitoring of the operation in the field, financial issues, sales and management.

What we will do to reduce these kind of difficulties, is that through our online system we provide an easier way to deal with tasks, to keep track of every move through GPS system so we can see the route's an employee takes to deliver goods because this way would also help us to find which route is faster and consumes less fuel, to automate and optimize the day-to-day transactions. We also found convenient to use a batch tracking that would allow us to group and monitor a set of stock that share similar properties, quickly track and trace all the products with ease and also to keep an eye on expiry dates at a quick glance in order to act quickly. The use of ABC analysis gives us a view of the most important to least important items.

Our system will consist of an admin page who will be the one responsible for dealing with the agents. He will have a full view of everything happening in the system. He will have a more precise view of the inventory; will deal with assigning the tasks, check reports and all the performances of the everyday operations, update the system to make it more efficient and to manage its structure. As for the employees we will have another one, which will show every step of their operation, from the minute they take the order until the deliver it to the right address.

### ***1.2 Purpose and Scope that of this Specification***

The Online Distribution management system has the purpose to track workforce performance and automate workforce scheduling in order to have more accurate results and to help the business in their operations and management.

Through this system will be easier to find out if the products have arrived in their destination in the right time or if there are any delays in reaching the product destination. It will improve the reliability levels; have more efficient results and managing the distribution of the products in a safer way.

## **2. Product/Service Description**

Our Online Distribution Management System is for a company known as Egema Shpk, a distribution company which delivers mostly products like snacks in stores and supermarkets. As they face different problems in their operations as most of the businesses do, our online system would make their work easier and more accurate. We are offering a system that gives more visibility to the business.

So keeping in track of the employee's route, using a batch tracking system for the products to have a view at the expiry dates, having a real time inventory would help and reduce the business' work, giving them better results in their performance. Our service would make their distribution more efficient so that they manage their business operation in a better way.

### ***2.1 Product Context***

The system will be an independent one which will be accessible from the, admin, employees. Admin will have the main access in the system. It will also include information about employees, sales, inventories and financial issues.

### ***2.2 User Characteristics***

The system will have admin, user and sales profile:

- The admin interface will manage everything its structure and contents, update the system when needed to increase its efficiency and install the latest extensions.
- The user interface or staff interface we will keep everything simple and create consistency, we will also use common UI elements.
- As for the sales agent we will have another interface which will show the moment the take the order until it delivered to the address. Also, to find as many new clients as possible and fill out the report for better tracking performance of our deliveries.
- We will have a inventory supervisor who will notify when we need to make new orders and also see all the shipping costs, holding costs etc. He can also add and delete new products.
- The delivery employee which will be responsible for delivering products to the corresponding address.

### ***2.3 Assumptions***

- We assume that our system will be compatible with most of the operating systems because some are faster at handling apps for example Mac OS.
- We assume that the delivery employee will find the fastest route and deliver the products on time and not face any problems.
- We assume that all of our employees will be able to use the application we provide them.\
- We assume that our software will have the proper billing and receipt format for our delivery employees.

## 2.4 Constraints

We think our system will face constraints like:

- By internet connection as it might get disconnected.
- All of the employees must be equipped with smartphones.
- It might not be compatible with older versions of OS and smartphones
- The need for fast internet connection.
- The client can access the application by a pre-registered account by a manager.

## 2.5 Dependencies

- Because our application will be web-based one it will require a fast internet connection preferably 10mpbs or higher.
- The client needs to be identified by their NIPT to see if they exist in the market or not based on QKB.
- All devices should be compatible with the application.
- The accounts for the employees will be provided by the administrator.

## 3. Requirements

### 3.1 Functional Requirements

Req#	Requirement	Comments	Priori ty	Date Rvwd	SME Reviewed / Approved
BR_01	The system is implemented as web application. It will be accessed by the administrator or owner, agents, economist and manager.	Each login will have a different view and not the same access to different options of business operations. Only administrator will have full access.	2	4/21/20	
BR_02	A database should be connected with the interface in order to hold and access all the data.	The data should be easy to edit and maintain.	1	4/21/20	

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BR_03	Each of the users will have unique ID and their own passwords.	Each ID will be given by the owner who will have full access to their accounts.	1	4/21/20	
BR_04	Administrator will have full access to the program, with options like online tracking the agents going to their destination, graphs to express orders monthly, bills, cash flows etc.	This option and other options will be managed by administrator.	1	4/21/20	
BR_05	The Administrator will have the option to register new agents and to add them to the system.	This help the owner know their employees better with their personal info added by themselves.	2	4/21/20	
BR_06	Administrator will have access to the warehouse option which has all the accounting operations managed also by the economist.	Through warehouse they can check the amount of the product, price of the product, amount sold and the reorder option.	1	4/21/20	
BR_07	Administrator will have access to the itinerary planning for sales agents.	They track their itinerary online and plan new itineraries for new days	3	4/21/20	
BR_08	Administrator will have access on clients by looking at their personal info, order, due to date etc.	They will also be an option of adding new clients	1	4/21/20	
BR_09	The web application will have the option to reset the password by email confirmation.	This option is for every user of the application	1	4/21/20	
BR_10	The administrator can manage the whole information on the application by updating and changing every information needed easily.	Only the admin account has this option.	2	4/21/20	
BR_11	The administrator will be able to add new products that he is willing to buy.	Also check their price, order the amount and have the reorder option.	1	4/21/20	

