Mass Customization of Products

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Abstract- As we all know that products were not digitized earlier. Mass Production was the earlier method used for producing products in bulk. Mass production is capital intensive and energy intensive, as it uses a high proportion of machinery and energy in relation to workers. However, the machinery that is needed to set up a mass production line is so expensive that there must be some assurance that the product is to be successful to attain profits.

Today, Mass customization is providing benefits to the customers as well as product based companies. The customers can modify the product of their choice. And the companies satisfy their customers with exactly what they need.

Keywords: ecommerce, customization, online shopping, e-shopping.

1. INTRODUCTION

Mass Customization is the new paradigm that replaces mass production, which is no longer suitable for today's turbulent markets, growing product variety, and opportunities for e-commerce. Mass customization proactively manages product variety in the environment of rapidly evolving markets and products, many niche markets, and individually customized products sold through stores or over the internet.

There is a whole spectrum of ways that Mass Customization methodologies can benefit companies. At the most visible end of the spectrum, companies can mass customize products for individual customers. The most well know category of individual customization relates to products that people wear (clothing, shoes, and glasses) as well as bicycles and pagers.

2. LITERATURE SURVEY

Sequential pattern mining is trying to find the relationships between occurrences of sequential events, to find if there exists any specific order of the occurrences. We can find the sequential patterns of specific individual items also we can find the sequential patterns cross different items. Sequential patterns indicate the correlation between transactions while association rule represents intra transaction relationships. The result of sequential pattern mining is about which items are brought in a certain order by the same customer, those items come from different transactions. An example of sequential patterns is that in a book store's transaction database history, 80% customers who brought the book Database Management typically bought the book Data Warehouse and then brought the book Web Information System with certain time gap. All those books need not to be brought at the same time or consecutively, the most important thing is the order in which those books are brought (IJht and they are bought by the same customer. 80% here represents the percentage of customers who use this purchasing habit. [3]

3. SCOPE OF THE PROJECT

The Internet and other information processing technologies allows sellers to better understand each customer's needs and wants, facilitating market provision of customized consumer goods. The novelty of our model derives from a distinct cost-structure assumption that customization requires a fixed initial investment with decreasing returns but can produce each planned variety with equal efficiency. The price of a customized product is the full price that the targeted buyer would incur if she purchases the closer standard product. Consequently, a monopoly will expand his customization scope and raise the prices of both types of products to take better advantage of advances in customization technologies.

Customization is not a differentiating strategy when both sellers endorse it; there is excessive product proliferation and diminished differentiation. However, price competition does not worsen due to the relaxation effect of price discrimination on customized products. Buyers are the long-term beneficiaries of customization, but consumer surplus does not monotonically increase. The irreversible nature of customization investment ensures an advantage for the early adopter. Investing excessively in customization may deter entry of potential rivals by leaving a meagre market niche uncovered.

Our model is a highly simplified, abstract characterization of customization and has several limitations.

➢ First, the circular product space and the cost structure seem reasonable for most products suitable for flexible manufacturing such as clothes, furniture, cars, and computers, but may not apply for certain information goods and services such as customized newspapers and travel packages.

➢ Second, our model is a single-period one and does not capture inter-temporal learning by the first mover about customers' tastes. While learning by the sellers is not critical for customization of such durable goods as cars and computers, it may foster switching costs for customers and form another source of first-mover advantage for repeatedly purchased items such as clothes.

➢ Third, we assume product differentiation is conducted along a single horizontal attribute. In reality, customizing firms also differentiate themselves by other dimensions such as brand name, quality, and delivery time, etc. Therefore the predictions of our model may not be duplicated in all real-world settings.

Two potential extensions to our model can be made.

➢ One particularly meaningful direction is to build a multi-period model to incorporate learning about customer tastes and examine its impacts on competition. We hypothesize that this extension will reveal more dynamics about the first mover's advantage.

➢ Second, by relaxing the assumption that firms have access to identical technologies, we may treat customization costs endogenously as functions of firms' investments.

4. PROBLEM DEFINATION

Mass customization — where customers can tailor a product's appearance, features or content to their own specifications -– has been the "next big thing" for a long time.

