

ARTICLE

Back Bay Battery Simulation Reflective Essay

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ABSTRACT

The success of an organization's innovation strategy relies on a clearly defined innovation theme. In this article, the author will delve into the concept of disruptive innovation and explore how to achieve Horizon 2 ideas. Horizon 2 ideas involve extending the business's current model and core competencies to reach new customers, markets, and even new business objectives in different segments. The business model extension under Horizon 2 focuses on the organization's mid-term goals, typically taking 24 to 36 months to yield results. Drawing insights from the Harvard Business Review's Back Bay Battery (BBB) simulation, this article presents the implementation of an innovation strategy within the BBB company. The aim is to assist the company in enhancing its business model and transitioning into the high-end market. The latter part of the article will shed light on the challenges associated with implementing this strategy in a real-world firm and the results it can deliver to the organization. Specifically, it will explore the effectiveness of the strategy in achieving disruptive innovation within the employee market, where the company intends to use the new business model to tap into new markets.

Keywords: Disruptive innovation; Horizon 2 idea; High-end market

1. Introduction

The Back Bay Battery simulation stands out as a widely embraced business simulation created by Harvard Business Publishing. Employed in educational environments, it serves as a tool to impart

knowledge on operations management, process enhancement, and decision-making principles. Within the simulation, individuals assume the position of a product manager at Back Bay Battery, an imaginary company specializing in the production and sale of batteries. The primary objective is to fine-tune the

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company’s operations and formulate strategic decisions aimed at maximizing profitability ^[1,2]. **Figure 1** illustrates certain essential aspects and concepts typically addressed within the Back Bay Battery simulation.

The Back Bay Battery simulation holds significant value for me as a tool for practicing diverse disruptive innovation strategies. It has provided me with practical, hands-on knowledge of innovation strategies, surpassing the theoretical concepts or approaches learned from readings and academic resources.

The simulation necessitates meticulous scrutiny of all facets of product data, particularly when incorporating Research and Development (R & D) investments. The core inquiry, central to the company’s disruptive innovation, revolves around enhancing the desired product features to cater to diverse markets. Simultaneously, it involves a delicate balance to prevent any unforeseen reduction in the organization’s net income. Expanding on this, the intricate nature of the simulation highlights the importance of a nuanced approach to Research and Development decisions. It’s not merely about investing in innovation but strategically channelling those investments towards optimizing product features. The central dilemma faced is how to align these enhanced features with the varied demands of different markets, ensuring that the products remain competitive without compromising the organization’s overall financial health. Furthermore, the simulation underscores the dynamic interplay between innovation and financial considerations. It’s not just a matter of introducing novel features but doing so in a way that avoids unintended financial setbacks. This involves foreseeing potential challenges, adapting strategies, and proactively mitigating risks to prevent any adverse impact on the organization’s net income.

In essence, the simulation challenges participants to navigate the intricate landscape of disruptive innovation, urging them to strike a delicate equilibrium between enhancing product features and safeguarding the financial stability of the organization. This dual focus ensures that the pursuit of innovation remains not only inventive but also financially sustainable in the ever-evolving market dynamics ^[2,3].

In this study, my objective is to share my insights on how the Back Bay Simulation mirrors the innovation theme and plays a practical role in workplace scenarios.

2. Innovation themes and rationale of strategy

2.1 Disruptive innovation

Innovation is widely known to have great effects on developing economy and obtaining sustainable competitive advantage ^[4]. Disruptive innovation entails the introduction of a novel product, service, or business model that brings about substantial changes in an existing market or establishes an entirely new market. Frequently, it employs technological advancements or inventive methodologies to provide products or services in a more streamlined, convenient, or cost-effective fashion ^[5]. **Table 1** outlines essential factors to consider when delving into the topic of disruptive innovation within a company.

