Maneggio
E-ISSN : 3032-7652
https://nawalaeducation.com/index.php/MJ/index
Vol.2.No.1 February 2025
DOI : https://doi.org/10.62872/wvxg9218

The Role of Dynamic Pricing to Improve Revenue and Competitive Advantage

Dina Nadiyah Faiqoh[1], Jemmy Jemmy[2], Adi Saputro[3], Eryco Muhdaliha[4], Agus Kusnawan[5]

[1,2,3,4,5] Budi Luhur University, Indonesia

Email: 2431700109@student.budiluhur.ac.id *1

Entered : December 20, 2024 Revised : December 27, 2024
Accepted: January 15, 2025 Published : February 28, 2025

ABSTRAK

Dynamic pricing adalah strategi penetapan harga yang memungkinkan perusahaan menyesuaikan harga produk berdasarkan permintaan, waktu, dan perilaku pelanggan. Dengan kemajuan teknologi dan analitik, penerapan strategi ini semakin luas, membantu perusahaan memahami pola permintaan secara real-time serta memaksimalkan pendapatan. Meskipun memberikan keunggulan kompetitif, perusahaan harus memperhatikan transparansi dan keadilan dalam penetapan harga guna mempertahankan kepercayaan pelanggan. Implementasi dynamic pricing diperkirakan akan terus berkembang dengan keterlibatan kecerdasan buatan dan analitik prediktif, yang memungkinkan perusahaan menetapkan harga lebih akurat sesuai dengan kondisi pasar. Selain itu, dynamic pricing juga berperan dalam mendukung penjualan produk yang memiliki masa simpan terbatas, sehingga dapat meminimalkan pemborosan dan meningkatkan efisiensi operasional. Strategi ini juga mencakup dynamic bundle pricing, yang dapat meningkatkan loyalitas pelanggan melalui penawaran yang lebih relevan. Pemberian diskon dalam strategi ini berkontribusi pada peningkatan interaksi positif dan rekomendasi produk, meskipun dampaknya sering kali bersifat sementara dalam sektor ritel. Secara keseluruhan, dynamic pricing membantu perusahaan mempertahankan daya saing dan meningkatkan kepuasan pelanggan dengan strategi penetapan harga yang lebih adaptif dan berbasis data.

Kata Kunci: Penetapan harga dinamis, strategi penetapan harga, perilaku pelanggan, permintaan waktu nyata, kecerdasan buatan

ABSTRACT

Dynamic pricing is a pricing strategy that allows companies to adjust product prices based on demand, time, and customer behavior. With advances in technology and analytics, the application of this strategy is increasingly widespread, helping companies understand demand patterns in real-time and maximize revenue. Despite providing a competitive advantage, companies must pay attention to transparency and fairness in pricing in order to maintain customer trust. The implementation of dynamic pricing is expected to continue to evolve with the involvement of artificial intelligence and predictive analytics, allowing companies to set prices more accurately according to market conditions. In addition, dynamic pricing also plays a role in supporting sales of products that have a limited shelf life, so as to minimize waste and improve operational efficiency. This strategy also includes dynamic bundle pricing, which can increase customer loyalty through more relevant offers. The provision of discounts in this strategy contributes to an increase in positive interactions and product recommendations, although the impact is often temporary within the retail sector. Overall, dynamic pricing helps companies maintain competitiveness and improve customer satisfaction with more adaptive and data-driven pricing strategies.

Keywords: *Dynamic pricing, pricing strategy, customer behavior, real-time demand, artificial intelligence*

INTRODUCTION

Dynamic pricing , or dynamic pricing, is a flexible pricing strategy that allows companies to adjust the prices of their products or services based on factors such as market demand, time, customer behavior, and competition. In an increasingly competitive and dynamic business environment, this strategy has become an important tool for increasing revenue while maintaining or even strengthening the company's competitive advantage. Along with the development of technology, especially in the field of data and analytics, the application of dynamic pricing is becoming increasingly widespread and sophisticated. Companies can now leverage big data and machine learning algorithms to understand demand patterns, consumer behavior, and market conditions in real-time, including competitor activity, inventory, and consumer shopping behavior. This enables companies to maximize revenue while maintaining competitiveness in a highly dynamic market.