Traditionally customization and low cost have been mutually exclusive. Mass production provided low cost but at the expense of uniformity. Customization was the product of designers and craftsman. Its expense generally made it the preserve of the rich.

To-day, new interactive technologies, like the Internet, allow customers to interact with a company and specify their unique requirements which are then manufactured by automated systems. While this may at first seem complicated and beyond the average consumer, there are various ways to hide the technical details. In some cases the process will be handled by your staff, a third party, or intermediary.
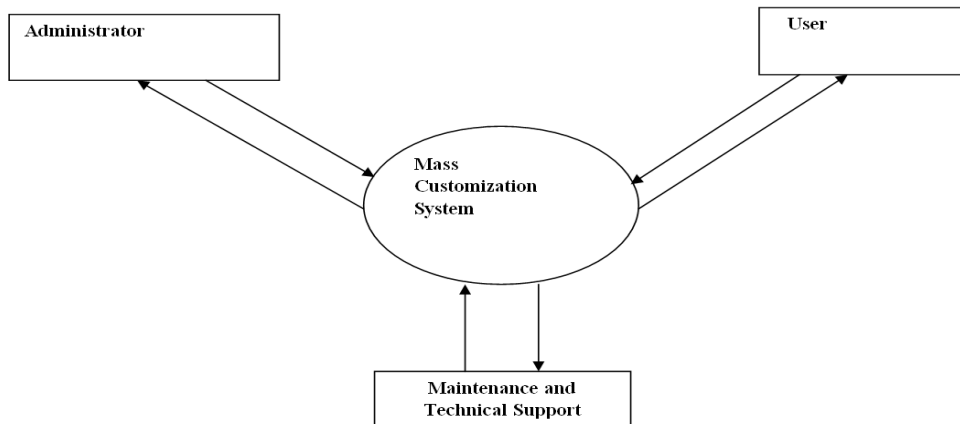
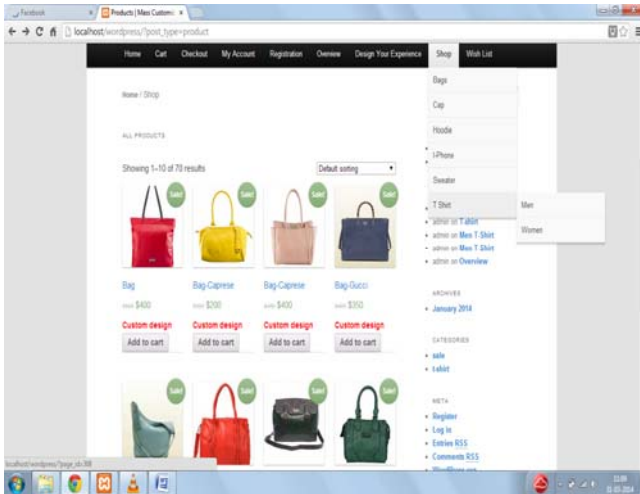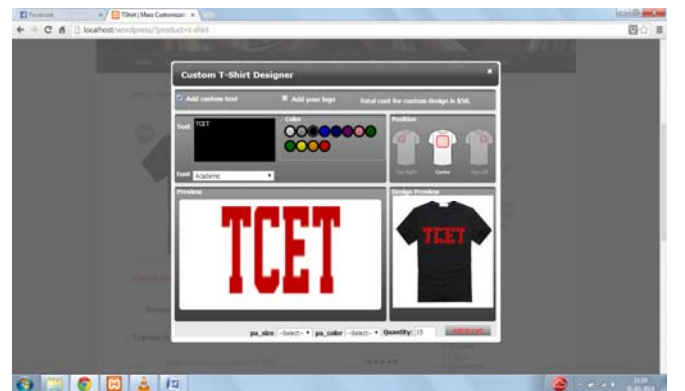Fig 1: Data Flow Diagram level 0
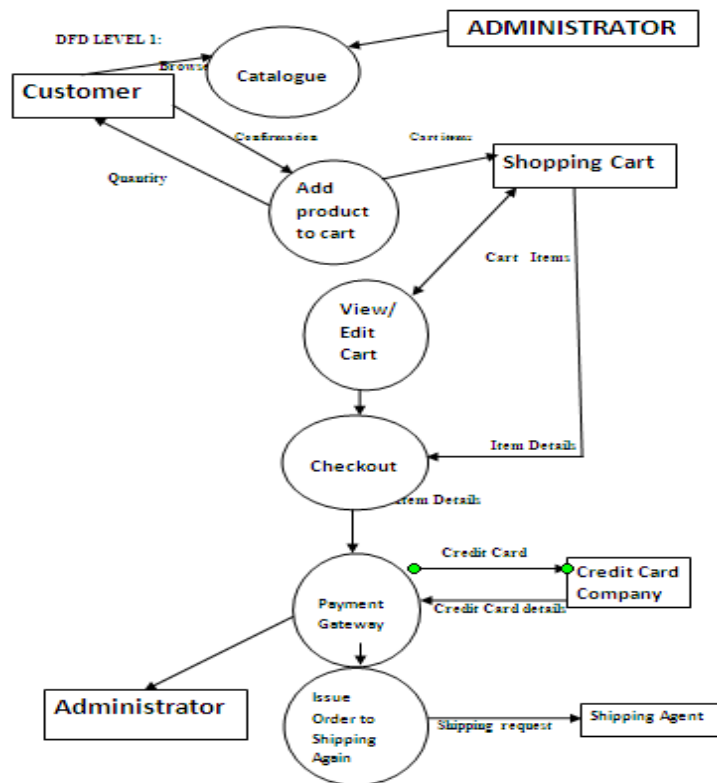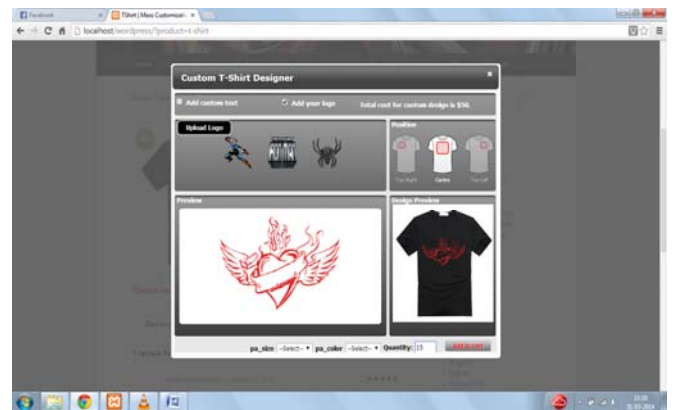
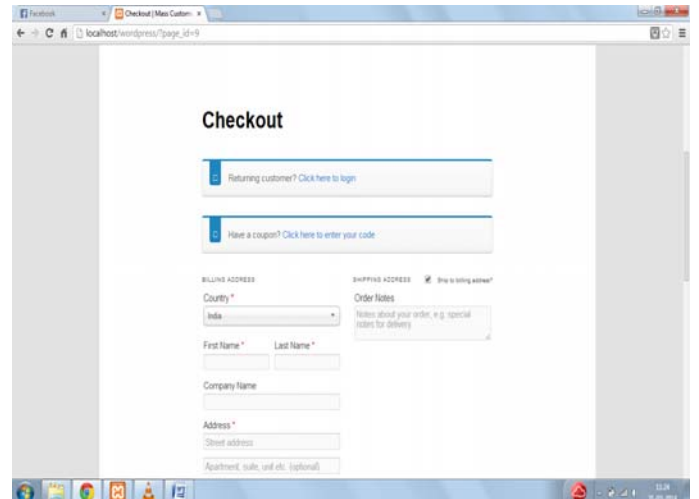