Disruptive innovation theory possesses the inherent capacity to profoundly disrupt and reshape established market connections ^[14]. Disruptive innovation theory postulates that certain types of innovations have the potential to significantly disrupt and reshape the existing fabric of markets. These disruptive innovations introduce novel ideas, products, or business

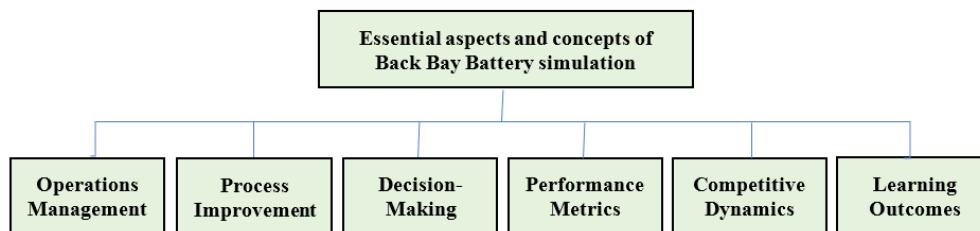


Figure 1. Certain essential aspects and concepts are typically addressed within the Back Bay Battery simulation.

Table 1. Essential factors to consider when delving into the topic of disruptive innovation within a company.

Factors	Additional Details	Ref.
Market proactiveness	Being proactive in the market during the launch stage is crucial, especially for highly innovative firms dealing with the task of translating scientific advancements into commercially successful products. During this phase, it primarily involves market preparation, such as creating awareness and educating potential customers. The expenses associated with market proactiveness become more reasonable when directed at innovative adopters.	[6]
Customer analysis methods	This point introduces a customer analysis model, derived from a literature review on the prerequisites for successful disruptive innovations. This model, focusing on context, customers, constraints, and effects, identifies the essential information needed for shaping disruptive innovation processes. Evaluating eight customer analysis methods in line with disruptive and radical innovation literature, the analysis indicates that no single method provides all the necessary information. The suggested approach involves combining and modifying these methods to meet the model's requirements and address market needs. Implementing these suggestions can enhance managers' understanding of current and potential customers, unlocking the potential for disruptive innovations.	[7]
Iterative development	Within disruptive innovation, iterative development involves an ongoing process of refining and enhancing through repeated cycles of testing, learning, and adaptation. This strategy acknowledges the dynamic nature of disruptive innovations and underscores the significance of being flexible and responsive to changing market conditions.	[8]
Continuous innovation	Disruptive innovation is a continuous process, not a singular event. Iterative development promotes a culture of ongoing innovation, motivating teams to continuously pursue enhancements and stay competitive.	[9,10]
Challenges and risks	Disruptive innovation presents challenges and risks. Companies that pursue disruptive strategies often encounter resistance from established players, navigate regulatory obstacles, and tackle technological complexities. Moreover, disruptive innovations may demand substantial investments and have longer paths to profitability, which can expose them to financial risks.	[11]
Competitive response	When a disruptive innovation gains momentum, established companies have various responses. Some opt to acquire or form partnerships with disruptive startups to access new technologies or markets. Others may try to emulate the innovation or safeguard their market position through legal or regulatory measures.	[12]
Business model innovation	Companies bring new ideas and technologies to market by leveraging their business models. Although companies may invest significantly in exploring new ideas and technologies, they often have limited capacity to innovate their business models through which these inputs will be implemented. This is significant because the same idea or technology, when introduced through different business models, can lead to distinct economic outcomes. Therefore, it is prudent for companies to cultivate the ability to innovate their business models, as it holds strategic value for their overall business success.	[13]

models that challenge the conventional norms and practices within an industry. By offering alternative solutions or addressing underserved customer needs, disruptive innovations can upend traditional market connections and relationships. This theory emphasizes the transformative power of disruptive innova-

tions in altering the competitive landscape, shifting customer preferences, and creating new market dynamics. It recognizes that these disruptive forces can displace established players, rearrange industry hierarchies, and open up opportunities for new entrants to thrive. Thus, the theory underscores the significant

impact disruptive innovation can have on existing market connections by introducing new pathways for value creation and market disruption^[15,16].