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BR_12	The administrator can delete the products no longer available.	He can delete the products he no longer want to buy.	1	4/21/20	
BR_13	The administrator should be able to delete employees.	The administrator will be the only user to possess this right.	3	4/21/20	
BR_14	The administrator can check the task history of sales agents.	This makes it easier for admin to keep track of the sales and to know which sales agent is working harder and deserves a bonus.	2	4/21/20	
BR_15	The administrator will be able to check the stock status in the warehouse.	This option will be showed on the administrator page	1	4/21/20	
BR_16	They will also have the reports option which shows the business activity and its performance through months. Orders and sales orders, bills, machineries and visits will be some other options where he can check anytime.	The data will be saved and updated monthly.	1	4/21/20	
BR_17	Agents will have the option to fill in some information about themselves and a profile picture.	Sales agent accounts will have limited access.	3	4/21/20	
BR_18	Agent can make orders.	Products will display before making the order	2	4/21/20	
BR_19	Agent can check their tasks and next itineraries in order to accomplish them.	Tasks and new itineraries will be displayed in the home page of their accounts.	1	4/21/20	
BR_20	Agent has to mark the task if it is completed.	No comment	2	4/21/20	
BR_21	Agent uploads bills online in real time.	After making the purchase and delivery or vice versa he uploads the bill in the moment.	1	4/21/20	

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Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_22	Agent can upload profile photos.	The option is easily done.	3	4/21/20	
BR_23	Agents will have access to the map and its marked locations by administrators to accomplish their job.	The itinerary will automatically show in the map	2	4/21/20	
BR_24	To protect the system from spam and abuse, re-captcha will be used.	To prove that you are human you must fill the captcha.	3	4/21/20	
BR_25	Inventory will show the current stock anytime.	It will be updated daily.	1	4/21/20	
BR_26	The manager will also be able to manage the transportation of goods where they are stored to the destination online.	They will have the same right as the administrator for itinerary tracking.	2	4/21/20	
BR_27	Manager will be responsible and have access to inventory.	Their job is checking the raw materials and machineries so through this option it will be easier for them.	1	4/21/20	
BR_28	Managers must have access to bills, inventory and warehouse so they can keep track of shipments.	No comment.	2	4/21/20	
BR_29	The manager will create weekly schedules.	These weekly schedules are tasks for agents.	1	4/21/20	
BR_30	Manager will be responsible for making orders.	Manager will have to mark the order.	1	4/21/20	
BR_31	Alert!	Ensure all tasks are completed on time by automating alert to remind the manager of the deadline	1	4/21/20	
BR_32	Manager keeps on track of the labor hours of agents.	Calculates the payroll depending on labor hours	1	4/21/20	
BR_33	Economist will keep track of money moving in and out.	The revenue and expenses will be automatically calculated.	1	4/21/20	



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BR_34	Economist will take care of the payroll part.	He will take care of the amount of payroll that will be added to the business expenses.	+	4/21/20	
BR_35	Economist will have access to financial reports.	He will see the business reports that will show the business performance, in that way he can make his conclusions of how the business is going.	+	4/21/20	
BR_36	Economist will have his own ID and password.	He can reset his password any time.	+	4/21/20	
BR_37	Economist will upload his own picture and fill his own personal information.	He will do this when he firsts log in in the application.	+	4/21/20	
BR_38	Economist will access warehouse.	He will have access and oversee the sales, purchases and bills.	+	4/21/20	
BR_39	Economist will take care of the legal financial part.	He will take care of the taxes and other governmental liabilities.	+	4/21/20	
BR_40	Economist will edit the employee's payroll records.	He will be able to edit the payments done.	+	4/21/20	
BR_41	The system will be connected with google maps.	To keep track of the itinerary of employees on real time and on the field.	+	4/21/20	

### **3.2 Non-Functional Requirements**

#### **3.2.1 User Interface Requirements**

- Clear interface helps prevent user errors, makes important information obvious
- Simple layout to maximize functionality and maintain simplicity
- User-Controlled interface so the user initiates and controls all actions

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- Real time notifications to provide feedback
- Easy to use and user-friendly structure

### **3.2.2 Usability**

- Our application will have an intuitive design, a nearly easy understanding of the architecture and navigation
- When the application is updated it will have all the latest functionalities
- Information in our application should be navigable and locatable

### **3.2.3 Performance**

- It will be designed to support multiple users at the same
- To make the application work properly, it will require a strong internet connection

#### **3.2.3.1 Capacity**

Our application is going to be a web-based there is no need for memory occupation in smartphones. Multiple users will use the application at any time, being said that the database will not be very complex but we will make sure that it is capable enough to store everything that is needed.