The main advantage of dynamic pricing lies in its ability to create efficiency in price management. By setting prices that match the value perceived by customers at a given time, companies can attract more consumers who are willing to pay that price. In addition, this strategy also provides flexibility to respond to changes in market demand or pressure from competitors, thereby reducing the risk of losing market share. In the context of increasing revenue, dynamic pricing allows companies to optimize total revenue by maximizing revenue per unit of goods or services sold. This approach not only increases revenue but also maximizes the utilization of available resources.

In addition to increasing revenue, dynamic pricing also makes a significant contribution to a company's competitive advantage. With the ability to set prices that are more responsive to market dynamics, companies can more effectively deal with competitive pressures. For example, in the e-commerce market, companies implementing dynamic pricing can adjust their product prices in real-time to stay competitive with competitors. This advantage is also reinforced by the company's ability to use customer data to offer more personalized and relevant prices, creating a better shopping experience for consumers. However, implementing dynamic pricing also presents challenges. One of the main challenges is ensuring that the strategy is implemented in a transparent and fair manner so as not to damage customer trust. In some cases, customers may feel unfairly treated if they realize that the price they are paying is higher than what other customers in similar situations are paying. Therefore, it is important for companies to communicate the reasons behind these price changes clearly and convincingly.

In an increasingly digitally connected business world, dynamic pricing has proven itself to be a highly effective strategic tool for increasing revenue and competitive advantage. By making optimal use of technology and data, companies can implement this strategy to better meet customer needs, improve operational efficiency, and strengthen their position in the market. Moving forward, the use of dynamic pricing is expected to grow even further, especially with the integration of increasingly sophisticated artificial intelligence and predictive analytics technologies.

LITERATURE REVIEW

"Companies must be flexible in their pricing strategies to adapt to changing market conditions and competition." (Helmold, 2020). "Discounts applied at the initial stage can increase customer loyalty and encourage repeat purchases in the future." (Yuang, Liang and Du, 2021) “While discounts can appeal to price-sensitive segments, excessive use can reduce perceived value and long-term revenue.” (Bernstein, 2014). "Proper market segmentation allows companies to apply different pricing strategies to different customer groups, increasing satisfaction and revenue. The goal of pricing and revenue management is to stimulate demand from various customers in order to obtain maximum revenue from them. " (Camilleri, 2018)

METHODS

This approach is especially useful for dealing with large volumes of data, such as thousands of journal articles or technical reports. Semantic technology helps filter relevant information, group key themes, and provide more comprehensive insights than manual analysis. In addition, the results of Semantic Literature Review are often presented in visual forms, such as concept maps or network graphs, to clarify the relationships between concepts. This approach not only improves research efficiency but also helps reduce subjective bias that may occur in traditional analysis. The process in this method usually involves several steps, such as data extraction from text (e.g., abstracts or keywords), concept mapping using semantic models (eg, word embeddings or topic modeling), and identification of patterns, trends, or research gaps through data visualization (eg, concept networks or cluster analysis). With this technology, the Semantic Literature Review method is able to reveal hidden relationships between concepts that may not be visible in manual analysis.

SLR is a way of synthesizing scientific evidence to answer a specific research question in a transparent and replicable way, while seeking to include all published evidence on the topic and assessing the quality of the evidence. The aim is to reduce the risk of bias and to increase transparency at every stage of the review process by relying on explicit and systematic methods to reduce bias in the selection and inclusion of studies, to assess the quality of studies, and to summarize them objectively. It is concluded that SLR has potential for design research and can help us address some important issues, but that efforts are needed to determine which review methods are appropriate for each type of research question in design research, and to adapt the guidance to our own needs and specificities.