Fig 2: Data Flow Diagram level 1
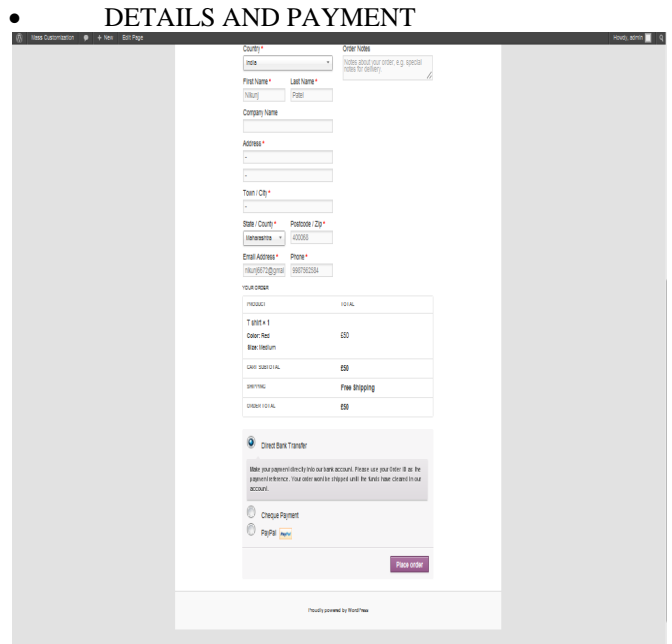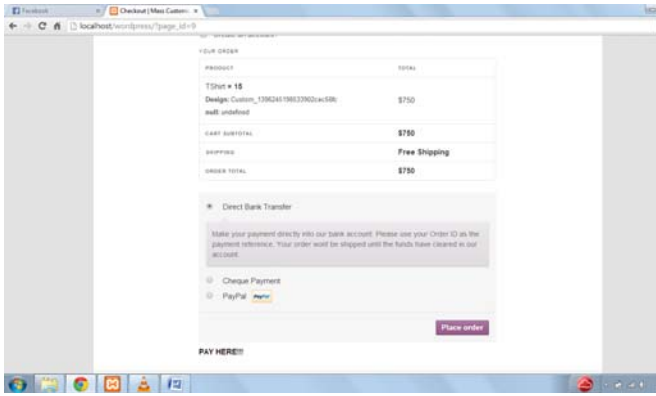
SCREENSHOTS

