

## **Exploring the opportunities for Pricing analytics for developing Pricing Strategies in Online Retailing**

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### **Abstract**

The increasing competition among e retailers in India has given rise to the adoption of different pricing strategies. The online retailers face the challenge of attracting customers as only a chunk of customers are interested in making transactions online. There can be several ways in which marketing analytics can be employed to use e-commerce platforms for maximizing customer satisfaction through enhanced pricing efficiency. From dynamic pricing to value-based pricing to cost-plus pricing, the online retailers are using all possible pricing strategies for enhanced customer value ad experience. The paper employed the use of qualitative research and focused groups on understanding the pricing strategies. The Study found the various factors that impact the online pricing strategies and exploring marketing analytics being employed by online retailers for developing their pricing strategies. The paper greatly impacts the practitioners in the comprehension of extensive role the pricing analytics has for the development of pricing strategies.

**Keywords-Analytics, pricing, online retailing, e commerce**

### **Introduction-**

The online retail growth is at a faster pace, and customers are actively looking for more engaging and highly personalized retail experiences. E-commerce businesses can stay one step ahead of their customers for achieving success. There is a need to predict the customer's expectations in their e-commerce Store. Large retailers such as Walmart thoroughly depend on analytics for their day-to-day decision making in supply chain management. Using the insights generated, one can make better use of the inventory space and avoid out-of-stock items.

Interestingly, according to a 2018 IBEF (India Brand Equity Foundation) report, the eCommerce market was estimated to reach \$200 Bn by 2026 from \$38.5 Bn in 2017. However, the eCommerce market has born a value of \$200 Bn in 2019. Research shows that

amongst various other reasons, pricing is one of the most important reasons for the online success of companies.

In the Study (Liu, 2012), the authors identify three factors influencing Internet company pricing strategy: the reputation of an online seller, customer awareness level, and competition. The type of pricing strategy used by online retailers is dependent on several factors, namely market rate, price variations, and product bundling. The pricing position of online store determines the consumer behavior and their decision choices. The online store's USP determines whether a store is price/ discount-centric or value-centric. Online retailing's expand nationally and globally as customers abandon historic high streets and shop from home or on the go. The popular trend of selling online is by OWM (online website mall), third party e-commerce platforms like eBay, Taobao, etc.

### **Theoretical Background-**

Microsoft's bundling of the software applications in the onsite retail space on a particular day, it is noticed 400+ combo offers from Snapdeal in the camera & accessories category. In contrast, PayTM has 200+ combo offers, and Amazon has 3000+ combo provides in the same category. Similarly, in the hair care category, significant variance in combo offers is observed across marketplaces.

It has been noticed that marketplaces have a varied number of products sold in packs across different brands (2500 in Amazon, 800+ in PayTM, and 500 in Snapdeal on a specific day. Costs, namely search costs and transaction costs, determine other differences to traditional markets (Geyskens et al., 2002; Reynolds, 2002). Pricing strategy is an essential element of the digital marketing strategy (Singh, 2018). Patterns in the analysis emphasize the opportunities for differentiated pricing at a customer-product level, based on willingness to pay (McKinsey, 2014). Marketing analytics is the science of data that is employed to develop pricing strategies in online retailing.

The Literature states that business firms differ in the elements of productivity, remuneration levels, and so on. Exporters evaluate the non-exporters on some of the features (Ranjan and Raychaudhari, 2011). The digitization has changed the business activities by offering multiple options. The change has fundamentally altered the landscape of marketing practices. Technology provides many versatile tools that firms can employ to cultivate and maintain their marketing practices, such as – customer touchpoints, relationships with customers, and empower the businesses to interact globally with customers.

This mega-trend is a new business norm not only in the developed world but also in emerging markets. For example, Facebook enables many small and medium companies to promote and communicate their products globally (Manyika and Lund, 2016), while Alibaba also facilitates the efforts of different value holders.

Even life insurance indicates less price dispersion due to online price comparison sites (Brown and Goolsbee, 2002). Costs still are an essential ingredient for pricing. The Study of how the diffusion of an e-channel affected the geographic trading patterns and price dispersion of the wholesale (Overby and Forman, 2014).

When a manufacturer tries to expand her market through two online channels, she meets the same questions in these traditional researches. One of the critical issues is to price simultaneously in two online channels. Information technology has increased efficiency, which in turn reduces transaction costs (Bakos 1998, Litan and Rivlin 2001). The Study had objective to examine the impact of pricing strategies as a promotional tool in the organized retail sector in India (Kumar, 2014).