These reviews provide an overview of a topic, and rely on the expertise of the authors, without attempting to synthesise all relevant published evidence or explain how the included papers were identified and synthesised. The problem with such reviews is that they leave it to the expert authors to decide what to include or exclude, and do not allow readers to track and assess these decisions. They also often do not explicitly assess the quality of the included studies. This creates the potential for bias in the review results." (Lame, 2019)

RESULT AND DISCUSSION

A. Dynamic Pricing Determination

Dynamic pricing allows companies to flexibly adjust product or service prices according to market changes and consumer behavior. With flexibility in pricing, companies can be more responsive to changing market conditions. For example, they can lower the price of products that are nearly damaged or have low demand to stay competitive in the market with more attractive prices. Thus, companies can attract more customers and increase competitiveness in industries with perishable products. Perishable products have a limited shelf life, so there is a big risk if the product is not sold in a timely manner. This price reduction can stimulate quicker purchases and reduce the likelihood of products going unsold and eventually going to waste.

With dynamic pricing , companies can take advantage of more flexible prices to sell products quickly and avoid losses caused by waste. With prices adjusted based on demand and product condition, companies can maximize revenue, even for products that are nearing expiration or are not in high demand. Dynamic pricing also reduces the need for manual markdown processes or product disposal, increasing operational efficiency and reducing costs associated with waste. The relationship between dynamic pricing and perishable products is critical in increasing revenue and reducing waste. By using dynamic pricing , companies can adjust prices based on demand, time, and product expiration, maximize revenue from perishable products, and reduce waste. This flexibility allows companies to be more responsive to market changes and consumer behavior, maintain their competitiveness, and optimize the management of perishable products, which in turn can improve profitability and sustainability.

Dynamic pricing strategies, which offer older units at lower prices than newer units, have proven effective in reducing decay by encouraging customers to choose the cheaper units. However, if prices are cut too sharply or demand elasticity is low, this strategy can reduce total revenue. This model aims to understand the interaction between dynamic pricing strategies and various factors, including total sales, revenue, and age distribution . Age based discount policies have been shown to reduce defective units, where increasing discounts are directly proportional to the number of units wasted. Although effective strategies can approach zero waste, their impact on total revenue is not always positive, depending on the elasticity of demand and the speed at which discounts are applied." (Diaz et.al, 2016).

Dynamic pricing is particularly relevant in the context of optimal pricing policies for network goods as both aim to maximize revenues and create competitive advantages in the market by taking into account evolving demand and network dynamics. Dynamic pricing allows companies to optimize revenue by adjusting prices according to the phase of network development. In the early stages, when the network is still small, prices can be lowered to attract more users. Once the network grows and network effects begin to be felt, companies can raise prices to reflect the greater value of the product or service. By utilizing dynamic pricing , companies can provide incentives or discounts to new users, to accelerate network growth.

Dynamic pricing also allows companies to adjust prices based on different user needs and product features. Dynamic pricing and optimal pricing policies for network goods work together to maximize revenue and competitive advantage in markets involving network effects. By adjusting prices based on user count and network impact, companies can increase their revenue, optimize early adoption, and maintain user loyalty. Dynamic pricing also provides flexibility in responding to rapid changes in demand, both at the individual level and at the overall network level.

Customers are forward-looking and experience (positive) network externalities, that is, each customer's utility depends not only on his/her assessment of the good and the price offered, but also on the weighted sum of the number of other customers who have purchased the good." (Makhdoumi et.al, 2017)

B. Bundling Price

Dynamic pricing allows companies to adjust the prices of products or services in real-time based on factors such as demand, consumer behavior, time of day, or market conditions. Using algorithms and analytics, companies can set higher prices during periods of high demand and lower prices during times of low demand. This allows companies to maximize their revenues, adjusting prices based on relevant factors such as changes in demand and consumer behavior. Dynamic pricing provides the flexibility to compete with prices that are more responsive to the market. This allows companies to adjust their prices in real-time, ensuring that the prices they offer remain competitive and attractive to customers.

Dynamic bundle pricing refers to a pricing approach where two or more products are offered as a package with prices dynamically adjusted based on factors such as demand, customer segmentation, and buying behavior analysis. This concept can be applied to products that are priced independently, where each product in the bundle is priced separately but still related to the bundle. With this approach, the bundle price can change based on market conditions and in-depth data analysis. Targeted bundle pricing means that bundle prices are tailored to specific customer segments based on collected customer data.

