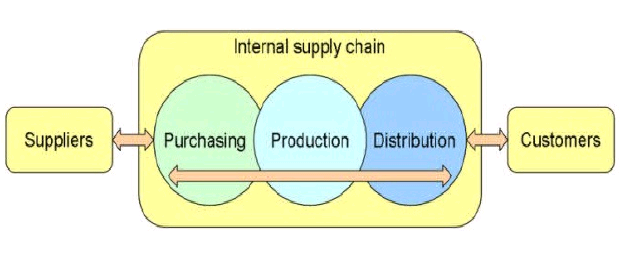
**| INTRODUCTION |**

* **What is food chain Management?**
  + The term "food chain Management" identifies a broad range of food production-distribution-consumption configurations.
    - Such as farmers' markets, [farm shops](http://en.wikipedia.org/wiki/Farm_shop), collective farmers' shops.
  + Food chains look to logistics service providers with a similar craving for made-to-order selectivity, quality, and service—all at an affordable cost.
  + Food [supply chain](http://en.wikipedia.org/wiki/Supply_chain) depends on distance and/or number of intermediaries between producers and consumers
  + Example: McDonald's
    - McDonald's is a name which is today synonymous with the fast food.
    - McDonald's is a fast food chain with restaurants all over the world with headquarters in US.
    - It serves burgers and other fast food customized to local tastes. Its philosophy has been 'one world, one burger;' which meant that the burger must be consistent in terms of cost and quality.
  + To meet such high standards, it was essential to have an excellent **supply chain management system**.
    - In India, McDonald's had a very well orchestrated supply chain, called the '**Cold Chain**'
  + **What are the basic pillars to get success in this field :**
    - Menu:
      * When you start new business in food industry, this is the main attraction among the people.
      * Because if your menu is somehow different then the others having the same business as yours, you will definitely going to get benefit through your unique product.
      * For that you will face many questions like raw material availability, environment, human resources etc.
    - Fresh Food:
      * If you somehow manage to have a great and unique menu for your customers then also it is not guaranteed that customers will happy with that.
      * You have to provide them that much qualitative food and should maintain money value for money law.
      * While having the food, customers will look for quality and freshness. So again here many questions will rise like even if we have availability of raw materials, are we able to maintain its quality or not?
    - Services:
      * These two questions are related to our customers.
        + The first question under this label is “Are we going to provide home delivery or not?”
        + Second is “Self service at the store?”
      * Now questions about raw material providers.
        + “Are we providing them any facility for their service to us?”
        + Example: If we want to start our business in such area where our raw material is not natural source and we fully depends on the farmers for the raw material. At this point we have to provide free training or some financial benefits to farmers. Without this service we can't proceed further.
    - affordable Price:
      * `Unique item in the menu can attract the customers but then after looking at the item they will surly look for the good and right price for that item because after all, all the customers always look for value for money.
      * We have to maintain price in such a manner that our business runs smoothly and grows periodically.
      * So balancing between two these is itself a big question and a challenge.
* **What is Supply chain management?**
  + A supply chain a system of organizations, people, technology, activities, information and resources involved in moving a product or service from “Supplier”to “C[ustomer”.](http://en.wikipedia.org/wiki/Customer)
  + Supply chain activities transform natural resources, raw martialand components into a finished product that is delivered to the end customer.
  + Supply Chain Management involves the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities.
  + Ii is also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, and customers.
  + Supply chain management integrates supply and demand management within and across companies.
  + Supply Chain Management is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model.
  + It includes all of the logistics management activities noted above, as well as manufacturing operations, and it drives coordination of processes and activities with and across marketing, sales, product design, finance and information technology.”
  + “The **primary objective of**[**supply chain management**](http://en.wikipedia.org/wiki/Supply_chain_management) **is to fulfill customer demands through the most efficient use of resources, including distribution capacity, inventory and labor**”
  + Advantage of the Supply chain Management in Food Chain Management.
    - Minimizing cost
    - Cut down the delivery time
    - Improve the profits
    - Maintain the highest standards
* **What is Cold Chain?**
  + A cold chain is a [temperature](http://en.wikipedia.org/wiki/Temperature)-controlled [Supply chain Management](http://en.wikipedia.org/wiki/Supply_chain).
  + An unbroken cold chain is an uninterrupted series of storage and distribution activities which maintain a given temperature range.
  + It is used help extend and ensure the shelf life of products such as fresh agricultural produce, processed foods, chemicals and [pharmaceutical drugs](http://en.wikipedia.org/wiki/Pharmaceutical_drug).
  + This concept of cold chain in food industry and that too on such a large scale was started by McDonald only.
  + It benefited both farmers as well as the consumers, as they are getting the fresh, best quality and great value food.
  + Using its food provide company cut down wastage and able to maintain its freshness and nutritional value of raw material.
  + **Steps involved in cold chain concept…….**
    - Procurement
    - Warehousing
    - Transportation
    - Retailing all the above activities took place in temperature controlled atmosphere.
    - Picture of a temperature controlled truck.
* Process OF the Food Chain Management
  + While the supply chain at first glance appears simple, its diverse components are both critical and multi-layered.
  + Food ingredients are mostly supplied by two categories,
    - Tier-I and Tier-2 suppliers.
  + Tier-2 suppliers comprise growers and processors who include importantly, lettuce and potato growers, poultry farms and companies
  + The ingredients are supplied to Tier-I suppliers who process them, for instance
  + The products are then transported in a dedicated fleet of refrigerated trucks to the company’s Distribution Centers.
  + Multi-temperature and single temperature trucks then transport the fast food swiftly to the restaurants across the country.
  + The supply-chain of has also been expertly devised to include the significant aspect of return logistics
  + The supply-chain of the fast food chain is in effect a hub-and-spoke model because the Distributors act as hubs.
  + This whole System Work like Internet network
    - Like Data passes at one to other place through Hub and switch. Hear instant of Data We have Food and in place of Hub and Switch, there are Distributors.