The manufacturer & company should consider the level of knowledge of the customers while deciding the price of the product. Customer knowledge would be highly-priced sensitive (Bareja and Sain, 2014). In a report titled 'Online Retail Forecast (2017-2022) the Asia Pacific', Forrester Research has found that Amazon India is now behind Flipkart by only 1% in GMV market share for 2017, in comparison to 5% in 2016. Homegrown e-commerce player Flipkart's standalone market share was 31.9%, while Amazon's was 31.1%, according to the research report.

A wrong pricing policy could harm a firm's profit or even drive it to bankruptcy. Incorrect pricing causes deadweight loss. Deadweight loss denominates damage, which could have been avoided by proper allocation of resources, I .e. in this case, optimal pricing in both sales channels. The deadweight loss occurs, and a price lets some consumers forgo a purchase that would otherwise have taken place and thus lowers a firm's profit. Second, a price tool would bring many consumers, but *ceteris paribus*, due to low prices, the benefit would not be adequate. Therefore, optimal pricing strategies lead to maximizing profit in industries that sell similar products on the Internet and through traditional channels (e.g., Varian, 1995; Shapiro and Varian, 1999; Liebowitz, 2002; Skiera 2000). In general, the price is always an essential competitive issue in satisfying consumers (e.g., Wallace et al., 2004).

### Costs and Pricing

E-commerce is the online transactions: selling goods and services on the Internet, either in one sale like Amazon or through an ongoing operation online (Frost and Strauss, 2013). The E-commerce firms include Amazon to Netflix and capture various types of data (orders, baskets, visits, users, referring links, keywords, catalogs browsing, and social data). They are divided into four types -transaction or business activity data, click-stream data, video data, and voice data. In eCommerce, data are the key to track consumer shopping behavior in personalized offers. They are collected over time using consumer browsing and transactional points. This section presents different types of big data along with their implications for e-commerce.

Through an intelligent pricing policy accompanied by supportive investments in promotion and distribution, the firm attains the competitive advantages, which should result in higher sales and profit for a firm. In the online market, firms could adjust prices instantaneously, and these price changes are immediately registered to rivals along with customers, allowing opponents to respond to price cuts with their own.

In the online market, costs, like search costs and transaction costs, decide the differences to traditional markets (Geyskens et al., 2002; Reynolds, 2002). Values are an essential ingredient for pricing. These costs directly influence consumers' reservation prices and their willingness to pay. Especially the digital media, where the search costs play a tremendous role.

The Internet encourages competition and seems plausible (e.g., Alba et al., 1997). The price comparison sites quote consumers a detailed overview of offerings. Brynjolfsson and Smith (2000) state that due to lower supply costs, higher price competition, and therefore the removal of natural monopolies and prices decrease online. The studies indicate that prices are distinctively lower in the online channel than in the offline channel. The digital information goods have reduced costs in online media since they contain no extra new feature, and price competition may be enforced (Ancarani and Shankar, 2004).

The price is the principal attribute to attract consumers to an online shop (Reibstein, 2002). Online trading promises the potentials of an entry barrier, easy access to information, and low transaction costs. These features of online trading imply that the growth of e-commerce has the potential of realizing often stated economic ideals for a genuinely competitive market- low search costs, intense price reactions, low margins, and weak market power. Such benefits might provide significant welfare benefits to consumers. (Tang and Xing, 2001)

The belief that price is a purchasing factor for online buyers was reinforced by the site's objective of offering the lowest prices (Armstrong, 1998; Gurley, 1999). Bakos (1997) made a precise prediction about the emergence of frictionless e-commerce: lower buyer search costs in E Marketplaces that promote price competition among the sellers. The effect will be most dramatic in commodity markets, where intensive price competition can eliminate all seller profits'. Consequently, lower search costs should lead to lower prices, which tend to decrease towards a perfect competition level.

By reducing search costs, many analysts expected the Internet to make electronic markets more competitive, leading to lower prices and less price dispersion. The work by Chen and Hitt (2003) indicates that a reduction in search costs may lead to an increase in price dispersion. The hypothesis got supported by the empirical work of Brown and Goolsbee (2002). Finally, Baye and Morgan (2004) demonstrate that price dispersion may be an equilibrium outcome if firms operate subject to bounded rationality resulting from satisfying behavior, or if firms are reluctant to alter pricing strategies because they view the payoffs as small relative to the costs.