By using dynamic pricing , companies can optimize bundle pricing by adjusting prices for products in the bundle based on different market demand and behavior for each product. This enables companies to maximize their revenue, both from single product sales and bundles, by dynamically adjusting bundle prices. Dynamic pricing allows companies to adjust bundle prices in real-time according to market conditions, while targeted bundle pricing allows companies to direct offers to more specific customer segments. This provides a competitive advantage by offering more relevant and attractive bundle pricing to customers, increasing conversions and customer loyalty. With dynamic bundle pricing based on independently assessed product prices and market demand, companies can create more compelling bundles. Customers will feel they are getting more value when bundle pricing is more accurately and precisely aligned with market behavior.

Bundling is the offering of two or more products as a single unit at a price lower than the total price of the products. We study the effects of dynamic bundle pricing in multi-segment markets, developing a model that combines dynamic and segment-specific pricing decisions. The results show that bundle offers are effective when inventory is high, and dynamic pricing is beneficial when inventory is low. Targeted discounts require significant investment and dynamic optimization to deliver benefits. The study also shows that the bundle discount strategy is dominant when increasing revenue, as well as the need to consider the inventory level of secondary products in further research. (Gokgur and Karabati, 2019).

A competitive pricing strategy on social networks plays a vital role in increasing sales by leveraging the interactive and dynamic nature of the platform. Social networks allow companies to monitor consumer preferences, behavior and reactions in real-time, allowing for quick and relevant price adjustments. This strategy is often supported by promotional campaigns, time-based discounts, or product bundling marketed through influencers or targeted advertising, which amplifies the reach and appeal of the offer. With high transparency on social networks, competitive pricing strategies not only attract consumers' attention but also build trust, as customers can easily compare prices and read reviews from other users. Bundling strategies, which combine several products into one package at a discounted price, entice consumers to buy more while driving increased transaction volume. With in-depth analytical data from the platform, bundling can be personalized based on customer preferences, ensuring that the offering is relevant and appealing to specific market segments. In addition to increasing sales of main products, bundling is also effective in reducing the stock of less popular products. (Faiqoh et.al, 2024)

C. Discount Price

Word-of-mouth marketing is a form of marketing that relies on personal recommendations from satisfied customers to attract new customers. Discounted pricing is often used in this strategy to encourage positive conversations and expand brand reach through customers talking about the products or services they enjoy. Discount pricing can be a major driver of word-of-mouth marketing because consumers are more likely to recommend a product or service if they feel they are getting more value for their money. By offering lower prices or discounts, companies can attract potential customers who will then share their experiences with others. Discounts given to customers can increase their loyalty to the brand. When customers feel valued through attractive pricing offers, they are more likely to recommend the product or service to others, which increases the effect of word-of-mouth marketing. The optimal control approach refers to the company's ability to manage and direct word-of-mouth marketing strategies effectively. By using dynamic pricing , companies can provide discounts or special offers at the right time, creating opportunities for consumers to talk about the offer. Using customer data and analytics, companies can tailor discount pricing offers to specific customer segments that are more likely to engage in word-of-mouth marketing. Dynamic pricing allows for more flexible and relevant pricing for specific customers, increasing the likelihood that they will recommend a product or service to others.

By using dynamic pricing to offer discounts that are adjusted based on demand or time of day, companies can attract new customers and encourage them to talk about the product or service to others. For example, if customers feel they got the best price at a particular time or after receiving a discount, they are more likely to recommend the product. Dynamically offered discount prices can increase customer satisfaction and encourage them to remain loyal to the brand. When customers feel they are getting more value through flexible pricing and relevant discount offers, they are more likely to repurchase and recommend the product. Discounts offered through dynamic pricing can spark positive conversations about a brand or product. Customers who feel they have received a special offer or attractive discount price are likely to share the experience with their friends or family, potentially increasing brand exposure through word-of-mouth marketing.