- HOME PAGE
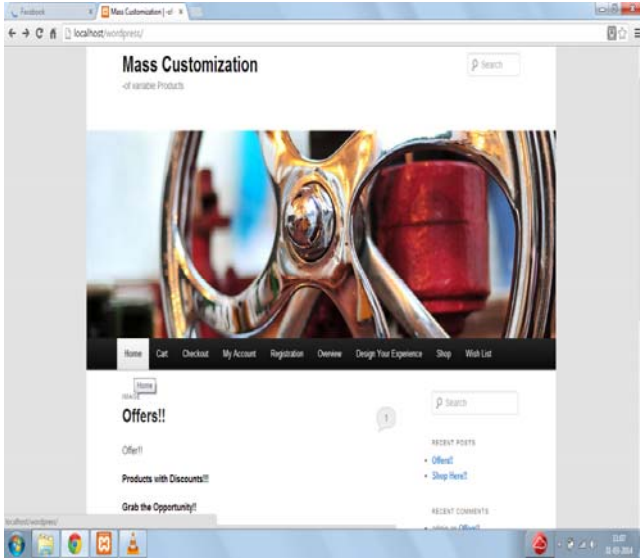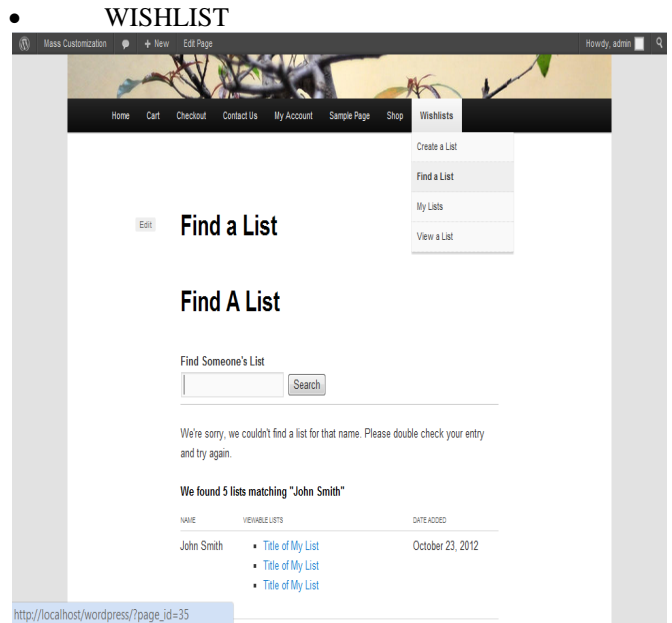