More recent studies explained why price dispersion continues to exist in online shopping, focusing on seller characteristics (Ratchford, and Shankar, 2003). Increased access to the Internet allows Consumers to obtain price quotes for a specific product from literally hundreds of sellers, have significantly reduced search costs for a large number of consumers. The prices get associated across products and over time. The sellers with low prices generally charge flat rates for all items within a given product category. Small price sellers in one time period are among the short price sellers in the future. The dominating prices across products and over time may further reduce search costs for consumers who shop online.

Davis and Hamilton (2004) deliver four suggestions: menu costs, information-processing lags, customer acceptance, and diplomatic identification of opposite responses. The fifth cost of market conditions is added and computing the best answers to these, leading to periods of inattention.

### **Search Costs and Pricing**

Search costs became an economic topic with the influential work of Stigler (1961). The Internet led to issues such as search costs get reduced by Internet adoption. The Internet allows consumers to undertake the unimpeded search across stores (Alba et al., 1997). Reduced search costs result in increased competition and thereby reduced prices (Bakos,

2001). The increased competition makes it harder for firms to generate profits (Liebowitz, 2002).

Because of this, firms use brands to enhance search costs and prevent price competition (Bergen et al., 1996). However, lower search costs also allow companies to monitor their competitors better. This may foster collusion, which increases firms' revenues (Campbell et al., 2005). The firms provide better consumer fit as the lower search costs help the firms to identify the able users. The Internet enables the profiling and monitoring back such strategies for evaluation (Bakos, 2001; Lee and Gosain, 2002).

Nevertheless, online search costs may not be small (Lynch and Ariely, 2000). The prices could easily be found; perceived search costs may be high. Search costs of zero imply limited consideration sets for consumers, i.e., consumers' consideration sets are overestimated (Mehta et al., 2003).

There may exist an asymmetric search behavior. The search costs are lowest; consumers tend to search less and vice versa (Zwick et al., 2003). Thus, consumers do not always search for the lowest price (Smith and Brynjolfsson 2001). The unique features of the online channel let the firms to expand their offerings cheaply. The online channel helps to serve consumers' needs better and increase their profits (Alba et al., 1997). Furthermore, the menu costs are considerably low, firms can change prices more frequently and a greater extent than in their traditional channel.

The price segmentation allows skimming consumer surplus better (Lee and Gosain, 2002). The online channel may lower transaction costs (Ward, 2001; Liang and Huang, 1998). The theoretical studies state that the online track leads to increased market coverage and the firm's profit (Friedman and Furey, 2003; Bakos et al., 2005). The Internet is often described as a "friction-free" market (Bakos 2001). The rising competition results in lower prices and less price dispersion. Besides the different features of the Internet, decreased search costs can increase price sensitivity. The friction-free market should increase efficiency so that the total welfare rises (Bakos et al., 2005).

Many practitioners rely on a threat from the friction-free market. The reduced search costs boost up the price competition, and the firms try to prevent by introducing barriers (Alba et al., 1997; Odlyzko, 1996; Bakos, 1997; Salop, 1979).

### **Price Dispersion**

The competition in the market is called price dispersion. The current Literature tells the information on price dispersion in the online channel among various product categories (Brynjolfsson and Smith, 2000). The travel agencies online have to distinguish themselves from each other by specializing and offering individual prices to its customers. The strategies bring a wide range of prices and high price dispersion.

The Internet allows firms to reach consumers and to customize pricing by direct marketing (Chen and Iyer, 2002). By this means, firms can realize sophisticated pricing strategies. These strategies can even be modified in a short time. The digital information goods can be given in many ways that promote price differentiation. Interactivity allows for auctions to be realized on the Internet. The possible pricing strategies reach from well known posted prices to sophisticated yield management. Each pricing strategy has its advantages or disadvantages, and there is no clear recommendation of which approach to use in conjunction with a particular product or a specific market environment.

Posted prices represent the widespread form of price products in developed countries. There is no price; the transaction turns out to be cheap, precise, and fast. The three factors are relevant in our advanced world. Posted costs show to be extremely efficient and functional (Liebowitz, 2002). The commonly used computation for calculating the price is cost-plus computation. The specific markup leads to the final price of a product. Cost-plus pricing is the most common pricing strategy because of its simple calculation and its foundations on the expenses.

Second, a firm could conduct parity pricing. This means that a firm copies the current price and maintains a price level between its competitors. This strategy demonstrates weakness as the firm does not act on its unique power but instead reacts to the market's will (Noble and Gruca, 1999). If a firm sells a high-quality product, it should get price premiums. The consumers accept the markup due to the superior features of the product, and the firm should earn the rent for its better work.

