MANTECH Publications

Journal of Product Design, Quality Engineering & Technology
Volume 8, Issue 1, January-April 2023

The Role of Customer Involvement in the Development of New Sustainable Products

Arvind Yadav[1], Abhishak Pandey[2], Piyush Rai[3]

Assistant Professor[1], Student[2, 3]

Department of Mechanical Engineering

Prestige Institute of Engineering Management & Research

Email ID: *arvindyadav666@gmail.com*

Abstract

The development of new sustainable products has become a significant concern in today's business world due to the pressing need for environmental protection. Involving customers in the development process of sustainable products has been identified as a critical factor in creating successful sustainable products. The objective of this research paper is to review the literature on customer involvement in the development of new sustainable products. The review provides insights into the different levels of customer involvement, the benefits and challenges of involving customers, and the factors that influence customer involvement. The paper concludes with suggestions for future research directions.

Keywords: *Sustainable product development, customer involvement, new product development, customer co-creation, sustainability, benefits and challenges, customer feedback.*

INTRODUCTION

In recent years, sustainability has become a critical issue for businesses due to the growing awareness of the impact of industrial activities on the environment. Consumers are increasingly demanding products that are eco-friendly, socially responsible, and ethically produced. To meet these demands, companies are focusing on developing sustainable products that meet the needs of customers while minimizing negative environmental impacts.

Page 28-33 © MANTECH PUBLICATIONS 2023. All Rights Reserved

The development of sustainable products involves a range of stakeholders, including designers, engineers, suppliers, and customers. However, involving customers in the product development process is becoming increasingly important, as customers have become more aware of the impact of their consumption behavior on the environment. This paper reviews the literature on customer involvement in the development of new sustainable products.

LEVELS OF CUSTOMER INVOLVEMENT

Involving customers in the development of sustainable products can occur at different levels, ranging from passive to active participation. Each level of involvement offers varying degrees of customer input and influence in the product development process.

Passive Involvement

Passive involvement is the lowest level of customer involvement, which involves customers providing feedback on the product after its development. This level of involvement is limited to the customer's experience with the product and their opinions and suggestions for improvement. It is a one-way communication channel from the company to the customer, and the customer's role is limited to providing feedback.

Reactive Involvement

Reactive involvement is the second level of customer involvement, which involves customers responding to company requests for feedback. The company solicits feedback from customers through surveys, focus groups, or interviews after the product has been developed. The customer's role is limited to providing feedback, but they have more opportunities to provide detailed input.

Consultative Involvement

Consultative involvement is the third level of customer involvement, which involves customers providing input on the product development process before the product is developed. The company consults with customers to gather information on their preferences, needs, and expectations regarding the product. Customers may provide feedback on product features, packaging, or marketing strategies. The company uses the input to inform product development decisions.

Collaborative Involvement

Collaborative involvement is the fourth level of customer involvement, which involves customers playing an active role

Page 28-33 © MANTECH PUBLICATIONS 2023. All Rights Reserved

in the product development process. Customers work with the company to co-create, co-design, and co-innovate new sustainable products. Customers provide input on product features, design, and functionality, and may even participate in the development of product prototypes. The company uses customer input to develop a product that meets the needs and preferences of its target audience.

Co-creation:

Co-creation is the highest level of customer involvement, which involves customers collaborating with the company to create new sustainable products. Customers work with the company to identify unmet needs and develop innovative solutions to meet those needs. The company and customers work together to design and develop new products from scratch. The customer's role is active throughout the process, from ideation to prototyping to product launch.

Each level of involvement offers varying degrees of customer input and influence in the product development process. Companies can choose the appropriate level of customer involvement based on their resources, goals, and target audience. Active involvement, such as co-creation and collaborative involvement, is generally more effective in developing sustainable products that meet the needs and preferences of customers while minimizing negative environmental impacts.

BENEFITS OF CUSTOMER INVOLVEMENT

Enhanced Customer Satisfaction

Customer involvement in the development of sustainable products can lead to enhanced customer satisfaction. By actively involving customers in the product development process, companies can ensure that the final product meets the needs and preferences of the target audience. This can lead to increased customer loyalty and repeat business.

Improved Product Quality

Customer involvement in the product development process can lead to improved product quality. Customers can provide valuable insights and feedback on product features, design, and functionality, which can help companies refine their product development strategies and improve the final product.