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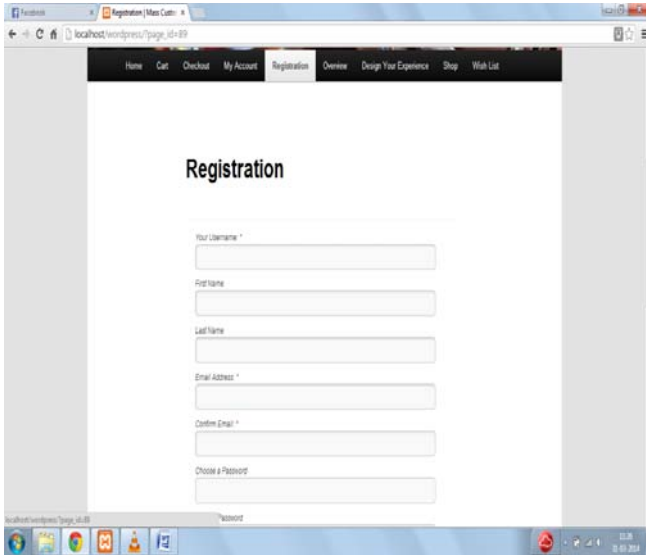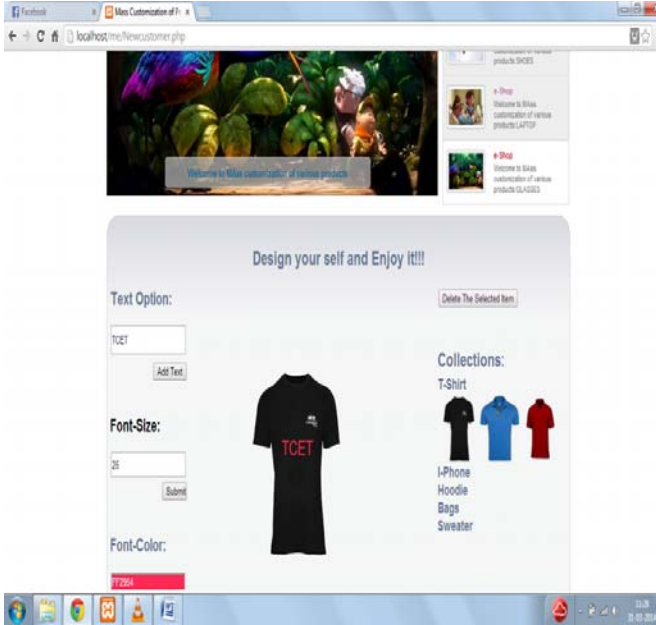