The discount pricing problem has been formulated, which has been modeled as an optimal control problem. A theoretical study shows that the optimal control problem can be solved numerically. Several examples of optimal control have been given. The influence of various factors on the expected optimal net profit has been investigated. Thus, several promotional measures have been recommended. (Li et.al, 2018).

Manufacturers and retailers may have different incentives when it comes to pricing and promotions. Manufacturers may want to increase sales volume through deep discounts, while retailers may be more focused on profits per unit. Game theory can help identify solutions that are beneficial to both parties by modeling the possible actions and reactions of each party. Reference price is the price that consumers expect based on previous experience or market prices. If the price of a product is higher than the reference price, consumers may perceive the product as too expensive. On the other hand , if the price is lower than the reference price, consumers may perceive it as a better deal. Thus, companies must consider the reference price in setting dynamic prices and promotional prices so as not to reduce the perception of the product's value in the eyes of consumers. Through a more structured coordination approach, manufacturers and retailers can be more efficient in managing stock and planning promotions, avoiding waste and maximizing sales potential.

The role of dynamic pricing and game theory approaches in coordinating promotional and advertising pricing policies in a two-echelon supply chain is critical to increasing revenue and competitive advantage. By integrating dynamic pricing strategies and considering reference prices in pricing decisions, manufacturers and retailers can achieve better coordination, maximize profits, and reduce the risk of waste or price wars. This approach allows both parties to work together to achieve optimal solutions, which benefit both revenue and consumer loyalty.

This study considers price promotions, reference price influences, and advertising in the manufacturer-retailer supply chain. The results show that consumer memory has a significant impact on the depth of price promotion and optimal advertising value. Negative price promotions increase short-term profits, but reduce long-term market potential. When consumer sensitivity to price is high, price promotions are positive. Certain memory factor values do not affect promotion and advertising rates. Stronger memory leads to positive reactions to price reductions, increasing demand. Increasing the memory factor decreases the depth of promotion, but increases the advertising rate. Advertising is effective in increasing channel efficiency and additional profits. (Malekian and Barzoki, 2019)

Price promotions can often drive increased sales of products, especially those related to unhealthy foods and beverages, which are often purchased impulsively by consumers. Discounts, bundled pricing, or other promotions can increase the appeal of the product, influence impulse purchases, and increase sales volume. However, unhealthy food and beverage products generally exploit very sensitive price factors. Consumers who previously had no intention of buying may be influenced by lower prices. In the UK retail context, effective price promotions can lead to spikes in sales of unhealthy food and drink products, particularly in high-traffic stores. Limited-time discounts and promotions often encourage impulse product purchases, which can lead to a temporary increase in sales. However, this effect tends to be short-term, because once the promotion is over, sales may drop again.

By leveraging technology to monitor consumer behavior, stores can adjust prices to achieve more optimal results, both in terms of sales volume and profit margins. In addition to increasing sales in the short term, price promotions implemented with a dynamic pricing approach can increase customer loyalty. Dynamic pricing and price promotions are highly relevant in increasing sales of unhealthy food and beverage products in UK retail stores.

Our dynamic reduced-form demand model incorporates endogenous inventory (stockpiling), consumption rates imputed from repeat purchases and allows for unobserved household heterogeneity. We find that eliminating price discounts is more effective at reducing purchase volumes than eliminating bulk offers for 10 of 12 food and beverage groups, particularly those products where price reductions are more common than bulk purchases. We find that price promotions drive consumption and waste through behavioral effects, associated with increases in household inventory (stockpiling).” (Watt et.al, 2022)

Dynamic pricing allows companies to set lower prices during promotions or specific periods when demand tends to be high, and raise prices when demand decreases. By implementing dynamic pricing , companies can quickly adapt to changes in market demand and competitor strategies. This provides a competitive advantage, especially in highly competitive markets such as food and beverage retail. Stores or brands that are able to offer lower or more competitive prices at the right time can gain a larger market share.