After conducting an in-depth analysis of “What Is Disruptive Innovation”^[17], I have extracted a crucial understanding that the success of disruptive innovation hinges on the quality of the products themselves. This factor resonates strongly with mainstream customers in the market^[17]. The Back Bay Battery simulation serves as a prime example of this principle, particularly in relation to the SC products aimed at the high-end market segment, where customers prioritize product performance. In order to generate substantial profits, the strategy involves either enhancing the products’ performance to align with market expectations or reducing unit costs to increase profit margins. This theoretical approach demonstrated its effectiveness within the simulation. As per the insights derived from Christensen’s article, disruptive innovation surpasses the confines of specific products or services launched at a fixed point in time; rather, it encompasses the ongoing evolution of products and services as markets undergo changes^[17].

The simulation provides a clear explanation for the modest growth in sales of the SC products, despite the company’s investment in research and development (R & D). This situation perfectly embodies the essence of disruptive innovation—an ongoing process of improving and optimizing the product, gradually diverting sales away from established market leaders. Consequently, after several years of implementing disruptive innovation, the company experiences a significant surge in revenue.

Within the simulation, the company’s disruptive innovation strategy revolves around the development and enhancement of SC products. Although the initial sales may not exhibit a substantial increase, the company’s perseverance in elevating the product’s performance and addressing customer needs gradually reshapes the market dynamics. As the SC products become more competitive and appealing to customers over time, they gain momentum and capture a larger portion of the market.

This gradual shift in sales from established mar-

ket leaders is a defining trait of disruptive innovation. Rather than attempting to immediately displace incumbents, disruptive innovators often begin by targeting niche markets or underserved customer segments. Through continuous refinement of their products and responsiveness to evolving market demands, they gradually erode the dominance of established players.

As a direct outcome of the company’s persistent efforts, the implementation of a disruptive innovation strategy leads to a significant upsurge in revenue after several years. This substantial growth can be attributed to the cumulative impact of continuously enhancing the product and effectively redirecting customer preferences towards the disruptive offering.

Disruptive innovation is characterized by deviating from the conventional path followed by mainstream technologies in the market. It challenges established norms and introduces novel approaches to address customer needs. The key attributes of disruptive innovation can be distilled into three main factors: affordability, simplicity, and the unforeseen displacement of dominant incumbents by new, smaller entrants. Affordability plays a crucial role in disruptive innovation, as it aims to make innovative products or services accessible and affordable to a broader customer base. By offering cost-effective alternatives, disruptive innovators can attract customers who were previously unable to afford or access the existing products or services in the market. Simplicity is another hallmark of disruptive innovation. It involves reimagining complex or convoluted processes and delivering streamlined solutions that are easier to understand, adopt, and use. By simplifying the user experience and removing unnecessary complexities, disruptive innovators can appeal to customers seeking straightforward and intuitive solutions. One of the notable outcomes of disruptive innovation is the unforeseen replacement of dominant incumbents by new, smaller entrants. Disruptive innovations often emerge in niche markets or underserved customer segments, where they gradually gain traction and disrupt the existing market dynamics. Over time, these disruptive offerings

can challenge and potentially replace established players, reshaping industry landscapes and hierarchies. In summary, the sustained effort in implementing a disruptive innovation strategy leads to substantial revenue growth. Disruptive innovation is characterized by its departure from mainstream technologies and is driven by affordability and simplicity. It can unexpectedly displace dominant incumbents and pave the way for new, smaller entrants to thrive in the market^[16,18,19].

