

# An Internet Based Aggregated Shopping Cart

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**Abstract**—This project mainly studies developments and establishments of an internet based aggregated shopping cart, specially to provide service for small buyers and small business holders, based on consolidated shopping and reverse auction at sellers side. This paper also explores the requirement and solutions for large volume discount to small buyers in both Business to Customer (B2C) and Business to Business(B2B) environments. For elective and e client navigation and representation of the entire structure of the product catalog system includes Tree map visualization technique and history bar to provide 2.5dimensional view. The whole platform possesses the versatility, convenience and includes the both Business to Customer (B2C) and Business to Business(B2B) environments. Dimensional view of contextual information.

**Keywords-** Aggregated cart, conlidation, reverse auction, client navigation.

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## 1. INTRODUCTION

Main purpose of innovation in E-commerce has been in simplifying every-day life and makes it easier and faster. The worldwide expansion of the internet has considerably contributed to the transformation of trade and store transactions. E-commerce, or electronic commerce, largely means buying and/or selling products through the internet and is commonly associated with online shopping. Current e-commerce statistics state that 40 percent (more than 1 billion online buyers) of worldwide internet users have bought products or goods online via desktop, mobile, tablet or other online devices and projected to grow continuously.

## 2. BASIC CONCEPTS

To design and implementation of Shopping cart Cart: An Internet-based aggregated shopping cart that would enable individual purchasers to form ad hoc buying coalitions to obtain maximum fair discounts distribution that are otherwise out of search. Platform that provides versatility, convenience and tradability to users. Provide maximum and fair discount distribution for the coalition of individual cart holders without having to increase their individual purchase quantities, by using Pareto-optimality and Nash equilibrium conditions. Treemap layout algorithms with image view provides users with a visual aid for the aesthetical view of entire catalogue with fast and elective product navigation. Provide history bar with 2.5- dimensional view of contextual information.



Fig. Shopping page

## 3. ALOGRITHMS

### 1] Sourcing Optimization-

1. start auction process
2. Buyers buy their respective goods
3. Individual buyers group by order.
4. Sellers proposes minimum prices for orders.
5. Select sellers from minimum proposed price for orders.

### 2] Buyers cost determination- allocate discount to group

$$\Delta = \sum P(I)-Q(I) B$$

At this point the maximum discount has been achieved by a coalition of buyers through minimization of the total cost of the aggregated purchase. How should we distribute the total minimal cost among the buyers in the coalition, i.e.,

determine cost for each buyer? We discuss this question in this section. To discuss the cost distribution, we denote by  $P(I)$  the minimal cost of purchase of item bundle  $I$ , computed through the optimization method described in the previous section. Assume that  $n$  buyers form a coalition to purchase multiple goods from multiple vendors in an auction.

### 3] Fair discount allocation-

1. To allocate fair discount to individual buyer.
2. Admin will create promo code.
3. Code is sent to user by email or message
4. User will get post order discount .

## 4. SYSTEM ARCHITECTURE

The proposed integrated online shopping platform implements both Business to Consumer and Business to Business model. The classes of problems under consideration are those with multiple purchasing agents and multiple vendors.

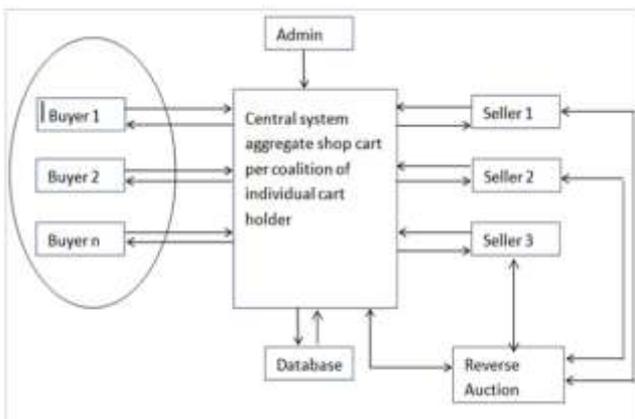


Fig 1. Architectural DFD

The description of above as below:

#### 4.1 Coalition of individual cart holders or buyers:

At buyers side system allows individual buyers to form ad-hoc buying coalitions to obtained maximum discounts without having to increase their individual buying quantities or total expenditure. There are one or more than one coalitions of individual buyers. Basically buyers browse the system, select products, add products to the cart and order the products. In the scenario of this system multiple buyers in the coalition orders the products. On reach of threshold value of products to be ordered shopping carts gets locked and overall demand for each products get copied into an aggregated shopping cart.

#### 4.2 Central system

Central system consists of following sub components:

#### 4.3 Admin:

Admin controls over all the system activities like he can configure checkout forms, payment method shipping methods, add, update, delete product, set Stock Keeping

Unit for (SKU) product. Also admin will be able create categories for products.

#### 4.4. Aggregated shopping cart:



Fig. Shopping cart

For the auction purpose, multiple buyers from a coalition combine their individ-

ual shopping carts into single aggregated shopping cart. When threshold value of products ordered to be reached, individual buyer's carts in the coalition get locked and overall demand for each item is copied to an aggregated shopping cart.

#### 4.5 Reverse auction system:

This is a subsystem in central system, to carried out auction at the suppliers end.

The registered suppliers proposed their minimum prize depends on availability of demanded products at each round. At the end of auction supplier who proposed minimum prize for demands get selected.

#### 4.6 Suppliers:

Suppliers are registered on the system, they are actively involved in the online auction. The suppliers have to provide their minimum prizes, for demands of products,

depends on availability of demand, in each round of online auction.

#### 5.7 Database:

Relational Database (SQLite) is used to track all the transactions made by system users.

## 5. CONCLUSION AND FUTURE SCOPE

A survey of various E-commerce related web stores shows that the large volume discounts are out of the reach of small buyers in both Business-to-Consumer (B2C) and Business-to-Business (B2B) environments. Based on the studies, we have been developed and implemented a fully featured "associate on-line shopping platform", especially to provide service for small buyers and small business holders, based on consolidated shopping and reverse auction at sellers side. This paper also explores the requirement and solutions for large volume discount to small buyers in both Business to Customer (B2C) and Business to Business(B2B) environments.

There are a number of areas in which we hope to carry out future work. We are implementing the reverse auction at primary level, in future there will lot of scope to improve the efficiency of the reverse auction. Also, further work assessing the feasibility of leveraging DGQL to support the discount allocation calculations would be a logical next step, both for those related to calculation of the core and the Shapley value as well as the simplified method described in base paper. We have targeted to expand the system to provide customization for small businesses. Also, there is lot of scope to improvement in the Tree map catalogue visualization technique.

## 6. ACKNOWLEDGMENT

This acknowledgement is intended to be thanks giving gesture to all those people who have been involved directly or indirectly with our project work. First and foremost, we express our special thanks with gratitude and great respect to our valuable guide Prof. Pragati P. .survey, fruitful suggestions and valuable guidance with motivation and constant encouragement to complete our project work. We are also thankful to him for his great patience, constructive criticism useful suggestion apart from invaluable guidance. We owe a great debt to our project in-charge Prof. NIKITA KERKAR, who guided us through the

maze of details associated with our project. We are thankful to Principal Dr. C.B.BAGAL and Head of Department Prof. VINA LOMATE for the ready availability of college facilities as and when required. Lastly we are deeply grateful to everyone who has been associated with our project.

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