#### **3.2.3.2 Availability**

- You can access the application anywhere as long there is a strong internet connection
- The application will be available any time of the day.
- It will be designed in Albanian language
- Different type of users have different availability

#### **3.2.3.3 Latency**

Latency is to be expected if users don't have a strong and fast internet connection, thus causing the loading time of the application late. TTFB refers to the time browsers need to wait before getting data from the server. Our web-application will have a fast TTFB so the requests can be delivered to the browser faster. We should be aiming for TTFB that's less than 200ms.

### **3.2.4 Manageability/Maintainability**

#### **3.2.4.1 Monitoring**

The user's interface as we said above is going to be simple and easy to be used. It will need two inputs, a username and a password which will redirect the user by its type to the corresponding page. In case that these inputs are not found in the database an error message will be displayed. Every user's page will include the functionalities mentioned before. The admin will have privilege access among all other users that are followed by the management and so on followed by the employees depending on their duties.

#### **3.2.4.2 Maintenance**

PhpMyAdmin will provide an ease for maintaining the database. The application will consist on simple and well-organized modules in order to create a simple and easy user-experience to our users. If there are going to be any errors simply refresh the page and you are good to go.

#### **3.2.4.3 Operations**

A user will be responsible for these operations:

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- Log-in
- Create/Remove users (admin, manager)
- Check and create reports
- Assign tasks and schedules (manager)
- Make orders (orders)
- Complete orders (delivery employee)
- Check real-time in inventory

The economist will be responsible for:

- Access to financial reports.
- Access the warehouse.
- Take care of the legal financial part.
- Edit the employee's payroll records.

#### **3.2.5 System Interface/Integration**

The system is going to operate as long as it has a database in PhpMyAdmin platform. Once the application is finished building it is its duty to avoid any possible error occurrence. The admin and also the manager who have the most system access can go to the database and make changes if needed.

##### **3.2.5.1 Network and Hardware Interfaces**

As we said before our application is going to be a web-based one meaning that it will be stored in an HTTP server. A TCP connection will be created between the user and the server using HTTP protocol. The screen size will be dynamic this way it will be accessible by any device that has an internet connection.

##### **3.2.5.2 Systems Interfaces**

There will be 4 main view interfaces:

- 1) Admin view
- 2) Manager view
- 3) Employee view (Sales Agent, Delivery Employee)
- 4) Client view
- 5) Economist view

The administrator, manager, employees, and client will be to authenticate with the methods username and password. The Administrator will have privileged access having more access and usability in the system. While the employee additional fields like name surname, username and a passport ID. The economist will have access to financial report, in order to show the business performance so he can conclude how the business is going.

The required field for the client will be:

- NIPT Number
- Address
- Category
- Area
- Password

### **3.2.6 Security**

#### **3.2.6.1 Protection**

To make sure that the data in our system is safe from malicious or accidental access, destruction, modification, disclosure or misuse, the system will require:

- Each user to enter their email address and password.
- Before logging in, the system will have a captcha test to make it more secured.
- A phone number or email back up will be required.
- Every activity made by the user will be tracked.
- Encryption of important information, like password using hashing methods.

#### **3.2.6.2 Authorization and Authentication**

- Every user of the system will have access only to their information.
- Every one of them will put their email address and password to have access to their account.
- We will use cookies to provide authentication.
- Admin will have access on the information of every user, meanwhile manager only to employees.

### **3.2.7 Data Management**

- Specific data will be accessed by users depending on the task they have.
- Validation of some information should be provided.
- We will use MySql for the tables.

### **3.2.8 Standards Compliance**

This system will function according to the rules and laws. For the bill format we will act in accordance with Law Nr. 92/2014 “PËR TATIMIN MBI VLERËN E SHUTUAR” on value added tax (VAT). It is a general consumption tax on goods that must be represented.

Regarding our clients according to Law Nr.9902, “PËR MBROJTJEN E KONSUMATORËVE” that states to protect interest of the consumers in the market.

### **3.2.9 Portability**

Our system will be developed using PHP programming language. Using PHP we will have many portability opportunities. It will be built in such a way that it will be suitable for different types of devices such as: mobile phones, pc etc.

Internet connection should be provided, otherwise the system won't work.

## **3.3 Domain Requirements**

Our system will make possible to track and trace every move of the distribution process and make the work easier for the business. The business will be more organized and will have a more accurate report of the daily actions. Tasks will be made in this system: employee's tracking, checking for the products, information regarding the client, management of the employees, inventory. With the help of the database information will be stored.