- PRODUCTS AVAILABLE

- PRODUCT CUSTOMIZATION

- CHECKOUT

- ## DESIGN YOUR EXPERIENCE

- ## ADDING PRODUCT TO CART

- ## DETAILS AND PAYMENT

- ## WISHLIST

- ## SELECTING PRODUCT

- ACCOUNT SETTINGS
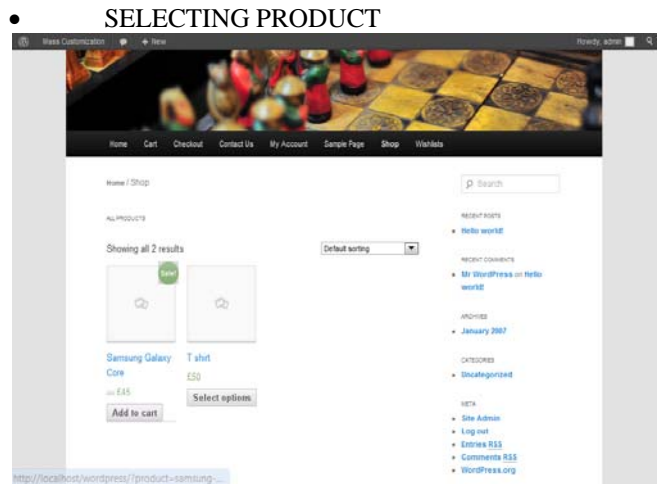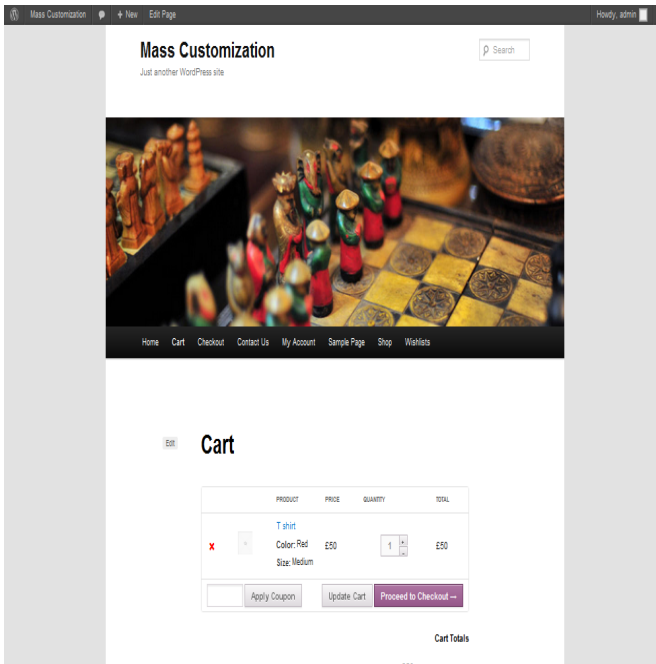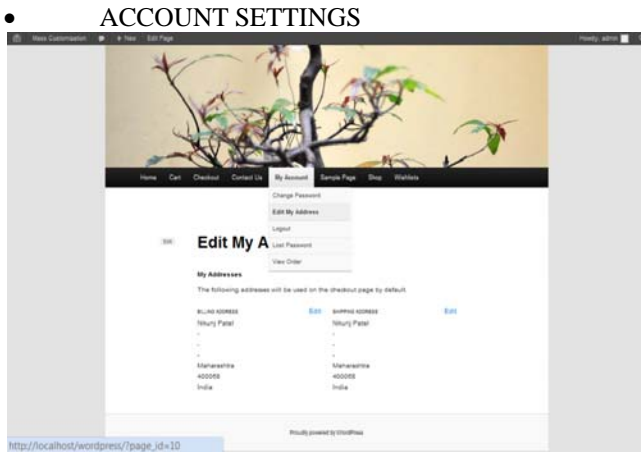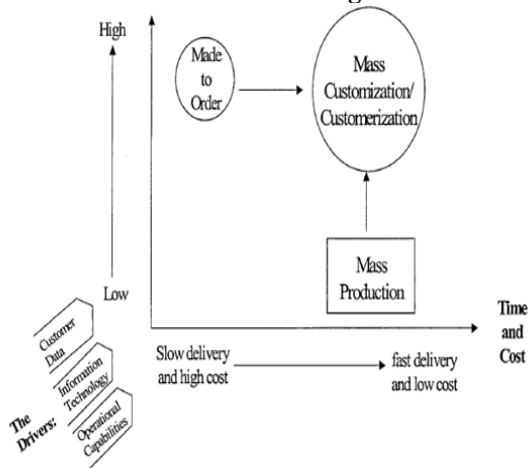

5. IMPLEMENTATION

As stated above, the implementation will be in PHP(**PHP** is an acronym for "**PHP** Hypertext Preprocessor") and java Script. PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language.

5.1 Framework Used

5.2 The Mass Customization Paradigm

Before the start of the project, we were not very sure about how we will implement our project and how the whole work will be delegated. Finally we started with our project and created some databases required for it. One database contains the details of users; other contains the shopping cart details of a purchase. Then we created GUI of some pages of our website. Now we are planning to add some more features like making profiles of each customer, providing discounts to our regular customers, adding as much as products as possible to provide the customer with a huge variety of products, tracking behaviour of each customer, advertising products to a customer whose behaviour is similar to some other customer.

6. CONCLUSION

Based on the problem statement, we have implemented the fully dynamic online shopping website using WordPress. We have also implemented the part of customization of products and we have started the implementation of tracking customer behavior and providing product suggestions accordingly.

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