The firm operates with the advantages of cost against the competitors; it should become a low-price supplier. The firm must hand over the cost savings to its consumers and therefore extend pressure on its competitors. Finally, the firm could afford that discount. Thus, the sole reason for firms to conduct parity pricing comes if the firm has to meet the high costs in a mature market (Guiltinan, 1987).

The market conditions to pricing strategy are composed of easily detectable price changes (Nagle and Holden, 1995), changing total demand (Guiltinan, 1987), high factor capacity utilization (Noble and Gruca 1999), low market share (Kotler, 2006), and little product differentiation (Noble and Gruca 1999). The third pricing strategy is to be a low-price supplier. If the firm obtains some cost advantages, it should be used and hand over to consumers (Nagle and Holden, 1995).

Consumers may consider these discounts and flock to the firm. A threat that could arise with the strategy is that the firm uses the deficiency of price knowledge in the market (Noble and Gruca, 1999).

All firms start to reduce the back prices, and in the end, the firm starting that price war may be worse off as before, and the price and cost spread scales down. If the competitor gets higher cost advantages and attracts additional consumers, it becomes worse. The firm's market environment to perform that kind of pricing is composed of a low market share, high brand elasticity, and little product differentiation (Noble and Gruca 1999). An aggressive price policy should be started in such a dynamic environment.

The agencies avoid comparison and competition (Clemons et al., 2002). Ancarani and Shankar (2004) explored the books and C.D.s and also found price dispersion higher online than offline. The 4% wider price range than with traditional stores in the case of pure retailers. Comparable results were examined by other authors (Iyer and Pazgal 2003).

On the opposite end, the findings of lower price dispersion online imply higher price competition in this sales channel (Wernerfelt 1994, Morton et al., 2001). Less price dispersion in the online medium was found by studies on the car retail industry, C.D.s, DVDs, hardware, software, and consumer electronics (Pan et al. 2002b). Morton et al. (2001) state that online consumers are aware of the current price structure, and online prices have to be less dispersed. Price comparison sites encourage development. The life insurance displays less price dispersion owing to their online price comparison sites (Brown and Goolsbee, 2002). There was no apparent argument related to price dispersion. Some authors contend that price dispersion depends on the number of firms filling a particular market (Baye et al., 2004).

The price dispersion is a function of the product class, the number of firms and competitiveness of that market, and the brand strength of the incumbent firms.



**Problems of Online Channel:**

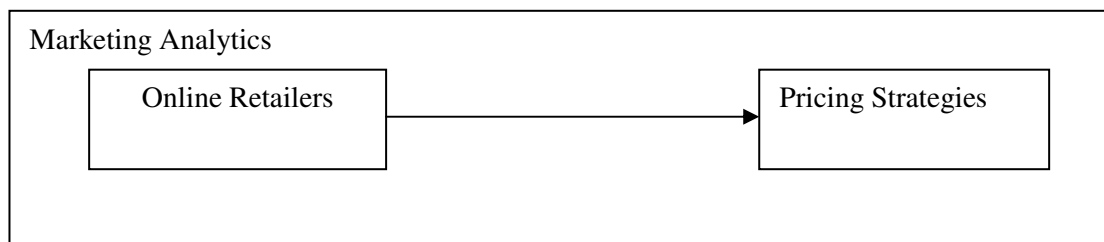
The authors state that the issues of cannibalization, channel coordination, and channel conflicts get pronounced due to the nature of the Internet (Balasubramanian 1998). The online channel may not enhance consumer spending, partly due to a lack of cross-selling potential (e.g., Sullivan and Thomas 2004). The homogeneous goods like digital information goods force firms to compete on prices because they contain no other unique points. The individual criteria of digital information goods make these firms particularly very exposed to cannibalization (Bailey 1998, Shapiro and Varian 1999). Pricing analytics are the metrics and tools meant to evaluate the impact of pricing activities on the complete business, analyze the profitability the price points, and optimize a business's pricing strategy for maximum revenue.

It is visible that new technologies have changed the way people go shopping these days. People use technologies to search for information on a product online, purchase goods, and compare prices (Otto & Chung, 2000; Goersch, 2002; Steinfield et al., 2002).

Marketing Analytics enables e-commerce firms to use data more efficiently in driving a high conversion rate, improve decision making, and empower customers (Miller 2013). The opinion of transaction cost theory in e-commerce can benefit online companies by improving market transaction cost efficiency (Devaraj et al. 2002).