Dynamic pricing focuses on strategies that encourage more purchases of a product through price reductions or limited-time promotions. In contrast, the prohibition of price promotions aims to limit incentives for excessive consumption , especially in products that may have adverse effects on health. In dynamic pricing , price promotions can be used to increase the appeal of unhealthy food and beverage products, potentially increasing overconsumption. A policy prohibiting price promotions would serve to inhibit the effectiveness of this strategy by reducing the opportunity to offer lower prices or other promotions. Companies can implement dynamic pricing with market segmentation, for example, adjusting prices based on consumer demographics or behavior. This could include offering discounts on healthy products to consumers who demonstrate a preference for a healthy lifestyle , while withholding large promotions on unhealthy food products.

While the impact of price promotions on sales has long been of interest to marketing academics, with modeling studies showing their use has increased food and beverage sales by 12–43%, it is only now beginning to be considered in the public health field. " (Watt et.al, 2019)

D. Revenue Management

Dynamic pricing is a pricing strategy that allows companies to adjust the price of products or services in real-time based on market demand, consumer behavior, and other external factors such as competition, time, or market conditions. By adjusting prices in real-time based on demand and market conditions, companies can maximize revenue by taking advantage of higher pricing opportunities during peak demand periods and conversely offering lower prices to attract consumers during low demand periods. Dynamic pricing enables companies to be more flexible and responsive to market changes. By leveraging data analytics and predictive algorithms, companies can offer more competitive prices compared to competitors, increasing market appeal and creating customer loyalty.

The reference effect refers to a psychological phenomenon in which consumers judge the price or value of a product based on a reference price they have previously seen. In income management strategies, reference effects play a key role in how consumers perceive prices and their purchasing decisions. Consumers often compare the prices they see to reference prices they consider fair or that they have seen in the past. Therefore, in a dynamic pricing arrangement, it is important for companies to understand how constantly changing prices can affect customer perceptions. If the price offered is too high compared to their reference price, customers may feel the price is unfair, even if the price is reasonable in the current market context. To maximize profits, companies can set prices by considering the reference effect. For example, they may place a higher anchor price to create the perception that the lower price is a profitable offer, even if it is a dynamic price that changes according to market conditions.

By understanding the reference effect, companies can manipulate dynamic pricing to create a better sense of value for consumers, for example by offering a discounted price relative to a higher reference price. This can increase conversion rates and revenue. By using dynamic pricing to align prices with consumers' perceptions of value (which are influenced by the referent effect), companies can increase customer satisfaction, which in turn can build customer loyalty and create competitive advantage. Overall, the combination of dynamic pricing and an understanding of reference effects provides companies with a more powerful tool to strategically set prices, increase revenues, and create a sustainable competitive advantage in the marketplace.

The optimal initial price increases with the level of the reference effect. This suggests that sellers may want to set high initial prices, taking into account reference effects. The reference effect seems to advocate the adoption of a price reduction strategy. In cases where the reference effect is strong enough, a price reduction policy can become the dominant strategy, regardless of sales volume in the previous period. Finally, the reference effect intensifies the downward price trend in a price reduction strategy, while it reduces the upward price trend in a markup strategy. (Yang et.al, 2017)

By setting prices that vary according to demand or usage, companies can maximize revenue. In a highly competitive market like the mobile social data market, dynamic pricing provides the flexibility needed to respond to rapid changes in demand, consumer behavior, and competition. Platforms can adjust prices faster than competitors and gain a competitive advantage by offering more attractive prices or more relevant offers.

Companies can set dynamic pricing for data services based on usage patterns, time of day, or geographic area. Dynamic pricing can be used to adjust prices according to specific user segments. Users who use data more frequently or who have a larger social media following (e.g., influencers or content creators) may be charged higher prices because they generate more data traffic, while regular users may get lower prices or discounted plans. To increase adoption and usage, service providers can create bundled offerings with dynamic pricing.

By using dynamic pricing , service providers can leverage network effects to increase revenue. While dynamic pricing can help maximize revenue, it can also create dissatisfaction if users feel prices are too high or unfair, especially if they feel prices change rapidly. Therefore, companies need to ensure that the prices set remain competitive and transparent to maintain user loyalty. With adaptive pricing, service providers can attract more new users and retain existing users by offering prices that suit their time or needs.