**| Purpose |**

Purpose of this document is to make designers, testers, developers and users wellaware of all the functions that are implemented in this system. This document contains all the software requirements that can help a designer to design a system to satisfy those requirements that are demanded by the users and testers to test the system to meet the requirements properly.

Purpose of this system is to offer facility to scrutinize and provide a wide range of features and facilities so that the users can perform wide variety of tasks easily to manage the routine work of Food Chain System. The system mainly focuses on managing the administration of System, managing the sales and most important task traceability of the raw material and the final product.

**| Scope |**

This system will provide facility to manage and maintain data efficiently, so Users can perform various tasks on data easily and fast. The users will be able to perform various basic data operations like calculation in order to maintain and analyze the system. The project is an attempt to make all the tasks can be performed in easy and fast manner in order to maintain the system. This system will also provide the facility to scrutinize the system in order to compete in the market.

* Traceability of the raw material
* Traceability of the final product
* Customer management
* Accounts managements
* HR management

**| Project perspective |**

The perspective is to build Food Chain automation plan, to support Food Agency that work with different kinds of clients and track progress of the product/raw material distribution workflow to ensure turning plans into reality. They must have to track their all the products to maintain the production and raw material consumption cycle. Such a kind of software is especially helpful in agencies that professionally want to expand their area of Food Chain Management, increase the customer satisfaction level and ultimately want the growth of their agency.

**Product Features**

* Provides the secure and authenticated system so that only intended users can use and access the system according to their role.
* Users can perform various tasks such as calculation of revenue, timely analysis, usage of raw materials, daily food raw material consumption calculation and reports as per their requirements …etc. easily and fast.
* User can easily **browse** through the database or just perform a **search** operation to access the specific information.
* This system will reduce the work load of the staff as will reduce the paperwork.
  1. **User Classes and Characteristics**

There are primarily two user classes:

1. Admin:

* This class includes all the persons who are actually working in the Food Chain Management System and hold some designation such as Manager, Accountant. These people can use the system to keep a watch on their counter parts and get to know where they stand in the competition. They also can get a feedback from their customers about their work that helps them in planning their next move.
* There are two different users under this class:

1. Manager
2. Accountant
3. Operator:

* This category holds a more number of users. These are the people from various departments of agency that can have limited access in order to manage the system according to their needs. These all the access rights are defined by the Admin of the system.
* There are two different users under this class:

1. Sales Executive
2. Distribution Agents (Area wise)
3. Raw material collector
   1. **Design and Implementation Constraints**

* Constraints need to be applied in any system to restrict the scope of the project to some extent so that the project can be true and manageable.
* Following are some of them that will be applicable to this system:
  + Data Volume Control – A restriction on the redundant data when the user (Operator) enters the data.
  + Data validation is required in order to protect the system from fake data.
  + Unauthenticated access is not allowed as every user of the project system will have to log in with unique username and password in order to maintain system security.
  + The system is following client-server architecture as server needs to be started when client has requested.
  + The database should be updated instantly whenever user performs any transaction activity in the system.
  + The Searching mechanism needs to be fast as there’s going to be a large number of links for the resources in the database and extracting particular query from the whole data pool is a tough task.
  1. **User Documentation**
* User manual for the software and how to use to it must be provided to the users in the form of an interactive demo tour of the system so that they can refer to it even if they don’t have any prior knowledge of the functioning of the system.
* The System administrators will also be provided with detailed description of the database and how to manipulate the information.
  1. **Assumptions and Dependencies**
     1. **Assumptions**
     + Once the system is in operation, there will not be any major changes in the database architecture in the back-end.
     + The system will not need any changes to support any new functionality that need to be included.
     + It’ll be a time bounded project i.e., the resources and time taken to built the system will be limited.
     + Every user must know how to use a computer and have access to a computer which has an internet connection or the system server.
     1. **Dependencies**
     + There should be efficient and consistent power backup supply to the server.
     + The system is highly dependent on the LAN (Local area network).

1. **Functional Requirements**
   1. **User Interfaces**
      1. **Administrator:**

* Users can access all the details (data) about the system.
* The visibility of these details can be managed through the system by Administrator, so that only some part of data is accessible to other users according to their rights.
* Users can have the access to the rich system database of all the data entities such as Customer details, financial details and any other core information about the system.
* Users can scrutinize the system and can easily measure how to improve performance of the agency. They are able to manipulate and update all the data regarding all the users and the music resources.
* They should be responsible for updating data whenever needed.
  + - 1. Manager

Manager will have different interface for performing different functions :

- Analyze the revenues

- Analyze the user feedbacks

- Analyze the total chain management

* + 1. **Operator:**
* User can access the only limited data according to their need in order to perform their tasks.
* They can do basic tasks such as data entry, access the information only related to their task.
  1. **Hardware Interfaces**
* Computers need to have network interface card.
* Servers should have efficient algorithms and hardware support for data backup.
  1. **Software and Communication Interfaces**
* Servers should have Operating Systems which are capable of running Oracle and SQL language.
* Server should have maximum bandwidth available in that area so that many client requests can be handled concurrently.

1. **Non-Functional Requirements**
   1. **Performance Requirements**

The System on that we are working on will be accessed by the operators and the administrator. There might be many hardware constraints on the system. But we hope to provide maximum bandwidth so that all the facilities of the system are availed without undesirably long delay. There might be very high load on the server. Therefore sever should be able to handle multiple concurrent requests efficiently. It also can be operated on many various operating systems.

* 1. **Safety Requirements**

The updates of the database must be moved to secondary storage device and external storage at specific time intervals so that in case of power loss or any other damage, the data safety is assured. There must be a facility of power backup which assures that data can be safely saved on non-volatile storage in case of power failure.

* 1. **Security Requirements**

The personal data regarding the user needs to be kept confidential. There should be data encoding mechanism to prevent unauthorized access of data by external harmful software entities. There should also be a password mechanism so that only certain high officials can access and modify this data. Login mechanism should also be provided at user level so that each user can only access the data related to him/her.There needs to be a mechanism which allows user to access and modify the database concurrently. This concurrent data access should preserve data integrity.