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A Study on "Dynamic Pricing in Automobile Industry"

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ABSTRACT: This paper concentrates how the dynamic valuing of errands in the "gig" economy impacts the gracefully of work. An enormous financial writing has investigated work gracefully when labourers can deftly pick to what extent to work every day. In an investigation of cab drivers, it is guaranteed that drivers quit when they hit a day by day pay target, therefore driving less when hourly profit are high. If general, this conduct would sabotage the advantages of rising "sharing economy" markets where errands are powerfully valued. In this paper, we concentrate how driver-accomplices on the Uber, Ola like stages react to the dynamic estimating of outings, known as "flood" evaluating.

KEYWORDS: Dynamic Pricing; Surge Pricing; Supply; Demand; network lifetime

I. INTRODUCTION

Dynamic pricing, additionally referred to as surge pricing, demand pricing, or time-based pricing is a pricing approach wherein organizations set flexible prices for services or products primarily based on present day marketplace demands. Organizations can exchange prices based on algorithms that consider competitor pricing, deliver and call for, and other external elements in the marketplace. Dynamic pricing is a commonplace practice in numerous industries together with hospitality, tourism, entertainment, retail, electricity, and public delivery.

Every industry takes a slightly exclusive method to dynamic pricing primarily based on its person wishes and the call for the product. Dynamic pricing is unpopular with a few purchasers because it favors the wealthy, who are less probably to be priced out of a market while there may be excessive demand, including the electricity market at some stage in a warmth wave or the food industry at some stage in a famine.

II. RELATED WORK

Dynamic pricing is used in many domains like hotel industry, travel industry, automobile industry etc. Dynamic pricing is applied to a business for increased profit and to get the best market value.

For the implementation of dynamic pricing one can make use of many algorithms and variables to make pricing decisions. In this paper, simple demand, supply ratio is used for the dynamic pricing decisions. If the demand is more and supply is less than the price is increased and vice-versa. This can be done by maintaining the data of demand and supply on daily basis.

There are multiple parameters for making pricing decisions like weekday, weekend, time in a day, festivals etc. but the best way is based on demand, supply and particular time in a day.

ADVANTAGES:

- Higher profit and sales
- Adjusting to the competition
- Flexibility
- Better inventory management

LIMITATIONS:

- Customer dissatisfaction Loss of sales
- Gaming the system
- Not applicable everywhere Price fluctuation
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III. PROPOSED ALGORITHM

A. *Design Considerations:*

- Initial database information for supply and demand.
- APIs should be able to get proper information.
- Keeping track of previously used Prices.
- Considered all possible prices at beginning.
- Consider all possible scenarios such as Peak time, weekend weekday etc.

B. *Description of the Proposed Algorithm:*

Aim of the proposed algorithm is to maximize the sales and profit of the automobile industry. The algorithm consists of 3 basic steps

Step 1: Calculating Supply/Demand Ratio:

The data is fetched from the database table of the supply of the product and demand of the product then the ratio of the both is calculated.

Supply = S, Demand = D, S:D

Step 2: Selection of Price indices and parameters:

There are multiple price indices and parameters among which the price is set. Some of them are like, time in a day, special days like weekends or weekdays, festive days etc. For every parameter there should be a different pricing method and set price. Once the price is selected almost work is done and dynamic price is ready to be applied.

Step 3: Display dynamic price:

After calculation of the dynamic price, the price should be displayed to the customer. Every slot is charged based on parameter set and the particular price is displayed to the customer.

IV. PSEUDO CODE

Step 1: Select data from the database.
Step 2: Calculate supply/demand ratio of the above data.
Step 3: Select on the parameters for the real time
Step 4: Based on the parameters calculate the price
Step 5: Display the price
Step 6: End.

V. SIMULATION RESULTS

The algorithms will calculate the price based on the ratio of demand and supply in the business. If the business has more demand and less supply, then the algorithm calculates for the higher price and vice-versa for the other scenario. It may also consider multiple parameters for the dynamic price calculation.

- **Travel Industry:**
  The prices of the buses, trains and specially flight vary frequently based on the demand of the tickets and festive days. The dynamic pricing algorithms are used for fluctuating pricing.

- **Transport Industry:**
  Dynamic pricing plays very important role in transport industries like Ola, uber who provide transport facilities for public. They charge based on the time in a day like either mornings or evening when there is chance of maximum bookings.

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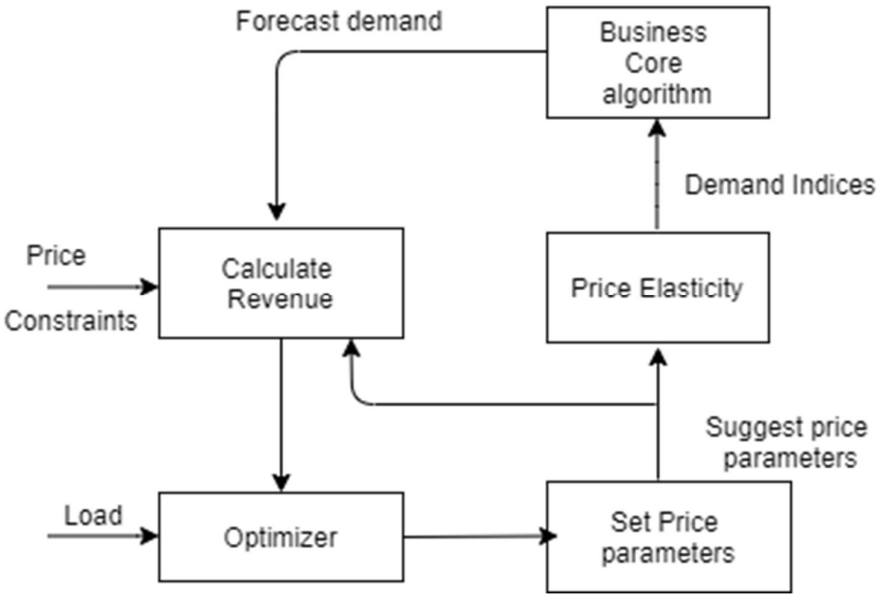

Fig.1. Working of Dynamic Pricing

VI. CONCLUSION AND FUTURE WORK

The possibility is that in future every business will need its own dynamic pricing model for their better business growth and sustainability. This paper gives us how demand and supply can be used as a parameter for dynamic pricing. This will make business grow rapidly and sale profit will be higher. Every business should adapt this model to survive in market as this could be the future of pricing values.

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BIOGRAPHY

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