Alternative pricing policies have been implemented to ensure social equity among users with respect to individual utilities. In addition, we have proposed a simultaneous dynamic pricing scheme to gain more insights. (Xiong et.al, 2018)

E. Competitive Advantage

With dynamic pricing , companies can be more responsive to competitors and changing market conditions. The ability to adjust prices quickly and in a timely manner gives companies a competitive advantage in responding to changes in the market, both in terms of price competition and in taking advantage of new opportunities that arise. In competitive marketing, dynamic discount pricing is used to attract customers, create urgency, or trigger purchases during a specific period. In highly competitive markets, dynamic discount pricing helps companies stay competitive by offering lower prices during certain periods or for certain products. This can be a way to attract more price-sensitive customers, especially when competitors are offering similar or lower prices. Dynamic discount pricing also allows companies to target specific market segments that are more likely to respond to discounts.

Using dynamic pricing , companies can modify prices based on a variety of market variables, including demand levels, consumer behavior, or competitor prices. Dynamic discount pricing is one way to implement dynamic pricing , where companies can offer discounts based on factors such as time or demand to maximize customer appeal. Dynamic discount pricing gives companies the flexibility to respond to changing market and customer needs in a timely manner. When discount prices are applied dynamically based on in-depth market analysis, companies can maintain their competitiveness and respond directly to changes in demand, even in conditions of intense competition. By using dynamic pricing and dynamic discount pricing, companies can adjust their offerings not only based on demand but also to compete directly with competitors. For example, if competitors lower prices, a company can use dynamic discounts to attract customers and maintain their loyalty, while maintaining a price advantage in a competitive market.

With the combination of dynamic pricing and dynamic discount pricing, companies can maximize their revenue in a highly flexible and responsive manner to market conditions. Dynamic price adjustments provide the opportunity to adjust prices to demand, while dynamic discounts entice customers to buy at the right time. By utilizing dynamic pricing, companies can adjust prices according to changing market conditions, increase revenue and strengthen competitiveness. This combined strategy enables companies to optimize revenue and maintain relevance in a competitive market.

Discounts are a frequently used marketing tool. This paper aims to design an effective dynamic discount pricing (DDP) strategy in competitive marketing. First, we introduce a competitive word-of-mouth (WOM) promotion model with DDP mechanism. On this basis, we model the initial problem as an optimal control problem. Next, we obtain an optimality system for the optimal control problem and, thus, propose the concept of a competitive DDP strategy. Finally, through comparative experiments, we find that the benefits of the competitive DDP strategy are satisfactory. Our findings contribute to maximizing marketing advantages over commercial competitors. Through comparative experiments, we have found that the effectiveness of the competitive DDP strategy is quite satisfactory. This work contributes to improving the marketing profits of companies in competitive marketing." (Chen et.al, 2019)

CONCLUSION

Dynamic pricing is a flexible strategy that allows companies to adjust product prices based on demand, time, and customer behavior. With advances in technology and analytics, its applications are expanding, helping companies understand demand patterns in real-time and maximize revenue. Despite offering competitive advantages, the challenges of transparency and fairness in pricing must be addressed to maintain customer trust. The use of dynamic pricing is expected to continue to grow with the integration of artificial intelligence and predictive analytics. Dynamic pricing helps companies adjust product prices according to market changes and consumer behavior. It supports fast sales of perishable products, maximizes revenue, reduces waste, and improves operational efficiency, maintaining the company's competitiveness and sustainability. Dynamic pricing and optimal pricing work together to maximize revenue and competitive advantage, by adjusting prices according to demand and network evolution to increase user adoption. Dynamic bundle pricing is a pricing strategy that combines products with customized prices based on demand, customer segmentation, and behavioral analytics, increasing revenue and customer loyalty through more relevant and compelling offers. Discounts as a strategy encourage positive conversations and product recommendations. Dynamic pricing enables quotes that match demand, increasing customer satisfaction and loyalty. Dynamic discounts create opportunities for customers to share experiences, expanding brand reach through personal recommendations. A structured approach and dynamic pricing enhance coordination, profitability and customer loyalty. Price promotions increase through impulse buying. Discounts and dynamic pricing can attract consumers, but their effects are often short-term in retail. Dynamic pricing allows companies to adjust prices based on demand, increasing product appeal and providing a competitive advantage.