The Back Bay Company skillfully harnesses these attributes by strategically lowering the prices of SC products through advancements in the production process. This deliberate approach results in a substantial reduction in the unit cost of SC products compared to their unit revenue, thereby maximizing marginal profits. The company's strategy for enhancing product performance is considered effective and straightforward. By replacing its existing mainstream products with high-end alternatives, Back Bay positions its offerings in direct competition with the overseas incumbents that customers prioritize. Back Bay achieves cost reduction by implementing improvements in the production process for SC products. These advancements can include streamlining manufacturing methods, optimizing resource allocation, or adopting more efficient technologies. By effectively reducing production costs, the company is able to offer SC products at competitive prices, making them more affordable and attractive to customers. In addition to cost reduction, Back Bay focuses on enhancing the performance of its products. This approach involves developing high-end alternatives that directly compete with the existing offerings of overseas incumbents, which are highly regarded by customers. By providing products that match or exceed the performance expectations of customers, Back Bay aims to capture a significant portion of the market share previously held by these incumbents. By effectively leveraging these strategies, Back Bay is able to disrupt the market by offering SC products at lower prices while simultaneously delivering enhanced performance. This positions the company as a formidable competitor to the established overseas incumbents, as customers are enticed by the combi-

nation of affordability and high-end features. Overall, the Back Bay Company employs a well-executed strategy that combines cost reduction, performance enhancement, and targeted competition to position its SC products as appealing alternatives to the offerings of established incumbents in the market. This suggests that the company is progressively disrupting the market with its high-performance SC products.

Further exploring this strategy, the company's ability to disrupt the market and achieve success can be attributed to a strategic focus on affordability and performance enhancement. By optimizing the production process, Back Bay not only achieves cost reduction but also positions its SC products as attractive alternatives to the offerings of established overseas competitors. This strategic maneuver allows Back Bay to carve out a unique niche within the market. The company is able to offer high-quality products that rival the performance of established competitors, but at a more accessible price point. This emphasis on affordability creates a compelling value proposition for customers, as they can obtain products with comparable performance to those of the incumbents, but at a more affordable price. The optimization of the production process plays a critical role in achieving this balance between affordability and performance. By streamlining manufacturing methods, improving efficiency, and seeking cost-saving opportunities, Back Bay can effectively reduce the production costs of its SC products. This cost reduction allows the company to pass on the benefits to customers through competitive pricing, making their products more accessible to a wider range of consumers. Moreover, the strategic focus on performance enhancement ensures that Back Bay's SC products not only offer affordability but also deliver the desired level of quality and performance that customers seek. By continuously investing in research and development and leveraging technological advancements, the company can enhance the features, functionality, and overall performance of its products. This enables Back Bay to compete directly with established overseas competitors, enticing customers with products that meet or exceed their expectations.

In summary, Back Bay's disruptive market strategy centers around affordability and performance enhancement. By optimizing the production process to achieve cost reduction and delivering high-quality products, the company establishes a unique position in the market. This strategic approach allows Back Bay to offer customers a compelling value proposition, providing them with high-performance products at a more accessible price point compared to the offerings of established overseas competitors.

Moreover, the strategy employed by Back Bay to replace conventional products with premium alternatives highlights the company's dedication to adaptability and responsiveness to customer needs. This agile approach not only enhances the company's product portfolio but also positions it as a dynamic player capable of catering to evolving market preferences.

2.2 Achieving Horizon 2 strategic initiatives

Applying the concept of "crossing the chasm" to the dynamics of operating within a large enterprise can help Back Bay achieve significant breakthroughs and cumulative profit growth^[20]. As mentioned in the article "To succeed in the long term, focus on the middle term", a common reason for companies failing to sustain long-term success is the presence of a "Horizon 2 vacuum". Implementing a Horizon 2 innovation strategy becomes crucial for Back Bay as it aims to dominate niche markets with its products^[20]. This strategy involves improving existing technologies or developing new ones to address key market concerns.

In Back Bay's markets, the product's features such as energy density, self-discharge, and price competitiveness are vital considerations. By investing in research and development (R & D) to address these technical gaps, Back Bay can expect increased cumulative profits from future sales in the coming years. In fact, the company's newly positioned products should be treated as "product start-ups" within the organization, emphasizing the need for strategic planning and resource allocation to ensure their success.

Successfully crossing the market chasm requires

a strategic shift from a product-centered approach to a market-centered one. This involves learning from early innovators and early adopters, as well as targeting pragmatists who have an interest in the product but are not yet fully ready to use it. According to Moore's study^[20], niche market identification and segmentation are key strategies for high-tech companies to navigate the market chasm. He also emphasizes the importance of deploying the whole product in order to enter the mainstream market^[20].