Increased Innovation

Customer involvement in product development can lead to increased innovation. By involving customers in the

Page 28-33 © MANTECH PUBLICATIONS 2023. All Rights Reserved

ideation and design phases of product development, companies can tap into the creativity and expertise of their target audience, leading to the development of new and innovative products.

Reduced Time-to-Market

Customer involvement in product development can help companies reduce time-to-market. By involving customers in the product development process, companies can ensure that the final product meets the needs and preferences of the target audience, reducing the likelihood of costly redesigns and delays.

CHALLENGES OF CUSTOMER INVOLVEMENT

Time and Resource Constraints

One of the main challenges of customer involvement in product development is time and resource constraints. Active involvement, such as co-creation and collaborative involvement can be time-consuming and resource-intensive, requiring significant investment from both the company and the customer.

Limited Customer Knowledge and Expertise

Another challenge of customer involvement in product development is limited customer knowledge and expertise. While customers can provide valuable insights and feedback, they may not have the technical expertise or knowledge of industry best practices to contribute to product development in a meaningful way.

Conflicting Customer Preferences

Customer involvement in product development can lead to conflicting customer preferences. Different customers may have different needs and preferences, making it challenging for companies to develop a product that meets everyone's needs.

Limited Control over the Product Development Process

Customer involvement in product development can limit a company's control over the product development process. By involving customers in the product development process, companies may be required to make changes or concessions based on customer feedback, potentially affecting the final product.

Intellectual Property Issues

Finally, customer involvement in product development can raise intellectual property issues. Customers may contribute to the development of new ideas or technologies, creating potential conflicts over ownership and intellectual property rights. Companies

Page 28-33 © MANTECH PUBLICATIONS 2023. All Rights Reserved

must carefully manage these issues to protect their intellectual property and ensure a fair and equitable relationship with their customers.

FACTORS INFLUENCING CUSTOMER INVOLVEMENT

Several factors influence customer involvement in the development of sustainable products. One key factor is the perceived benefit of involvement, where customers are more likely to participate if they perceive that their involvement will benefit them or the environment. Another factor is the level of trust between the customer and the company, where customers are more likely to participate if they trust the company's motives and capabilities.

The type of product also influences customer involvement, where customers may be more willing to participate in the development of products that have a greater environmental impact, such as electronics and automobiles. Cultural factors, such as attitudes towards sustainability and social norms, also influence customer involvement in the development of sustainable products.

CONCLUSION

Customer involvement is becoming increasingly important in the development of new sustainable products. This review has provided insights into the different levels of customer involvement, the benefits and challenges of involving customers, and the factors that influence customer involvement. However, there are still several gaps in the literature, including the need for empirical research on the effectiveness of different types of customer involvement and the role of customer involvement in the adoption and diffusion of sustainable products. Future research in these areas will help companies to develop effective strategies for involving customers in the development of sustainable products.

REFERENCES

1. Agarwal, R., Grassl, W., & Pahl, J. (2012). Customer involvement in sustainable new product development: A systematic review. Journal of cleaner production, 37, 182-195.

2. Bhattacharya, S., & Sen, S. (2004). Doing better at doing well: When, why, and how consumers respond to corporate social initiatives.

Page 28-33 © MANTECH PUBLICATIONS 2023. All Rights Reserved

California management review, 47(1), 9-24.

3. Bocken, N. M., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. Journal of cleaner production, 65, 42-56.

4. Dahl, D. W., & Moreau, P. (2007). Thinking inside the box: Why consumers enjoy constrained creative experiences. Journal of marketing research, 44(3), 357-369.

5. Franke, N., & Piller, F. T. (2004). Value creation by toolkits for user innovation and design: The case of the watch market. Journal of product innovation management, 21(6), 401-415.

6. Jansson, J., Marell, A., & Nordlund, A. (2011). The effects of customer involvement on new product development: A constructivist inquiry. Journal of product innovation management, 28(2), 268-283.

7. Matthing, J., Sandén, B., & Edvardsson, B. (2004). New service development: learning from and with customers. International Journal of service industry management, 15(5), 479-498.

8. Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. Journal of interactive marketing, 18(3), 5-14.

9. Verhoef, P. C., Lemon, K. N., Parasuraman, A., Roggeveen, A., Tsiros, M., & Schlesinger, L. A. (2009). Customer experience creation: Determinants, dynamics and management strategies. Journal of retailing, 85(1), 31-41.

10. Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. Journal of marketing, 68(1), 1-17.

Page 28-33 © MANTECH PUBLICATIONS 2023. All Rights Reserved