DAFTAR PUSTAKA

B. Adenso- Diaz, S. Lozano, A. Palacio. (2016) Effects of dynamic pricing of perishable products on revenue and waste. Applied Mathematical Modeling doi: 10.1016/j.apm.2016.12.024

Bermstein, Joanne Scheff. (2014). Marketing Insights for Engaging Performing Arts Audiences. Palgrave Macmilan. I SBN 978-1-137-28293-4 ISBN 978-1-137-37569-8 (eBook) DOI 10.1057/9781137375698

Camilleri, Mark Anthony. (2018). Pricing and Revenue Management . Travel Marketing, Tourism Economics and the Airline

Chen, Jian . Huang, Da Wen. Yang, Xiaofan. Tang, Yuang Yang. (2019). Dynamic Discount Pricing in Competitive Marketing. IEEE Access . 10.1109/ACCESS.2019.2945884

Faiqoh, Dina Nadiyah. Riyadi, Selamet. Lestari, Setyani Dwi . Mudjijah, Slamet. (2024) IMPLEMENTATION OF PRICING STRATEGY TO INCREASE SALES IN THE DIGITALIZATION ERA. Maneggio Journal E- ISSN : 3032-7652 Vol.1 No.6

Gokgur, Burak. Karabati, Selcuk. (2019) Dynamic and targeted bundle pricing of two independently valued products. European Journal of Operational Research . https://doi.org/10.1016/j.ejor.2019.05.022

Helmold, Marc. (2020) Total Revenue Management. Springer International Publishing. ISBN 978-3-030-46984-9 ISBN 978-3-030-46985-6 (eBook) https://doi.org/10.1007/978-3-030-46985-6

Lame, Guillaume. (2019) SYSTEMATIC LITERATURE REVIEWS: AN INTRODUCTION. INTERNATIONAL CONFERENCE ON ENGINEERING DESIGN, ICED19 . DOI :10.1017 / dsi.2019.169

Li, Pengdeng. Yang, Xiaofan. Wu, Yingbo. Hey, Weihi. Zhao, Pengpeng. (2018) Discount pricing in word-of-mouth marketing: An optimal control approach. Physics A. https://doi.org/10.1016/j.physa.2018.03.062

Makhdoumi, Ali. Malekian, Azarakhsh. Ozdaglar, Asuman. (2017). Optimal Pricing Policy of Network Goods. Fifty-Fifth Annual Allerton Conference Allerton House, UIUC.

Malekian, Yasser. Rasti-Barzoki, Morteza. (2019). A game theoretic approach to coordinate price promotion and advertising policies with reference to price effects in a two-echelon supply chain. Journal of Retailing and Consumer Services . https://doi.org/10.1016/j.jretconser.2019.05.028

Watts, Toby. Beckert, Walter. Smith, Richard. Cornelsen, Laura. (202 2). The impact of price promotions on sales of unhealthy food and drink products in British retail stores. Health Economics. DOI: 10.1002/hec.4607

Watts, Toby. Beckert, Walter. Smith, Richard. Cornelsen, Laura. (2019). Reducing consumption of unhealthy foods and beverages through banning price promotions: what is the evidence and will it work ? . Public Health Nutrition . doi: 10.1017/S1368980019004956

Xiong, Jihui. Niyato, Dusit. Wang, Ping. Han, Zhu. Zhang, Yang. (2018). Dynamic Pricing for Revenue Maximization in Mobile Social Data Market with Network Effects. IEEE. Access

Yang, Hui. Zhang, Ding. Zhang, Chen. (2017) The influence of reference effect on pricing strategies in revenue management settings . INTERNATIONAL TRANSACTIONS INOPERATIONAL RESEARCH . DOI: 10.1111/itor.12371

Yuang, He. Liang, Ziwei. Du, Hongwei. (2021) Two-Stage Pricing Strategy with Price Discount in Online Social Networks. Springer International Publishing.