To avoid depleting Horizon 2 resources to meet Horizon 1 business objectives, it is crucial to establish clear boundaries and enforce portfolio commitments. This means preventing resource migration across horizon boundaries and ensuring that the allocation of resources for intrapreneurship innovative products follows a strict system. By maintaining these boundaries, the company can effectively manage and allocate resources for both Horizon 1 and Horizon 2 objectives, enabling sustainable growth and innovation^[20].

3. Workplace practice

3.1 Challenges

The market orientation of disruptive innovation faces various challenges, especially when the new product replaces the existing product in the mainstream market. One challenge is cannibalization, which occurs when a company sells both the old and new products simultaneously^[21]. Over time, the new product gradually replaces the old one, similar to how Back Bay replaced its mainstream market share products from AGM to SC^[22].

To achieve disruptive innovations for long-term sustainability, companies need to address complex market-oriented problems by disrupting existing markets^[23]. More radical and disruptive innovations are necessary to meet the pressures of sustainable development and challenge current business practices^[24]. Therefore, in real-world corporate markets, the competitiveness of product innovation should be reliable and effective in the long term, rather than being a temporary goal for a specific period of time. Over-

coming challenges associated with organizational constraints and path-resource dependencies in the employer's market is crucial for the successful internationalization of disruptive innovation. To achieve this, business models must be closely aligned with the requirements of the international market and address technological advancements and institutional factors^[25]. In the real-world enterprise marketplace, having internal capabilities and a deep understanding of market needs is essential for ensuring success. According to Sundström's study^[22], small and midsize enterprises pursuing disruptive innovation require a market-oriented business model that facilitates internationalization and provides necessary support.

3.2 Corporate's market deliverables

Taking the software industry as an example, cloud computing has emerged as a breakthrough technology and a disruptive innovation in this field. It is important to distinguish between successful and unsuccessful innovations^[26]. Adner's article highlights that an innovation cannot succeed if its value creation relies on other innovations. This concept is referred to as the "blind spot", which refers to the failure to recognize how a company's success depends on partner organizations that also need to innovate. Adner's research reveals that successful innovation requires two key elements: the company's effective execution of its promises and the partner's commitment to the company. Additionally, Adner stresses the significance of strong corporate management in pursuing potentially disruptive innovations, which aligns with the real-world employer's marketplace scenario. Therefore, effective innovation strategies should enable corporate managers to successfully transition from being on-premises providers to assuming a more focused role^[27]. These strategies are crucial for managing real-world market challenges, and their effectiveness is supported by the Back Bay innovation strategy pilots.

4. Conclusions

Back Bay company needs to foster innovation in

new products to enhance competitiveness in the market. The company's Research and Development team should aim for higher marginal profits from their high-cost products, specifically the SC battery. This will result in a larger market share for SC products and establish strong market competitiveness. The key to achieving this lies in technological innovation that offers superior performance in crucial aspects while maintaining a relatively low-cost structure. Such innovation would directly penetrate the mainstream market and have more significant disruptive effects compared to typical disruptive innovation strategies that prioritize low cost but compromise on performance^[14].

When a company intends to incorporate disruptive innovation theory into its business operations, leveraging its existing capabilities becomes a fundamental element. Managers need to analyze how these existing capabilities can be deployed most profitably^[28]. If a company's current capabilities can be utilized or expanded, it might be logical to venture into a new market. Amazon.com Inc., for instance, expanded beyond books and entered other vertical markets where it could leverage its advantages in online sales. However, companies must consider the potential synergies between their existing and new businesses^[16]. The mining industry is currently experiencing a significant technological transformation, transitioning from human-operated mines to autonomous or semi-autonomous remote-controlled mines. This represents a breakthrough disruptive change in the industry^[11]. Disruptive innovation will continue to play a significant role in the development and innovation of every industry.

Conflict of Interest

There is no conflict of interest.

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