**The rationale of Study-**

The literature review indicates that the prices in the market are dynamic and developing pricing strategies by using traditional technologies are obsolete. The paper explores the possibilities of using pricing analytics in generating pricing strategies in online retailing.

**Figure 1- Conceptual Framework****Objectives of Study-**

The Study has considered the following purposes-

1. To explore the use of pricing analytics in online retailing

2. To examine the opportunities of pricing analytics in developing the pricing strategies

### **Methodology-**

The extensive Literature is extracted on pricing strategies and online channels in online retailing. Qualitative research is used in the Study, and the method of data collection is one focus group with online retailers in the sampling areas—the possibilities of developing pricing strategies via marketing analytics. The four online retailers, namely Flipkart, Amazon, E bay, and Myntra of 4 cities of Tier 2, i.e., Ghaziabad, Agra Kanpur, and Lucknow (shown in Table 2) have been taken into consideration. The total eight managers and heads of these retailers were put in a focus group via zoom, and it continued for one hour, and the collection through moderation led to few analyses. The details of the authority of retailers are indicated in Table 1.

### **Data Analysis-**

#### **Use of Pricing Analytics**

Marketing analytics enables online retail businesses to enhance pricing models. The online retail market is quite competitive. It is essential to say that online stores must offer the best prices to ensure sales. Pricing products in online retail are necessary to ensure the success of a brand. Online businesses must always be alert to monitor the pricing of the products in their stores. The online stores can predict trends in product prices, taking advantage of festivals or periods of high visitor traffic on their virtual store. With the use of pricing analytics, online retail businesses can create enhanced product pricing models, determining the optimum prices to maximize conversions effectively.

Marketing analytics capabilities in a robust analytics solution analyze historical data for various products and customer responses towards past pricing trends and evaluate competitor pricing in building suitable pricing models for online retail businesses. Pricing analytics can also help an online business decide the optimum prices for its products through useful analysis of customer sentiments related to pricing. The online retailers gain valuable insights about the highest price their customers are prepared to pay for any product.

Table 1- Retailers Title

Retailer	Designation
Myntra	Manager
	Head
Flipkart	Manager
	Head
Amazon	Manager
	Head
eBay	Manager
	Head

Table 2- Online Retailers responses

City	Retailers	Responses
Ghaziabad	Myntra, Amazon, Flipkart,Ebay	Online analytics helps in tracking the price wise navigation of shoppers in e-commerce sites. Also helps in analyzing the profitability of price point
Agra		Supports the profitability of price point and thereby the pricing strategies. Use of analytics helps in making competitive strategies
Kanpur		Predictive analytics in pricing analytics support in predicting the right price of the products and the pricing strategies are also determined
Lucknow		The descriptive analytics and prescriptive analytics help in setting the prices online and pricing strategies

The responses of the authority (Table2) amongst the four retailers led to further interpretations

### **Opportunities for Pricing Analytics in developing Pricing Strategies**

Online retailers are making focused efforts to improve product recommendation capabilities on their e-commerce platforms. By harnessing the potential of pricing analytics viz. predictive, descriptive, and prescriptive analytics, online retailers can gain deep insights about individual customers. The initiatives help them to offer targeted product recommendations based on analysis of past shopping history, store browsing patterns, and popular products or items within a specific price range.



**Figure 2- Word Cloud**

### **Findings-**

The Study indicates that online retailers benefit greatly by pricing analytics. The analytics enable the online retailing predictions and perform better in terms of the pricing. The strategies like price determination, price navigation, price tracking, and competitive pricing lead to uplift online retailing. Pricing of the products in online retail is necessary for the success of a brand. The descriptive component in pricing analytics helps to explore the past trends of pricing and determine the right price, the predictive analytics look for the proper price for future. Prescriptive pricing analytics provide the diagnostic measure for pricing. Online businesses must always be alert to monitor the pricing of the products in their stores. The online stores must predict trends in product prices, taking advantage of festivals or periods of high visitor traffic on their virtual store. The figure 2 indicates the role of analytics

in tracking, navigation, predicting, analyzing the profitability of prices. The pricing analytics is also one of the components of online strategies for online retailers.

### **Conclusion & Implications-**

The pricing analytics is the relevant tool for developing the pricing strategies for online retailing. With the use of pricing analytics, online retail businesses can create enhanced product pricing models, determining the optimum prices to maximize conversions effectively. The Study may be extended by academia for other marketing mix analytics in online businesses. The paper dramatically impacts the practitioners in the comprehension of the extensive role the pricing analytics has for the development of pricing strategies.

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