Implementation of Decentralized Techniques in E-Commerce Website

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Abstract. After the Coronavirus Pandemic struck in 2020, administrative agencies around the globe had imposed strict lockdowns in every sector. The biggest of them was imposed in India. The only things allowed was the essential services like medical and grocery. But due to the sudden panic of the unknown disease there was a huge rush to buy and stock items. Long queues and crowd were developed which may lead to rapid transmission of the virus. We as a team tried to find a solution, by putting their shops online so that they can take orders remotely and distribute it without the risk of long queue and infection. Gromore Shoppe is developed in order make these small local shops online. Retail owners can now catalogue their products on web and take orders from the locality, can process them quickly and distribute them with minimal risk of contact. This solution will first time introduce them with web and its benefits and make them sufficient enough so that they even can expand easily and effectively.

Keywords: e-Commerce, react.js, node.js, herokuapp, B2C Commerce.

Introduction

In this rapidly developing world, the internet and the information technology is emerging as solution to every kind problem. As the pandemic started expanding his feet, millions of ventures which are not connected to the digital world suffered major losses. It forced them to bring their products and services online in order to survive. Gromore Shoppe also introduces a similar kind of solution to the local retail owners which are suffering from losses and a risk of spreading the Coronavirus.

Gromore Shoppe is a web Application which provide an interface to the shop owners to bring their products online, take orders and distribute it without disturbing Covid protocols. Retailers can now expand their business very easily and in cost effective manner. The web app helps them to manage their products in the similar way that they use to have in offline. This approach will reduce cost to product management, and saved resources and be applied in distribution and logistics.

On the other hand, people who are at home as consumers can use the similar interface as they were using in any other shopping site, but this time they can buy from their local shops and retailers. This will increase the trust of the consumers and will bring more satisfaction in the process of buying stuff.

The Idea of this web application comes as the primary solution of problems that just emerges with the lockdown. People were panic about the unknown disease, they started to buy emergency supplies. This created long queues in the shops that were not taking care of protocols. Also, with extensive rush shop owners were also not able to manage them. All this sometimes-created large tension between security personal and civilians. To tackle this situation, we suggested to bring the shops online that can be easily manageable and profitable at the same time.

Literature Review

In India, about 13.8 million conventional family run neighbourhood stores and the organised retail sector with a share less than 10%. The organised sector includes all organized brick & mortar stores and online shopping sites. Despite the boom in B2C e-commerce sector in India, majority of Indians continue to have more faith in the neighbourhood brick & mortar stores for shopping as they prefer touching and feeling the products and negotiating discounts over-the-counter, before buying. Enter the novel
coronavirus which causes a highly infectious disease Coronavirus disease (COVID-19) that has infected more than 4 lakh people worldwide. Since it spreads primarily through contact with an infected person (when they cough or sneeze) or when a person touches a surface that has the virus on it, the best way to guard against it is to stay at home. This has increased online shopping usage globally, which caused the decline of retail sector and local shops in India.

The retail industry in India is among the fastest-growing sector in the world. The contribution of e-retailing in the Indian market is not at par when compared to other developing economies. Although in recent years, the E-tailing industry in India has shown rapid growth from around $14 billion revenues in 2014 to more than $50 billion in 2018. This is because of the augmentation of the telecom industry which in turn has offered internet accessibility to the youth of the country. As online shopping has brought convenience in terms of time and place, it is becoming popular among the youth and has started threatening the traditional brick-and-mortar retail business.

Experimental Work

The development of the project started with the basic idea to make shopping website framework and then integrate the product listing and cataloguing capabilities. Every normal website which sells products these days have a similar implementation with different design techniques. We also used the same approach to initialize the development.

Another major issue was to select the technologies and applications on which the web application was to be made. For the ease of development, we decided to use the best technologies that we are capable to handle. Then we finalized React and Node as the backbone of the project and Google’s Firebase to serve as a database webservice. The reason why we choose those was the lightweights and extensive features provided by them.

React.Js is an open-source front end library developed by Facebook, which provide user friendly website environment. It is been used by various famous content-based websites like Netflix. Node.Js is also an open-source framework for back-end software development. It allows to implement web API’s and host servers with high scalability and less maintenances. These two React and Node happens to be the best combination for the website development.

For the purpose of database management and web hosting we used Google’s Firebase and an open site for development hosting, Herokuapp. Both these services are highly popular in their fields among the new developers as their operations are easy and free of cost up to a certain limit of usage.

Figure 1. Block diagram of development phase in vendor centric application.

After deciding the development applications, we started the development. At first, we shaped the front or home page for the website in the general trend of shopping sites. There is scrollable home page with dynamic content about the product available along with its details and prices. We also implemented several carousels in-between them for the latest deals and up-coming offers. After when we finished the next step was to implement our own idea for vendor centric application as represented in Figure 1.

Now was the time to convert a normal site implementation into the Gromore Shoppe. To achieve that we have create a user interface for the retailers and vendors so that they can catalogue their products onto the application. The arrangement was simple, we created an interface especially for them. So, whenever they get verified by us after registering on the portal, they can directly list the products on website an manage orders.

This methodology makes sures that the vendor feels the website as an online extension of their business and feel free to engage in web operations and to grow their business. They can add products, details and its images. They can update the prices and give additional offers and deals. It also makes sure that any new person who want start a fresh business directly and only for online can also register themselves and make use of the services very easily.

Result

After months long development process, we hosted the web application on the Herokuapp as to implement further operations and additional testing and bug fixing. When all those was done, we deployed the application.

The Website, Gromore Shoppe was successfully implemented as we have thought. It provided all the features which we initially decided. Gromore Shoppe have the capabilities to empower the end-user and our prime target,
the local retail owners and business. They can now easily
switch to online and can rid of the hassle of product and
order management with minimal resources used.

It also provide the consumers of the products the
choice of buying local stuff with quality, which ultimately
supported the Indian campaign of “Vocal for Local” to
empower the local products and stuff over foreign good
of the same type.

Conclusion and Future Scope

We are living in the age of digital workplace, where every
thing is supposed to have an online interface. But still
in developing countries, there are millions of businesses
are not connected to the cyber world. Gromore Shoppe
and other related platforms can provide these businesses
a start-up to expand their reach and can have global sales
and revenue.

Gromore shoppe as an individual and may be alone
platform, believes in the scope of advancements, with the
use of AI and machine learning the interface can be more
interactive in future. As the number of users increases, we
may setup a centralized system to offer greater services to
the consumers.

These kind of retail platforms also give rise to business
who are thinking to join web, but with the lack of technol-
ogy and funding, they are not able of go for it. This is a
kind of ready to use shop for both consumers and vendors,
making it as a one stop solution to the basic needs of online
product operation with sales and purchase.

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